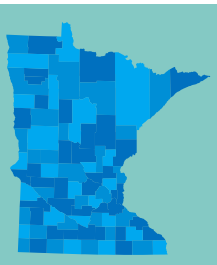
Wastewater Permits

July 2022

# Minnesota Pollution Control Agency Wastewater Permit User's Manual

A guide to using National Pollutant Discharge Elimination System/State Disposal System permit.

MINNESOTA POLLUTION CONTROL AGENCY



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## Minnesota Pollution Control Agency

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This report is available in alternative formats upon request, and online at www.pca.state.mn.us.

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# Introduction

Whether reading a permit as an operator, mayor, owner, town board member, clerk or board member, understanding all sections of a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit is the first step to compliance. The Permit User's Manual is meant to complement the NPDES/SDS wastewater permit that has been issued to you by the Minnesota Pollution Control Agency (MPCA). This document contains information that may help answer questions regarding everything from the application process to the sampling required to meet limits and monitoring requirements and definitions of terms used in permits.

# Contents

# Wastewater operator certification

## Operator certification requirements

The MPCA requires individuals involved in a disposal operation or other environmentally related activity to obtain a license. An example is the certification of wastewater treatment operators. A person may not operate a wastewater treatment facility or collection system unless the permittee retains at **least one person** that:

- Is certified in a class equal to or higher than the class of the facility.
- Has full and active responsibility for the daily on-site operation of the facility or a portion of the facility (if additional operator(s) with appropriate certification are responsible for the remaining portions).
- Holds a Type IV certified operator license for all permittees that apply biosolids or industrial by-products to the land.
- Holds a Type V Certified Operator license for all industrial facilities that irrigate wastewater or other wastes.
    - The number of Type IV or V Certified Operators is dependent on the number of operators working at a waste disposal facility:

| # of Operators | Required # Type IV/V Certified Operators |
|---|---|
| 3 or fewer | 1 |
| 4 to 7 | 2 |
| 8 or more | 3 |

## Minnesota wastewater facility operator experience and education requirements*

| Class | Experience requirements | Education requirements |
|---|---|---|
| A | Class B certified operator at least two years<br>and<br>Eight years operations experience in a Class A or B facility with two years management experience in a Class A or B facility | High school diploma or GED |
| | Class B certified operator at least two years<br>and<br>Four years operations experience in a Class A or B facility with two years management experience in a Class A or B facility | B.S. degree in chemical, civil, environmental, mechanical or sanitary engineering, or a physical or biological science |
| B | Class C certified operator at least one year<br>and<br>Six years operations experience in a Class A, B or C facility | High school diploma or GED |
| | Class C certified operator at least one year<br>and<br>Two years operations experience in a Class A, B or C facility | B.S. degree in chemical, civil, environmental, mechanical or sanitary engineering, or a physical or biological science |

| Class | Experience requirements | Education requirements |
|---|---|---|
| C | Three years operations experience in a Class A, B, C or D facility | High school diploma or GED |
| | One year operations experience in a Class A, B, C or D facility | B.S. degree in chemical, civil, environmental, mechanical or sanitary engineering, or a physical or biological science |
| D | One year operations experience in a Class A, B, C or D facility | High school diploma or GED |
| | No experience | Satisfactorily complete an **approved** postsecondary program of courses in water and wastewater treatment technology** |

*The above also applies respectively to SA, SB, SC, and SD, except experience must have been gained in a wastewater facility or collection system.
**Approved program is available at St. Cloud Technical and Community College, and Vermilion Community College in Ely.

| **Fees** | | |
|---|---|---|
| | Exam | $55 |
| | Certificate Issuance | $23 |
| | Certificate Reissuance | $23 |

# Disposal facility operator experience and education requirement to be eligible to take the exam

| Type | Experience requirements | Education requirements |
|---|---|---|
| IV Operator | Six months work experience as a Type IV facility operator | High school diploma or equivalent or equivalent experience<br>Six contact hours of approved land application training for maintaining certification<br>Nine contact hours of approved land application training to receive certification |
| V Operator | At least one spray season's work experience as a Type V facility operator (three months) | High school diploma or equivalent or equivalent experience<br>Six contact hours of approved spray irrigation training for maintaining certification<br>Nine contact hours of approved land application training to receive certification |

| **Fees** | | |
|---|---|---|
| | Exam | $15 |
| | Issuance | $15 |
| | Reissuance | $15 |

## Substitutions for experience

- Collection system or water treatment system operations experience may be substituted for up to 50% of the experience requirement.

- 40 contact hours of correspondence or college courses relating to wastewater treatment may be substituted for one month of experience.
- Sacramento State University wastewater training manuals = two and one half months experience for each volume.
- No substitutions for one year experience required for Class D except satisfactorily completing postsecondary program in wastewater approved by the MPCA.

## Certificate issuance and renewal

The fee for issuance must be submitted within 90 days of receiving passing letter. Certificate must be renewed after three years. You should receive renewal notice one month prior to expiration date. If you don't receive one, call 800-657-3864.

All fees are nonrefundable; the certification program is mandated by the legislature to be self-supporting. If denied a reinstatement or reciprocity, the fee may be used for the exam application fee.

If your license expires the following fees apply:
More than 30 days after expiration date – certificate must be reinstated
Classes A – D: $40
Type IV and V: $30
More than one year after expiration date – license is lost and operator must retest

The following table outlines the number of hours needed in a three year period to renew the certificate based on the level of classification of the operator.

| Operator classification | Hours needed for renewal |
|---|---|
| Class A | 32 hours |
| Class B | 24 Hours |
| Class C | 16 hours |
| Class D | 8 hours |
| Type IV | 6 hours |
| Type V | 6 hours |

### Acceptable training

A – D Wastewater operator classification

- **At least half** of renewal hours must be direct **wastewater**; the other half may be water treatment, safety, management, etc.

Type IV

- Municipal and industrial biosolids land application courses.

Type V

- Spray irrigation courses.

A list of approved training courses for renewal is mailed to certified operators, and is posted on MPCA's wastewater training page. If an operator attends a training course that is not on the list they must submit the agenda that includes a schedule of all topics covered with the renewal application. The schedule must include stop and start times, breaks and lunches. Training approval is not automatic.

**It is your responsibility to keep track of your training hours. Check the website for training schedule: https://www.pca.state.mn.us/water/wastewater-operators-training-and-certification.**

## Contracting operators

- Should a permittee decide to contract with a properly certified operator to meet the certification requirement, a copy of the contract must be submitted to the MPCA. The contract must include the following items:
  - Certified operator's name and certificate number.
  - Period covered by the contract and provisions for renewal.
  - Duties and responsibilities of the certified operator.
  - Duties and responsibilities of the permittee.
  - Provisions for notifying the MPCA 30 days in advance of termination if the contract is terminated prior to the expiration date.
- In addition, the contract must specify the number of visits that the certified operator will make and the length of each visit. It is recommended that each visit be a minimum of two hours in length and at the following frequency:

| Facility classification | Number of visits |
|---|---|
| Class A | 3/week |
| Class B | 2/week |
| Class C | 1/week |
| Class D | 1/month (Dec-Feb) |
| | 1/two weeks (Mar-Nov) |

- In an unexpected event that leaves a permit holder without a certified operator the permit holder is responsible for contracting with or hiring a certified operator as soon as possible. Please note that the facility must notify the MPCA of the change of operator within 30 days.

## Large Subsurface Treatment System operator certification

Large Subsurface Treatment System (LSTS) operators are required by their MPCA State Disposal System permit to take both wastewater and Subsurface Sewage Treatment System (SSTS) training to become an SSTS Service Provider. Completing MPCA wastewater operator and SSTS trainings will be ensure LSTS operators are more adequately trained to successfully operate and maintain LSTS facilities**.** New and renewed permits issued after March 3, 2008, require the operator to be certified as an SSTS service provider.

To become a service provider, all LSTS operators are required to complete the Introduction to Onsite Systems and Service Provider courses provided through the University of Minnesota Onsite Sewage Treatment Program. Current class schedules can be found on the University of Minnesota website at http://septic.umn.edu/events/category/index.htm.

During the three year certification period, the service provider is required to earn 12 continuing education credit hours, with at least half of them approved as directly related to the operation of SSTS facilities by the MPCA.

LSTS operators who are SSTS certified service providers do not need a business license to operate permitted LSTS, provided the system is owned by a municipality and the LSTS operator is a municipal employee. If these conditions are not met, an SSTS business license is required.

For more information about program requirements for SSTS professional certification and business licensing, contact:

SSTS Certification & Licensing Staff
Minnesota Pollution Control Agency, Certification and Training Unit
520 Lafayette Road North
St. Paul, Minnesota  55155-4194

MPCA general numbers: 651-296-6300 or 800-657-3864, Fax: 651-297-8676

Email: ssts-info.pca@state.mn.us

Online: search “SSTS” at http://www.pca.state.mn.us

Information about SSTS certification and licensing requirements can be found on the MPCA website at http://www.pca.state.mn.us/index.php/view-document.html?gid=5294

The following link describes the requirements of a service provider
http://www.pca.state.mn.us/index.php/view-document.html?gid=19061

# Parameter specific monitoring requirements

Certain facilities may be assigned specific limits and/or monitoring parameters in their permit. The following sections will outline what types of parameters may be included in a permit and the basis for assigning them.

## Nitrogen species and total dissolved solids

The frequency of nitrogen monitoring in industrial and municipal permits has increased over the past few years in order to develop a more complete understanding of the magnitude and dynamics of nitrogen sources and discharges from wastewater sources. A better understanding of nitrogen concentrations and loadings received by and discharged from municipal and industrial wastewater sources is necessary in order to assess the accuracy of current nitrogen loading estimates and to develop realistic nitrogen reduction alternatives from wastewater sources.

There are several factors that require some form of nitrogen monitoring in National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permits:

1. If a domestic WWTP permittee's average wet weather (AWW) design flow is >0.100 million gallons per day, the following parameters are required in the limits and monitoring by 40 CFR 122.21(j).
    - Total nitrite plus nitrate (as N)
    - Total ammonia (as N)
    - Total kjeldahl nitrogen
    - Total dissolved solids (TDS)
2. Smaller domestic WWTPs with an average wet weather (AWW) design flow <0.100 million gallons per day are required to sample for the first three parameters above at reduced frequencies.
3. Industrial facilities are required to monitor regularly for Nitrite + Nitrate, TKN, Total Nitrogen, and Ammonia at frequencies dependent on the type of facility and wastewater discharge
4. As a result of completion of the 2014 Statewide Nutrient Reduction Strategy, a Phase 1 Milestone of a 20% reduction in total nitrogen loads to surface waters by 2025 was established for point source wastewater discharges. As a first step in achieving this, Phase 1 Milestone influent and effluent monitoring for total nitrogen (Nitrite + Nitrate plus TKN) is added or increased in municipal and industrial NPDES Permits. This additional monitoring provides the data necessary to develop a better understanding of the total nitrogen concentrations and loadings that are received and discharged from municipal wastewater plants and industrial facilities. Once a more extensive total nitrogen data set is established, nitrogen reduction work can begin to achieve the necessary reductions required to meet the 20% reduction goal in total nitrogen loads from point source dischargers by 2025. The changes and/or increases in total nitrogen monitoring in wastewater NPDES Permits as a result of the Statewide Nutrient Reduction Strategy are outlined in the Minnesota NPDES Wastewater Permit Nitrogen Monitoring Implementation document located on the external MPCA wastewater Permits webpage at: Wastewater Permits - Minnesota Pollution Control Agency

## Mercury

Many permittees are required to monitor for mercury due to the statewide mercury total maximum daily load (TMDL) that was approved by U.S. Environmental Protection Agency (EPA) on March 27, 2007. With regards to mercury monitoring, the MPCA's key implementation consideration continues to be to ensure that NPDES/SDS permits verify that wastewater point source discharges are insignificant on the

local and regional levels. To find more information about the MPCA's strategies to address mercury in wastewater permits, please refer to the guidance document found at http://www.pca.state.mn.us/index.php/view-document.html?gid=12813.

### Municipal facilities

Municipal limits and monitoring are based on:

- Waste load allocations (WLAs) consistent with the northeast and southwest regions of the state.
- Reasonable potential of a facility to exceed mercury standards determined by the influent and effluent monitoring assigned to the facility.
- Antidegradation requirements.

### Industrial facilities

Industrial facilities will have limits and/or monitoring based on:

- Sector; some likely candidates include:
  - Metallic mining
  - Refineries
  - Peat mining
  - Power plants
- Geographical location related to the Lake Superior Basin – requirements and/or monitoring/limits will be determined on a case-by-case basis via discussion between effluent limits staff, permit writers and their supervisors, and reasonable potential calculations.
- Reasonable potential determination of a facility to exceed mercury standards.

Additionally, municipal and industrial facilities may be required to send MPCA a new or updated Mercury Minimization Plan (MMP) at a frequency specified in the facility's permit. These plans require facilities to identify any influent sources of mercury and to develop a plan to minimize those inputs to avoid creation of mercury concentrations in fish or water that are higher than other concentrations in the area and/or caused by a local source.

## Phosphorus

As a result of the increased concern regarding phosphorus in receiving waters, the MPCA has determined that there is a need to obtain more information from dischargers. Frequencies will vary depending on the type of facility being permitted. Phosphorus limit assignment is based on the following:

- Reasonable potential determination
- TMDL waste load allocation
- Impaired water determination
- Minn. R. 7053.0255

The continued evaluation of pollutant minimization opportunities will require facilities to be prepared to comply with phosphorus mass Water Quality Based Effluent Limits. As flow and loading increases, compliance with this limit is more challenging. Phosphorus Management Plans (PMPs) are a tool that will help to determine where phosphorus is being added to the facility's flow and if there is a potential area from where it can be reduced.

## Salty discharges

In recent years, MPCA staff became aware of environmental issues associated with salty discharges from industrial and municipal facilities. As a result, MPCA staff began to request additional monitoring for these facilities and also began assigning effluent limits to facilities that already have data, which shows a reasonable potential to exceed a water quality standard.

Monitoring and technical data has shown that certain types of processes contain concentrated levels of chlorides, salinity, dissolved solids, etc. Many of the facilities that have concentrated discharges are discharging directly to Publicly Owned Treatment Works (POTWs). The concentrations are high enough to raise concerns regarding whether POTWs are capable of fully treating this wastewater and/or if POTW final effluent is being impacted by the industrial users.

Industrial and municipal facilities with one or both of the following conditions will be required to monitor for salty discharge parameters:

- Continuous, periodic/seasonal, or intermittent wastewater flows where the low flow volume of the receiving water stream is five times less than the effluent design flow.
- Facilities with salty waste streams from concentrating treatment technologies (e.g., reverse osmosis, ion exchange, membrane filtration, etc.) and food processing industries using density-based (saline) sorting processes.

Salty discharge parameters include:

- Chloride
- Calcium and magnesium hardness as $C_aO_3$
- Specific conductance
- Total dissolved solids
- Sulfates as $SO_4$
- Bicarbonates ($HCO_3$)
- Sodium
- Calcium
- Magnesium
- Potassium
- Whole effluent toxicity (WET) testing will be assigned on a case-by-case basis

## Whole effluent toxicity testing

WET refers to the aggregate toxic effect to aquatic organisms from all pollutants contained in a facility's wastewater (effluent). It is one way we implement the Clean Water Act's prohibition of the discharge of toxic pollutants in toxic amounts. WET tests measure wastewater's effects on specific test organisms' ability to survive, grow and reproduce. Additional information can be found at http://water.epa.gov/scitech/methods/cwa/wet/.

**MPCA WET Test Report forms:** http://www.pca.state.mn.us/index.php/water/water-types-and-programs/wastewater/wastewater-permits/index.html.

# Discharge Monitoring Reports

Discharge Monitoring Reports (DMRs) are a set of monitoring report forms unique to the facility location and operation and based on currently effective permit requirements. The heart of National Pollutant Discharge Elimination System (NPDES) permitting program is self-monitoring and reporting – and DMRs are the way you do that. Completing DMRs allows the facility to maintain compliance with the permit and verify that compliance. It also allows the identification of pollutants from multiple sources that are entering a water body.

The MPCA's data management staff generates the DMR forms for a specific facility and they are then available online for download. DMRs are generated whenever a permit is issued, reissued, modified or final limits are triggered; make sure to download a new version after receiving a new permit or beginning final limits. If the incorrect version is uploaded, the eDMR file will fail and not be uploaded. The facility name and address are printed in the upper left corner with the station information directly below. The permittee name and address are in the upper right corner. The permit number and the monitoring period are listed in the middle of the upper portion of the form. The body of the form is specific to the facility. If you have a discharge or flow when completing forms, **all** the empty yellow boxes must have a value. Be sure to use the same units as are specified on the DMR forms!

If, during the monitoring period specified, there is no discharge, no flow or no material generated, mark the No discharge/no flow field with an "X", leave the parameter fields blank and submit the form.

### DMR quick tips:

- If there is data missing from a DMR, a comment and/or explanation must be included.
- Double check all calculations.
- Each staff charged with reporting DMRs shall have an individual account. Information on account management, including account creation and termination is located at https://www.pca.state.mn.us/water/discharge-monitoring-reports.
- Ensure User ID, passwords, PIN, and challenge question answers are documented.
- Consider creating an electronic filing system on your computer for DMRs and DMR related documents (i.e. do not save documents to desktop).
- Cancel in Progress DMRs from the My Workspace- My Services - In Progress location of your e-services account.
- Create reoccurring electronic calendar reminder for DMR submittals.

## Sample values forms

Daily sampling and monitoring data must be submitted on the "Sample Values" Spreadsheet and/or the "Operational" Spreadsheet. The Sample Values/Operational spreadsheets are customized to your facility and available for download in eServices. ***All*** facilities are required to submit all sampling and monitoring data completed during the reporting period electronically. Please note, facilities that discharge from a stabilization pond shall not report pre-discharge sampling results on sample values or operational spreadsheets and DMRs.

Pond and mechanical systems have different reporting requirements. The facility's individualized forms will reflect this and includes space to fill out the information required by the permit and facility type. If you are a pond facility you are still required to report your pond observations and electronically submit that information on the pond weekly observations form as an attachment to the DMR.

In the DMR, sample values, and operational spreadsheets, there are individual forms for each station. Station types may include; groundwater, land application, surface discharge, waste stream (influent), waste stream (wastewater to land application), etc. Even if there is no activity at the station (monitoring location), you must still submit the form with the no discharge, no flow, or no material generated field populated.

If the electronic calculator tool is used to populate the fields on the DMR, please make sure to review the calculated values and fix any that may not have been calculated or calculated incorrectly. It is the permittee's responsibility to validate the calculations prior to submitting the DMR.

## Reporting limit

Report monitoring results below the reporting limit (RL) as "<" the value of the RL. For example, if the lab report includes a RL of 0.1 mg/L and a parameter is not detected at a value of 0.1 mg/L or greater, report the concentration as < 0.1 mg/L by including the less than (<) symbol in the qualifier field and the RL in the sample value field. The MPCA considers the terms "non-detected," "undetected," "below detection limit," or "zero" as permit reporting violations.

Use the following instructions to determine a reportable value where sample values are less than the RL and the permit requires reporting of an average.

A. If **some values** are less than (<) the RL, substitute zero for all non-detectable values to report the average or summed concentration .

   Example: The values for the month are: 5.0 mg/L, 4.0 mg/L, 3.0 mg/L and <2.0 mg/L. Report the monthly average or sum as (5.0 + 4.0 + 3.0 + 0.0) = 12.0 ÷ 4 = 3.0 mg/L

B. If **all values** are less than (<) the RL, use the RL for all non-detectable values to calculate the average or sum and report as < the RL calculated average or summed concentration.

   Example: The values for the month are <0.2 mg/L, <0.4 mg/L, <0.2 mg/L, <2.0 mg/L. Report the monthly average or sum as (0.2 + 0.4 + 0.2 + 2.0) = 2.8 ÷ 4 = < 0.7 mg/L.

C. To calculate a mass loading with a less than (<) the RL concentration, use the RL value in the calculation and then add the "<" to the product of the concentration and the volume.

   Example: Daily or monthly average concentration = < 2.0 mg/L, daily or monthly average flow = 7 million gallons per day (MGD). Report the daily or monthly mass loading as (2.0 mg/L x 7 MGD x 3.78 kg/gallon) = <53 kg/day.

To calculate geometric mean ignore any less than (<) to a value or RL to calculate the reportable value. See calculation of geometric mean guidance document and geometric mean worksheet for more detail: https://www.pca.state.mn.us/water/wastewater-operator-resources.

## Significant figures

Significant figures include all the digits in a measurement that are known with certainty as well as the last digit, which is an approximation. Regardless of the measuring device there is always some uncertainty in a measurement, but consistently using the following rules for determining significant figures will ensure more accuracy in DMR reporting.

For any parameter, sample measurements shall be reported in the same number of significant digits as the limits for that parameter are set forth in the permit. If the permit does not clarify the number of significant digits, sample measurements shall be reported in two significant digits. In the cases of

effluent total suspended solids (TSS) or biochemical oxygen demand (BOD), where single digit effluents are achieved, single digits can be reported.

Rules for significant figures:

- All non-zero digits (1-9) are to be counted as significant.
  Example: 91 has two significant figures (9 and 1) and 123.45 has five significant figures (1, 2, 3, 4, 5)
- All zeroes between non-zero digits are always significant.
  Example: 4308 (4, 3, 0, 8) and 40.05 (4, 0, 0, 5) contain four significant digits
- For numbers that do not contain decimal points, the trailing zeroes may or may not be significant. Example: 470,000 may have two to six significant digits
- For numbers that do contain decimal points, the trailing zeroes are significant.
  Example: 0.360 (3, 6, 0) and 4.00 (4, 0, 0) contain significant digits
- If a number is less than 1, zeroes that follow the decimal point and are before a non-zero digit are not significant.
  Example: 0.00253 (2, 5, 3) and .0670 (6, 7, 0) contain three significant digits

## Rounding

Rounding may be necessary in order to report in the same number of significant figures as the permit limit. All calculations (i.e. averaging and multiplying) should be performed prior to rounding any numbers for reporting purposes.

When rounding drop non-significant digits and apply the following rules to the proceeding digits:

- If the digit following the digit to be rounded is less than 5, drop it and all digits to the right of it.
  Example: 6.4**3**78 rounds to 6.4
- If the digit following the digit to be rounded is greater than 5, increase the preceding digit by 1 and drop all digits to the right of it. Example: 6.1**8**21 rounds to 6.2
- If the digit following the digit to be rounded is 5, round the preceding digit to the nearest even number (keep in mind that zero is considered an even number when rounding) and drop all digits to the right of it.

  Example: 6.0**5**68 rounds to 6.0 and 6.1**5**68 rounds to 6.2

## Invalid sample (invalid quality control/lab accident)

There are a number of conditions when a sample or sample result is considered invalid. These may include:

- If a sample is subject to a lab accident and a valid analysis cannot be performed.
- The quality control during sample analysis is not within analytical standards.
- Sample preparation results in insufficient dilutions and the result is reported with a greater than symbol (>), (Typically occurs with BOD and coliform analysis).

When sufficient time remains in the monitoring period, an additional sample can be collected and reported. When not enough time remains in the monitoring period to collect an additional sample, report the sample in the sample values and DMR boxes include a comment and attach an explanation of the situation to the DMR. Documentation from the lab and/or a written explanation from the operator must be retained with lab records for inspection.

## Pond facilities and discharging

For pond facilities with a discharge event that occur in two consecutive months, summarize only the discharge samples that occur in the month being reported. The required effluent monitoring should be reported in the month in which the samples were taken. If all of the required effluent samples were taken in one of the months, then the month in which there were no effluent samples taken but a discharge occurred, a note should be included on the DMR indicating that the required samples were reported in the previous month or will be reported on the following month's DMR form.

An example of this would be if a discharge began the 27th day of the month and ended one or two days into the next month. Effluent samples could be taken at the required frequency of twice per week before the month ended. There would be no effluent samples to report in the new month, but there would still be flow reported from the discharge. A note should then be written on the DMR stating that the required sampling was done during the previous month.

Facility specific information about the acceptable discharge windows is located in the facility's permit. The following table outlines acceptable discharges windows for ponds based on the facility's assigned MPCA office. More information about discharge windows is found within the following website publication http://www.pca.state.mn.us/index.php/view-document.html?gid=8807.

| **MPCA Office** | Brainerd<br>Detroit Lakes<br>Duluth | Rochester<br>Marshall /Mankato<br>St. Paul |
|---|---|---|
| **Spring windows** | March 1 - June 30 | March 1 - June 15 |
| **Fall windows** | September 1 - December 31 | September 15 - December 31 |

## Quarterly influent samples

These values will populate on the DMR forms for influent waste in the months of March, June, September, and December. The samples **do not have to be taken in those months; they may be taken at any time during the quarter.** The influent quarterly samples for pH, TSS, CBOD and phosphorus may still be taken during any of the three months in the calendar quarter and must be reported on the sample values spreadsheet/operational spreadsheet for the month during which the sample was taken. Quarterly influent sample results must also be reported on the DMR form for the last month of each calendar quarter. Take the samples and report as follows:

| **Month sample was taken in and reported in the Sample Values Spreadsheet** | **Month reported on DMR** |
|---|---|
| January, February, March | March |
| April, May, June | June |
| July, August, September | September |
| October, November, December | December |

## Attachments to the DMR

The NPDES/ SDS permit may require an attachment to be submitted with DMR submittals. Examples can include, but are not limited to:

- Discharge Evaluation Report.
- Release sampling report.
- Pond observations.
- Total Toxic Organics (TTO) certification statement.
- Water Treatment Plant subsurface disposal system weekly observation form.

Consider saving copies of attachments applicable to your facility's permit to your computer. All supplemental forms are available electronically from the MPCA's website.

## Amendments

There may be scenarios that require your facility to perform sample values and DMR amendments. Amendments are performed on the Manage DMR screen of your e-services account. Amendment examples can include, but are not limited to:

- Unreported/ incorrectly reported data.
- Failed to include attachments.

Further information and instructions for submitting amendments is located on the DMR webpage.

## Checklist: Before you send in your Discharge Monitoring Reports

Use this checklist to ensure everything is submitted:

- ☐ Are all required forms correctly filled out for the monitoring period?
- ☐ Are all the values calculated correctly on the DMR?
- ☐ Has the sample values or operational spreadsheets been submitted already?
- ☐ Are all attachments included? (Release Sampling Reports, Pond Observation Form, Mercury Supplemental Report Form, Cover letters, etc.).
- ☐ Do all the empty tan boxes have a value in them? If data is missing, is an explanation attached in the comments?
- ☐ Is the submission on time? (submitted on or before the 21$^{st}$ of the month following the monitoring period).

## Resources

See MPCA's DMR webpage: https://www.pca.state.mn.us/water/discharge-monitoring-reports

- Guidance documents.
- Permit calculations and definitions.
- Information on eDMRs and sample values.
- Link to online services portal.
- Contact information for DMR assistance.

The MPCA has staff that can answer your questions about filling out DMRs. Call the MPCA toll-free 1-800-657-3864 and ask for a data manager or your assigned compliance person.

# Compliance

Municipal and Industrial Wastewater Facility Compliance and Enforcement Coverage Areas Inspector Map: http://www.pca.state.mn.us/index.php/view-document.html?gid=19145

The ultimate goal for wastewater operators and MPCA inspectors is for a facility to maintain compliance with NPDES/SDS permit requirements, which in turn means environmental protection. The NPDES/SDS permitting program is designed to allow permittees to self-monitor and self-report to demonstrate compliance with permit conditions, state statues and rules and federal regulations are being achieved. Therefore, it is important that an operator become familiar with permit conditions, submittal dates, and resources to avoid enforcement. **Please note, the MPCA has numerous tools/ resources available on its website for permittee's to assist in maintaining permit compliance.**

## Inspections

During an inspection, MPCA evaluates compliance by comparing a facility's operations to the requirements within the facility's NPDES/ SDS permit. The permittee is encouraged to ask questions throughout the inspection. The inspection affords both the permittee and MPCA inspector a unique opportunity to learn from each other. Expect the following agenda when an inspector visits your facility.

### Arrival

Sign in – when the facility provides a blank sign-in sheet, log, or visitor register, it is acceptable for MPCA inspectors to sign it. Please keep in mind, MPCA employees are not allowed to sign any "waiver" or "visitor release" that would relieve the facility of responsibility for injury or that would limit the rights of the MPCA to use data obtained from the facility. The inspector may cross-out and initial wording to ensure the form is able to be signed by the inspector.

Confidentiality – the inspector may also work with the facility to protect any trade secrets that may be encountered during the inspection. If you have any questions about this please talk to your inspector about public and non-public data prior to the tour of the facility.

### Opening conference

MPCA inspectors may present identification upon arrival. To outline the purpose and scope of the inspection, the inspector may also provide a document with a list of objectives for the visit or an agenda. A mutually agreed upon agenda is meant to allow the permittee time to start up intermittent operations, and organize records, if not already compiled.

### Treatment facility items

MPCA inspectors will want to see every treatment component of the system. Additionally, discharge locations, sampling methods and locations, etc. are all likely inspection items/areas.

### On-Site document review

Depending on the visit, the inspector will review facility records before or after viewing the treatment facility's components. The following documents are required to be kept for at least three years by the facility and may be reviewed as part of your inspection:

- Current permit.
- Discharge Monitoring Reports.

- Chain of custody (COC) forms.
- Sampling/lab data.
- Operation and maintenance records.
- Other records as requested depending on the type of inspection being performed.

### Closing conference

Following your inspection, MPCA staff should allow time for an exit interview. At this time the inspector may outline tentative violation findings or other concerns identified as well as possible corrective actions the facility should consider implementing. This discussion may also include a discussion about how enforcement decisions are made at the MPCA (forum process). This is also an opportunity to ask any questions or obtain any other information about your inspection.

### Photographic documentation

The MPCA inspector may use a camera to collect images and copy records at the facility. The inspector will attempt to accommodate permittees who have confidential business information or trade secret/proprietary items. Photography is an essential tool used to assist the inspector in preparing a thorough and accurate inspection record. If you have any concerns regarding the photos taken during your inspection, talk to your inspector about confidentiality options.

## Sampling

The following sections should be used as a guide to properly collect, preserve and transport samples to ensure proper record keeping and reporting accuracy.

### Sampling frequency

Efforts shall be made to space weekly or monthly samples out in a manner which is most representative of the monitored water/activity throughout the course of the week/month. For example, in most cases the permittee should not sample on consecutive days unless that is the most representative of the monitored water/activity.

### Preservation and storage

Samples shall be properly stored and preserved when immediate analysis is not possible. Methods of preservation may include cooling, pH control, and chemical addition. Appropriate containers must be used and there must be clear documentation of any chemical preservation of the sample. All sample containers must be clearly and completely labeled. Fill out labels in advance or immediately after taking the samples. Information concerning preservation and storage can be found in Table II to 40 CFR pt. 136.3. Where samples require thermal preservation during collection or are refrigerated prior to analysis, document conditions daily when in use to ensure thermal preservation is maintained by use of a thermometric device. See Temperature under Field parameters section below for more information on using an appropriate thermometric device and how to maintain accuracy.

### Sample transport

All sample transmittal forms and shipping bills from common carriers shall be placed in waterproof bags and sealed in the transport containers with the samples. Use tamper-indicating tape or seals for all shipping container closures when transferring or shipping transport containers, or samples to another party. The seal shall be placed so that the transport container cannot be opened without breaking the

seal. While not required, seals may be applied to individual sample containers. This establishes the history of each individual sample.

All samples that require thermal preservation shall be packed in thermally insulated coolers with wet ice that will sufficiently cool them to a temperature of <6°C for the duration of shipment. Blue ice packs or other chemical cooling packs have been proven to not be as effective as wet ice. The sample containers should be packed so that leakage and cross contamination is minimized, and care should be taken to prevent breakage of glass containers. A temperature blank containing non-freezing liquid should also be included in the cooler.

## Sample transmittal records/chain-of-custody

All samples that are submitted to a laboratory must be accompanied by a sample transmittal record or chain-of-custody (COC) form. This record may be designed as individual forms for each sample or a summary form for a set of samples. Tracking records shall be kept for a period of three years. The following procedures are designed to document and track the physical possession and/or storage of samples from the start of collection through the final analytical result and sample disposal to ensure sample integrity and eliminate possible tampering.

The number of individuals who physically handle the samples should be limited to those responsible for sample collection, initial laboratory receipt, sample preparation and sample analysis and sample disposal. All parties handling the sample are responsible for sample custody (i.e. relinquishing and receiving) must be documented with the exception of common carriers used to transfer samples to the laboratory. If a common carrier is used, they should not sign COC forms. Include the name of the name of the common carrier on the COC and retain shipping documents. This shall include laboratory, field, and other personnel releasing or accepting materials from the common carrier. COC will be relinquished by the party who seals the shipping container and accepted by the party who opens it. The COC form shall indicate the date and time that the transport container was sealed for shipment. The COC forms shall remain with the samples during transport or shipment. They must be put in a waterproof closure inside the sealed cooler or shipping chest.

**At a minimum**, the information transmitted to the laboratory shall include:

- Site name and address (client code may be acceptable if samples are considered sensitive information and if the field records clearly trace the code to a specified site and address).
- Date and time (military time preferred) of sample collection for each sample.
- Unique identification for all samples.
- Number of samples.
- Intended analyses – the analytical method number shall be listed if the sample results are related to a permit which specifies the method to be used.
- Storage conditions for the samples, including chemical and thermal preservation (may be indicated on sample label/field sheets).
- Signature of person or sampler responsible for sample transmittal with date and time.
- Signature of person receiving the samples with date and time.
- Comments section (about sample or sample conditions).
- Appropriate place for identification of common carrier (if used).

## Laboratory reports

Review lab reports as soon as possible to determine if the sample results are within expectations, met holding time requirements, and if data qualifiers are associated with any sample results. Depending on

the situation and the laboratory's sample retention period, they may be able to analyze the original sample and provide a revised report. Data qualifiers are included in sample narratives or by an abbreviation linking to a qualifier key. Include qualifiers associated with any sample result in the comments field to the sample values spreadsheet. If it is determined that a sample value reported is invalid follow the instructions for Invalid sample values in DMR's for properly reporting invalid sample values. If it cannot be determined if a sample result is invalid, contact compliance staff for further DMR reporting instructions. Ensure that, where sample results are reported as less than values, the lab reported data to the reporting limit and that sensitivity for permit compliance is met.

# Field parameters

Field parameters are required to be analyzed on-site and within 15 minutes of collection using an EPA Clean Water approved method, see Table 1B to 40 CFR pt. 136.3. Field instruments or measuring systems accuracy must be documented to ensure they are capable of acceptable performance at the beginning of the analysis and they are still valid after continued system operation. Follow the manufacturer's instructions for calibration procedure and maintenance. This section will discuss different field parameters for compliance monitoring and how to properly ensure they are verified for accuracy.

## pH

Use a pH meter that is accurate to 0.1 Standard Units (S.U.) with a range of 0-14 S.U. and is equipped with temperature compensation adjustment. Calibrate the meter according to the manufacturer's procedure each day prior to analysis of compliance monitoring samples. Calibration must include at least two pH buffers that bracket the range of expected sample values (pH 7 buffer and either the pH 4 or 10 buffer). After calibration, verify with a buffer. The reading for the verification buffer should be within 0.1 S.U. of the expected value. Use a small portion of each buffer solution (or disposable daily use packets) for calibration and verification. Do not use the portion for more than one calibration. Discard the used portion. Do not pour back into the original bottle.

When performing analyses at multiple sites, use a post-calibration verification buffer at the end of the run. If verification buffers are ever outside of the acceptable 0.1 S.U. range take corrective action. All samples analyzed since the last acceptable verification buffer must be reanalyzed, if possible. If reanalysis is not possible, all data from the last acceptable verification must be qualified.

All initial calibrations and calibration verifications shall be completely documented in bound notebook or field sheets, including: date/time, buffer(s) used, resultant meter response, temperature at which buffers were measured, action taken, and technician initials.

## pH quick tips

- Be sure to analyze grab samples within 15 minutes of collection.
- Calibrate each day with two buffers.
- Always report the temperature at which the pH is measured.
- Document pH values in one-hundredths (0.01).
- Report pH values in tenths (0.1).
- Never reuse buffers.

## Dissolved oxygen

Use a calibrated meter according to the manufacturer's procedure each day prior to analysis of compliance monitoring samples by using water saturated air or air saturated water. Include documentation of calibration details for temperature, barometric pressure (mmHg), and the final DO reading in mg/L. Verify the final DO calibration reading by back calculating the theoretical DO for the current calibration conditions of temperature and barometric pressure using a theoretical DO saturation chart. The meter value should be within 0.5 mg/L of the theoretical DO. If the meter cannot be calibrated by the user verify the internal calibration by following this same procedure.

When performing analyses at multiple sites, use a post-calibration verification at the end of the run. If verification is outside of 0.5mg/L theoretical value take corrective action. All samples analyzed since the last acceptable verification must be reanalyzed, if possible. If reanalysis is not possible, any data from the last acceptable verification must be qualified.

If the barometric pressure is not obtainable for calibration and/or verification elevation in altitude can be used. Below is a simple chart that can be used to verify the theoretical DO based on temperature and Minnesota's mean altitude of 1200 feet. Calibration/Verification should be within ± 0.10 of these ranges.

| Temperature (Celsius) | Acceptable Range (mg/L) |
|---|---|
| 18.0 | 9.03 – 9.23 |
| 18.5 | 8.94 – 9.13 |
| 19.0 | 8.85 – 9.04 |
| 19.5 | 8.76 – 8.95 |
| 20.0 | 8.67 – 8.86 |
| 20.5 | 8.59 – 8.77 |
| 21.0 | 8.50 – 8.68 |
| 21.5 | 8.42 – 8.60 |
| 22.0 | 8.34 – 8.52 |
| 22.5 | 8.26 – 8.44 |
| 23.0 | 8.18 – 8.36 |
| 23.5 | 8.10 – 8.28 |
| 24.0 | 8.02 – 8.20 |
| 24.5 | 7.95 – 8.12 |
| 25.0 | 7.88 – 8.05 |

## Temperature

Temperature determinations for compliance samples must be made with a thermometric device that equilibrates rapidly, has a demonstrated accuracy of ± 0.5 $^{o}$C, and is traceable to National Institute of Standards (NIST). Acceptable thermometric devices include liquid-in-glass or electronic thermistor and devices such as dissolved oxygen, pH or multi-parameter meters. If your facility is using or storing a mercury-filled thermometer, please turn the equipment into the nearest hazardous waste facility.

A NIST reference thermometric device may be used to verify the calibration of other thermometric devices if it has a documented accuracy of ± 0.5 $^{o}$C, is able to distinguish temperature changes of 0.1 $^{o}$C, and equilibrate rapidly. The NIST reference thermometric device must be calibrated every 5 years. Thermometric devices used for compliance samples, that include a NIST traceable certificate, do not require initial verification but must be verified against a NIST thermometric device every 12 months

after date of first use or certificate expiration, whichever comes first. Alternatively, they can be replaced with currently certified thermometric devices. Thermometric devices without a NIST traceable certificate, or with an expired NIST traceable certificate, must be verified against a reference thermometric device and the process documented initially and annually thereafter.

To verify a compliance temperature-measuring-device, compare two temperatures that bracket the range of compliance samples against the reference thermometric device and record all four readings. The readings must agree within 0.5 $^{o}$C. Documentation must include the make, model, serial number, and calibration date of each thermometric device.

All thermistors must be calibrated in the field with a field grade (or NIST-grade) thermometer.

1. Allow the thermometer or thermistor to equilibrate to ambient temperature.
2. Insert thermometer or thermistor **in situ** when possible or in a sub-sample. Swirl and take readings when the mercury column, needle, or read-out becomes constant; record the temperature to the nearest 0.5°C. Read to the nearest 0.1°C for a digital gage. Continuing calibration must also be performed for thermistors. The thermistor should be checked against the field grade thermometer at 4-hour intervals and at the end of the sampling day.

## Specific conductance

Specific conductance also known as conductivity must be analyzed within 28 days and stored at 6oC from the time of collection to analysis. Where specific conductance is monitored for groundwater stations analysis is required within 15 minutes. Use a calibrated meter, equipped with automatic temperature compensation, according to the manufacturer's procedure each day prior to analysis of compliance monitoring samples. After calibration, verify with a standard with a value that is in the range of the expected sample value. The verification standard should be within ±10% of the true value.

When performing analyses at multiple sites, use a post-calibration verification standard at the end of the run. If the verification standard is outside ±10% of the true value take corrective action. All samples analyzed since the last acceptable verification buffer must be reanalyzed, if possible. If reanalysis is not possible, all data from the last acceptable verification must be qualified.

## Specific conductance quick tips

- Calibrate each day and verify with a standard.
- Report in units of umhos/cm.
- Do not dilute conductivity sample.
- Discard unused portions of calibration or verification standards.

## Total residual chlorine

Chlorine is added to water supplies and wastewater treatment processes as a disinfectant. The properties for which it is valued as a disinfectant also make chlorine extremely toxic to aquatic organisms.

Chlorine is unstable in aqueous solutions and therefore, samples must be collected as grab samples and analyzed within fifteen minutes of collection to assure accuracy. Field handheld meters are commonly used to determine chorine in the field followed by bench top spectrophotometers and amperometric titration. While methods using handheld meters and spectrophotometers are most desirable due to ease of use, they contain a number of matrix interferences. Interferences that cannot be eliminated with sample pretreatment may require the use of the amperometric titration method which is relatively

free of matrix interference. The most current edition of *Standard Methods for the Examination of Water & Wastewater* provides a complete discussion.

A reporting limit (RL) must be determined and verified for TRC that meets permit monitoring requirements. Report values recovered below the RL as less than (<) the RL. For example, if an analytical value of 0.01 mg/L is obtained and the verified RL is 0.04 mg/L, report the result as: <0.04 mg/L. See NPDES/SDS total residual chlorine MDL/RL guidance for requirements and further discussion.

### In-line meters

Some facilities have the capability to measure field parameters with in-line meters to obtain in-situ or "real-time" data. Follow the manufacturer's instructions for calibration and maintenance. In-line meters must be calibrated initially and verified directly or indirectly using a calibrated laboratory type meter on a daily basis. Less frequent calibration/verification is allowed only if it is demonstrated and documented that less frequency is required. For more information on acceptable calibration and/or verification see the individual field parameters above.

Permits that include "continuous measurement" as the sample type must utilize the real-time data for reporting compliance monitoring sample values.

Permits that include "grab" as the sample type can utilize in-line meters for reporting compliance monitoring sample values by using the real-time data or by physically reading the in-line meter display at a time that is most representative of the monitoring station.

Data collected that is not representative of the monitoring station (i.e. during calibration, verification, or maintenance events) may be excluded from reporting but documentation summarizing the exclusion must be maintained for on-site inspection. If the in-line meter becomes inoperable for a period greater than 24 hours, collect a physical grab sample and measure using a secondary calibrated and/or verified meter. Include a comment to the sample value indicating the in-line meter is out-of-service for the duration that the in-line meter was inoperable.

## Sanitary sewer extensions

MPCA staff will review data for sanitary sewer extensions (SSEs) when the permittee submits a SSE application, or prior to inspections.

Background: The sanitary sewer, or collection system, collects and transports wastewater. It includes sewers, lift stations, conveyance systems, interceptors, temporary storage basins, and related facilities. (Minn. R. 7077.0105, subp. 9a). Modifications to sanitary sewers typically provide new or improved sanitary service to residential dwellings, and industrial and commercial facilities.

Under Minnesota law (Minn. Stat. § 115.07, subp. 3), an MPCA permit is required for any extension, addition, or modification that: increases an existing pollutant discharge; introduces a new pollutant; or will result in an increase or potential increase in the amount of flow in a sanitary sewer system.

Additional information is found within the sanitary sewer modification or extension permit fact sheet at http://www.pca.state.mn.us/publications/wq-wwprm1-15.pdf.

## Compliance quick tips:

- MPCA staff have developed pH, dissolved oxygen, total residual chlorine, and conductivity calibration templates that are available to permittees. Please contact MPCA compliance staff to request a copy.
- Prohibited releases of wastewater to the environment require action from you. If you discover a prohibited discharge you must:
  - Immediately notify the Minnesota Duty Officer (1-800-422-0798).
  - Take all reasonable steps to immediately end the release.
  - Recover materials or substances associated with the release.
  - Collect a representative sample of the release and report results to MPCA.
- Chemical additives, including bio-augmentation products required MPCA approval. Information on the chemical approval process is located at https://www.pca.state.mn.us/water/wastewater-additional-guidance-and-information.
- NPDES permits require installation and maintenance of outlet protection measures to prevent erosion. Routinely visit the location of your facility's discharge to the environment, use photographs to document the condition(s), and take corrective action if you observe erosion.
- Many reports and submittals can now be received electronically by the Water Quality Submittal Center. Information on the electronic submittal process is located at https://www.pca.state.mn.us/water/discharge-monitoring-reports.

# Permitting

The permit is often the main compliance tool – both for the permittee and the MPCA. The permittee benefits from knowing exactly how the MPCA defines the parameters of the activity being permitted and how the permittee is required to track and report its compliance status to the MPCA. The MPCA benefits from the consistency that permits help provide. The permit and any language included in it supersede this document. If there are any variations, the permittee will be held to the requirements written in the permit.

The permittee has input throughout the permitting process and has the same rights as any other citizen to contest the permit. It is important to remember that the permitting process is not unilateral but allows for negotiation between the MPCA and the permittee. This negotiation is limited to the parameters used to determine compliance with the law. The law itself cannot be negotiated. The final permit should ideally reflect the needs of both the MPCA and the permittee. The MPCA and the permittee can use the permit to resolve noncompliance issues. The permit can allow a grace period during which the permittee is required to take certain steps to return to compliance. In those cases, a compliance schedule is often included in the permit. The MPCA relies on permits to advance environmental protection.

Permits are the basis for many of MPCA's regulatory activities. The MPCA authorizes activities in four categories through permits:

- Establish limits to prevent, control, or abate pollution. For example, permits may prevent deterioration of water quality by establishing limits on the concentration of pollutants discharged from a wastewater facility.
- Authorize the release, discharge, emission, or disposal of pollutants. The NPDES/SDS permit authorizes the discharge of treated wastewater.
- Authorizes construction, installation, or operation of a facility.
- Authorizes the storage, collection, transport, or processing of waste.

## Water quality permit fees

Application fees reflect the level of effort required to process the different types of permit applications and develop a permit that complies with applicable regulations. Application fees must be submitted with the application.

Like application fees, annual fees vary and are dependent upon the type of permit. Annual fees can also depend on the design flow or design capacity for the different types of wastewater treatment facilities.

Guidance on application fees and permit annual fees can be found at:
https://www.pca.state.mn.us/water/wastewater-permit-fees

## Permit issuance/reissuance application forms

To determine the required application forms, attachments, and other information that must be included for a completion application, use the checklists below for the specific waste types discharged from the facility. These checklists can be found at http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-permits-and-forms/water-permit-application-forms.html.

# Definitions

| **Certification** | |
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| Exclusions | A city manager, superintendent of public works, or other administrative official is not eligible to be certified as an operator unless that person's duties include the operation of the system of the facility. Includes maintenance and laboratory personnel, also. |
| Direct responsibility | Have full and active responsibility for the operation of a portion of, or all of a facility. |
| Disposal facility | A waste facility that is designed or operated for the purpose of disposing of waste on or in the land and has a permit, stipulation agreement, or other written approval from the agency. |
| Management | To direct or supervise the operation of a facility or shift operators who make operational decisions or operate facilities without supervision from a supervisor. |
| Operation | The routine performance of duties at a facility to achieve results that meet existing state laws and rules pertaining to wastewater. |
| Operator | An individual who has full and active responsibility for the daily on-site operation of the system or facility, or of a portion of the system or facility if an additional operator or operators with appropriate certification are responsible for the remaining portions. Operator does not include office personnel, laborers, transporters, corporate directors, elected officials, or other individuals in managerial roles unless such individuals are directly involved in on-site supervision or operation of a waste disposal facility. Operator does not include private individuals who store or land spread sewage sludge on property owned or farmed by that individual. Operator includes facility managers, supervisors, and equipment operators. |
| Type IV | Any disposal facility that applies on the land any sewage sludge or semisolids from commercial or industrial operations. |
| Type V | Any disposal facility that applies on the land any nonhazardous liquid waste from commercial, industrial, or agricultural operations. |
| Waste disposal inspector | Any individual who has governmental authority to routinely review waste disposal facilities to determine compliance with applicable statutes, rules, permits, ordinances, or standards. |
| Waste disposal operator | Any individual responsible for conducting work at a waste disposal facility. It does not include office personnel, laborers, transporters, corporate directors, elected officials, or other individuals in managerial roles unless the person is directly involved in on-site supervision or operation of a waste disposal facility. |
| **Discharge Monitoring Report** | |
| Concentration | The information contained in this section is usually a concentration calculation, such as milligrams/liter (mg/L) or micrograms/liter (ug/L). Some values to be reported are not true concentration values, such as flow in million gallons per day (mgd). |
| Concentration units | Specifies the reporting units required in the concentration section. |
| DMR | Discharge Monitoring Report. The form used to report self-monitoring results by the NPDES permittees as required by the NPDES/SDS Permit. |
| eDMR | The electronic version of the Discharge Monitoring Report. |
| Frequency of analysis | The number of sampling and monitoring events that have occurred or that are required as part of the permit. |
| Operational spreadsheet | The operational spreadsheet is a form to be used to record and submit individual monitoring results in an electronic file format, as a prerequisite to the DMR. |
| Parameter | The constituent that is being sampled and reported as required by the permit. |

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| Permit requirement | Reflects the limit type of the parameter to be sampled and reported by the designated sample type and frequency, and the associated limit, if applicable. If there is no numeric limit, this means monitor only. |
| Quantity | The information contained in this section is usually a mass calculation, such as kg/day or kg/month or kg/year and/or total calculations for flow and precipitation. |
| Quantity units | Specifies the reporting units required in the quantity section. |
| Report | Means no limit applies but monitoring is required to be reported. |
| Reporting Limit | The sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. |
| Sample type | The sample type is the method of how the sample was acquired. |
| Sample value | The actual value or monitoring result to be reported. |
| Sample values spreadsheet | The sample values spreadsheet is a form to be used to record and submit individual monitoring results in an electronic file format, as a prerequisite to the DMR. |
| Supplemental report form | Form used to report a facility's detailed monitoring results. |
| **General terms** | |
| Act | The Federal Water Pollution Control Act, as amended, commonly referred to as the Clean Water Act, U.S. Code, title 33, section 1251 et seq. |
| Agency | The Minnesota Pollution Control Agency. |
| Average dry weather flow | The daily average flow when the groundwater is at or near normal and a runoff condition is not occurring. |
| Average wet weather flow | The daily average flow for the wet test 30 consecutive days for mechanical facilities or for the wettest 180 consecutive days for controlled discharge pond systems. The 180 consecutive days for pond systems must be based on either the storage period from approximately November 15 through May 15 or the storage period from approximately May 15 through November 15. |
| Bypass | An intentional diversion of a waste stream from any portion of the treatment facility. |
| CFR | Code of Federal Regulations. |
| Commencement of construction | a) to begin or cause to begin as a part of a continuous program the placement, assembly, or installation of facilities or equipment; or to conduct significant site preparation work, including clearing, excavation, or removal of existing buildings, structures, or facilities, which site preparation is necessary for the placement, assembly, or installation of facilities or equipment; or<br>b) to enter into a binding contractual obligation for the purchase of facilities or equipment which is intended to be used within a reasonable time in the operation of a new source. For the purpose of these rules, "binding contractual obligation" does not include an option to purchase or a contract which option or contract can be terminated without substantial financial loss, and does not include contracts for feasibility, engineering, or design studies. |
| Commissioner | The commissioner of the Minnesota Pollution Control Agency or a designated representative. |
| Continuous discharge | A discharge of a pollutant that occurs throughout the operating hours of a facility without interruption, except for occasional shutdowns for maintenance, process changes, or similar activities. |
| Dike | An embankment, ridge, or wall which is impermeable to stored substances and which forms the perimeter of the secondary containment area. |
| Discharge | The conveyance, channeling, runoff, or drainage of wastewater, including stormwater and snow melt from a site. |
| Disposal system | A system for disposing of sewage, industrial waste or other wastes, and includes sewer systems and treatment works. |

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| Duty officer | The Minnesota Duty Officer, Department of Public Safety, Division of Emergency Management. |
| Effluent limitation | A restriction established by rule or permit condition on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources into waters of the state. |
| EAW | Environmental Assessment Worksheet. A document prepared by an entity that is proposing a project that has the potential to impact surface waters or groundwater. It may be a mandatory worksheet based on Minnesota Rules Part 4410 and may be because of one of the following circumstances: a proposed expansion of an existing municipal wastewater treatment facility, or a new municipal wastewater treatment facility; a new industrial discharge. If an EAW is required, it must also be presented to the MPCA Board for approval or denial. |
| EPA | United States Environmental Protection Agency |
| General permit | A permit issued under Minn. Rule 7001.0210 to a category of permittees whose operations, emissions, activities, discharges, or facilities are the same or substantially similar. |
| Groundwater | Water contained below the surface of the earth in the saturated zone including, without limitation, all waters whether under confined, unconfined, or perched conditions, in near-surface unconsolidated sediment or regolith, or in rock formations deeper underground. |
| Hazardous waste | A waste that may pose greater human health or environmental risks due to their chemical properties. See the following fact sheet: https://www.pca.state.mn.us/sites/default/files/w-hw1-01.pdf |
| Impervious surface | A constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas and concrete, asphalt, or gravel roads. |
| Initiation of operation | The date on which all components of the wastewater treatment system and all individual sewage treatment systems within a project service area are complete and functioning and the project begins operating for the purposes for which it was planned, designed, and built. |
| Intermittent stream | A drainage channel with definable banks that provides for runoff flow to any of the surface waters during snow melt or rainfall events. |
| ISTS | Individual Sewage Treatment System |
| Local government unit | Cities, towns, and counties and sanitary districts |
| Major facility | A major municipal wastewater treatment facility that has a design average wet weather flow of 1.0 million gallons per day or more, and has been designated as such by the State, and has been approved by the EPA. Major industrial facilities meet the criteria set forth in the EPA Industrial Categorical Worksheet or the State has determined is significant and should be designated as a major facility. |
| Minor facility | A minor municipal wastewater treatment facility that has an average wet weather design flow of less than 1.0 million gallons per day. A minor industrial facility does not meet the criteria set forth in the EPA Industrial Categorical Worksheet. |
| MPCA | Minnesota Pollution Control Agency |
| Municipality | Any county, city, town, the Metropolitan Council Environmental Services, the Metropolitan Council when acting under chapter 473, an Indian tribe or an authorized Indian tribal organization, or any other governmental subdivision of the state responsible by law for the prevention, control, and abatement of water pollution in any area of the state. |

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| New source discharge | A discharge not in existence on or before the date the receiving water body was designated an Outstanding Resource Value Waters or, for discharges to trout waters, on or before September 14, 1999. |
| Nonpoint source | A land management or land use activity that contributes or may contribute to ground and surface water pollution as a result of runoff, seepage, or percolation and that is not defined as a point source under Minnesota Statutes, section 115.01, subdivision 11. |
| Noncontact cooling water | Water used to reduce temperature which does not come into contact with a raw material, intermediate product, waste product other than heat, or finished product. |
| NPDES | National Pollutant Discharge Elimination System. The program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits and imposing and enforcing pretreatment requirements under sections, 307, 318, 402 and 405 of the Clean Water Act, United States Code, title 33, sections 1317, 1328, 1342 and 1345. |
| Outstanding resource value waters | Waters of the state with high water quality, wilderness characteristics, unique scientific or ecological significance, exceptional recreational value, or other special qualities which warrant stringent protection from pollution as defined in Minn Rule 7050.0180. |
| Permittee | The entity identified as permittee on the cover letter authorizing coverage under a permit. |
| Petroleum | a) gasoline and fuel oil as defined in Minn. Stat. section 296.01, subdivisions 3 and 4; b) crude oil or a fraction of crude oil that is liquid at a temperature of 60°F and pressure of 14.7 psi absolute; and c) constituents of gasoline and fuel oil under items a. or b. of this part. |
| Plans and specifications | Documents, including completed drawings and specifications that describe the project in full and detail the complete requirements for materials, dimensions, and construction technique. The documents that comprise the plans and specifications must conform with generally accepted engineering practices and applicable state statutes, rules, and requirements. |
| Point source | A discernible, confined, and discrete conveyance, including, but not limited to, a pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. |
| Pollutant | Any sewage, industrial waste, or other wastes, as defined in Minnesota Statutes chapter 115.01, discharged into a disposal system or to waters of the state. |
| Pollution of water, water pollution or pollute the water | a) the discharge of any pollutant into any waters of the state or the contamination of any waters of the state so as to create a nuisance or render such waters unclean, or noxious, or impure so as to be actually or potentially harmful or detrimental or injurious to public health, safety or welfare, to domestic, agricultural, commercial, industrial, recreational or other legitimate uses, or to livestock, animals, birds, fish or other aquatic life; or b) the alteration made or induced by human activity of the chemical, physical, biological, or radiological integrity of waters of the state. |
| Process wastewater | Any water, which during manufacturing or processing, comes into direct contact with or results from the production or use of a raw material, intermediate product, finished product, by-product, or waste product. |
| POTW | Publicly Owned Treatment Works. A device or system used in the treatment, recycling, or reclamation of municipal sewage or industrial wastes of a liquid nature, which is owned and operated by a municipality or sanitary district. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works for treatment. |

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| Reasonable potential | The process for determining the possibility for a discharged pollutant to exceed water quality standards or criteria. The reasonable potential determination is described in part 7052.0220 for chemical-specific water quality-based effluent limitations, and part 7052.0240, subpart 5, for whole effluent toxicity. |
| Release | Any overflow, discharge, spill, or other release of wastewater or materials to the environment. |
| SDS | State Disposal System. Generally describes a permit issued by the state of Minnesota that is non-surface water discharging or land application facilities. |
| Septic tank | Any watertight, covered receptacle that is designed and constructed to receive the discharge of sewage from a building sewer or preceding tank, stores liquids for a detention period that provides separation of solids from liquid and digestion of organic matter, and allows the effluent to discharge to a succeeding tank, treatment device, or soil dispersal system. |
| Sewage | The water-carried waste products from residences, public buildings, institutions or other buildings, or any mobile source, including the excrementitious or other discharge from the bodies of human beings or animals, together with such groundwater infiltration and surface water as may be present. |
| Surface waters | Waters of the state excluding groundwater as defined in Minnesota Statutes, section 115.01, subdivision 6. |
| TMDL | Total maximum daily load. The sum of the individual WLAs for point sources and load allocations for nonpoint sources and natural background, as more fully defined in Code of Federal Regulations, title 40, section 130.2, paragraph (i). A TMDL sets and allocates the maximum amount of a pollutant that may be introduced into a water of the state and still assure attainment and maintenance of water quality standards. |
| TTO | Total toxic organics. The summation of all values greater than 0.01 milligrams per liter (mg/l) for the toxic organics and found in the discharge from the Permittee's facility. |
| Technology based effluent limits | Means an effluent limitation, standard, or prohibition promulgated by the Environmental Protection Agency at Code of Federal Regulations, title 40, parts 400 to 460, under sections 301 and 306 of the Clean Water Act, United States Code, title 33, sections 1311 and 1316. |
| Upset | An exceptional incident in which the permit discharge limits are unintentionally and temporarily exceeded due to factors beyond the reasonable control of the permittee. |
| WLA | Waste Load Allocation. The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution, as more fully defined in Code of Federal Regulations, title 40, section 130.2, paragraph (h). In the absence of a TMDL approved by EPA under Code of Federal Regulations, title 40, section 130.7, or an assessment and remediation plan developed and approved according to part 7052.0200, subpart 1, item C, a WLA is the allocation for an individual point source that ensures that the level of water quality to be achieved by the point source is derived from and complies with all applicable water quality standards and criteria. |
| Water quality variance | A temporary change in a state's water quality standard for a specific pollutant and its relevant criteria, allowing deviation from meeting a water quality-based effluent limit (WQBEL) for a particular discharger. More information located at http://www.pca.state.mn.us/mvri148b. |
| Waters of the State | All streams, lakes, ponds, marshes, wetlands, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof. |

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| Wetlands | Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Constructed wetlands designed for wastewater treatment are not waters of the state. Wetlands must have the following attributes: a. a predominance of hydric soils; b. inundated or saturated by surface water or groundwater at a frequency and duration to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and, c. under normal circumstances support a prevalence of such vegetation. |
| **Land application** | |
| Absorptive capacity | The ability of the soil to absorb additional water in the event of possible rainfall. It means maintaining a soil water deficit while spray irrigation is occurring. |
| Agronomic rate | The sewage sludge application rate (dry weight basis) designed to: a) provide the amount of nitrogen which can be utilized by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and b) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the groundwater. |
| Annual pollutant loading rate | The maximum amount of a pollutant that can be applied to a unit area of land during a 365-day period. |
| Aquifer | Unconsolidated material or rock capable of producing water to supply a well. |
| Available nitrogen | Nitrogen which is present in inorganic forms and the amount of organic nitrogen that can be mineralized to plant available forms. |
| Background level | The concentration of a monitored parameter due to naturally occurring conditions, hydraulically upgradient off-site activities, and/or preconstruction activities. Background may be determined by the average concentration of all monitoring points located hydraulically upgradient of a spray irrigation site. |
| Beneficial use | Any application of sewage sludge or industrial by-product to the land to improve soil physical and chemical properties by supplying nutrients, organic matter, and other components of this material. |
| Biosolids | See sewage sludge |
| By-product | Has the same meaning as solid waste given in Minn. R. 7035.0300. |
| Ceiling concentrations | A pollutant concentration in biosolids which prohibits the land application of those biosolids. |
| Compatible | The ability of two or more substances or materials in a tank system to maintain their respective physical and chemical properties upon contact with one another. |
| Cover crop | Vegetation which is planted specifically to prevent soil erosion and to take up nutrients that may otherwise be lost before the next cropping year. This typically includes crops such as rye, oats, or other types of fast-growing vegetation. Cover crops, in general, are not harvested.<br>However, cover crops at industrial spray irrigation sites must be harvested at least twice per year to encourage vegetative growth and remove nutrients from the system. Cover crops at industrial spray irrigation sites typically include cool-season perennial grasses grown for forage. |
| Cropping year | A year beginning on September 1 of the year prior to the growing season and ending August 31 the year the crop is harvested. For example, the 2022 cropping year began September 1, 2021, and ended August 31, 2022. |
| Cumulative pollutant loading rate | The maximum amount of an inorganic pollutant that can be applied to an area of land. |
| Dewatered sewage sludge | Any sewage sludge with a total solids content of 20 percent or greater or which can be transported and handled as a solid material. |

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| Dewatered industrial by-product | An industrial by-product with a total solids content of 20% or greater or which can be transported and handled as a solid material. |
| Domestic septage | Either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant. |
| Dry weight basis | Calculated on the basis of having been dried at 105 degrees Celsius until reaching a constant mass, or essentially 100 percent solids content. |
| End user | The person that has accepted the by-product for their use as a soil amendment. |
| Exceptional quality sewage sludge | Sewage sludge which has been prepared to meet one of the Class A pathogen reduction requirements in part 7041.1300, subpart 2; the pollutant concentrations in part 7041.1100 subpart 4, item C; and one of the vector attraction/reduction requirements in part 7041.1400 subpart 2, items A to H. |
| Fallow land | Land which is not cropped throughout a cropping year and has a vegetative cover of less than 25 percent. |
| Feed crops | Crops produced primarily for consumption by animals. This includes forage crops. |
| Food crops | Crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco. |
| Grassed waterways | Natural or constructed areas, seeded to grass as protection against erosion. Separation distances are from the centerline of grassed waterways.<br>For a grassed waterway which is wider than the separation distances required, application is allowed to the edge of the grass strip. |
| Highly permeable soil | Soils whose soil leaching potentials are rated as severe, poor filter for soil pesticide loss, by the Natural Resources Conservation Service using the procedure found in part 620, Soil Interpretation Rating Guides of the United States Department of Agriculture-Natural Resources Conservation Service National Soils Survey Handbook. |
| Immediately incorporated | Means incorporated into the soil with tillage within 48 hours after surface application of an industrial by-product. |
| Industrial by-product (IBP) | Has the same meaning as solid waste given in Minn. R. 7035.0300. |
| Industrial spray irrigation | The act of supplying process wastewater for agricultural and horticultural purposes to land, crops, or plants by means of pipes, hoses, sprinklers, drippers, ditches, furrows, or other devices that are connected directly to a source of process wastewater. |
| Karst topography | An area underlain by fractured carbonate bedrock in whicherosion has produced geological characteristics such as: sinkholes; springs, subsurface drainage; caves; sinking streams; dissolutionally enlarged joints (grikes) or bedding planes, and bedrock surface channels (karren). Counties known for karst features include parts of Dakota, Rice, Dodge, and Mower, and most of Goodhue, Olmsted, Winona, Wabasha, Houston and Fillmore. |
| Land application site | An area of land which receives application of sewage sludge or IBP for beneficial use. |
| Liquid industrial by-product | Any industrial by-product that does not meet the definition of dewatered industrial by-product. |
| Long-term storage | Storage of dewatered sewage sludge or industrial by-product for more than 30 days but less than seven months. |
| Maximum allowable nitrogen application rate | The maximum amount of available nitrogen which can be applied to a site during a single cropping year. |
| Monitoring well | An excavation that is drilled, cord, bored, washed, driven, dug, jetted, or otherwise constructed to extract groundwater for physical, chemical, or biological testing. "Monitoring well" includes a groundwater quality sampling well. |

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| Other regulated substances | Any substance, including a food-based product intended for human or animal consumption, which may cause pollution of waters of the state and is not: a. a petroleum substance under standard temperature and pressure; or, b. a hazardous material. |
| Pathogens | Organisms that are capable of producing an infection or disease in a susceptible host. |
| Perched water table | Land where the soil is saturated with water in one or more layers within 200 centimeters of the mineral soil surface and has one or more unsaturated layers with an upper boundary above 200 centimeters in depth below the saturated layer. The zone of saturation, i.e. the water table is perched on top of a relatively impermeable layer. The Natural Resources Conservation Service also classifies this as epi-saturation. |
| Permanent storage | Storage of dewatered industrial by-product for more than seven months. |
| Pollutant limit (related to exceptional quality biosolids) | A numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge, such as milligrams per kilogram of total solids, or the amount of a pollutant that can be applied to a unit area of land, such as pounds per acre. |
| Private livestock truck wash | A truck washing facility owned or leased, operated, andused only by a feedlot operator to wash trucks owned or leased by the feedlot operator and used to transport animals or supplies to and from the feedlot. Minn. Stat. ch. 116.07 |
| Public contact site | Land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, and golf courses. |
| Realistic yield goal | The most recent five-year average of crop yields, excluding the worst year, or the most recent three- to five-year average yield increased by 10% or if the crop has never been grown, the realistic yield goal based on soil productivity and level of management as determined by the county Natural Resources Conservation Service, county extension agent, or a crop consultant. |
| Sewage sludge | Solid, semisolid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes, and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. Sewage sludge that is acceptable and beneficial for recycling on land as a soil conditioner and nutrient source is also known as biosolids. |
| Short-term storage | Storage of dewatered sewage sludge or industrial by-product for less than 30 days. |
| Sodium adsorption ratio (SAR) | A ratio of specific available cations in wastewater or soil solution that indicates whether the accumulation of sodium in the soil exchange complex will lead to degradation of the soil structure and thus a sharp reduction in infiltration and permeability rates. |
| Soil horizon | A layer of soil that is approximately parallel to the soil surface and has some set of properties that has been produced by soil-forming processes and has some properties that are not like those of the layers above and beneath it. These properties include color, structure, texture, consistency, and bulk density. |
| Soil texture | The relative portion of the soil separates sand, silt, and clay. It can be measured using methods described in Minn. R. 7041.3400, subp. 1. Coarse texture is US Department of Agriculture textural classifications sand, loamy sand, and sandy loam. Medium texture is US Department of Agriculture classifications loam, silt, silt loam, and sandy clay loam. Fine texture is US Department of Agriculture classifications clay loam, silty clay loam, sandy clay, and clay. |
| Soil water deficit | The difference between the amount of water currently held in the soil and the amount of water held at field capacity, expressed in inches and calculated over the active rooting depth of the crop. |
| Spray irrigation site | The area of land that receives the actual application of wastewater. This area does not include buffer zones, setbacks, or other land where wastewater is not applied. |

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| Total solids | The materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius. |
| Unstabilized solids | Organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process. |
| Vector attraction | The characteristic of sewage sludge or IBP that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents. |
| Volatile solids | The amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air. |
| **Permit calculations & definitions** | |
| | **For a complete list of limit type definitions, please refer to the Permit Calculations and Definitions document on the MPCA website located at** http://www.pca.state.mn.us/index.php/view-document.html?gid=16214 |
| **Pretreatment** | |
| Categorical industrial user | An industrial user that is subject to national categorical pretreatment standards. |
| Individual control mechanism | A document, such as an agreement or permit, which imposes limitations or requirements on an individual industrial user of the publicly owned treatment works (POTW). |
| Indirect discharger | A nondomestic discharger that introduces pollutants into a publicly owned treatment works. |
| Industrial user | A nondomestic source of indirect discharge. |
| Interference | A discharge that alone or in conjunction with a discharge or discharges from other sources:<br>a) inhibits or disrupts a POTW plant, its treatment processes or operations, or its sludge processes, use, or disposal; and<br>b) is, therefore, a cause of a violation, including an increase in the magnitude or duration of a violation, of any permit or rule controlling, prohibiting, or limiting the release of pollutants from the POTW plant into the environment. |
| Pass-through | A discharge that exits a POTW plant into waters of the state in quantities or concentrations that, alone or in conjunction with a discharge or discharges from other sources, is a cause of violating a requirement of any permit, rule, regulation, or ordinance controlling, prohibiting, or limiting the release of pollutants from the POTW plant into the environment, including an increase in the magnitude or duration of a violation. |
| Pretreatment | The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater before or in lieu of discharging or otherwise introducing pollutants into a POTW. The reduction or alteration may be obtained by physical, chemical, or biological processes, process changes, or other means, except as prohibited by part 7049.0300, subpart 4. Appropriate pretreatment technology includes, but is not limited to, control equipment, such as equalization tanks or facilities, for protection against surges or slug discharges that might interfere with or otherwise be incompatible with the receiving POTW. However, when process effluent limited by categorical pretreatment standards is mixed with wastewater other than those generated by processes limited by the same categorical pretreatment standard, the effluent must meet, after pretreatment, the alternate limits for the combined effluent calculated using the combined waste stream formula as provided in part 7049.0350. |

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| Significant Industrial User (SIU) | Any industrial user that:<br>A. Is subject to Categorical Pretreatment Standards, as defined in Minn. R. 7049.0120, subp. 5;<br>B. Discharges 25,000 gallons per day or more of process wastewater, excluding sanitary, noncontact cooling, or boiler blowdown wastewater, to the POTW;<br>C. Contributes a process wastewater containing five percent or more of the flow or load of any pollutant of concern to the POTW; or<br>D. Is designated as significant by the Permittee or the MPCA on the basis that the industrial user has a reasonable potential to adversely impact the POTW's operation or violate any pretreatment standard or requirement. |
| **Sampling** | |
| | **For a complete list of limit type definitions, please refer to the Limit Type Calculations and Definitions document on the MPCA website located at** http://www.pca.state.mn.us/index.php/view-document.html?gid=16214 |
| Acute toxicity test | A static renewal test conducted on an exponentially diluted series of effluent. The purpose is to calculate the percent of effluent that causes 50% mortality/immobility of aquatic organisms at 48 or 96 hours. An LC50/EC50 (lethal/immobile) concentration less than or equal to 100 % effluent constitutes a positive for toxicity. |
| Acute toxic unit (TUa) | The reciprocal of the effluent dilution that causes the acute effect by the end of the acute exposure period. |
| Chronic toxicity test | A static renewal test conducted on an exponentially diluted series of effluent. The purpose is to find the dilution rate that causes no unacceptable effect on the test organisms by the end of the chronic exposure period. |
| Chronic toxic unit | The reciprocal of the effluent dilution that causes no unacceptable effect on the test organisms by the end of the chronic exposure period. For example, a TUc equals [7Q10flow (mgd) + effluent average dry weather flow (mgd)]/[effluent average dry weather flow (mgd)]. |
| Calculation | Determine the amount or number of a parameter mathematically. |
| Continuous | A sample taken without interruption. |
| Estimate | An approximate calculation or judgment of the value, number quantity or extent of something. |
| Flow composite sample | A sample prepared by physically combining two or more samples taken proportionately to flow over a designated period of time. |
| Grab sample | An individual sample collected from one location at one point in time and place. |
| Instantaneous sample | A measurement such as flow pH or temperature taken immediately at the time of sampling. |
| Measurement sample | A sample taken using the designated unit of measurement. |
| Whole effluent toxicity test | The aggregate toxic effect of an effluent measured directly by a toxicity test. Effects on tested organisms are measured and expressed as toxic units or percent effluent for both acute and chronic whole effluent toxicity tests. |
| **Stormwater** | |
| BMPs | Best management practices. Practices to prevent or reduce the pollution of waters of the state, including schedules of activities, prohibitions of practices, and other management practices, and also includes treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge, or waste disposal or drainage from raw material storage. (Minn. R. 7001.1020, subp.5.) |
| Benchmark monitoring location | The location(s) within the boundary of the facility where the Permittee will collect stormwater samples for the purpose of compliance with the benchmark monitoring requirements of this permit. |

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| Construction activity | For this permit includes construction activity as defined in 40 CFR pt.122.26(b)(14)(x) and small construction activity as defined in 40 CFR pt. 122.26(b)(15). This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated stormwater runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling, and excavating. Construction activity includes the disturbance of less than one acre of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) acre or more. |
| Erosion prevention | Measures employed to prevent erosion. Examples include but not limited to: soil stabilization practices, limited grading, mulch, temporary erosion protection or permanent cover, and construction phasing. |
| Final stabilization | All soil disturbing activities at the site have been completed and all soils are stabilized by a uniform perennial vegetative cover with a density of 70% of its expected final growth density over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions. In addition, all temporary synthetic and structural erosion prevention and sediment control BMPs (such as silt fence) have been removed on the portions of the site for which the permittee(s) is/are responsible. BMPs designed to decompose on site (such as some compost logs) may be left in place. |
| Flood event | The surface elevation of a water body has risen to a level that causes the inundation or submersion of areas normally above the Ordinary High Water Level. |
| Impervious surface | A constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads. |
| No Exposure | All industrial materials and activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snow melt, and/or runoff. Industrial activities or materials include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. |
| Non-structural BMP's | Practices that will reduce or eliminate pollutants to stormwater and do not require installation of permanent structural devices to treat runoff. Examples of non-structural BMPs include but are not limited to parking lot and street sweeping, employee training, changing material handling practices, installation of silt fence, and minimizing materials exposed to stormwater through inventory reduction, tarping, or moving materials indoors. |
| Runoff | Any liquid that drains over land from any part of a facility. |
| Significant materials | Includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with stormwater discharges. When determining whether a material is significant, the physical and chemical characteristics of the material should be considered (e.g. the material's solubility, transportability, and toxicity characteristics) to determine the material's pollution potential. (40 CFR 122.26(b)(12). |
| Storm event | A precipitation event (rainfall, snowfall, snowmelt, etc.) that results in surface runoff and is independent of the duration of the event and/or the volume of precipitation. |

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| Stormwater | Stormwater runoff, snow melt runoff, and surface runoff and drainage. (Minn. R. 7090.0080, subp.12.) |
| Structural BMPs | The installation of devices that will reduce or eliminate pollutants to stormwater through installation of permanent structural devices to treat or control runoff. Examples of structural BMPs include but are not limited to installation of stormwater diversion berms or channels; sedimentation basins (retention or detention basins); oil/water separators; grit chambers; roofs, awnings, or buildings to cover significant material. |