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17-008

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Total Toxic Organic (TTO) and Volatile Organic Compounds Monitoring Procedures

This document is intended to work with an NPDES permit to provide permittees guidance for total toxic organic testing, a requirement in the permit.

A. General

A complete TTO analysis involves testing for up to 5 fractions containing 111 compounds. However, the Pesticide Fraction and Dioxin need not be included in the TTO analysis unless specifically requested by the Department. The Department may also, on a case-by-case basis, add additional parameters to this TTO list.

B. Calculation of TTO Value

TTO test results are calculated by summing all quantifiable values greater than 0.01 milligrams per liter (mg/L) for the TTO compounds. In situations where the concentration of a compound is below the detection limit, it need not be included. However, the Department may reject an analysis as inconclusive and request follow-up monitoring if the detection limits are too high to provide reasonable assurance of compliance.

C. Reporting of Results

The TTO value calculated as set forth above is to be reported on the appropriate Discharge Monitoring Report (DMR) and a copy of the laboratory report showing the test results for each individual compound is to be attached to both the Department's and City's copy of the DMR.

D. Identification of Compounds, Sampling Methods and Analytical Procedures

1. Volatile Fraction

The compounds included in this fraction are listed below. The volatile fraction is to be analyzed using **grab samples** and **EPA Method 624 or 1624**, unless written Departmental approval for alternative methods is provided.

Acrolein	Acrylonitrile	Benzene
Bromoform	Carbon tetrachloride	Chlorobenzene
Chlorodibromomethane	Chloroethane	2-Chloroethyl vinyl ether
Chloroform	Dichlorobromomethane	1, 1-Dichloroethane
1, 2-Dichloroethane	1, 1-Dichloroethylene	1, 2-Dichlorobenzene
1, 3-Dichlorobenzene	1, 4-Dichlorobenzene	1, 2-Dichloropropane
1, 3-Dichloropropylene	Ethylbenzene	Methyl bromide
Methyl chloride	Methylene chloride	Tetrachloroethylene
1, 1, 2, 2-Tetrachloroethane	Toluene	1, 2- <i>trans</i> -Dichloroethylene
1, 1, 1-Trichloroethane	1, 1, 2-Trichloroethane	Trichloroethylene
Vinyl chloride		

2. Acid Fraction

The compounds included in this fraction are listed below. The acid fraction is to be analyzed using **production day composite samples** and **EPA Method 625 or 1625**, unless written Departmental approval for alternative methods is provided.

2-Chlorophenol	2, 4-Dichlorophenol	2, 4-Dimethylphenol
4, 6-Dinitro-o-cresol	2, 4-Dinitrophenol	2-Nitrophenol
4-Nitrophenol	N-nitrosodimethylamine	N-nitrosodi-n-propylamine
N-nitrosodiphenylamine	Parachlorometa cresol	Pentachlorophenol
Phenol	2, 4, 6-Trichlorophenol	

3. Base/Neutral Fraction

The compounds included in this fraction are listed below. The volatile fraction is to be analyzed using **production day composite samples** and **EPA Method 625 or 1625**, unless written Departmental approval for alternative methods is provided.

Acenaphthene	Acenaphthylene	Anthracene
Benzidine	1, 2-Benzanthracene	3, 4 -Benzopyrene
3, 4-Benzofluoranthene	11, 12-Benzofluoranthene	1, 12-Benzoperylene
Bis(2-chloroethoxy) methane	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether
Bis(2-ethylhexyl)phthalate	4-Bromophenyl phenyl ether	Butyl benzyl phthalate
2-Chloronaphthalene	Chrysene	4-Chlorophenyl phenyl ether
1, 2, 5, 6-Dibenzanthracene	3, 3-Dichlorobenzidine	Diethyl phthalate
Dimethyl phthalate	Di-N-Butyl phthalate	2, 4-Dinitrotoluene
2, 6-Dinitrotoluene	Di-n-octyl phthalate	
1, 2-Diphenylhydrazine (as Azobenzene)		Fluoranthene
Fluorene	Hexachlorobenzene	Hexachlorobutadiene
Hexachloroethane	Indeno (1 ,2, 3-cd) pyrene	Isophorone
Hexachlorocyclopentadiene	Naphthalene	Nitrobenzene
Phenanthrene	Pyrene	1, 2 ,4-Trichlorobenzene

4. Pesticide Fraction

The compounds included in this fraction are listed below. The Pesticide Fraction is to be analyzed using **production day composite samples** and **EPA Method 608**, unless written Departmental approval for alternative methods is provided. Monitoring for the Pesticide Fraction need not be conducted unless specifically requested by the Department.

Aldrin	Alpha-BHC	Beta-BHC
Gamma-BHC	Delta-BHC	Chlordane
4, 4'-DDT	4, 4'-DDE	4, 4'-DDD
Dieldrin	Alpha-endosulfan	Beta-endosulfan
Endosulfan sulfate	Endrin	Endrin aldehyde
Heptachlor	Heptachlor epoxide	PCB-1016
PCB-1221	PCB-1232	PCB-1242
PCB-1248	PCB-1254	PCB-1260
Toxaphene		

5. Dioxin (2, 3, 7, 8-tetrachlorodibenzo-p-dioxin)

Dioxin is to be analyzed using production day composite samples and EPA Method 613, unless written Departmental approval for alternative methods is provided. Monitoring for Dioxin need not be conducted unless specifically requested by the Department.

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