

UDEQ Guidance Document for UPDES Multi-Sector General Permit Monitoring and Reporting Requirements

GENERAL INFORMATION

Purpose

The intent of this guidance document is to provide basic guidelines for Utah DEQ's UPDES Multi-Sector General Permit (MSGP) permittees who are required to monitor their storm water runoff, as described under Monitoring and Reporting Requirements of the MSGP. This document is not a substitute for permit requirements. Monitoring requirements, including monitoring schedules, vary depending on industry type. Specific monitoring requirements, including sampling frequency can be found for individual sectors in Appendix I of the UPDES MSGP on DEQ's Storm Water webpage at <https://deq.utah.gov/water-quality/explanation-of-standard-industry-classification-sic-codes-updes-permits>.

Permittees should consult with their laboratory for specific, detailed sampling procedures, sample preservation, holding times, or chain-of-custody procedures.

Monitoring Frequency

Analytical Monitoring. Permittees that are required to sample and analyze their storm water discharges associated with industrial activity must do so during the specified two years of their five-year permit cycle except as noted in the exceptions for monitoring frequency. During the specified two years, storm water discharges will be sampled at least quarterly (4 times per year). An early storm event may be the only opportunity for sampling, so sample as early as possible in the quarter.

Visual monitoring is required quarterly (4 times per year) for all industrial sectors, with the exception of Sector S and as noted in the exceptions for monitoring frequency

Exceptions for monitoring frequency. Read Representative Discharges, Adverse Conditions, Low Concentration Waiver, and Inactive and Unstaffed Site sections below.

Storm Event Monitoring Criteria and Data

All samples (both for analytical and visual monitoring) should be collected from the discharge resulting from a storm event that is at least 0.1 inches in magnitude and that

occurs at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall) storm event. Runoff from either rain storms or melting snow is acceptable.

Visual monitoring of the samples collected should be examined within the first 30 minutes (or as soon thereafter as practical, but not to exceed one hour) of when the runoff or snowmelt begins discharging. The visual examination should document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. Visual samples are a valuable way to monitor the effectiveness of BMPs. Record the date and duration of the storm event sampled, rainfall measurements which generated the sampled runoff, and the number of days between the storm event sampled and the end of the previously measurable storm event.

Monitoring Area

Runoff from areas where industrial activity occurs should be sampled, e.g. areas for outdoor storage, outdoor processing, loading/unloading, significant dust or particulate generating processes, in addition to outfalls. Facilities in Utah often do not “channel” or “pipe” storm water offsite. In many instances storm water may run off a site over a paved, graveled, or compacted area. This type of runoff is still considered a discharge and storm water should be sampled. Storm water that infiltrates into the ground water is also considered a discharge to waters of the State; therefore samples should be taken on site in areas where industrial activity occurs and before infiltration occurs. Refer to the Sampling Techniques section for more details.

Outfalls

If there are multiple drainage areas that leave the facility through separate outfalls, then each outfall should be sampled except as noted in the Representative Discharges, Adverse Conditions, Low Concentration Waiver, and Inactive and Unstaffed Site sections below. Outfalls are locations where storm water exits the facility property, including pipes, ditches, swales and other structures that transport storm water. Locations where storm water collects and is infiltrated is considered a discharge to groundwater and also should be identified and sampled. Permittees should identify sampling point(s) in their Storm Water Pollution Prevention Plan (SWPPP).

Reporting

Analytical Monitoring. All analytical results that are collected within the sampling period should be reported on DEQ’s Storm Water Discharge Monitoring Report (SWDMR) form. The form can be found at: <https://documents.deq.utah.gov/water-quality/stormwater/DWQ-2020-014802.pdf>. Signed copies of the SWDMR forms need to be submitted, by March 31st of the year following the sampling year, to the Division of Water Quality (DWQ) at the address provided in the SWDMR form. The following are examples of the information that should be recorded on the SWDMR form:

- The date and duration (in hours) of the storm event sampled.
- Rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff. A simple rain gauge is helpful for this.
- The number of days between the storm event sampled and the end of the previously measurable storm event.

Visual Monitoring. Permittees may use a SWDMR form to record visual monitoring results but it is not required. The report should include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (see monitoring criteria above), and probable sources of any observed storm water contamination. In addition, permittees may document the location of their visual examination(s).

SAMPLE TYPE	SAMPLE FREQUENCY	REPORTING REQUIREMENTS
Analytical	A minimum of 1 per quarter: January-March April-June July-September October-December	Signed copies of SWDMR should be submitted to DWQ by March 31st of the following year.
Visual	A minimum of 1 per quarter: January-March April-June July-September October-December	Keep visual examination results onsite in SWPPP. Permittees may use SWDMR. Permittees are encouraged but not required to submit visual examination records to the DWQ.

Submitting documents to DWQ

1. The preferred method to submit documents is through the Electronic Document Submission Portal <https://deq.utah.gov/legacy/services/electronic-submissions/index.htm>
2. The second preferred method is to email the document to wqinfodata@utah.gov
3. If you are unable to scan documents to submit them the first two ways, then you may mail documents to:

Division of Water Quality
PO BOX 144870
Salt Lake City, UT 84114-4870

Representative Discharges

Facilities with more than one outfall may designate one sample as representative of more than one outfall. This may be done where discharges from separate drainage areas are expected to be similar. A determination that discharges from one outfall is representative of other outfalls is made primarily on the basis of the similar materials and activities occurring from one drainage area to another. Other factors such as drainage area size and slope should also be considered. The decision to consider an outfall representative of other outfalls should be documented and kept with the SWPPP.

CHOOSING A LABORATORY

Permittees should discuss sampling strategies with their laboratory, including the parameters that will be tested, prior to the actual sampling event. Make sure the laboratory will:

- Conduct all analyses in conformance with 40 CFR Part 136 and is familiar with the storm water program.
- Provide sampling bottles, packaging materials, chain-of-custody forms, and coolers as needed.
- Provide information for sample collection, sample labeling, preservation, and shipping.
- Conduct required tests before holding times expire.

Sample preservation techniques consist of refrigeration, pH adjustment, and chemical fixation. It is important that the sample is properly preserved to ensure that the sample remains representative of the storm water discharge at the time of collection.

SAMPLING TECHNIQUES AND REQUIREMENTS

Numeric Effluent and Benchmark Limitations

Monitoring requirements, including numeric effluent and benchmark limitations, are noted for individual sectors in Appendix I of the UPDES MSGP. Appendix I can be found on DEQ's Storm Water Webpage at: <https://deq.utah.gov/water-quality/explanation-of-standard-industry-classification-sic-codes-updes-permits>. If a permittee exceeds the Benchmark Limitations provided in Appendix I, then modifications should be made to existing Best Management Practices (BMPs), additional BMPs should be implemented, and updates to the SWPPP should be made to meet the limitation in order to avoid enforcement action(s). Numeric Effluent limitations are specifically for enforcement purposes, not benchmarking purposes, and should be adhered to at all times.

Grab Samples

A grab sample is an individual sample taken within a short period of time. A grab sample should be collected within the first 30 minutes of the discharge (storm event) in order to characterize the maximum concentration of a pollutant that may occur in the discharge. If it isn't practicable to collect a grab sample within the first 30 minutes, then collect the grab sample within the first 60 minutes. Use the following procedures to collect a grab sample:

- Label containers before the sampling event.
- Use the right container for the constituents being tested. Be sure the containers are clean.
- Take a cooler with ice to the sampling point.
- When possible, take the sample from the horizontal and vertical center of the discharge.
- Avoid stirring up bottom sediment or collecting uncharacteristic floating debris.
- Hold the container so the opening faces upstream.
- Avoid touching the inside of the container to prevent contamination.
- If taking several grab samples, keep them separate and clearly labeled.

Sheet Flow

Sampling sheet flow can pose some problems. Permittees should discuss appropriate sampling techniques with their laboratory, including the recommendation of using a flat-bottomed scoop or some other method to collect samples.

Sampling from Holding Ponds

For facilities with holding ponds or other impoundments, sampling should be performed at the outlet from the pond. If no discharge occurs from the pond to surface waters, then no sampling is necessary. Please note that if any process water mixes with storm water, all of the water is considered to be process waste water and needs to be covered under an individual UPDES permit.

Visual Examination

See Visual Monitoring Requirements section above.

Sampling Waivers

Adverse Conditions

Sampling may be prohibited by adverse weather conditions. Adverse weather conditions include situations that create dangerous conditions for personnel (such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc.) or ones otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.). Collect a substitute sample from a separate qualifying event in the next sampling period and make a note in the SWDMR that sampling was not possible due to adverse weather conditions.

Low Concentration Waiver

A facility may waive monitoring and reporting requirements in the second monitoring period if the average concentration for a pollutant, calculated from the entire first monitoring period, is less than the Numeric Limitation that is specified for a specific sector in Appendix I of the UPDES MSGP. To qualify for the waiver, the permittee should submit a certification that there has not been a significant change in industrial activity or the pollution prevention measures in the area of the facility that drains to the outfall.

Inactive and Unstaffed Site

If a facility remains inactive and unstaffed, the permittee may exercise a waiver of the monitoring requirements by submitting a certification statement, using the SWDMR form, to the Director. The certification statement should state that the site is inactive and unstaffed; therefore collecting a sample during a qualifying event is not possible.

CALCULATING HARDNESS IN RECEIVING WATERS FOR HARDNESS DEPENDANT METALS

This information was adapted from Appendix J of the 2015 version of EPA's Multi-Sector General Permit (MSGP).

For any sectors required to conduct benchmark samples for a hardness-dependent metal, the sector requirements include a table "hardness ranges" from which benchmark values are determined. To determine which hardness range to use, you must first collect data on the hardness of your receiving water(s). Once the site-specific hardness data have been collected, the corresponding benchmark value for each metal is determined by comparing where the hardness data fall within hardness ranges. You only need to determine hardness for your discharges into freshwater as the benchmark values for metals do not vary for discharges to saline waters. For discharges that are infiltrating to groundwater, use the benchmark values for the 0-24.99 mg/L hardness range unless it can be explained in your SWPPP why a different value should be used.

How to Determine Hardness for Hardness-Dependent Parameters in Freshwater

You may select one of three methods to determine hardness, including: individual grab sampling, grab sampling by a group of operators which discharge to the same receiving water, or using third-party data. Regardless of the method used, you are responsible for documenting the procedures used for determining hardness values. The three method options for determining hardness are detailed in the following sections.

(1) Permittee Samples for Receiving Stream Hardness

This method involves collecting samples in the receiving water and submitting these to a laboratory for analysis. If you elect to sample your receiving water(s) and submit samples for analysis, hardness must be determined from the closest intermittent or perennial stream downstream of your point of discharge. The sample can be collected during either dry or wet weather. Collection of the sample during wet weather is more representative of conditions during storm water discharges; however, collection of in-stream samples during wet weather events may be impracticable or present safety issues.

Hardness must be sampled and analyzed using approved methods as described in 40 CFR Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants)

(2) Group Monitoring for Receiving Stream Hardness

You can be part of a group of permittees discharging to the same receiving waters and collect samples that are representative of the hardness values for all members of the group. In this scenario, hardness of the receiving water must be determined using 40 CFR Part 136 procedures and the results shared by group members. To use the same results, hardness measurements must be taken on a stream reach within a reasonable distance of the discharge points of each of the group members.

(3) Collection of Third-Party Hardness Data

You can submit receiving stream hardness data collected by a third party provided the results are collected consistent with the approved 40 CFR Part 136 methods. These data may come from a local water utility, previously conducted stream reports, TMDLs, peer reviewed literature, other government publications, or data previously collected by the permittee. Data should be less than 10 years old.

Water quality data for many of the nation's surface waters are available on-line or by contacting EPA or a state environmental agency. EPA's data system STORET, short for STORage and RETrieval, is a repository for receiving water quality, biological, and physical data and is used by state environmental agencies, EPA and other federal agencies, universities, private citizens, and many others. Similarly, state environmental agencies and the U.S. Geological Service (USGS) also have water quality data available that, in some instances, can be accessed online. "Legacy STORET" codes for hardness include: 259 hardness, carbonate; 260 hardness, noncarbonated; and 261 calcium + magnesium, while more recent, "Modern STORET" data codes include: 00900 hardness, 00901 carbonate hardness, and 00902 noncarbonate hardness; or the discrete measurements of calcium (00915) and magnesium (00925) can be used to calculate hardness. Hardness data historically has been reported as "carbonate," "noncarbonate," or "Ca + Mg." If these are unavailable, then individual results for calcium (Ca) and magnesium (Mg) may be used to calculate hardness using the following equation:

$$\text{mg/L CaCO}_3 = 2.497 (\text{Ca mg/L}) + 4.118 (\text{Mg mg/L})$$

When interpreting the data for carbonate and non-carbonate hardness, note that total hardness is equivalent to the sum of carbonate and noncarbonate hardness if both forms are reported. If only carbonate hardness is reported, it is more than likely that noncarbonated hardness is absent and the total hardness is equivalent to the available carbonate hardness.

Need Help? Contact Division of Water Quality: (801) 536-4300

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