

6.1.5.3 Monitoring Conditions / Other Considerations / Analytical Detection Levels - Total Residual Chlorine

Applicability:

The determination of compliance levels for NPDES permits where the Total Residual Chlorine (CLTRC) limit is not quantifiable using standard EPA approved methods.

Content:

Some facility permits contain a very low CLTRC effluent limit. When using the most common and practical EPA approved CLTRC methods, these low limits cannot be measured with an accuracy that is acceptable for reporting purposes. A review of these methods finds that they do not specify a method detection level or minimum level that department staff can use for compliance purposes.

The department's Total Residual Chlorine Workgroup addressed issues related to CLTRC in permits. Research completed by the workgroup determined the current acceptable minimum level (ML) for CLTRC is 0.13 mg/L when using the DPD Colorimetric Method #4500-CL G. from *Standard Methods for the Examination of Waters and Wastewater* or equivalent. Values below the ML are not considered acceptable for reporting. See Appendix T for discussion of the studies conducted by the workgroup.

Permit writers will determine the appropriate CLTRC effluent limit for each facility. If the determined effluent limit is greater than 0.13 mg/L it will be included in the permit as the CLTRC effluent limit for the facility. If the determined effluent limit is less than or equal to 0.13 mg/L, then the permit limit, the ML and the specified analytical method should be placed in the permit as follows:

Parameter	Units	Effluent Limit
Total Residual Chlorine as Cl ₂	mg/L	Proposed effluent limit* (0.13 ML)

* This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The department has determined the current acceptable ML for total residual chlorine to be 0.13 mg/L when using the DPD Colorimetric Method #4500-CL G. from *Standard Methods for the Examination of Waters and Wastewater*. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 0.13 mg/L will be considered violations of the permit and values less than the minimum quantification level of 0.13 mg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.

Legal References:

Code of State Regulations:

[10 CSR 20-7.015\(9\)\(A\)2 and \(A\)3](#)

Effluent Regulations - General Conditions - Monitoring, Analysis and Reporting

Code of Federal Regulations:

[40 CFR part 136, appendix B](#)

Part 136: Guidelines Establishing Test Procedures for the Analysis of Pollutants - Appendix B—Definition and Procedure for the Determination of the Method Detection Limit—Revision 1.11

Code of State Regulations:

[10 CSR 20-7.015\(9\)\(A\)2](#) Effluent Regulations - General Conditions - Monitoring, Analysis and Reporting

[10 CSR 20-7.015\(9\)\(A\)3](#) Effluent Regulations - General Conditions - Monitoring, Analysis and Reporting

Code of Federal Regulations:

[40 CFR part 136, appendix B](#) - Part 136: Guidelines Establishing Test Procedures for the Analysis of Pollutants

Other Links:

“Technical Support Document for Water-Quality Based Toxics Control” (EPA/505/2-90-001), section 5.7.3

[“Determining Compliance With Water Quality Based Effluent Limits Below Quantitation in the Absence of Promulgated Minimum Levels\(MLs\)”](#), Federal Register: May 25, 1995 (Volume 60, Number 101)

Standard Methods for the Examination of Waters and Wastewater, 19th edition, Section 1030 C., published by the Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314

[Permit Manual Appendix T – Total Residual Chlorine Study](#)

Key Words:

Total residual chlorine, CLTRC, TRC, compliance level, detection level, Minimum Level

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