

3.5.7.3 Overview of the Permit/No-Discharge Permits/ Effluent Limits/Maximums and Averages

Applicability:

Describes the specification of common effluent limitations in no-discharge permits.

Content:

Definitions of the common measurements describing the effluent limitations are in 10 CSR 20-2.010 Definitions. Those relating to maximums and averages are presented below.

- Daily maximum. An effluent limitation that specifies the total mass or average concentration of pollutants that may be discharged in a calendar day.
- Discharge. The causing or permitting of one or more water contaminants to enter waters of the state.
- Monthly average. The total mass or concentration of all daily discharges sampled during a calendar month divided by the number of daily discharges sampled or measured during that month.
- Weekly average. The total mass or concentration of all daily discharges sampled during any calendar week divided by the number the number of daily discharges sampled or measured during that week.

Missouri state operating permit (NPDES permit) activities are conducted in conformance with U.S. EPA NPDES permit program requirements. Unless flexibility is granted by the federal regulations and the state acts upon that flexibility, state program provisions and details are consistent with federal program provisions and details. This is the case with Missouri's use of the word "average" when describing effluent limitations. The type of average (i.e. the arithmetic mean) is clearly implied in the Missouri definitions. However, the word "average" is not specifically defined or qualified in the Missouri Clean Water Law, 10 CSR 20-2.010 Definitions, 10 CSR 20-6.015 No-Discharge Permits, 10 CSR 20-7.015 Effluent Regulations, 10 CSR 20-7.031 Water Quality Standards or the Missouri Standard and Special Conditions for NPDES Permits. Therefore, the following applies:

40 CFR 122.41(l)(4)(iii) states that, "Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit."

The permit writer needs to keep this in mind when developing effluent limitations for the various pollutant parameters. If an average other than the arithmetic mean is preferred (e.g. the geometric mean), this needs to be specified in the permit. Use of a footnote in the Effluent Limitations and Monitoring Requirements table of the permit is an appropriate way to do this.

The federal regulations have several definitions that address average and maximum monitoring and reporting values. They are presented below for reference and background purposes.

40 CFR 122.2 Definitions state that:

- Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of "daily discharges" measured during that month.

- Average weekly discharge limitation means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all the “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
- Daily discharge means the “discharge of a pollutant” measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
- Maximum daily discharge limitation means the highest allowable “daily discharge”.

Legal References:

Code of State Regulations

[10 CSR 20-2.010](#) Definitions, (17), (22), (40) and (84)

Code of Federal Regulations:

[40 CFR 122.2](#) EPA Administered Programs: The NPDES - Definitions

[40 CFR 122.44\(i\)](#) EPA Administered Programs: The NPDES - Establishing limitations, standards, and other permit conditions

[40 CFR 122.45\(d\), \(e\) and \(f\)](#) EPA Administered Programs: The NPDES - Calculating NPDES permit conditions

Other Links:

Key Words:

Effluent limits, effluent limitations, maximum limitations, average limitations, daily maximum, monthly average, weekly average

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