

ANALYTICAL METHODS AND BASELINE VALUES

INTRODUCTION

15.1

This chapter describes the analytical methods that EPA used to analyze the samples collected during EPA's data gathering efforts at a number of facilities (these sampling efforts are described in Chapter 2). It also discusses how EPA treated the results of its sample analysis for purposes of identifying pollutants of concern (described in Chapter 6), determining the loadings (Chapter 12), and calculating the limitations and standards (Chapter 10).

EPA contracted with various laboratories to analyze the samples. The laboratories analyzed the samples using the methods identified in Table 15.1 and provided most of the results as liquid concentrations (e.g., micrograms per liter (ug/L)). In a few instances, the results were provided as solids (e.g., milligrams per kilogram (mg/Kg)). In those instances, EPA converted the solids results into liquid concentration units by using a conversion factor based upon the percent of solids in the sample. In the rare cases that the percent solids was not available, EPA excluded the data from its analyses. None of these excluded data were for the analytes regulated by today's rule.

EPA compared each laboratory-reported (or converted) analytical result for each pollutant to a baseline value in order to determine whether to use the value as reported by the laboratory. In most cases, the baseline value was the "nominal quantitation limit"¹ stipulated for the specific method used to measure a particular pollutant.

¹In other sections in this document and in the preamble to the rulemaking, EPA sometimes uses the term "minimum analytical detection limit" when it refers to nominal quantitation limit or the baseline value.

In general, the term "nominal quantitation limit" is used here to describe the smallest quantity of an analyte that can be measured reliably with a particular analytical method. In some cases, however, EPA used a value lower than the nominal quantitation limit as the baseline value because data demonstrated that reliable measurements could be obtained at a lower level. In a few instances, EPA has concluded that the nominal quantitation limit for a specified method was less than the level that laboratories could reliably achieve. For those pollutants, EPA modified the nominal quantitation limit upward and used a higher value as the baseline value. Sections 15.3 and 15.4 provide further explanation of nominal quantitation limits and baseline values. Table 15-1 sets forth the analytical methods and baseline values used for each pollutant in identifying pollutants of concern, developing the loadings, and calculating limitations and standards.

ANALYTICAL RESULTS

15.2

The laboratories expressed the result of the analysis either numerically or as "not quantitated"² for a pollutant in a sample. When the result is expressed numerically, then the pollutant was quantitated³ in the sample. For example, for a hypothetical pollutant X, the

²Elsewhere in this document and in the preamble to the rulemaking, EPA refers to pollutants as "not detected" or "non-detected." This chapter uses the term "not quantitated" or "non-quantitated" rather than non-detected.

³Elsewhere in this document and in the preamble to the rulemaking, EPA refers to pollutants as "detected." This chapter uses the term "quantitated" rather than detected.

result would be reported as “15 ug/L” when the laboratory quantitated the amount of pollutant X in the sample as being 15 ug/L. For the non-quantitated results, for each sample, the laboratories reported a “sample-specific quantitation limit.”⁴ For example, for the hypothetical pollutant X, the result would be reported as “<10 ug/L” when the laboratory could not quantitate the amount of pollutant X in the sample. That is, the analytical result indicated a value less than the sample-specific quantitation limit of 10 ug/L. The actual amount of pollutant X in that sample is between zero (i.e., the pollutant is not present) and 10 ug/L. The sample-specific quantitation limit for a particular pollutant is generally the smallest quantity in the calibration range that may be measured reliably in any given sample. If a pollutant is reported as not quantitated in a particular wastewater sample, this does not mean that the pollutant is not present in the wastewater, merely that analytical techniques (whether because of instrument limitations, pollutant interactions or other reasons) do not permit its measurement at levels below the sample-specific quantitation limit.

In a few instances, some of the laboratories reported numerical results for specific pollutants detected in the samples as “right-censored.” Right-censored measurements are those that were reported as being greater than the highest calibration value of the analysis (e.g., >1000 ug/L).

In its calculations, EPA generally substituted the value of the reported sample-specific quantitation limit for each non-quantitated result. In a few cases when the sample-specific quantitation limit was less than the baseline value, EPA substituted the baseline value for the

non-quantitated result. In a few instances when the quantitated value was below the baseline value, EPA considered these values to be non-quantitated in the statistical analyses and substituted the baseline value for the measured value. For the rare instances when the laboratory reported a measurement as right-censored, EPA used the highest calibration value in its calculations.

NOMINAL QUANTITATION LIMITS **15.3**

Protocols used for determination of nominal quantitation limits in a particular method depend on the definitions and conventions that EPA used at the time the method was developed. The nominal quantitation limits associated with the methods addressed in the following sections fall into three general categories. The first category includes Methods 1624, 1625, and 1664, which used the minimum level (ML) definition as the lowest level at which the entire analytical system must give a recognizable signal and an acceptable calibration point for the analyte. The second category pertains specifically to Method 1620, and is explained in detail in section 15.5.3. The third category pertains to the remainder of the methods (i.e., the National Council for Air and Stream Improvement, Inc. (NCASI) Method 85.01 and the classical wet chemistry methods), in which a variety of terms are used to describe the lowest level at which measurement results are quantitated. In some cases (especially with the classical wet chemistry analytes) the methods are older (1970s and 1980s) and different concepts of quantitation apply. These methods typically list a measurement range or lower limit of measurement. The terms differ by method and, as discussed in subsequent sections, the levels presented are not always representative of the lowest levels laboratories can achieve currently. For those methods associated with a calibration procedure, the laboratories demonstrated through a low point calibration standard that they were capable of reliable

⁴Elsewhere in this document and in the preamble to the rulemaking, EPA refers to a “sample-specific quantitation limit” as a “sample-specific detection limit” or, more simply, as a “detection limit.”

quantitation at method-specified (or lower) levels. In such cases these nominal quantitation limits are operationally equivalent to the ML (though not specifically identified as such in the methods). In the case of titrimetric or gravimetric methods, the laboratory adhered to the established lower limit of the measurement range published in the methods. Details of the specific methods are presented in Section 15.5.

BASELINE VALUES

15.4

Before using the data to identify pollutants of concern, determine the loadings, and calculate the limitations and standards; EPA compared each analytical result (i.e., quantitated value or sample-specific quantitation limit for a non-quantitated value) to a baseline value for the pollutant. For example, if a facility data set had five values for oil and grease of which two were non-quantitated with sample-specific quantitation limits of 10 mg/L and the remaining three values were quantitated with measurements of 20 mg/L, 25 mg/L, and 50 mg/L, then all five values (10 mg/L, 10 mg/L, 20 mg/L, 25 mg/L, and 50 mg/L) were compared to the baseline value of 5 mg/L for oil and grease. In most cases, the detected values and sample-specific quantitation limits were equal to or greater than the baseline values.

In general, the baseline value was equal to the nominal quantitation limit identified for the method. For example, for total cyanide, the baseline value was 0.02 mg/L which is the same as the nominal quantitation limit of 0.02 mg/L for total cyanide in Method 335.2.

EPA made several exceptions to this general rule when EPA determined that the baseline value should differ from the nominal quantitation limit as specified in the method for a pollutant. For example, EPA determined that the baseline value for COD by Method 410.1 should be 5 mg/L rather than the nominal quantitation limit of 50 mg/L. (Section 15.5.6 explains this decision.) EPA made exceptions to the general rule based

upon EPA's knowledge about the methods, experiences with laboratories using those methods, and the need for a single baseline value for each pollutant. For example, EPA selected a baseline value to be less than a nominal quantitation limit when the laboratories demonstrated through calibration or other quality control (QC) data that reliable measurements of the pollutant could be made at a lower level. For these pollutants, the nominal quantitation limits reported in the methods are overestimates of what laboratories can reliably achieve and, the baseline values were adjusted downwards. Another example is when EPA selected baseline values greater than the nominal quantitation limits because the nominal quantitation limits could not be reliably achieved. A third example is when EPA selected a single baseline value when the pollutant was measured by two or more methods, each with a different nominal quantitation limit.

The following section provides a brief description of the analytical methods and explains any differences between the nominal quantitation limits and the baseline values.

Table 15-1 Analytical Methods and Baseline Values

Method	Analyte	CAS Number	Nominal Quantitation Value	Baseline Value	Unit	Assumption for Reported Values † < Baseline Value
D4658	Total sulfide	18496-25-8	0.04	1.0	mg/L	used reported value
160.1	Total dissolved solids	C-010	10.0	10.0	mg/L	n/a
160.2	Total suspended solids	C-009	4.0	4.0	mg/L	n/a
1620	Metals compounds	*				used reported value
1624	Organic compounds	*				modified
1625	Organic compounds	*				modified
1664	HEM	C-036	5.0	5.0	mg/L	modified
1664	SGT-HEM	C-037	5.0	5.0	mg/L	modified
209F	Total solids	C-008	10.0	10.0	mg/L	n/a
218.4	Hexavalent chromium	18540-29-9	0.01	0.01	mg/L	used reported value
325.1	Chloride	16887-00-6	1.0	1.0	mg/L	n/a
325.3	Chloride	16887-00-6	1.0	1.0	mg/L	n/a
335.2	Total cyanide	57-12-5	0.02	0.02	mg/L	used reported value
340.1	Fluoride	16984-48-8	0.1	0.1	mg/L	n/a
340.2	Fluoride	16984-48-8	0.1	0.1	mg/L	n/a
350.1	Ammonia as nitrogen	7664-41-7	0.01	0.05	mg/L	n/a
350.2	Ammonia as nitrogen	7664-41-7	0.05	0.05	mg/L	n/a
350.3	Ammonia as nitrogen	7664-41-7	0.03	0.05	mg/L	n/a
3500D	Hexavalent chromium	18540-29-9	0.1	0.01	mg/L	n/a
353.1	Nitrate/nitrite	C-005	0.01	0.05	mg/L	used reported value
353.2	Nitrate/nitrite	C-005	0.05	0.05	mg/L	used reported value
353.3	Nitrate/nitrite	C-005	0.01	0.05	mg/L	used reported value
365.2	Total phosphorus	14265-44-2	0.01	0.01	mg/L	n/a
365.3	Total phosphorus	14265-44-2	0.01	0.01	mg/L	n/a
376.1	Total sulfide	18496-25-8	1.0	1.0	mg/L	used reported value
405.1	Carbonaceous BOD ₅	C-002	2.0	2.0	mg/L	n/a
405.1	BOD ₅	C-003	2.0	2.0	mg/L	used reported value
410.1	COD	C-004	50.0	5.0**	mg/L	n/a
410.1	D-COD	C-004D	50.0	5.0**	mg/L	n/a
410.2	COD	C-004	5.0	5.0**	mg/L	n/a
410.4	COD	C-004	3.0 [†] 20.0	5.0	mg/L	n/a
413.1	Oil and grease	C-007	5.0	5.0	mg/L	used reported value
415.1	Total organic carbon	C-012	1.0	1.0	mg/L	n/a
420.2	Total phenols	C-020	0.01	0.05	mg/L	used reported value
5210	BOD ₅	C-003	2.0	2.0	mg/L	n/a
85.01	Chlorinated phenolics	*				n/a

† If the entry in this column indicates that EPA 'used the reported value' for a particular analyte, then EPA used either the quantitated value or the sample-specific quantitation limit reported by the laboratory. If the entry is 'n/a' then none of the data that EPA used in its analyses were reported below the baseline value.

* The method analyzed a number of pollutants. Attachment 15-1 identifies all pollutants that EPA considered (see section 2) and their baseline values. In general, the baseline values are equal to the nominal quantitation limits.

**The baseline value was adjusted to reflect the lowest nominal quantitation limit of the titrimetric procedures (i.e., 410.1 and 410.2). See Section 15.5.6 for a detailed explanation.

†Method 410.4 lists two different quantitation limits that are dependent upon whether the automated or manual protocols are followed. The automated method limit = 3 mg/L and the manual method limit = 20 mg/L.

ANALYTICAL METHODS**15.5**

Table 15-1 provides a summary of the analytical methods, the associated pollutants measured by the method, the nominal quantitation levels, the baseline levels, and the assumptions for values reported below the baseline levels. Attachment 15-1 provides a more complete list of the pollutants and their baseline values. The following subsections provide additional information supporting the summary in Table 15-1.

**Methods 1624, 1625, 1664
(Organics, HEM)****15.5.1**

As stated earlier, Methods 1624 and 1625 for organic compounds, and Method 1664⁵ for *n*-hexane extractable material (HEM) and silica gel treated *n*-hexane extractable material (SGT-HEM)⁶ use the minimum level concept for quantitation of the pollutants measured by the methods. The ML is defined as the lowest level at which the entire analytical system must give a recognizable signal and an acceptable calibration point for the analyte. When an ML is published in a method, the Agency has demonstrated that the ML can be achieved in at least one well-operated laboratory, and when that laboratory or another laboratory uses that method, the laboratory is required to demonstrate, through calibration of the instrument or analytical system, that it can make measurements at the ML. For these methods, EPA used the minimum levels as the baseline values.

If a quantitated value or sample-specific quantitation limit was reported with a value less than the ML specified in a method, EPA

substituted the value of the ML and assumed that the measurement was non-quantitated⁷. For example, if the ML was 10 ug/L and the laboratory reported a quantitated value of 5 ug/L, EPA assumed that the concentration was non-quantitated with a sample-specific quantitation limit of 10 ug/L.

Method 413.1 (Oil and Grease)**15.5.2**

Method 413.1 was used in early sampling episodes to measure pollutant concentrations of oil and grease. Because this method requires freon, an ozone depleting solvent, to perform the analysis, EPA developed and recently promulgated Method 1664 to replace the procedures currently approved at 40 CFR 136. The same nominal quantitation limit of 5 mg/L applies to both methods for measuring oil and grease and HEM.

Of the data used to identify the pollutants of concern and calculate pollutant loadings, a few of the quantitated values from Method 413.1 were lower than the nominal quantitation limit. EPA used the values as reported in its analyses. (None of the sample-specific quantitation limits were less than the nominal quantitation limit.)

Of the data used to develop the limitations, none of the quantitated values and sample-specific quantitation limits were less than the nominal quantitation limit.

Method 1620**15.5.3**

Method 1620, which measures the amounts of specific metals in samples, uses the concept of an instrument detection limit (IDL), which is defined as “the smallest signal above background

⁵See final rulemaking at 64 *Federal Register* 26315, May 14, 1999.

⁶SGT-HEM measures non-polar material (i.e., *n*-hexane extractable material that is not absorbed by silica gel). Method 1664 measures both oil and grease and non-polar material.

⁷For *p*-cresol, EPA used 10 ug/L as the ML in many of its data analyses. However, in developing the limitations and standards for the organics subcategory EPA used the correct ML of 20 ug/L.

noise that an instrument can detect reliably.”⁸ IDLs are determined on a quarterly basis by each analytical laboratory participating in the data gathering efforts by EPA’s Engineering and Analysis Division (EAD) and are, therefore, laboratory-specific and time-specific. Data reporting practices for Method 1620 analysis follow conventional metals reporting practices used in other EPA programs, in which values are reported at or above the IDL. Though Method 1620 does contain minimum levels (MLs), these MLs pre-date EPA’s recent refinement of the minimum level concept. The ML values associated with Method 1620 are based on a consensus opinion reached between EPA and laboratories during the 1980s regarding levels that could be considered reliable quantitation limits when using Method 1620. These limits do not reflect advances in technology and instrumentation since the 1980s. Consequently, the IDLs were used as the baseline for reporting purposes, with the general understanding that reliable results can be produced at or above the IDL.

The Method 1620 ML values were used as the baseline values in the data screening, with the exception of two analytes: boron and lead. Based on laboratory feedback years ago, it was determined that the boron ML of 10 ug/L specified in Table 9 of Method 1620 could not be reliably achieved. Consequently, for the purposes of EAD’s data gathering under the metals contracts, the ML for boron was adjusted to 100 ug/L. In the case of lead, which has an ML of 5 ug/L associated with graphite furnace atomic absorption (GFAA) spectroscopy analysis, EAD determined that it was not necessary to measure down to such low levels, and that lead could be analyzed by inductively coupled plasma atomic emission (ICP)

spectroscopy instead. Consequently, the ML requirement was adjusted to 50 ug/L.

In one sampling episode (1987), the laboratory did not provide sample-specific limits⁹ for the 42-element semiquantitative screen component of Method 1620. In 1990, when these analyses were performed, the laboratory’s standard convention to report non-quantitated results from semiquantitative analysis was to populate the summary form with ‘ND’ rather than reporting sample-specific limits. In identifying pollutants of concern and determining the loadings, EPA generally assumed that the sample-specific limits were equal to the baseline values for the pollutant (none of these pollutants were regulated in this rule).

Though the baseline values were derived from the MLs (or adjusted MLs) in Method 1620, EPA used the laboratory reported quantitated values and sample-specific quantitation limits (or substituted baseline values), which captured concentrations down to the IDLs, in identifying the pollutants of concern and calculating the pollutant loadings and limitations. If the long-term average for a pollutant was less than the baseline value, however, EPA substituted the baseline value for the long-term average and re-calculated the limitation using this revised long-term average and the variability factor.

Method 85.01
(Chlorinated Phenolics)

15.5.4

NCASI Method 85.01 was used to analyze some samples associated with the organics subcategory for chlorinated phenolics. This gas chromatography/electron capture detector (GC/ECD) method predates EPA Method 1653

⁸Keith, L.H., W. Crummett, J. Deegan, R.A. Libby, J.K. Taylor, G. Wentler (1983). “Principles of Environmental Analysis,” *Analytical Chemistry*, Volume 55, Page 2217.

⁹These limits are lower threshold limits (LTLs) and are based upon signal-to-noise ratio for each element. As such, these are different than the quantitation limits as defined in this section.

for chlorinated phenolics determination, and was only used for analysis of samples under one CWT sampling episode (Episode 1987, collected in 1990). Method 1653 is an isotope dilution gas chromatography/mass spectrometry (GC/MS) method.

Some chlorinated phenolics in Episode 1987 were analyzed by both Method 85.01 and Method 1625. Thus, for a given sample, there were two results for a specific chlorinated phenolic compound. Of the pollutants of concern, these compounds were pentachlorophenol, 2,3,4,6-tetrachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol. Where two results were provided for the same pollutant in a sample, EPA used the analytical result from Method 1625. This decision is based on the knowledge that Method 1625 is an isotope dilution GC/MS procedure and, therefore, produces more reliable results than Method 85.01.

For the remaining chlorinated phenolics analytes that were determined by Method 85.01, EPA used the laboratory-specific quantitation limits as the baseline values. These laboratory-specific quantitation limits were established by the laboratory through its calibration procedures. The quantitation limits reported were representative of a low level calibration standard concentration, thereby complying with the minimum level definition of the lowest level at which the entire analytical system gives a recognizable signal and an acceptable calibration point.

EPA used the data from Method 85.01 to identify pollutants of concern and to determine pollutant loadings. In all cases, the quantitated values and sample-specific quantitation limits were greater than or equal to the baseline value associated with the pollutant.

EPA has not used the Method 85.01 results in calculating any limitations or standards. EPA is regulating one of the analytes measured by this method; however, the data used to calculate the limitations and standards were generated by

Method 1625.

Methods D4658 and 376.1 (Total Sulfide)

15.5.5

Total sulfide was analyzed by Methods 376.1 and D4658, each of which have different nominal quantitation limits. Method 376.1 has a nominal quantitation limit of 1 mg/L, while Method D4658 has a nominal quantitation limit of 0.04 mg/L. Rather than use two different baseline values for the same pollutant, EPA used the maximum of the two values (i.e., 1 mg/L) as the baseline value.

In some cases, the reported quantitated value or sample-specific quantitation limit was lower than the nominal quantitation limits identified in the method. EPA used these values as reported in identifying the pollutants of concern and calculating the pollutant loadings (EPA did not regulate total sulfide in this rule).

Methods 410.1, 410.2, and 410.4 (COD and D-COD)

15.5.6

Methods 410.1, 410.2, and 410.4 were used to measure chemical oxygen demand (COD) concentrations. In addition, Method 410.1 was used to measure the dissolved chemical oxygen demand (D-COD) concentrations in Episode 1987.

Methods 410.1 and 410.2 are titrimetric procedures that follow identical analytical protocols, with the exception of the concentration level of the reagents used for the titration. Method 410.1 is designed to measure “mid-level” concentrations greater than 50 mg/L for COD and D-COD. Method 410.2 is designed to measure “low-level” concentrations of these parameters in the range of 5-50 mg/L. When one of the participating laboratories analyzes a sample, they are required to measure down to the lowest quantitation limit possible.

Consequently, if the laboratory analyzes a sample using Method 410.1 and obtains a non-

quantitated result, it must reanalyze the sample using Method 410.2. Therefore, the quantitation limit reported for non-quantitations will be equal to 5 mg/L, unless sample dilutions were required because of matrix complexities. Method 410.4 is a colorimetric procedure with a measurement range of 3-900 mg/L for automated procedures and measurement range of 20-900 mg/L for manual procedures.

For all COD data, EPA used the baseline value of 5 mg/L that is associated with the lower quantitation limit for the titrimetric procedures because most of the data had been obtained by the titrimetric procedures (i.e., Methods 410.1 or 410.2). Regardless of the method used to analyze COD and D-COD, all quantitated values and sample-specific quantitation limits used to identify the pollutants of concern and calculate the pollutant loadings were greater than the nominal quantitation limit of 5 mg/L (EPA did not regulate COD and D-COD in this rule).

Method 420.2 (Total Phenols) **15.5.7**

Method 420.2 was used to analyze for total phenols. The method reports two “working ranges”; one with a lower range limit of 0.002 mg/L and the other with a lower range limit of 0.01 mg/L. In this case, EPA’s experience with the laboratories has indicated that some can meet the lower limits of the method-specified range and others cannot. Consequently, EPA determined that the baseline value should be 0.05 mg/L, which reflects the quantitation limit that all participating laboratories were capable of achieving.

In some cases, the quantitated value or the sample-specific quantitation limit was lower than the baseline value of 0.05 mg/L. Because some laboratories have demonstrated that they can quantitate to lower levels, EPA used these values as reported in identifying pollutants of concern and calculating the pollutant loadings (EPA did not regulate total phenols in this rule).

***Method 218.4 and 3500D
(Hexavalent Chromium)*** **15.5.8**

Hexavalent chromium was determined by Methods 218.4 and 3500D. Because most of the samples were analyzed using Method 218.4, its baseline value of 0.01 mg/L was used for all hexavalent chromium results. For some samples analyzed by Method 218.4, the quantitated value or sample-specific quantitation limit was lower than the nominal quantitation limit identified in the method. (None of the data used from Method 3500D were less than the nominal quantitation limit.) EPA used these values as reported in identifying the pollutants of concern and calculating the pollutant loadings. In calculating the limitations and standards, none of the quantitated values or sample-specific quantitation limits were lower than the nominal quantitation limit identified in the method (EPA did not regulate hexavalent chromium in this rule).

Method 335.2 (Total Cyanide) **15.5.9**

Samples were analyzed for total cyanide using Method 335.2. The nominal quantitation limit and the baseline value were the same.

In some cases, the reported sample-specific quantitation limit was lower than the baseline value for the pollutant. (None of the quantitated values was lower than the baseline value.) Because some laboratories have demonstrated that they can quantitate to lower levels, EPA used these values as reported in identifying the pollutants of concern and calculating the pollutant loadings. None of the data used to calculate the limitations were lower than the baseline value.

**Methods 353.1, 353.2, and 353.3
(Nitrate/Nitrite) 15.5.10**

Nitrate/nitrite was determined by three EPA methods, each of which list slightly different nominal quantitation limits, which are expressed in the methods as the lower limit of the measurement range. Methods 353.1 and 353.2 are automated colorimetric procedures with quantitation limits of 0.01 and 0.05 mg/L, respectively. Method 353.3 is a cadmium reduction, spectrophotometric procedure with a nominal quantitation limit of 0.01 mg/L. Rather than use two different baseline values for the same pollutant, EPA used the maximum of the two values (i.e., 0.05 mg/L) as the baseline.

In several instances, the reported quantitated values or sample-specific quantitation limits were below the 0.05 mg/L baseline value. Because the laboratory demonstrated that it could quantitate at lower levels, EPA used these values as reported in identifying the pollutants of concern and calculating the pollutant loadings (EPA did not regulate nitrate/nitrite in this rule).

**Methods 350.1, 350.2, and 350.3
(Ammonia as Nitrogen) 15.5.11**

Ammonia as Nitrogen was measured by three different procedures, each of which were associated with a different nominal quantitation limit. Method 350.1 is an automated colorimetric procedure with a lower measurement range limit of 0.01 mg/L. Method 350.2 utilizes either colorimetric, titrimetric, or electrode procedures to measure ammonia, and has a lower measurement range limit of (a) 0.05 mg/L for the colorimetric and electrode procedures and (b) 0.01 mg/L for the titrimetric procedure. Method 350.3 determines ammonia potentiometrically using an ion selective ammonia electrode and a pH meter and has a lower measurement range limit of 0.03 mg/L. Rather than use different baseline values for the same pollutant, EPA used the maximum of the

values (i.e., 0.05 mg/L) as the baseline.

None of the quantitated values and sample-specific quantitation limits used to identify the pollutants of concern and calculate the pollutant loadings were less than the baseline value (EPA did not regulate ammonia as nitrogen in this rule).

Remaining Methods 15.5.12

The previous subsections in section 15.5 identify many of the methods used to analyze the wastewater samples. The remaining methods were: 160.1 (total dissolved solids), 160.2 (total suspended solids), 209F (total solids), 325.1 and 325.3 (chloride), 340.1 and 340.2 (fluoride), 365.2 and 365.3 (total phosphorus), 405.1 (5-day biochemical oxygen demand (BOD₅)) and carbonaceous BOD₅, 5210 (BOD₅), and 415.1 (total organic carbon). For these methods, the nominal quantitation limits and the baseline values were equal. In addition, none of the quantitated values were reported below the nominal quantitation limits. For one sample, the sample-specific quantitation limit for BOD₅ was less than the nominal quantitation limit. EPA used this sample-specific quantitation limit in identifying pollutants of concern and calculating pollutant loadings for BOD₅.

Of the pollutants measured by these methods, EPA proposed limitations for total suspended solids (TSS) and BOD₅.

**ANALYTICAL METHOD
DEVELOPMENT EFFORTS 15.6**

Section 304(h) of the Clean Water Act directs EPA to promulgate guidelines establishing test procedures for the analysis of pollutants. These test procedures (methods) are used to determine the presence and concentration of pollutants in wastewater, and are used for compliance monitoring and for filing applications for the NPDES program under 40 CFR 122.21, 122.41, 122.44 and 123.25, and for the

implementation of the pretreatment standards under 40 CFR 403.10 and 403.12. EPA publishes test procedures for the wastewater program at 40 CFR 136.3. Currently approved methods for metals and cyanide are included in the table of approved inorganic test procedures at 40 CFR 136.3, Table I-B. Table I-C at 40 CFR 136.3 lists approved methods for measurement of non-pesticide organic pollutants, and Table I-D lists approved methods for the toxic pesticide pollutants and for other pesticide pollutants. Dischargers must use the test methods promulgated at 40 CFR Part 136.3 or incorporated by reference in the tables to monitor pollutant discharges from the centralized waste treatment (CWT) industry, unless specified otherwise in part 437 or by the permitting authority.

The final CWT rule amends 40 CFR Part 136, Appendix A, to specify the applicability of certain methods for specific wastestreams. The amendments accomplish several objectives, which are outlined in the following paragraphs. Briefly, the amendments clarify EPA's intent regarding the applicability of Methods 625 and 1625 for some of the pollutant parameters in the final rule for Centralized Waste Treatment facilities and also for some of the pollutant parameters in 40 CFR 445 (Landfills Point Source Category).

The 1999 CWT proposal (at 64 FR 2297) stated that 11 CWT semivolatile organic pollutants and two CWT volatile organic pollutants (2-butanone and 2-propanone) were not listed in Table I-C at 40 CFR 136.3. Even though these 13 analytes were not shown in Table I-C, there were already approved test methods for six of these 13, as follows. EPA Method 1624 lists 2-butanone and 2-propanone, provides performance data for these two analytes, and is an approved method for these two analytes. EPA Method 1625 lists four of the 11 CWT semivolatile organic pollutants with relevant performance data and is an approved method for these four analytes (alpha-terpineol,

carbazole, n-decane, and n-octadecane).

In the 1999 CWT proposal, EPA proposed to expand the analyte list for the already-approved methods and also to allow modified versions of Methods 625 and 1625. The Docket for the proposed rulemaking included the proposed modifications to Methods 625 and 1625 regarding expansion of the analyte list. The expanded list covered 17 pollutants in total, including all of the proposed CWT semivolatile organic pollutants. For 7 of those analytes, performance data were not available for either method and these data were not included in the Docket at proposal. EPA also noted its plans for further validation of the method modifications.

Since proposal, EPA has gathered performance data on the additional seven CWT analytes and additional analytes of interest for other industry categories. In January 2000, EPA amended Methods 625 and 1625 by adding the performance data for the additional analytes. The amendments consist of text, performance data, and quality control (QC) acceptance criteria for the additional analytes. This information will allow a laboratory to practice the methods with the additional analytes as an integral part. The QC acceptance criteria for the additional analytes were validated in single-laboratory studies. The January 2000 amendments were part of the rulemaking notice for the effluent limitations guidelines and standards for the Landfills Point Source Category (65 FR 3008, January 19, 2000). EPA's intent was to promulgate amendments to Methods 625 and 1625 that would allow the use of those methods for specific pollutants regulated in 40 CFR Part 445 (i.e., Landfills) for purposes of that rule only. Some of the pollutants had also been included in the CWT proposal. Subsequent to the Landfills promulgation, EPA received inquiries about the scope and applicability of the amendments to the test methods. In response to those inquiries, EPA published a notice of data availability (NODA) and request for comment on the data collected for the additional analytes (see 65 FR

41391, July 5, 2000).

The NODA clarified EPA's intent regarding the method amendments by explaining that the amendments published on January 19, 2000 "... are applicable only to the five regulated pollutants in the Landfills rule when found in the waste streams regulated under that rule" (65 FR 41392). The NODA also announced EPA's plans to further amend the methods in the final CWT rulemaking (i.e., this rulemaking) to specify that the revisions to Methods 625 and 1625 apply to the pollutants promulgated in the final CWT rule and only for the wastestreams regulated in the final CWT rule. In the final CWT amendments to 40 CFR Part 136, Appendix A, EPA thus clarifies its intent regarding the scope of method amendments. Specifically, the amendments include additional text to the Introduction section of the attachment at the end of Methods 625 and 1625 and footnotes to Tables in the attachment. The amendments delineate the scope of Methods 625 and 1625 regarding compliance with monitoring requirements for the wastestreams covered by 40 CFR Parts 437 and 445. In addition, EPA deleted from the attachment to the methods those analytes not covered by the Landfills and CWT final rules.

Attachment 15-1 Analytical Methods and Baseline Values

Pollutant	CAS No.	Method	Baseline Value	Unit
<u>CLASSICALS OR CONVENTIONALS</u>				
Ammonia as nitrogen	7664-41-7	350.1	0.05	mg/L
		350.2	0.05	mg/L
		350.3	0.05	mg/L
Biochemical oxygen demand (BOD)	C-003	405.1	2.00	mg/L
		5210	2.00	mg/L
BOD 5-day (carbonaceous)	C-002	405.1	2.00	mg/L
Chemical oxygen demand (COD)	C-004	410.1	5.00	mg/L
		410.2	5.00	mg/L
		410.4	5.00	mg/L
		410.4	5.00	mg/L
Chloride	16887-00-6	325.1	1.00	mg/L
		325.3	1.00	mg/L
D-Chemical oxygen demand	C-004D	410.1	5.00	mg/L
Fluoride	16984-48-8	340.1	0.10	mg/L
		340.2	0.10	mg/L
Hexane extractable material (HEM)	C-036	1664	5.00	mg/L
Hexavalent chromium	18540-29-9	218.4	0.01	mg/L
		3500	0.01	mg/L
		353.1	0.05	mg/L
Nitrate/nitrite	C-005	353.2	0.05	mg/L
		353.3	0.05	mg/L
		353.3	0.05	mg/L
SGT-HEM	C-037	1664	5.00	mg/L
Total cyanide	57-12-5	335.2	0.02	mg/L
Total dissolved solids	C-010	160.1	10.00	mg/L
Total organic carbon (TOC)	C-012	415.1	1.00	mg/L
Total phenols	C-020	420.1	0.05	mg/L
		420.2	0.05	mg/L
Total phosphorus	14265-44-2	365.2	0.01	mg/L
		365.3	0.01	mg/L
Total recoverable oil and grease	C-007	413.1	5.00	mg/L
Total solids	C-008	209F	10.00	%
Total sulfide	18496-25-8	376.1	1.00	mg/L
		D4658	1.00	mg/L
Total suspended solids	C-009	160.2	4.00	mg/L
<u>METALS</u>				
Aluminum	7429-90-5	1620	200.00	ug/L
Antimony	7440-36-0	1620	20.00	ug/L
Arsenic	7440-38-2	1620	10.00	ug/L
Barium	7440-39-3	1620	200.00	ug/L
Beryllium	7440-41-7	1620	5.00	ug/L
Bismuth	7440-69-9	1620	100.00	ug/L
Boron	7440-42-8	1620	100.00	ug/L
Cadmium	7440-43-9	1620	5.00	ug/L
Calcium	7440-70-2	1620	5000.00	ug/L
Cerium	7440-45-1	1620	1000.00	ug/L
Chromium	7440-47-3	1620	10.00	ug/L
Cobalt	7440-48-4	1620	50.00	ug/L

Pollutant	CAS No.	Method	Baseline Value	Unit
Copper	7440-50-8	1620	25.00	ug/L
Dysprosium	7429-91-6	1620	100.00	ug/L
Erbium	7440-52-0	1620	100.00	ug/L
Europium	7440-53-1	1620	100.00	ug/L
Gadolinium	7440-54-2	1620	500.00	ug/L
Gallium	7440-55-3	1620	500.00	ug/L
Germanium	7440-56-4	1620	500.00	ug/L
Gold	7440-57-5	1620	1000.00	ug/L
Hafnium	7440-58-6	1620	1000.00	ug/L
Holmium	7440-60-0	1620	500.00	ug/L
Indium	7440-74-6	1620	1000.00	ug/L
Iodine	7553-56-2	1620	1000.00	ug/L
Iridium	7439-88-5	1620	1000.00	ug/L
Iron	7439-89-6	1620	100.00	ug/L
Lanthanum	7439-91-0	1620	100.00	ug/L
Lead	7439-92-1	1620	50.00	ug/L
Lithium	7439-93-2	1620	100.00	ug/L
Lutetium	7439-94-3	1620	100.00	ug/L
Magnesium	7439-95-4	1620	5000.00	ug/L
Manganese	7439-96-5	1620	15.00	ug/L
Mercury	7439-97-6	1620	0.20	ug/L
Molybdenum	7439-98-7	1620	10.00	ug/L
Neodymium	7440-00-8	1620	500.00	ug/L
Nickel	7440-02-0	1620	40.00	ug/L
Niobium	7440-03-1	1620	1000.00	ug/L
Osmium	7440-04-2	1620	100.00	ug/L
Palladium	7440-05-3	1620	500.00	ug/L
Phosphorus	7723-14-0	1620	1000.00	ug/L
Platinum	7440-06-4	1620	1000.00	ug/L
Potassium	7440-09-7	1620	1000.00	ug/L
Praseodymium	7440-10-0	1620	1000.00	ug/L
Rhenium	7440-15-5	1620	1000.00	ug/L
Rhodium	7440-16-6	1620	1000.00	ug/L
Ruthenium	7440-18-8	1620	1000.00	ug/L
Samarium	7440-19-9	1620	500.00	ug/L
Scandium	7440-20-2	1620	100.00	ug/L
Selenium	7782-49-2	1620	5.00	ug/L
Silicon	7440-21-3	1620	100.00	ug/L
Silver	7440-22-4	1620	10.00	ug/L
Sodium	7440-23-5	1620	5000.00	ug/L
Strontium	7440-24-6	1620	100.00	ug/L
Sulfur	7704-34-9	1620	1000.00	ug/L
Tantalum	7440-25-7	1620	500.00	ug/L
Tellurium	13494-80-9	1620	1000.00	ug/L
Terbium	7440-27-9	1620	500.00	ug/L
Thallium	7440-28-0	1620	10.00	ug/L
Thorium	7440-29-1	1620	1000.00	ug/L
Thulium	7440-30-4	1620	500.00	ug/L
Tin	7440-31-5	1620	30.00	ug/L
Titanium	7440-32-6	1620	5.00	ug/L

Pollutant	CAS No.	Method	Baseline Value	Unit
Tungsten	7440-33-7	1620	1000.00	ug/L
Uranium	7440-61-1	1620	1000.00	ug/L
Vanadium	7440-62-2	1620	50.00	ug/L
Ytterbium	7440-64-4	1620	100.00	ug/L
Yttrium	7440-65-5	1620	5.00	ug/L
Zinc	7440-66-6	1620	20.00	ug/L
Zirconium	7440-67-7	1620	100.00	ug/L
ORGANICS				
Acenaphthene	83-32-9	1625	10.00	ug/L
Acenaphthylene	208-96-8	1625	10.00	ug/L
Acetophenone	98-86-2	1625	10.00	ug/L
Acrylonitrile	107-13-1	1624	50.00	ug/L
Alpha-terpineol	98-55-5	1625	10.00	ug/L
Aniline	62-53-3	1625	10.00	ug/L
Aniline, 2,4,5-trimethyl-	137-17-7	1625	20.00	ug/L
Anthracene	120127	1625	10.00	ug/L
Aramite	140-57-8	1625	50.00	ug/L
Benzanthrone	82-05-3	1625	50.00	ug/L
Benzene	71-43-2	1624	10.00	ug/L
Benzenethiol	108-98-5	1625	10.00	ug/L
Benzidine	92-87-5	1625	50.00	ug/L
Benzo(a)anthracene	56-55-3	1625	10.00	ug/L
Benzo(a)pyrene	50-32-8	1625	10.00	ug/L
Benzo(b)fluoranthene	205-99-2	1625	10.00	ug/L
Benzo(ghi)perylene	191-24-2	1625	20.00	ug/L
Benzo(k)fluoranthene	207-08-9	1625	10.00	ug/L
Benzoic acid	65-85-0	1625	50.00	ug/L
Benzonitrile, 3,5-dibromo-4-hydroxy-	1689-84-5	1625	50.00	ug/L
Benzyl alcohol	100-51-6	1625	10.00	ug/L
Beta-naphthylamine	91-59-8	1625	50.00	ug/L
Biphenyl	92-52-4	1625	10.00	ug/L
Biphenyl, 4-nitro	92-93-3	1625	10.00	ug/L
Bis(2-chloroethoxy)methane	111-91-1	1625	10.00	ug/L
Bis(2-chloroethyl) ether	111-44-4	1625	10.00	ug/L
Bis(2-chloroisopropyl) ether	108-60-1	1625	10.00	ug/L
Bis(2-ethylhexyl) phthalate	117-81-7	1625	10.00	ug/L
Bromodichloromethane	75-27-4	1624	10.00	ug/L
Bromomethane	74-83-9	1624	50.00	ug/L
Butyl benzyl phthalate	85-68-7	1625	10.00	ug/L
Carbazole	86-74-8	1625	20.00	ug/L
Carbon Disulfide	75-15-0	1624	10.00	ug/L
Chloroacetonitrile	107-14-2	1624	10.00	ug/L
Chlorobenzene	108-90-7	1624	10.00	ug/L
Chloroethane	75-00-3	1624	50.00	ug/L
Chloroform	67-66-3	1624	10.00	ug/L
Chloromethane	74-87-3	1624	50.00	ug/L
Chrysene	218-01-9	1625	10.00	ug/L
Cis-1,3-dichloropropene	10061-01-5	1624	10.00	ug/L
Crotonaldehyde	4170-30-3	1624	50.00	ug/L
Crotoxyphos	7700-17-6	1625	99.00	ug/L

Pollutant	CAS No.	Method	Baseline Value	Unit
Di-n-butyl phthalate	84-74-2	1625	10.00	ug/L
Di-n-octyl phthalate	117-84-0	1625	10.00	ug/L
Di-n-propylnitrosamine	621-64-7	1625	20.00	ug/L
Dibenzo(a,h)anthracene	53-70-3	1625	20.00	ug/L
Dibenzofuran	132-64-9	1625	10.00	ug/L
Dibenzothiophene	132-65-0	1625	10.00	ug/L
Dibromochloromethane	124-48-1	1624	10.00	ug/L
Dibromomethane	74-95-3	1624	10.00	ug/L
Diethyl ether	60-29-7	1624	50.00	ug/L
Diethyl phthalate	84-66-2	1625	10.00	ug/L
Dimethyl phthalate	131-11-3	1625	10.00	ug/L
Dimethyl sulfone	67-71-0	1625	10.00	ug/L
Diphenyl ether	101-84-8	1625	10.00	ug/L
Diphenylamine	122-39-4	1625	20.00	ug/L
Diphenyldisulfide	882-33-7	1625	20.00	ug/L
Ethane, pentachloro-	76-01-7	1625	20.00	ug/L
Ethyl cyanide	107-12-0	1624	10.00	ug/L
Ethyl methacrylate	97-63-2	1624	10.00	ug/L
Ethyl methanesulfonate	62-50-0	1625	20.00	ug/L
Ethylbenzene	100-41-4	1624	10.00	ug/L
Ethylenethiourea	96-45-7	1625	20.00	ug/L
Fluoranthene	206-44-0	1625	10.00	ug/L
Fluorene	86-73-7	1625	10.00	ug/L
Hexachlorobenzene	118-74-1	1625	10.00	ug/L
Hexachlorobutadiene	87-68-3	1625	10.00	ug/L
Hexachlorocyclopentadiene	77-47-4	1625	10.00	ug/L
Hexachloroethane	67-72-1	1625	10.00	ug/L
Hexachloropropene	1888-71-7	1625	20.00	ug/L
Hexanoic acid	142-62-1	1625	10.00	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	1625	20.00	ug/L
Iodomethane	74-88-4	1624	10.00	ug/L
Isobutyl alcohol	78-83-1	1624	10.00	ug/L
Isophorone	78-59-1	1625	10.00	ug/L
Isosafrole	120-58-1	1625	10.00	ug/L
Longifolene	475-20-7	1625	50.00	ug/L
m+p Xylene	179601-23-1	1624	10.00	ug/L
M-xylene	108-38-3	1624	10.00	ug/L
Malachite Green	569-64-2	1625	10.00	ug/L
Mestranol	72-33-3	1625	20.00	ug/L
Methapyrilene	91-80-5	1625	10.00	ug/L
Methyl methacrylate	80-62-6	1624	10.00	ug/L
Methyl methanesulfonate	66-27-3	1625	20.00	ug/L
Methylene chloride	75-09-2	1624	10.00	ug/L
n,n-dimethylformamide	68-12-2	1625	10.00	ug/L
n-Decane	124-18-5	1625	10.00	ug/L
n-Docosane	629-97-0	1625	10.00	ug/L
n-Dodecane	112-40-3	1625	10.00	ug/L
n-Eicosane	112-95-8	1625	10.00	ug/L
n-Hexacosane	630-01-3	1625	10.00	ug/L
n-Hexadecane	544-76-3	1625	10.00	ug/L

Pollutant	CAS No.	Method	Baseline Value	Unit
n-Nitrosodi-n-butylamine	924-16-3	1625	10.00	ug/L
n-Nitrosodiethylamine	55-18-5	1625	10.00	ug/L
n-Nitrosodimethylamine	62-75-9	1625	50.00	ug/L
n-Nitrosodiphenylamine	86-30-6	1625	20.00	ug/L
n-Nitrosomethylethylamine	10595-95-6	1625	10.00	ug/L
n-Nitrosomethylphenylamine	614-00-6	1625	99.00	ug/L
n-Nitrosomorpholine	59-89-2	1625	10.00	ug/L
n-Nitrosopiperidine	100-75-4	1625	10.00	ug/L
n-Octacosane	630-02-4	1625	10.00	ug/L
n-Octadecane	593-45-3	1625	10.00	ug/L
n-Tetracosane	646-31-1	1625	10.00	ug/L
n-Tetradecane	629-59-4	1625	10.00	ug/L
n-Triacontane	638-68-6	1625	10.00	ug/L
Naphthalene	91-20-3	1625	10.00	ug/L
Nitrobenzene	98-95-3	1625	10.00	ug/L
o+p Xylene	136777-61-2	1624	10.00	ug/L
o-Anisidine	90-04-0	1625	10.00	ug/L
o-Cresol	95-48-7	1625	10.00	ug/L
o-Toluidine	95-53-4	1625	10.00	ug/L
o-Toluidine, 5-chloro-	95-79-4	1625	10.00	ug/L
o-Xylene	95-47-6	1624	10.00	ug/L
p-Chloroaniline	106-47-8	1625	10.00	ug/L
p-Cresol	106-44-5	1625	10.00	ug/L
p-Cymene	99-87-6	1625	10.00	ug/L
p-Dimethylaminoazobenzene	60-11-7	1625	20.00	ug/L
p-Nitroaniline	100-01-6	1625	50.00	ug/L
Pentachlorobenzene	608-93-5	1625	20.00	ug/L
Pentachlorophenol	87-86-5	1625	50.00	ug/L
Pentachlorophenol	87-86-5	85.01	0.80	ug/L
Pentamethylbenzene	700-12-9	1625	10.00	ug/L
Perylene	198-55-0	1625	10.00	ug/L
Phenacetin	62-44-2	1625	10.00	ug/L
Phenanthrene	85-01-8	1625	10.00	ug/L
Phenol	108-95-2	1625	10.00	ug/L
Phenol, 2-methyl-4,6-dinitro-	534-52-1	1625	20.00	ug/L
Phenothiazine	92-84-2	1625	50.00	ug/L
Pronamide	23950-58-5	1625	10.00	ug/L
Pyrene	129-00-0	1625	10.00	ug/L
Pyridine	110-86-1	1625	10.00	ug/L
Resorcinol	108-46-3	1625	50.00	ug/L
Safrole	94-59-7	1625	10.00	ug/L
Squalene	7683-64-9	1625	99.00	ug/L
Styrene	100-42-5	1625	10.00	ug/L
Tetrachlorocatechol	1198-55-6	85.01	0.80	ug/L
Tetrachloroethene	127-18-4	1624	10.00	ug/L
Tetrachloroguaiacol	2539-17-5	85.01	0.80	ug/L
Tetrachloromethane	56-23-5	1624	10.00	ug/L
Thianaphthene	95-15-8	1625	10.00	ug/L
Thioacetamide	62-55-5	1625	20.00	ug/L
Thioxanthe-9-one	492-22-8	1625	20.00	ug/L

Pollutant	CAS No.	Method	Baseline Value	Unit
Toluene	108-88-3	1624	10.00	ug/L
Toluene, 2,4-diamino-	95-80-7	1625	99.00	ug/L
Trans-1,2-dichloroethene	156-60-5	1624	10.00	ug/L
Trans-1,3-dichloropropene	10061-02-6	1624	10.00	ug/L
Trans-1,4-dichloro-2-butene	110-57-6	1624	50.00	ug/L
Tribromomethane	75-25-2	1624	10.00	ug/L
Trichloroethene	79-01-6	1624	10.00	ug/L
Trichlorofluoromethane	75-69-4	1624	10.00	ug/L
Trichlorosyringol	2539-26-6	85.01	0.80	ug/L
Triphenylene	217-59-4	1625	10.00	ug/L
Tripropyleneglycol methyl ether	20324-33-8	1625	99.00	ug/L
Vinyl acetate	108-05-4	1624	50.00	ug/L
Vinyl chloride	75-01-4	1624	10.00	ug/L
1,1,1,2-tetrachloroethane	630-20-6	1624	10.00	ug/L
1,1,1-trichloroethane	71-55-6	1624	10.00	ug/L
1,1,2,2-tetrachloroethane	79-34-5	1624	10.00	ug/L
1,1,2-trichloroethane	79-00-5	1624	10.00	ug/L
1,1-dichloroethane	75-34-3	1624	10.00	ug/L
1,1-dichloroethene	75-35-4	1624	10.00	ug/L
1,2,3-trichlorobenzene	87-61-6	1625	10.00	ug/L
1,2,3-trichloropropane	96-18-4	1624	10.00	ug/L
1,2,3-trimethoxybenzene	634-36-6	1625	10.00	ug/L
1,2,4,5-tetrachlorobenzene	95-94-3	1625	10.00	ug/L
1,2,4-trichlorobenzene	120-82-1	1625	10.00	ug/L
1,2-dibromo-3-chloropropane	96-12-8	1625	20.00	ug/L
1,2-dibromoethane	106-93-4	1624	10.00	ug/L
1,2-dichlorobenzene	95-50-1	1625	10.00	ug/L
1,2-dichloroethane	107-06-2	1624	10.00	ug/L
1,2-dichloropropane	78-87-5	1624	10.00	ug/L
1,2-diphenylhydrazine	122-66-7	1625	20.00	ug/L
1,2:3,4-diepoxybutane	1464-53-5	1625	20.00	ug/L
1,3,5-trithiane	291-21-4	1625	50.00	ug/L
1,3-butadiene, 2-chloro	126-99-8	1624	10.00	ug/L
1,3-dichloro-2-propanol	96-23-1	1625	10.00	ug/L
1,3-dichlorobenzene	541-73-1	1625	10.00	ug/L
1,3-dichloropropane	142-28-9	1624	10.00	ug/L
1,4-dichlorobenzene	106-46-7	1625	10.00	ug/L
1,4-dinitrobenzene	100-25-4	1625	20.00	ug/L
1,4-dioxane	123-91-1	1624	10.00	ug/L
1,4-naphthoquinone	130-15-4	1625	99.00	ug/L
1,5-naphthalenediamine	2243-62-1	1625	99.00	ug/L
1-bromo-2-chlorobenzene	694-80-4	1625	10.00	ug/L
1-bromo-3-chlorobenzene	108-37-2	1625	10.00	ug/L
1-chloro-3-nitrobenzene	121-73-3	1625	50.00	ug/L
1-methylfluorene	1730-37-6	1625	10.00	ug/L
1-methylphenanthrene	832-69-9	1625	10.00	ug/L
1-naphthylamine	134-32-7	1625	10.00	ug/L
1-phenylnaphthalene	605-02-7	1625	10.00	ug/L

Pollutant	CAS No.	Method	Baseline Value	Unit
2,3,4,6-tetrachlorophenol	58-90-2	1625	20.00	ug/L
		85.01	0.80	ug/L
2,3,6-trichlorophenol	933-75-5	1625	10.00	ug/L
		85.01	0.80	ug/L
2,3-benzofluorene	243-17-4	1625	10.00	ug/L
2,3-dichloroaniline	608-27-5	1625	10.00	ug/L
2,3-dichloronitrobenzene	3209-22-1	1625	50.00	ug/L
2,4,5-trichlorophenol	95-95-4	1625	10.00	ug/L
		85.01	0.80	ug/L
2,4,6-trichlorophenol	88-06-2	1625	10.00	ug/L
		85.01	0.80	ug/L
2,4-dichlorophenol	120-83-2	1625	10.00	ug/L
		85.01	0.80	ug/L
2,4-dimethylphenol	105-67-9	1625	10.00	ug/L
2,4-dinitrophenol	51-28-5	1625	50.00	ug/L
2,4-dinitrotoluene	121-14-2	1625	10.00	ug/L
2,6-di-tert-butyl-p-benzoquinone	719-22-2	1625	99.00	ug/L
2,6-dichloro-4-nitroaniline	99-30-9	1625	99.00	ug/L
2,6-dichlorophenol	87-65-0	1625	10.00	ug/L
		85.01	0.80	ug/L
2,6-dinitrotoluene	606-20-2	1625	10.00	ug/L
2-(methylthio)benzothiazole	615-22-5	1625	10.00	ug/L
2-butanone	78-93-3	1624	50.00	ug/L
2-chloroethylvinyl ether	110-75-8	1624	10.00	ug/L
2-chloronaphthalene	91-58-7	1625	10.00	ug/L
2-chlorophenol	95-57-8	1625	10.00	ug/L
2-hexanone	591-78-6	1624	50.00	ug/L
2-isopropyl-naphthalene	2027-17-0	1625	10.00	ug/L
2-methylbenzothiazole	120-75-2	1625	10.00	ug/L
2-methylnaphthalene	91-57-6	1625	10.00	ug/L
2-nitroaniline	88-74-4	1625	10.00	ug/L
2-nitrophenol	88-75-5	1625	20.00	ug/L
2-phenylnaphthalene	612-94-2	1625	10.00	ug/L
2-picoline	109-06-8	1625	50.00	ug/L
2-propanone	67-64-1	1624	50.00	ug/L
2-propen-1-ol	107-18-6	1624	10.00	ug/L
2-propenal	107-02-8	1624	50.00	ug/L
2-propenenitrile, 2-methyl-	126-98-7	1624	10.00	ug/L
2-syringaldehyde	134-96-3	85.01	0.80	ug/L
3,3'-dichlorobenzidine	91-94-1	1625	50.00	ug/L
3,3'-dimethoxybenzidine	119-90-4	1625	50.00	ug/L
3,4,5-trichlorocatechol	56961-20-7	85.01	0.80	ug/L
3,4,5-trichloroguaiacol	57057-83-7	85.01	0.80	ug/L
3,4,6-trichloroguaiacol	60712-44-9	85.01	0.80	ug/L
3,4-dichlorophenol	95-77-2	85.01	0.80	ug/L
3,5-dichlorocatechol	13673-92-2	85.01	0.80	ug/L
3,5-dichlorophenol	591-35-5	85.01	0.80	ug/L
3,6-dichlorocatechol	3938-16-7	85.01	0.80	ug/L
3,6-dimethylphenanthrene	1576-67-6	1625	10.00	ug/L
3-chloropropene	107-05-1	1624	10.00	ug/L

Pollutant	CAS No.	Method	Baseline Value	Unit
3-methylcholanthrene	56-49-5	1625	10.00	ug/L
3-nitroaniline	99-09-2	1625	20.00	ug/L
4,4'-methylenebis(2-chloroaniline)	101-14-4	1625	20.00	ug/L
4,5,6-trichloroguaiacol	2668-24-8	85.01	0.80	ug/L
4,5-dichlorocatechol	3428-24-8	85.01	0.80	ug/L
4,5-dichloroguaiacol	2460-49-3	85.01	0.80	ug/L
4,5-methylene phenanthrene	203-64-5	1625	10.00	ug/L
4,6-dichloroguaiacol	16766-31-7	85.01	0.80	ug/L
4-aminobiphenyl	92-67-1	1625	10.00	ug/L
4-bromophenyl phenyl ether	101-55-3	1625	10.00	ug/L
4-chloro-2-nitroaniline	89-63-4	1625	20.00	ug/L
4-chloro-3-methylphenol	59-50-7	1625	10.00	ug/L
4-chloroguaiacol	16766-30-6	85.01	160.00	ug/L
4-chlorophenol	106-48-9	85.01	240.00	ug/L
4-chlorophenylphenyl ether	7005-72-3	1625	10.00	ug/L
4-methyl-2-pentanone	108-10-1	1624	50.00	ug/L
4-nitrophenol	100-02-7	1625	50.00	ug/L
5,6-dichlorovanillin	18268-69-4	85.01	0.80	ug/L
5-chloroguaiacol	3743-23-5	85.01	160.00	ug/L
5-nitro-o-toluidine	99-55-8	1625	10.00	ug/L
6-chlorovanillin	18268-76-3	85.01	0.80	ug/L
7,12-dimethylbenz(a)anthracene	57-97-6	1625	10.00	ug/L