



National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permit Program Fact Sheet

Permittee:	Facility Name:	Permit Number:
City of Stewartville	Stewartville Wastewater Treatment Facility	MN0020681
P.O. Box 275	595 - 20th Street Northeast	
Stewartville, MN 55976-0275	Stewartville, MN 55976	

Current Permit Expiration: January 31, 2013

Public Comment Period Begins: January 23, 2013

Period Ends: February 22, 2013

Receiving Water: North Branch Root River (Class 2B, 3C, 4A, 4B, 5, 6 Water)

Proposed Action: Permit Reissuance

Permitting Contact:

Nancy Heskett
18 Wood Lake Drive Southeast
Rochester, MN 55904
507-206-2605
Fax 507-280-5513

Table of Contents

Purpose and Participation.....	3
Applicable Statutes	3
Purpose	3
Public Participation	3
Facility Description.....	5
Background Information	5
Facility Location	5
Outfall Location.....	5
Map of Permitted Facility	5
Current Information.....	5
Components and Treatment Technology	5
Flow Schematic	6
Changes to Facility or Operation	6
Significant Industrial Users	6
Recent Compliance History.....	6
Recent Monitoring History	6
Receiving Water	7
Use Classification	7
Impairments.....	7
Existing Permit Effluent Limits	7
Technology Based Effluent Limits	8
Water Quality Based Effluent Limits.....	8
State Discharge Restrictions	8
Proposed Permit Effluent Limits	9
Technology Based Effluent Limits	9
Water Quality Based Effluent Limits.....	9
State Discharge Restrictions	9
Reasonable Potential Determinations	11
Background	11
Whole Effluent Toxicity (WET)	11
Mercury.....	11
Additional Requirements	11
Mercury Minimization Plan	11
Phosphorus Management Plan.....	12
Industrial Stormwater	12
Total Facility Requirements	12
Nondegradation and Anti-Backsliding	12

Purpose and Participation

Applicable Statutes

This Fact Sheet has been prepared according to 40 CFR § 124.8 and 40 CFR § 124.56 and Minn R. 7001.0100, subp. 3, in regard to a draft NPDES/SDS Permit (Permit) to construct and/or operate wastewater treatment facilities, and to discharge into waters of the state of Minnesota.

Purpose

This fact sheet outlines the principal issues related to the preparation of this draft permit and documents the decisions that were made in the determination of the effluent limitations and conditions of this Permit.

Public Participation

You may submit written comments on the terms of the draft permit or on the Commissioner's preliminary determination. Your written comments must include the following:

1. A statement of your interest in the permit application or the draft permit.
2. A statement of the action you wish the Minnesota Pollution Control Agency (MPCA) to take, including specific references to sections of the draft permit that you believe should be changed.
3. The reasons supporting your position, stated with sufficient specificity as to allow the Commissioner to investigate the merits of your position.

You may also request that the MPCA Commissioner hold a public informational meeting. A public informational meeting is an informal meeting that the MPCA may hold to help clarify and resolve issues. In accordance with Minn. R. 7000.0650 and Minn. R. 7001.0110, your petition requesting a public informational meeting must identify the matter of concern and must include the following: items 1 through 3 identified above; a statement of the reasons the MPCA should hold the meeting; and the issues you would like the MPCA to address at the meeting.

In addition, you may submit a petition for a contested case hearing. A contested case hearing is a formal hearing before an administrative law judge. Your petition requesting a contested case hearing must include a statement of reasons or proposed findings supporting the MPCA decision to hold a contested case hearing pursuant to the criteria identified in Minn. R. 7000.1900, subp. 1 and a statement of the issues proposed to be addressed by a contested case hearing and the specific relief requested. To the extent known, your petition should include a proposed list of witnesses to be presented at the hearing, a proposed list of publications, references or studies to be introduced at the hearing, and an estimate of time required for you to present the matter at hearing.

You must submit all comments, requests, and petitions during the public comment period identified on page 1 of this notice. All written comments, requests, and petitions received during the public comment period will be considered in the final decisions regarding the permit. If the MPCA does not receive any written comments, requests, or petitions during the public comment period, the Commissioner or other MPCA staff, as authorized by the Commissioner, will make the final decision concerning the draft permit. During the public comment period, however, you may request that the draft permit be presented to the MPCA's Citizens' Board (Board) for final decision. You may participate in the activities of the Board, as provided in Minn. R. 7000.0650.

Comments, petitions, and/or requests must be submitted by the last day of the public comment period to:

Nancy Heskett
Minnesota Pollution Control Agency
18 Wood Lake Drive Southeast
Rochester, MN 55904

The Permit will be reissued if the MPCA determines that the proposed Permittee or Permittees will, with respect to the Facility or activity to be permitted, comply or undertake a schedule to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the MPCA and the conditions of the Permit and that all applicable requirements of Minn. Stat. ch. 116D, and the rules promulgated thereunder have been fulfilled.

More detail on all requirements placed on the Facility may be found in the Permit document.

Facility Description

Background Information

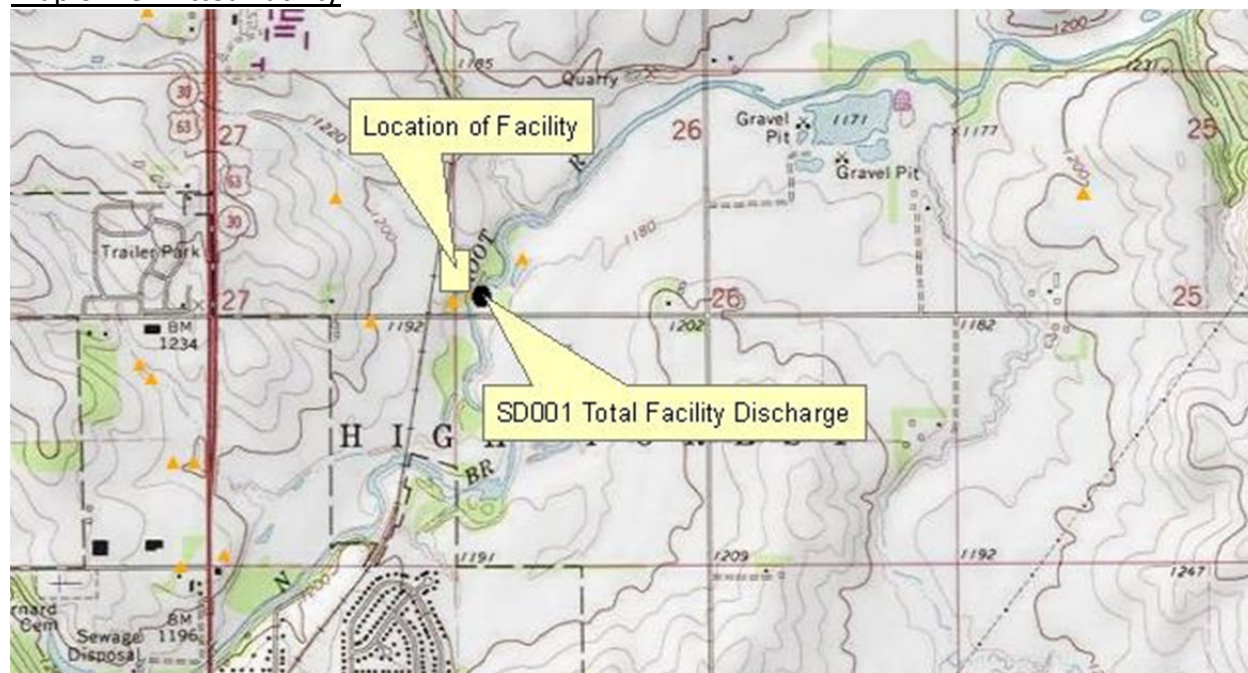
Facility Location

This Facility is an existing municipal wastewater treatment facility that treats wastewater from the community of Stewartville. The Facility is located in the SW¼ of Section 26 and the SE¼ of Section 27, Township 105 North, or approximately one-half mile north of the city of Stewartville on 20th Street Northeast.

Outfall Location

The continuous discharge outfall for this Facility (SD001 in the Permit) is located in the SW¼ of Section 26, Township 105 North, or approximately one-half mile north of the city of Stewartville on 20th Street Northeast.

Map of Permitted Facility



Current Information

Components and Treatment Technology

The existing treatment system consists of two lift stations, a mechanical bar screen, grit removal, dual oxidation ditches, two final clarifiers, a parshall flume, chlorination-dechlorination equipment, an excess flow clarifier, and an aerobic sludge digester. The Facility has a continuous discharge (SD001) to the North Branch of the Root River (Class 2B water) and is designed to treat an average wet weather (AWW) flow of 1.1114 million gallons per day (mgd), and a peak hourly wet weather flow of 2.07 mgd with a five-day biochemical oxygen demand strength of 171 milligrams per liter based on AWW design flow.

Flow Schematic

Changes to Facility or Operation



There were no significant changes to the Facility or its operation in the previous Permit cycle. However, the Permittee plans to make upgrades to the Facility during this Permit cycle. These upgrades include the addition of six new influent pumping stations and an influent parshall flume. These upgrades will not cause an increase in design flow.

Significant Industrial Users (SIUs)

This Facility does not receive process wastewater from any SIUs.

Recent Compliance History

An evaluation of the compliance history of the Facility was performed for the time period of the current Permit issuance to present. No violations were reported for this time period.

Recent Monitoring History

The following table shows the average monthly reported values for the Facility from November 2010 through December 2011.

Table 1. Monthly Average Reported Values

Parameter Name	Limit and Units	Limit Type	Monthly Average
5-Day Carbonaceous Biochemical Oxygen Demand (CBOD ₅), Percent Removal	85%	Minimum Calendar Month Average	99%
CBOD ₅	105 kilograms per day (kg/day)	Calendar Month Average	3.273 kg/day
CBOD ₅	168 kg/day	Maximum Calendar Week Average	6.167 kg/day
CBOD ₅	25 milligrams per liter (mg/L)	Calendar Month Average	1.455 mg/L
CBOD ₅	40 mg/L	Maximum Calendar Week Average	2.833 mg/L
Total Residual Chlorine (TRC)	0.038 mg/L	Daily Maximum	<0.1 mg/L
Fecal Coliform	200 colonies per 100ml	Calendar Month Geometric Mean	22.714
Mercury, Total	Nanograms per liter (ng/L)	Calendar Quarter Average	1.513 ng/L
Nitrogen, Ammonia, Total	mg/L	Calendar Month Average	0.513 mg/L
Dissolved Oxygen	mg/L	Calendar Month Minimum	7.733 mg/L

Table 1, Cont.

pH	9.0 standard units (SU)	Calendar Month Maximum	7.608 SU
pH	6.0 SU	Calendar Month Minimum	7.067 SU
Phosphorus, Total	kg/day	Calendar Month Average	7.985 kg/day
Phosphorus, Total	mg/L	Calendar Month Average	5.008 mg/L
Solids, Total Suspended (TSS) Percent Removal	85%	Minimum Calendar Month Average	98.667 %
TSS	126 kg/day	Calendar Month Average	3.917 kg/day
TSS	189 kg/day	Maximum Calendar Week Average	8.917 kg/day
TSS	30 mg/L	Calendar Month Average	1.833 mg/L
TSS	45 mg/L	Maximum Calendar Week Average	3.917 mg/L

Receiving Water

Use Classification

This Facility discharges to the North Branch of the Root River. This river is classified as a 2B, 3C, 4A, 4B, 5, and 6 water. This classification indicates that the body of water is capable of sustaining aquatic life and recreation. Aquatic life and recreation include supporting or the ability to support fish, other aquatic life, bathing, boating, or other recreational purposes and for which water quality control is, or may be, necessary to protect aquatic or terrestrial life and its habitat or public health, safety, or welfare. More information on the classification of waters can be found in Minn. R. 7050.0140.

Impairments

This water is listed on the 303(d) list as impaired for turbidity. Total maximum daily load (TMDL) studies are currently being developed for turbidity and escherichia coliform (E. coli). The statewide Mercury TMDL was approved by the EPA on March 27, 2007. Table 2 lists the current receiving water impairments.

Table 2. Receiving Water Impairments

AUID	River Name	Reach	Impairment	Approved TMDL
07040008-716	Root River, North Branch	Unnamed Creek to Mill Creek	Turbidity	Mercury
07020009-534	Root River, North Branch	North Branch to Lynch Creek	Mercury, E. coli	Mercury

Existing Permit Effluent Limits

The effluent limits and monitoring requirements in the current Permit are presented in Table 3. This table lists both water quality-based and technology-based effluent limits and state discharge restrictions.

Technology Based Effluent Limits (TBELs)

The carbonaceous biochemical oxygen demand (CBOD₅), total suspended solids (TSS), pH, and percent removal limits are technology-based limits developed for achieving secondary treatment standards. These limits are specified in 40 CFR §133.102, Minn. R. 7050.0211, and Minn. R. 7053.0215.

Water Quality Based Effluent Limits (WQBELs)

Water quality-based effluent limits in the existing Permit have been developed for chlorine. The residual chlorine limit is the final acute value for chlorine found in Minn. R. 7050.0222. This limit is determined necessary to protect the use classification of the receiving water.

State Discharge Restrictions

The limit for fecal coliform has been developed to meet discharge restrictions specified under Minn. R. 7053.0255.

Table 3: Existing Limits and Monitoring Requirements

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency
CBOD ₅	105	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	25	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	168	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	40	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅ Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	2 x Week
Chlorine, Total Residual	0.038	mg/L	Daily Maximum	Jan-Dec	Grab	1 x Day
Fecal Coliform, MPN or Membrane Filter	200	#100ml	Calendar Month Geometric Mean	Apr-Oct	Grab	2 x Week
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Quarter Average	Jan-Dec	Grab	1 x Quarter
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month
Oxygen, Dissolved	Monitor Only	mg/L	Calendar Month Minimum	Jan-Dec	Grab	1 x Day
pH	9	SU	Calendar Month Maximum	Jan-Dec	Grab	1 x Day
pH	6	SU	Calendar Month Minimum	Jan-Dec	Grab	1 x Day
Phosphorus, Total	Monitor Only	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week

Table 3, Cont.

Phosphorus, Total	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week
TSS	126	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	30	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	189	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	45	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	2 x Week

Proposed Permit Effluent Limits

The effluent limits and monitoring requirements in the draft permit are presented in Table 4. This table lists both water quality-based and technology-based effluent limits, and state discharge restrictions.

Technology Based Effluent Limits

Limits for CBOD₅, TSS, pH, and percent removal continue to be technology-based limits, as specified by 40 CFR §133.102 and Minn. R. 7053.0215.

Water Quality Based Effluent Limits

The limit TRC is a water quality-based limit. The TRC limit is the final acute value for chlorine found in Minn. R. 7050.0222. This limit is determined to be necessary to protect the use classification of the receiving water.

State Discharge Restrictions

The limit for fecal coliform was developed to meet the requirements specified under Minn. R. 7053.0255.

Table 4. Proposed effluent limits and monitoring requirements

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency
CBOD ₅	105	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	25	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	40	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	169	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅ Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	2 x Week

Table 4, Cont.

Chlorine, Total Residual	0.038	mg/L	Daily Maximum	Jan-Dec	Grab	1 x Day
Fecal Coliform, MPN or Membrane Filter	200	#100ml	Calendar Month Geometric Mean	Apr-Oct	Grab	2 x Week
Flow	Monitor Only	mgd	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day
Flow	Monitor Only	mgd	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	1 x Day
Flow	Monitor Only	MG	Calendar Month Total	Jan-Dec	Measurement, Continuous	1 x Day
Mercury, Dissolved (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	May, Sep	Grab	1 x Month
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	May, Sep	Grab	1 x Month
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Apr, Sep	24-Hour Flow Composite	1 x Month
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Apr, Sep	24-Hour Flow Composite	1 x Month
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Apr, Sep	24-Hour Flow Composite	1 x Month
Oxygen, Dissolved	Monitor Only	mg/L	Calendar Month Minimum	Jan-Dec	Grab	1 x Day
pH	9	SU	Calendar Month Maximum	Jan-Dec	Grab	1 x Day
pH	6	SU	Calendar Month Minimum	Jan-Dec	Grab	1 x Day
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week
Solids, Total Dissolved	Monitor Only	mg/L	Calendar Month Average	Apr, Sep	24-Hour Flow Composite	1 x Month
TSS	126	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	30	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	189	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	45	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS, Percent Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	2 x Week
TSS, grab (Mercury)	Monitor Only	mg/L	Calendar Month Maximum	May, Sep	Grab	1 x Month

Reasonable Potential Determinations

Federal regulations require the MPCA to evaluate the discharge to determine whether the discharge has the reasonable potential to cause or contribute to a violation of water quality standards. The MPCA must use acceptable technical procedures accounting for variability (coefficient of variation, or CV), when determining whether the effluent causes have the reasonable potential to cause, or contribute to, an excursion of an applicable water quality standard. Projected effluent quality (PEQ) derived from effluent monitoring data is compared to Preliminary Effluent Limits (PELs) determined from mass balance inputs. Both determinations account for effluent variability. Where PEQ exceeds the PEL, there is reasonable potential to cause or contribute to a water quality standards excursion. When reasonable potential is indicated, the Permit must contain a WQBEL for that pollutant.

Background

The discharge is located on the North Branch of the Root River. This section of the North Branch of the Root River has water classification of 2B, 3C, 4A, 4B, 5, and 6. The Facility has submitted three WET tests and one priority pollutant scan since March 2010. The average dry weather (ADW) design flow is used to calculate WQBELs under critical low-flow stream conditions. The ADW for this Facility is 0.817 mgd. The low flow condition is defined by the once in ten year weekly average flow ($7Q_{10}$), which is determined to be 4.654 mgd (7.20 cubic feet per second). The dilution ratio is 5.7:1, river low flow to effluent flow at the ADW flow. The analysis below is based on data submitted to date.

Whole Effluent Toxicity (WET)

This Facility has submitted three WET tests since March 2010. All three WET tests had less than 1.0 toxicity unit, chronic (TUC) for each species tested. As such, there is no reasonable potential shown for a need for a chronic WET limit for this Facility. No reasonable potential was found to exceed the monitoring threshold of 6.7 TUC.

Mercury

Monitoring results of the effluent include 15 data points at a calculated CV of 0.6. PEQ is derived as an upper bound value from the highest value measured (6.29 ng/l), and the determined variability (CV = 0.6) and number of data points (15). The PEL calculation assumes that the background mercury concentration is at the water quality standard (6.9 ng/l) when the listed stream impairment is for fish consumption advice, and no local river water column analytical data exist. To assure that the discharge does not cause or contribute to a water quality standards excursion for mercury-impaired waters, the numeric water quality standard (6.9) is applied at the point of discharge for the mass balance equation for the subsequent preliminary effluent limit calculations. Where PEQ exceeds the PEL, there is reasonable potential to cause or contribute to a water quality standards excursion. Since PEQ does not exceed the PEL in this case, reasonable potential to cause or contribute to an excursion above water quality standards is not indicated. A WQBEL is not needed.

Additional Requirements

Mercury Minimization Plan (MMP)

The Permittee is required to submit an MMP. The purpose of the MMP is to evaluate collection and treatment systems to determine possible sources of mercury as well as potential mercury reduction options.

Phosphorus Management Plan (PMP)

The Permittee is required to submit an updated PMP. PMPs help wastewater treatment facility (WWTF) operators and managers understand the inputs of phosphorus to, and treatment capabilities of, their facilities, and evaluate pollution prevention and WWTF optimization options that can reduce the amount of phosphorus discharged from the treatment system.

Industrial Stormwater

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 addresses stormwater discharges associated with industrial activities at facilities that provide onsite 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 created the necessary industrial stormwater boilerplate language and limits and monitoring so that coverage under the NPDES Permit alone will cover both permits. An additional discharge station (SD003) has been created with specific limits and monitoring, with a DMR required to be submitted annually. There is also an Industrial Stormwater chapter specific to this Facility included in the draft permit. Upon issuance of this Permit, the Permittee may request termination of their Industrial Stormwater General Permit.

Total Facility Requirements

All NPDES/SDS Permits issued in the state of Minnesota contain certain conditions that remain the same regardless of the size, location, or type of discharge. The standard conditions satisfy the requirements outlined in 40 CFR § 122.41, Minn. R. 7001.0150, and Minn. R. 7001.1090. These conditions are listed in the Total Facility Requirements chapter of the NPDES/SDS Permit. These requirements cover a wide range of areas, including recordkeeping, sampling, equipment calibration, equipment maintenance, reporting, facility upsets, bypass, solids handling, changes in operation, facility inspections, and permit modification and reissuance.

Nondegradation and Anti-Backsliding

In accordance with MPCA rules regarding nondegradation for all waters (that are not Outstanding Resource Value Waters (ORVW)), 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 (gpd), or 2) an expanded discharge that expands by greater than 200,000 gpd that discharges to any non-ORVW 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 January 1, 1988, calculated design AWW flow for this Facility is 1.114 mgd. In accordance with MPCA rules regarding nondegradation for all waters, the design AWW flow of the Facility as of January 1, 1988, and associated mass loading are the baseline design flow and mass loading. This baseline flow and mass loading will be used to determine whether nondegradation review is required for any change in the discharge. Any change that results in an increase in design flow greater than 0.2 mgd and an increased loading of one or more pollutants, or any change in a discharge containing a toxic pollutant that results in 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, is subject to nondegradation review, in accordance with Minn. R. 7050.0185.

This Permit also complies with Minn. R. 7053.0275 regarding anti-backsliding. Any point source discharger of sewage, industrial, or other wastes for which an 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.