

6.1.3 Monitoring and Reporting Requirements/Monitoring Conditions/ Sample Collection Methods

Applicability:

The intent of this section is to assist the permit writer in determining what type of collection method to require, based on the nature of the permitted facility and the effluent parameter to be measured.

Content:

Grab – A grab sample is any individual sample collected without compositing or adding other samples. Equivalent to a snap shot, a grab sample is generally appropriate for sampling from smaller facilities. It is also the appropriate method for data collection for non-conservative parameters such as temperature, dissolved oxygen, and ammonia nitrogen. These sample properties are subject to transformation during storage. Parameters that are known to have diurnal fluctuations, such as dissolved oxygen are best measured as grab sample taken at varying times to ascertain the degree of such fluctuations.

Composite – A composite sample is a combination of individual samples collected over a designated period of time. A composite sample is statistically more reliable than a grab sample, and can be interpreted as a long running film. Water pollutant concentrations tend to vary over time, particularly on a diurnal basis. Thus a composite sample represents an average concentration of the substance in question. Composite sampling is often done with a mechanized sampler set in place at the outfall or an in-stream sampling point with the sample collected at the end of the sampling period. Composite sampling is appropriate for conservative parameters such as metals, and is used for BOD and total suspended solids.

Samples taken from wastewater treatment lagoons and in-stream can generally be grab samples. Samples taken from mechanical plants should be 24-hour composites except for those parameters for which a composite sample would not be appropriate. Sludge samples are to be a grab samples unless otherwise specified in the operating permit.

Legal References:

Code of State Regulations:

[10 CSR 20-2.010\(14\)](#)

Definitions - Composite Sample & (33) Grab Sample

[10 CSR 20-7.015\(8\)\(C\)](#)

Effluent Regulations - All Other Waters Limitations - Monitoring Requirements

Other Links:

Water Environment Federation, American Public Health Association, and American Water Works Association, 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. L.S. Clesceri, A.E. Greenberg, and A.D. Eaton, eds. American Public Health Assoc., Washington, D.C.

Key Words:

Grab sample, composite sample, sample type, conservative parameters, non-conservative parameters,

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Revised By: Mark Osborn

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