



Minnesota Pollution
Control Agency

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

Permittee: City of Hibbing 401 East 21 st Street Hibbing, MN 55746	Facility Name: Hibbing WWTP South Plant 11669 Townline Road Hibbing, MN 55746	Permit Number: MN0030643
--	--	------------------------------------

Current Permit Expiration: February 29, 2012

Public Comment Period Begins: July 17, 2012
Period Ends: August 16, 2012

Receiving Water: East Swan Creek (Class 2B, 3C, 4A, 4B, 5, 6 water)

Proposed Action: Permit Reissuance

Permitting Contact:
Holly Christensen
MPCA – Detroit Lakes
714 Lake Avenue, Suite 220
Detroit Lakes, MN 56501
Ph. 218-846-8104 Fax. 218-846-0719

Table of Contents

Purpose and Participation	3-4
Applicable Statutes	3
Fact Sheet Purpose	3
Public Participation	3-4
Facility Description	4-8
Background Information	4-5
Facility Location Legal Description	4
Outfall Location Legal Description	4
Permitted Facility Map	5
Components and Treatment Technology	5-8
Current Information	5-6
Flow Schematic	6
Changes to Facility or Operation	6
Significant Industrial Users	6
Recent Compliance History	7
Recent Monitoring History	7-8
Receiving Water	8
Use Classification	8
Impairments	8
Existing Permit Effluent Limits	9-10
Technology Based Effluent Limits	9
Water Quality Based Effluent Limits	9
Proposed Permit Effluent Limits	10-15
Technology Based Effluent Limits	11
State Discharge Restrictions	11
Water Quality Based Effluent Limits	11-13
Additional Requirements	16
Pollutant Minimization Plans	16
Compliance Schedules	16
Variances	16
Total Facility Requirements	16
Nondegradation and Anti-backsliding	16-17

Purpose and Participation

Applicable Statutes

This fact sheet has been prepared according to the Title 40 Federal Code of Regulations (CFR) 124.8 and 124.56 and Minn R. 7001.0100, Subp. 3 in regards to a draft NPDES/SDS 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 which 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:

Holly Christensen

Minnesota Pollution Control Agency
714 Lake Avenue, Suite 220
Detroit Lakes, MN 56501

The permit will be reissued if the MPCA determines that the Permittee 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

The Hibbing WWTP - South Plant (Facility) is located at SW 1/4 of SW 1/4 of Section 32, Township 57 North, Range 20 West, Hibbing, St. Louis County, Minnesota. The Facility is located at 11669 Townline Road, within the Hibbing city limits.

Outfall Location

The Facility has a continuous discharge (SD001) to the East Swan Creek (Class 2B, 3B, 4A, 4B, 5, 6 water) to the East Swan River (Class 1B, 2A, 3B, 3C, 4A, 4B, 5, 6 water). The discharge point is located at SW 1/4 of SW 1/4 of Section 32, Township 57 North, Range 20 West, Hibbing, St. Louis County, Minnesota.

Map of Permitted Facility

Topographic Map of Permitted Facility

MN0030643, Hibbing Wastewater Treatment Plant - South Plant

SW 1/4 of the SW 1/4 of Section 32, T57N, R20W

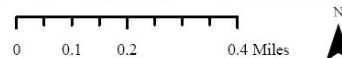
Hibbing, St. Louis County, Minnesota



Map produced by: MPCA Staff, 1/12/12

Source: USA Topo

Scale: 1:15,000



Components and Treatment Technology

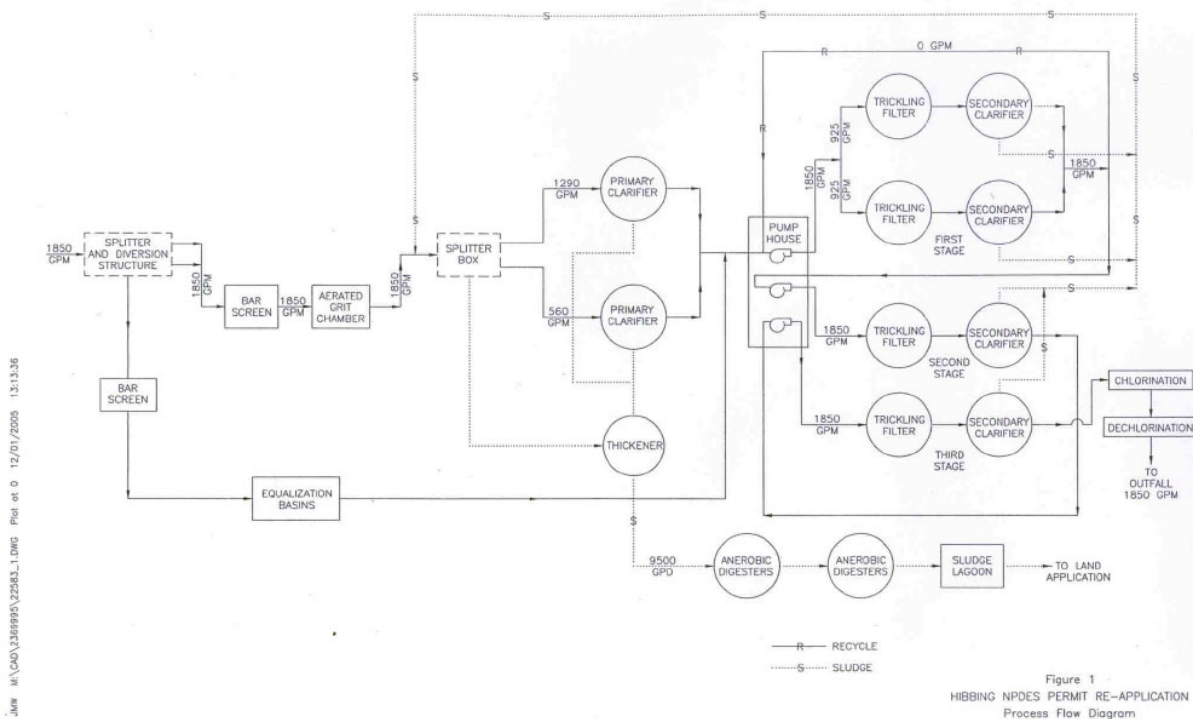
Current Information

The existing treatment system includes two mechanical bar screens, an aerated grit chamber, two primary clarifiers, four trickling filters, four secondary clarifiers, one gravity thickening unit, alum addition for phosphorous removal, a chlorine contact basin, two anaerobic digesters, and a biosolids storage lagoon.

The Facility also includes a bypass diversion structure that can divert flow during periods of high flow to an equalization (EQ) basin system consisting of 2.0 acre and 15.0 acre aerated EQ basins and a 0.8 acre EQ basin. The Facility also has an emergency discharge from the EQ basins that has the capability of discharging partially treated wastewater when the basins are full and the plant is at maximum capacity.

The Facility is designed to treat wastewater at an average wet weather flow rate of 4.5 million gallons per day (MGD) with a 5-day carbonaceous biological oxygen demand (CBOD₅) strength of 5,629.5 pounds per day or 150 milligrams per liter (mg/L).

Current Flow Schematic



Changes to Facility or Operation

As part of this permit action the City of Hibbing will be constructing five (4 duty/1 redundant) rectangular dual media sand filters (with 12 inches of sand and 18 inches of anthracite and a surface area of 407 ft² each) at the Facility in accordance with the schedule of compliance that was executed between the City of Hibbing and the MPCA on July 16, 2012. The new dual media sand filters will be designed for a loading rate of 2.13 gpm/ft² (average) and 2.35 gpm/ft² (peak). The existing Facility includes a three point chemical addition system (for alum injection) that allows for operational flexibility to improve and fine tune treatment, if necessary.

The dual media sand filters will be located in the southeast corner of the existing Facility. A new filter system diversion structure will divert treated secondary effluent from the third stage secondary clarifier to the new filter building. Filtered effluent will then flow back to the existing chlorination/dechlorination tank for disinfection and subsequently flow to the post aeration tank prior to discharge.

The proposed dual media sand filter (sand/anthracite) was pilot tested at the Facility from August 14, 2007 – September 5, 2007. The pilot test was run at a loading rate of 2.2 gpm/ft². Dual media filtration

performance was based on an average influent mercury concentration of 8.1 ng/L (total) and the average effluent total mercury and dissolved mercury concentrations were 1.3 ng/L and 1.0 ng/L respectively for the data set.

Significant Industrial Users (SIUs)

The Facility has two known SIUs:

- Ameripride Services/American Linen – laundry processes and related products; and
- Hibbing Public Utilities – process water relevant to a discharge to sanitary sewer.

Recent Compliance History

In 2008 a Letter of Warning and a Notice of Violation were issued to the Permittee. In 2009 a forgivable Administrative Penalty Order was issued to the Permittee and in 2011 a Notice of Violation was issued to the Permittee. All four of these enforcement actions were a result of non-compliance due to reporting issues.

The Permittee has been out of compliance from their Total Mercury effluent limit since March 31, 2011. On July 16, 2012, a Schedule of Compliance was issued to the Permittee to address the non compliance and requires the Permittee to take actions to come into compliance with their Total Mercury Limit in their NPDES/SDS Permit.

Recent Monitoring History

6/22/2012

DMR Summary Report

Page 1 of 2

Hibbing WWTP South Plant (MN0030643)
First DMR in Delta: 7/1999

Surface Discharge Station SD001 (001 Main Discharge)

Parameter Name	Limit and Units	Limit Type	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	85 %	MnCalMoAvg	93	97	97	95	97	97	98	96	97	98	97	98	95.667
Percent Removal															
BOD, Carbonaceous 05 Day (20 Deg C)	131 kg/day	CalMoAvg	41.3	17.6	8.7									2.0	17.4
BOD, Carbonaceous 05 Day (20 Deg C)	160 kg/day	CalMoAvg				4.8	<29	<29	<29	6.4	<26.4	<33.2	<23.4		5.6
BOD, Carbonaceous 05 Day (20 Deg C)	204 kg/day	MxCalWkAvg	83	37	43.3									8.7	43.0
BOD, Carbonaceous 05 Day (20 Deg C)	256 kg/day	MxCalWkAvg				19.0	<35	<35	<34	30	<35.3	<43	<24.3		24.5
BOD, Carbonaceous 05 Day (20 Deg C)	7.7 mg/L	CalMoAvg	5.5	2.3	0.5									0.3	2.15
BOD, Carbonaceous 05 Day (20 Deg C)	9.4 mg/L	CalMoAvg				0.3	<3.1	<3.1	<2.9	0.6	<2.9	<3	<3		0.45
BOD, Carbonaceous 05 Day (20 Deg C)	12 mg/L	MxCalWkAvg	11.7	4.7	2.3									1.1	4.95
BOD, Carbonaceous 05 Day (20 Deg C)	15 mg/L	MxCalWkAvg				1.1	<3.7	<3.7	<3	2.6	<3	<3	<3		1.85
Chlorine, Total Residual	0.038 mg/L	DailyMax				<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		
Copper, Total (as Cu)	ug/L	SingleVal	10.6	10.8	12.6	11.3	17.0	17.0	13.2	15.2	11.7	19.0	9.34	10.7	13.203
Fecal Coliform, MPN or Membrane Filter 44.5C	200 #100ml	CalMoGeoMn				32	4	4	9	34	9	37			18.429
Mercury, Total (as Hg)	1.8 ng/L	CalMoAvg				4.43	2.34	2.34	2.83	2.48	3.20	2.63	2.38	1.94	2.719
Mercury, Total (as Hg)	14.4 ng/L	CalMoAvg	1.93	2.94	11.7										5.523
Mercury, Total (as Hg)	26.4 ng/L	DailyMax	2.26	4.39	22.3										9.647
Mercury, Total (as Hg)	3.2 ng/L	DailyMax				6.07	2.61	2.61	2.89	2.78	4.02	2.57	2.86	2.56	3.219
Mercury, Total (as Hg)	31 mg/day	CalMoAvg				70.82	20.09	20.09	30.24	27.73	25.25	22.17	18.89	30.68	29.551
Mercury, Total (as Hg)	54 mg/day	DailyMax				105.43	25.75	25.75	36.72	32.39	32.29	32.27	22.42	31.25	38.252
Nitrogen, Ammonia, Total (as N)	114 kg/day	CalMoAvg	31.93	13.3	3.04									0.06	12.083
Nitrogen, Ammonia, Total (as N)	149 kg/day	CalMoAvg				1.16	1.27								1.215
Nitrogen, Ammonia, Total (as N)	20 kg/day	CalMoAvg						1.27	0.56	1.33	0.46				0.905
Nitrogen, Ammonia, Total (as N)	82 kg/day	CalMoAvg										7.2	0.67		3.935
Nitrogen, Ammonia, Total (as N)	1.3 mg/L	CalMoAvg						0.14	0.06	0.11	0.04				0.088
Nitrogen, Ammonia, Total (as N)	4.9 mg/L	CalMoAvg										0.51	0.05		0.28
Nitrogen, Ammonia, Total (as N)	6.7 mg/L	CalMoAvg	4.1	1.67	0.21									0.01	1.497
Nitrogen, Ammonia, Total (as N)	8.8 mg/L	CalMoAvg				0.07	0.14								0.105
Oxygen, Dissolved	12.5 mg/L	CalMoMin	12.7	12.8	12.6									12.6	12.675
Oxygen, Dissolved	7.8 mg/L	CalMoMin				10.8	9.9	9.9	10.0	10.0	10.1	10.3	10.9		10.238
pH	9.0 SU	CalMoMax	7.7	7.7	7.6	7.9	7.6	7.6	7.7	7.6	7.6	7.5	7.5	7.4	7.608
pH	6.0 SU	CalMoMin	6.9	7.0	7.1	7.0	7.1	7.1	7.1	7.0	7.0	6.8	6.8	6.9	6.983
Phosphorus, Total (as P)	17.0 kg/day	CalMoAvg	3.75	2.75	3.64	4.86	1.81	1.81	1.32	2.19	1.00	7.01	0.83	1.38	2.696
Phosphorus, Total (as P)	1.0 mg/L	CalMoAvg	0.48	0.34	0.25	0.30	0.31	0.19	0.13	0.20	0.10	0.50	0.10	0.18	0.257
Solids, Total Suspended (TSS) Percent Removal	85.0 %	MnCalMoAvg	89	92	91.8	88	96	96	97	90	95	96	94	94	93.067

Note: a limit in the Limit and Units column which is demarcated by asterisks is an intervention limit, not a hard, violation-causing limit.

Hibbing WWTP South Plant (MN0030643)
First DMR in Delta: 7/1999

Surface Discharge Station SD001 (001 Main Discharge)

Parameter Name	Limit and Units	Limit Type	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	Ave
Solids, Total Suspended (TSS)	510 kg/day	CalMoAvg	112.7	93.8	142.1	193.9	64	64	54	74	59.8	102.5	52.7	67.4	90.075
Solids, Total Suspended (TSS)	766 kg/day	MxCaWkAvg	179.7	127.3	254.3	231.3	94	94	67	109	82.0	150	74.7	72.3	127.967
Solids, Total Suspended (TSS)	30.0 mg/L	CalMoAvg	14.1	11.5	9.5	12.5	6.6	6.6	5.4	6.8	6.4	8.9	6.6	7.9	8.567
Solids, Total Suspended (TSS)	45 mg/L	MxCaWkAvg	23.7	16.3	13.2	13.5	8.1	8.1	6.0	8.0	6.9	10.4	9.3	9.1	11.05

Waste Stream Station WS001 (Influent Waste Stream)

Parameter Name	Limit and Units	Limit Type	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11	11/11	12/11	Ave
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoAvg	127.6	136.9	124.4	77.5	135	135	154	93	144	187	130	159	133.617
BOD, Carbonaceous 05 Day (20 Deg C)	mg/L	CalMoMax	190	200	255	163	226	226	318	168	223	458	207	224	238.167
Flow	MG	CalMoTot	64.529	59.921	117.309	123.031	75.046	75.046	89.364	84.524	66.529	47.07	64.378	63.955	77.559
Flow	mgd	CalMoAvg	2.082	2.140	3.784	4.101	2.502	2.502	2.883	2.727	2.218	1.518	2.146	2.063	2.556
Flow	mgd	CalMoMax	2.257	2.955	5.958	4.974	3.402	3.402	4.677	4.510	3.914	3.855	2.598	2.260	3.73
Mercury, Total (as Hg)	ng/L	SingleVal	11.2		12.6										11.9
pH	SU	CalMoMax	7.7	7.6	7.6	7.3	7.7	7.7	7.6	7.8	7.8	7.6	7.6	7.6	7.633
pH	SU	CalMoMin	6.8	6.8	6.8	7.0	7.1	7.1	6.9	6.7	7.0	6.6	6.7	6.5	6.833
Phosphorus, Total (as P)	mg/L	CalMoAvg	3.844	4.08	2.974	2.37	3.35	3.35	3.73	2.75	4.16	4.09	3.20	3.85	3.479
Precipitation	in	CalMoTot	1.09	0.30	0.37	5.61	5.46	5.46	3.57	3.99	1.28	1.30	0.83	0.24	2.458
Solids, Total Suspended (TSS)	mg/L	CalMoAvg	137.5	171.3	172	107	244	244	217	99	183	266	120	166	177.233
Solids, Total Suspended (TSS)	mg/L	CalMoMax	200	348	708	192	675	672	408	344	440	752	246	318	441.917

Receiving Waters

Use Classification

The receiving water for the Facility is a reach of East Swan Creek that is assigned use classification 2B, 3C, 4A, 4B, 5, 6. Class 2B waters are identified as waters that are capable of sustaining aquatic life and recreation. The use classification of the next downstream reach of East Swan Creek (which begins about 0.2 mile downstream of outfall SD001) is 1B, 2A, 3A, 3C, 4A, 4B, 5, 6. This reach is a designated trout stream with listed use classifications for domestic consumption (1B), aquatic life and recreation (2A), industrial consumption (3A, 3C), agriculture and wildlife (4A, 4B), aesthetic enjoyment (5), and other uses (6). Those remaining portions of East Swan Creek not listed as trout waters are to be protected as a cool or warm water sport fishery with use classifications of 2B, 3C, 4A, 4B, 5, and 6. Under critical summer low-flow conditions, the flow in East Swan Creek would be about 92% of the effluent at the WWTF design flow (stream: 0.3 mgd, WWTF: 3.374 mgd). East Swan Creek is part of the East Swan River sub-watershed, which ultimately flows to Lake Superior. More information on the classifications of waters can be found in Minn. R. 7050.0140.

There are not any federally listed endangered or threatened species in the receiving water.

Impairments

Table 1. Impairments of the receiving stream.

AUID	Waterbody	Description	CALM Category	Parameter	Approved TMDL	Affected Use
04010201-525	St Louis River (St Louis Bay)	Swan R to Whiteface R	5C	Mercury	None	Aquatic Consumption
04010201-508	St Louis River	Whiteface R to Floodwood R	5C	Mercury	None	Aquatic Consumption
04010201-507	St Louis River	Floodwood R to East Savanna R	5C	Mercury	None	Aquatic Consumption

Existing Permit Effluent Limits

The effluent limits and monitoring requirements in the current permit are presented in Table 2. This table lists both water quality based and technology based effluent limits.

Technology Based Effluent Limits (TBELs)

The total suspended solids (TSS), fecal coliform bacteria, and percent removal limits are technology based limits developed for achieving secondary treatment standards. These limits are specified in 40 CFR §133.102 and 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 five-day carbonaceous biochemical oxygen demand (CBOD₅), ammonia nitrogen, pH, dissolved oxygen, and phosphorous. The WQBEL's are determined to be necessary to protect the use classification of the receiving water.

Table 2. Existing Limits and Monitoring Requirements

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency
CBOD	131	kg/day	Calendar Month Average	December - March	24-hour Composite	3/week
CBOD	7.7	mg/L	Calendar Month Average	December - March	24-hour Composite	3/week
CBOD	204	kg/day	Max. Calendar Week Average	December - March	24-hour Composite	3/week
CBOD	12	mg/L	Max. Calendar Week Average	December - March	24-hour Composite	3/week
CBOD	160	kg/day	Calendar Month Average	April - November	24-hour Composite	3/week
CBOD	9.4	mg/L	Calendar Month Average	April - November	24-hour Composite	3/week
CBOD	255	kg/day	Max. Calendar Week Average	April - November	24-hour Composite	3/week
CBOD	15	mg/L	Max. Calendar Week Average	April - November	24-hour Composite	3/week
CBOD %removal	85	%	Min. Calendar Month Average	January-December	Calculation	3/week
TSS	510	kg/day	Calendar Month Average	January-December	24-hour Composite	3/week
TSS	30	mg/L	Calendar Month Average	January-December	24-hour Composite	3/week
TSS	765	kg/day	Max. Calendar Week Average	January-December	24-hour Composite	3/week
TSS	45	mg/L	Max. Calendar Week Average	January-December	24-hour Composite	3/week
TSS % removal	85	%	Min. Calendar Month Average	January-December	Calculation	3/week
Fecal Coliform	200	CFU/100 mL	Calendar Month Geo. Mean	April-October	Grab	3/week
Mercury, Total	31	mg/day	Calendar Month Average	January-December	Grab	2/month
Mercury, Total	1.8	ng/L	Calendar Month Average	January-December	Grab	2/month
Mercury,	54	mg/day	Daily Maximum	January-	Grab	2/month

Total				December		
Mercury, Total	3.2	ng/L	Daily Maximum	January-December	Grab	2/month
Chlorine, Total Residual	0.038	mg/L	Daily Maximum	January-December	Grab	1/day
Copper, Total (as Cu)	Monitor Only	ug/L	Single Value	January – December	24-hour Composite	1/month
Nitrogen, Ammonia, Total (as N)	114	kg/day	Calendar Month Average	December – March	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	6.7	mg/L	Calendar Month Average	December – March	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	149	kg/day	Calendar Month Average	April - May	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	8.8	mg/L	Calendar Month Average	April - May	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	20	kg/day	Calendar Month Average	June - September	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	1.3	mg/L	Calendar Month Average	June - September	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	82	kg/day	Calendar Month Average	October - November	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	4.9	mg/L	Calendar Month Average	October - November	24-hour Composite	3/week
Oxygen, Dissolved	12.5	mg/l	Calendar Month Minimum	December - March	Grab	1/day
Oxygen, Dissolved	7.8	mg/l	Calendar Month Minimum	April - November	Grab	1/day
pH	9.0	SU	Calendar Month Maximum	January-December	Grab	1/day
pH	6.0	SU	Calendar Month Minimum	January-December	Grab	1/day
Phosphorus	17.0	kg/day	Calendar Month Average	January-December	24-Hour Composite	3/week
Phosphorus	1.0	mg/L	Calendar Month Average	January-December	24-Hour Composite	3/week

Proposed Permit Effluent Limits

The effluent limits and monitoring requirements in the proposed permit are presented at the end of this section in Table 4. Proposed Limits and Monitoring Requirements. Table 4 lists the water quality based, technology based, and state discharge restriction effluent limits.

Water quality based effluent limits are established based on an analysis of downstream water quality. In contrast, technology based effluent limits represent an anticipated pollutant removal efficiency that can be reasonably expected based on the type of treatment technology employed. Alternatively, state discharge restrictions are established based on requirements within state rule, and these limits are neither based on a water quality analysis nor do they have a relationship to the type of treatment technology employed.

Technology Based Effluent Limits (TBELs)

The total suspended solids (TSS) and percent removal limits are TBELs that are developed for achieving secondary treatment standards. These limits are specified in 40 CFR §133.102, Minn. R. 7050.0211, and Minn. R. 7053.0215.

State Discharge Restrictions (SDRs)

The fecal coliform and phosphorous limits are SDRs. These limits are specified in Minn. R. 7053.0215 and 7053.0255.

Water Quality Based Effluent Limits (WQBELs)

The five-day carbonaceous biochemical oxygen demand (CBOD₅), ammonia nitrogen, pH, dissolved oxygen, and mercury limits are WQBELs that were developed for this Facility. The residual chlorine limit is the final acute value for chlorine found in Minn. R. 7050.0222. These limits are determined to be necessary to protect the use classification of the receiving water.

Reasonable Potential for Chemical Specific Pollutants (40 CFR 122.44(d)(1))

“Reasonable Potential” is a procedure specified by EPA regulation that compares preliminary WQBELs 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 exceed water quality standards (“Reasonable Potential” – RP) using acceptable technical procedures, accounting for variability in the effluent. Of the three priority pollutant scans received, the only organic priority pollutant that was reported above the method detection level (MDL) was chloroform (MDL of 0.036 µg/L). The reported concentration for chloroform of 0.070 µg/L was less than the method reporting limit (MRL) of 1.0 µg/L. and for this reason the reported concentration of chloroform represents an estimated value. Results of the priority pollutant scans do not indicate reasonable potential for any of the organics to exceed WQBELs.

The following table contains preliminary WQBELs used to make RP determinations for copper (Cu), nickel (Ni), and zinc (Zn). Also included in the RP table is the 2006 RP analysis for mercury. The 2006 RP analysis for mercury is the basis for the final mercury limit associated with this draft NPDES/SDS Permit. Cadmium, chromium, and lead were not detected in the priority pollutant scans at levels above their respective MDL’s, and for that reason no RP analysis was done for these pollutants. The remaining metals are included in Table 3 below:

Table 3. Reasonable Potential

PARAMETER	<u>CU</u>	<u>NI</u>	<u>ZN</u>	<u>HG^</u>
-----------	-----------	-----------	-----------	------------

Plant design flow (mgd) ADW	3.374	3.374	3.374	na
AWW	na	Na	Na	4.5
Stream design flow (mgd) 7Q ₁₀	0.3	0.3	0.3	na*
1Q ₁₀	0.2	0.2	0.2	na*
Background concentration (ug/l)	0	0	0	2 ng/l
Continuous standard (cs) (ug/l)	18.7	175	238	1.3 ng/l
Maximum standard (ms) (ug/l)	30.1	932	238	910 ng/l
Final acute value (FAV) (ug/l)	67.6	2,071	530	--
Waste Load Allocation: WLAcS	20.3	179	243	1.3 ng/l
WLAmS	31.8	987	252	--
Coefficient Of Variation (CV)	0.246	0.6	0.6	0.6
Long Term Average: LTAcS	15.4	101	137	1.0 ng/l
LTAmS	18.6	317	81	--
WQBEL: Daily Maximum	31.8	313	252	3.2 ng/l
Monthly Average	24.4	181	146	1.8 ng/l
Maximum measured effluent value	19.5	2.3	16	14 ng/l
Projected effluent quality (PEQ) @ n data points	20.5 (40)	6.9 (3)	48 (3)	17 ng/l (28)
Reasonable Potential (PEQ>Dmax/FAV)	No**	No	No	Yes

* no mixing zone allowed; ** reasonable potential based on total copper, not dissolved.

^ from the 2006 reasonable potential analysis.

Table 3 shows that RP was not indicated for copper, nickel, and zinc. Additional information about copper is provided below.

Copper

During the previous reissuance of the permit RP was indicated for copper. A recommendation was made at that time for the Permittee to initiate monthly monitoring for copper to reduce the conservatism resulting from so few samples that were available for the RP analysis. This recommendation was subsequently written into the NPDES/SDS Permit and the additional effluent copper concentration data were used in the current RP analysis. Table 3 shows that RP for copper is no longer indicated based on the current data set. It is recommend that the frequency for monitoring copper be reduced from monthly to quarterly.

Mercury

The final limits listed below are based on the current NPDES/SDS Permit and are from the previous RP toxics review. The limits outlined below are effective at the start of this next Permit cycle:

- Total mercury monthly average is 1.8 ng/l based on sampling twice per month
- Total mercury daily maximum is 3.2 ng/l based on sampling twice per month
- Mass limit: 54 mg/day as a daily maximum mass limit
- Mass limit: 30.6 mg/day as a monthly average mass limit

The Facility's influent waste stream should be monitored quarterly for total mercury. The quarterly influent samples shall be taken at the same time as one of the two monthly effluent samples are taken.

Chronic Whole Effluent Toxicity (WET) Testing (Limit)

Eight chronic WET test batteries were reviewed from the current permit cycle. There was only one exceedance (Dec 2007). The average dry weather flow of the Facility and the 7Q10 flow of the receiving stream remain unchanged. As such, the monthly average WET effluent limit of 1.1 TUC will remain unchanged in the permit. This Facility will continue to test for WET on an annual basis.

Priority Pollutants

A priority pollutant scan is required to be performed three times in the life of the permit. Sampling events shall not be less than one year apart.

Salty Discharge Monitoring

Municipal facilities with continuous, periodic/seasonal, or intermittent waste flows where the receiving water stream flow to effluent design flow dilution ratio under low flow conditions is less than 5:1 (annual climatic 7Q10:Average Dry Weather Design Flow) are required to monitor effluent for parameters listed below.

Analyte
Chloride
Ca and Mg Hardness as CaCO ₃
Specific Conductance
Total Dissolved Salts (a.k.a:solids)
Sulfates as SO ₄
Bicarbonates (HCO ₃)
Sodium
*Calcium
*Magnesium
*Potassium

* Analytes necessary to calculate Sodium as % total cations. The sodium water quality standard is 60% of total cations

The Facility is required to monitor the effluent for the salty discharge parameters outlined above. If monitoring data indicate a reasonable potential to exceed a water quality standard for any of the above parameters, the Permittee will be required to submit an application for a permit modification and a compliance schedule (if appropriate) will be added to the permit to ensure progress towards meeting the standards. The compliance schedule will contain a requirement that the Facility either demonstrate compliance with the standard as soon as possible or submit a variance request with the application for permit reissuance. Permittees may request a reduction in monitoring if after two years of data, the monitoring does not indicate a reasonable potential to exceed a water quality standard.

Table 4. Proposed Limits and Monitoring Requirements

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency
CBOD	131	kg/day	Calendar Month Average	December - March	24-hour Composite	3/week
CBOD	7.7	mg/L	Calendar Month Average	December - March	24-hour Composite	3/week
CBOD	204	kg/day	Max. Calendar Week Average	December - March	24-hour Composite	3/week
CBOD	12	mg/L	Max. Calendar Week Average	December - March	24-hour Composite	3/week
CBOD	160	kg/day	Calendar Month Average	April - November	24-hour Composite	3/week

CBOD	9.4	mg/L	Calendar Month Average	April - November	24-hour Composite	3/week
CBOD	255	kg/day	Max. Calendar Week Average	April - November	24-hour Composite	3/week
CBOD	15	mg/L	Max. Calendar Week Average	April - November	24-hour Composite	3/week
CBOD %removal	85	%	Min. Calendar Month Average	January-December	Calculation	3/week
TSS	510	kg/day	Calendar Month Average	January-December	24-hour Composite	3/week
TSS	30	mg/L	Calendar Month Average	January-December	24-hour Composite	3/week
TSS	766	kg/day	Max. Calendar Week Average	January-December	24-hour Composite	3/week
TSS	45	mg/L	Max. Calendar Week Average	January-December	24-hour Composite	3/week
TSS % removal	85	%	Min. Calendar Month Average	January-December	Calculation	3/week
Fecal Coliform	200	CFU/100 mL	Calendar Month Geo. Mean	April-October	Grab	3/week
Mercury, Total	30.6	mg/day	Calendar Month Average	January-December	Grab	2/month
Mercury, Total	1.8	ng/L	Calendar Month Average	January-December	Grab	2/month
Mercury, Total	54.4	mg/day	Daily Maximum	January-December	Grab	2/month
Mercury, Total	3.2	ng/L	Daily Maximum	January-December	Grab	2/month
Chlorine, Total Residual	0.038	mg/L	Daily Maximum	January-December	Grab	1/day
Copper, Total (as Cu)	Monitor Only	ug/L	Single Value	January – December	24-hour Composite	1/quarter
Nitrogen, Ammonia, Total (as N)	114	kg/day	Calendar Month Average	December – March	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	6.7	mg/L	Calendar Month Average	December – March	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	149	kg/day	Calendar Month Average	April – May	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	8.8	mg/L	Calendar Month Average	April – May	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	20	kg/day	Calendar Month Average	June – September	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	1.3	mg/L	Calendar Month Average	June – September	24-hour Composite	3/week
Nitrogen, Ammonia, Total (as N)	82	kg/day	Calendar Month Average	October – November	24-hour Composite	3/week

Nitrogen, Ammonia, Total (as N)	4.9	mg/L	Calendar Month Average	October – November	24-hour Composite	3/week
Nitrite Plus Nitrate, Total	Monitor Only	mg/L	Calendar Month Average	April, September	24-Hour Composite	1/month
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	April, September	24-Hour Composite	1/month
Oxygen, Dissolved	12.5	mg/l	Calendar Month Minimum	December – March	Grab	1/day
Oxygen, Dissolved	7.8	mg/l	Calendar Month Minimum	April – November	Grab	1/day
pH	9.0	SU	Calendar Month Maximum	January-December	Grab	1/day
pH	6.0	SU	Calendar Month Minimum	January-December	Grab	1/day
Phosphorus	17.0	kg/day	Calendar Month Average	January-December	24-Hour Composite	3/week
Phosphorus	1.0	mg/L	Calendar Month Average	January-December	24-Hour Composite	3/week
Bicarbonates	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Chloride, Total	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Hardness, Calcium, & Magnesium Calculated (as CaCO ₃)	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Potassium, Total (as K)	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Sulfate, Total (as SO ₄)	Monitor Only	mg/L	Calendar Month Maximum	January – December	24-Hour Composite	1/month
Specific Conductance	Monitor Only	umh/cm	Calendar Month Maximum	January – December	Measurement	1/month

Additional Requirements

Pollutant Minimization Plans

The draft NPDES/SDS Permit includes a requirement for the Permittee to submit a Mercury Minimization Plan (MMP). The MMP must document the Permittee's work in locating and eliminating sources of mercury and educating users with regards to proper mercury disposal in order to prevent its introduction into the waste stream. The goal of the MMP is to reduce the influent mercury loads to the Facility, to increase the Facility's mercury treatment effectiveness, and ultimately to reduce the effluent mercury concentrations to ensure compliance with the Facility's mercury limits.

Compliance Schedules

The draft NPDES/SDS Permit includes one compliance schedule. The schedule is outlined below:

1. Compliance Related Construction Schedule
 - a. This construction schedule requires the Permittee to add tertiary treatment to their Facility in accordance with the July 16, 2012 Schedule of Compliance to ensure compliance with the Total Mercury Limits in the draft NPDES/SDS Permit.

Biosolids

This permit requires biosolids to be treated to meet specific standards and specifies monitoring, recordkeeping, reporting and general requirements for biosolids which are applied to the land. Sites to which biosolids are applied are approved by the MPCA by the procedures found in Minn. R. 7041.0800.

Variances

This Facility has no variances to the Clean Water Act requirements.

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.

Nondegredation and Anti-Backsliding

In accordance with Minnesota Pollution Control Agency rules regarding nondegredation for all waters (that are not Outstanding Resource Value Waters), nondegredation 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 or 2) an expanded discharge that expands by greater than 200,000 gallons per day 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.

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 national pollutant discharge elimination system permit has been issued by the agency 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.