



Mining and Industrial Stormwater Sampling and Monitoring

This general information is regarding the stormwater monitoring requirements for the North Dakota Pollutant Discharge Elimination (NDPDES) general stormwater industrial (NDR05-0000) and mining (NDR32-0000) permits. If you have further questions regarding stormwater permitting and monitoring, please contact the North Dakota Department of Environmental Quality - Division of Water Quality, at (701) 328-5210 or by email at stormwater@nd.gov.

Facilities required to conduct sampling must submit their monitoring results on Discharge Monitoring Reports (DMR). DMRs must be submitted, at minimum, once per year but may require more frequent submissions. The permittee must submit DMRs electronically using the electronic information reporting system (ERIS). If no discharge has occurred during a reporting period, "No Discharge" must be reported on the DMR. You can access ERIS [here](#). If your facility is unable to submit DMR's electronically, check the general permit to see if your facility qualifies for an electronic reporting waiver.

There may be instances where the department finds it necessary to require additional sampling to evaluate the effectiveness of best management practices (BMPs) and other water quality concerns. Conditions that may require increased sampling include, but are not limited to, the following:

- Facilities with industrial activities associated with standard industrial classification (SIC) codes 1311, 1321, and 1381-1389 that have spill sites that are actively being remediated or sites that are in post-remediation.
- Facilities where additional analytical data is needed to evaluate the potential impact of stormwater discharges. Examples of where additional data may be needed include water quality improvement projects, Total Maximum Daily Load (TMDL) development, or lake restoration projects.
- Facilities where monitoring sample results indicate discharges are generally of a poor quality or have significantly higher pollutant concentrations relative to the results of similar industrial categories.



Before you Sample

1) Select a laboratory to test your stormwater samples. Prices and locations vary, so checking multiple labs can be a good idea. The laboratory must be certified with the state of North Dakota for the results to be valid. When setting up the account, be sure to provide the laboratory with the type of stormwater permit you have, the parameters you need analyzed, and the permit benchmarks and detection limit for the analysis. *The laboratory needs to know the correct detection limits, typically 10 percent below the benchmarks, for your sample results to be valid.* The detection limits are the minimum amount of a parameter the test can accurately measure and is important for the accuracy of your stormwater results. Samples analyzed with incorrect detection limits will not be accepted as valid. The lab must use testing procedures that meet federal regulations for permit water quality testing (40 CFR 136). If you need assistance finding a laboratory for your facility, you can email the permits program for an up-to-date list of accredited labs in your region (stormwater@nd.gov).

2) Acquire the appropriate sampling containers. Your laboratory may provide you with the necessary sample containers to fulfill your testing requirements. If not, be sure to inquire about what bottles the laboratory needs to be submitted for valid testing. Different bottles are used for different tests, so be sure to read any instructions before filling the containers. It is a good idea to have at least one extra set of sample containers onsite in case one breaks, is lost, or if additional samples need to be taken. Use caution when handling sample containers as some have small amounts of acid or other preserving agents and some are made of glass and could be damaged in an impact. Also, be aware that some bottles cannot be rinsed, while others may require rinsing. Bottle should be utilized as per laboratory instruction.

3) Consider sampling frequency, time, and location. Though it may seem obvious, you must sample when adequate rain or snow melt runoff is occurring at your facility. Each facility is required to develop a Storm Water Pollution Prevention Plan (SWPPP) for the site that identifies stormwater sampling locations. Sampling locations can occur at catch basins, stormwater manholes, ditches, culverts, stormwater outfalls or stormwater treatment units, and can also include areas of sheet flow. The NDR05-0000 and NDR32-0000 permits require a minimum of annual sampling, with some industry sectors requiring quarterly or monthly sampling.



DMR submission deadlines

For general industrial stormwater NDR05-0000 permittees

- Airports and U.S. Air Bases that conduct deicing or anti-icing shall submit a DMR summarizing monitoring results once every six months. The monitoring period shall cover the biannual permit cycle and the DMR shall be submitted to the department by the end of the month following the six-month period (i.e., April 1 to September 30, due October 31; and October 1 to March 31, due April 30).
- For all other facilities, the DMR submission shall cover an annual period from April 1 to March 31 and be submitted to the department by April 30. If no discharge occurs during a reporting period, “no discharge” shall be reported on the DMR.
- DMR’s are to be submitted electronically through the Electronic Reporting Information System (ERIS) which can be accessed [here](#).

For general mining stormwater NDR32-0000 permittees

- Facilities required to conduct monthly sampling (refer to Appendix 2 of the permit) must submit a DMR once per month. The monitoring period shall cover the calendar month and the DMR is due by the end of the following month (e.g., March 1 to March 31, due April 30).
- Facilities required to conduct quarterly sampling (refer to Appendix 2 of the permit) must submit a DMR once per quarter. The monitoring period covers the calendar quarter and the DMR is due by the end of the month following the quarter (e.g., January 1 to March 31, due April 30).
- Facilities required to conduct yearly sampling (refer to Appendix 2 of the permit) must submit a DMR once per year. The monitoring period covers the calendar year (January 1 to December 31) and the DMR is due by January 31 of the following year.



Sample Technique and Handling

How do you take a sample?

For NDR05-0000, permit sampling conditions in Part III, Part IV, and Appendix 2 of the general permit outline when and how to take stormwater samples. For NDR32-0000, permit sampling conditions can be found in Part IV and Appendix 2 and 3. In addition, your laboratory will include sampling instructions along with the sample containers. Be sure to collect enough sample to conduct the analysis. If you are sampling at a catch basin, sample stormwater flowing into the catch basin rather than stormwater that is pooled in the catch basin.

In some areas of your facility it may be difficult to obtain a sample because the runoff drains from the site as sheet flow. If the flow is too shallow to directly fill a collection bottle, you can overcome this by:

- Concentrating the sheet flow by excavating a small depression in an existing ditch or other location where stormwater runoff flows.
- Installing a trough, gutter or ditch to intercept and concentrate stormwater flow.
- Installing flow “speed” bumps to convey and concentrate the flow.

How do you handle a sample?

Keep your samples chilled in a cooler with ice or several cold packs during transport and delivery. Contact your laboratory for specific shipping instructions to ensure samples arrive within the hold time.

How long do samples have to get to the lab?

Samples need to arrive at the laboratory within certain holding times depending on the analysis. These times vary, so ask your testing laboratory for your sample parameter’s specific holding times. Failure to get samples to the laboratory in a timely manner may cause the sample results to be rejected.



How are samples tracked?

A sampling form shows who took the sample, when and where the sample was taken, and for what the sample needs be analyzed. Your laboratory will typically provide these forms with your sample containers. Be sure to label the sample with the same sample point designation that is used in the facilities SWPPP. A sampling form must be completed for each sample taken.

Interpreting Sample Results

How do I interpret my sample results?

- When you receive your sampling results, review them to determine if they exceed any of your permit benchmarks or limits. Lab reports vary, but they all should contain the following elements:
 - There should be a column listing the test parameter or analyte, which is a description of the substance being analyzed in the stormwater.
 - There should be a numerical result for each parameter which should be compared to the permit benchmarks/limits.
 - Each result should be associated with units. Typically, units are reported in milligrams per liter (mg/L) but some may be in micrograms per liter (ug/L). You may have to convert your results to the same units as your stormwater permit benchmarks. Multiply mg/L by 1000 to get to ug/L, and divide ug/L by 1000 to get to mg/L.
- Every result has a “Minimum Reporting Limit” (MRL), which is sometimes referred to as a “Reporting Limit/Level” or “Minimum Detection Limit” (MDL). This is the smallest concentration that the laboratory method can detect in your sample. If the concentration of a parameter is less than the detection limit, your result may be reported as “ND” for non-detect or numerically as “<MDL.”
- Your report will also describe the “Method” used to analyze your sample. Your permit requires that an EPA-approved method (40 CFR 136) be used to analyze stormwater samples. Be sure to note any problems with the analysis of your sample in your DMR submission.



How do I submit my results?

Monitoring and sample results must be summarized and reported to the department using Discharge Monitoring Reports (DMRs). The permittee must submit DMRs electronically using the electronic information reporting system (ERIS). You can access ERIS [here](#). If no discharge has occurred during a reporting period, "No Discharge" shall be reported in the DMR submission. If your facility is unable to submit DMR's electronically, check the permit to see if your facility qualifies for an electronic reporting waiver.

Frequently asked questions:

How do I know how often my facility needs to sample?

For NDR05-0000 permits, see page 16 of the general permit for a list of standard industrial classification (SIC) codes that require annual sampling. Appendix 1 contains the monitoring schedules.

For NDR32-0000, see page 17 of the general permit for SIC codes and associated discharge monitoring report schedules. Oil and gas related facilities associated with spill remediation have more frequent sampling requirements.

To determine your facilities SIC code, visit <https://www.osha.gov/pls/imis/sicsearch.html> and search by keyword. A facility can fall under more than one SIC code due to various industrial activities occurring at a facility.

My permit requires visual observations and monitoring. What am I looking for?

Your stormwater permit may require a visual observation for oil and grease. You need to look for things like greasy floating solids and an oily sheen on the discharge and sample surface. These visual results will be reported on the DMR. If a visual observation of potential oil and/or grease is noticed, a sample must be taken for analysis.



What is a benchmark value vs. discharge limit?

A permit discharge limit is a value not to be exceeded in a given discharge. Repeated exceedances of a limit may result in enforcement actions by the state. A benchmark value is a level above which a discharge could adversely affect receiving water quality. If stormwater monitoring results indicate that you have exceeded your benchmarks, your permit requires that you review site controls and your SWPPP to identify any additional controls or practices needed to improve stormwater quality. Check your permit and primary industry SIC code to determine if you are sampling for benchmarks, limits, or both.

North Dakota Department of Environmental Quality – Permits Program

Contact information

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