



Arizona Pollutant Discharge Elimination System

FORM 2C INSTRUCTIONS

FOR INDUSTRIAL AND COMMERCIAL OPERATIONS
THAT CURRENTLY DISCHARGE OR ARE PERMITTED TO DISCHARGE NON-
DOMESTIC WASTEWATER

This form must be completed by all applicants who check “yes” to Part VII.C on Form 1

This form is to be used by private or government owners of facilities that discharge wastewater other than domestic wastewater. This includes discharges from water treatment plants, groundwater remediation efforts, mining and silvicultural operations, and noncontact cooling waters among others. Your application will not be considered complete unless you answer every question on this form and on Form 1. If an item does not apply to you, enter “NA” (*for not applicable*).

Availability of Information to Public

Information contained in these application forms will, upon request, be made available to the public for inspection and copying. No information on this form or on Form 1 may be claimed as confidential. No information concerning effluent characterization may be claimed as confidential. If you send in more information than is requested in these forms that is considered company-privileged information, you may ask ADEQ to keep that extra information confidential. Otherwise, ADEQ may make the information public without letting you know in advance. For more information on claims of confidentiality, see Arizona Revised Statutes (A.R.S.) § 49-205.

Definitions

All significant terms used in these instructions and in the form are defined in the glossary found in Part D Glossary of Instructions, which accompanies Form 1.

AZPDES (NPDES) Permit Number

Fill in your AZPDES or NPDES permit number at the top of each page of Form 2C. You may copy this number directly from item 1 of Form 1.

Item I. Outfall Location

Provide the latitude and longitude of each of your outfalls and the name of the receiving water.

Item II. Flows, Sources of Pollution and Treatment Technologies

Part II.A

The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water and stormwater runoff. You may group similar operations in a single unit, labeled to correspond to the more detailed listing in Part II.B. The water balance should show average flows. Show all significant losses of water to products, atmosphere and discharge. You should use actual measurements

whenever available; otherwise provide your best estimate. An example of an acceptable line drawing appears in Figure 2C.1 of these instructions.

Part II.B

List all sources of wastewater to each outfall. Operations may be described in general terms (for example, "dye-making reactor" or "distillation tower"). You may estimate the flow contributed by each source if no data are available. For stormwater discharges you may estimate the average flow, but you must indicate the rainfall event upon which the estimate is based and the method of estimation. For each treatment unit, indicate its size, flow rate and retention time and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table 2C-1 to fill in column 3.b for each treatment unit. Insert "XX" into column 3.b if no code corresponds to a treatment unit you list.

Part II.C

A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "MAXIMUM DAILY" columns (columns 4.a.2 and 4.b.2). Report the average of all daily values measured during days when discharge occurred within the last year in the "LONG TERM AVG." columns (columns 4.a.1 and 4.b.1).

Item III. Production

Part III.A

All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by a BPT, BCT or BAT guideline. If you are unsure whether you are covered by a promulgated effluent guideline, check with ADEQ. You must check "yes" if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated effluent guideline has been remanded by a court for reconsideration and does not apply to your operations, you may check "no."

Part III.B

An effluent guideline is expressed in terms of production (or other measure of operation) if the limitation is expressed as mass of pollutant per operational parameter; for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

Part III.C

This part must be completed only if you checked "YES" to Part III.B. The production information requested here is necessary to apply effluent guidelines to your facility and you cannot claim it as confidential. However, you do not have to indicate how the reported information was calculated. Report quantities in the units of measurement used in the applicable effluent guideline. The production figures provided must be based on actual daily production and not on design capacity or on predictions for future operations. To obtain alternate limits under 40 CFR 122.45(b)(2)(ii), you must define your maximum production capability and demonstrate to ADEQ that your actual production is substantially below maximum production

capability and there is a reasonable potential for an increase above actual production during the duration of the permit.

Item IV. Improvements

Part IV.A

If you check "yes" to this question, complete all parts of the chart or attach a copy of any previous submission you have made to EPA/ADEQ containing the same information.

Part IV.B

You are not required to submit a description of future pollution control projects if you do not wish to or if none are planned.

Item V. Intake and Effluent Characteristics (ADDENDUM)

Parts V.A, V.B, V.C, V.D, and V.E

Item V requires you to collect and report data on the pollutants discharged or expected to be discharged for each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

General Instructions

If you are required to submit quantitative data, you must report at least one analysis for each pollutant listed. You may be required to report analytical data in two ways. For some pollutants, you must mark "X" in the "TESTING REQUIRED" column and test (sample and analyze) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all others, you must mark "X" in either the "BELIEVE PRESENT" column or the "BELIEVE ABSENT" column based on your best estimate and test for those which you believe to be present. Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts and any previous analyses known to you of your effluent or similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated stormwater runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "BELIEVE PRESENT" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "INTAKE" column.

A. Reporting: All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out the ADDENDUM if the separate sheets contain all the required information in a format which is consistent with the ADDENDUM in spacing and in identification of pollutants and columns. (For example, the data system used in your GC/MS analysis may be able to print data in the proper format.) Use the following abbreviations in the columns headed "Units" (column 3, Parts A and D, and in column 4, Parts B and C).

Concentration

ppm . . parts per million
mg/l . . milligrams per liter
ppb . . .parts per billion
ug/l . . .micrograms per liter

Mass

lbs . . pounds
ton . . .tons (English tons)
mg . . . milligrams
ggrams
kgkilograms
Ttonnes (metric tons)

All reporting of values for metals must be in terms of "total recoverable metal," unless:

- (1) An applicable, promulgated effluent limitation or standard specifies the limitation for the metal in dissolved, valent or total form; or
- (2) All approved analytical methods for the metal inherently measure only its dissolved form (e.g., hexavalent chromium); or
- (3) ADEQ has determined that in establishing case-by-case limitations it is necessary to express the limitations on the metal in dissolved, valent or total form to carry out the provisions of the CWA.

If you measure only one daily value, complete with actual numbers only the "Maximum Daily Value" columns and insert "1" into the "NUMBER OF ANALYSES" column (columns 2.a and 2.d, Parts A and D, and column 3.a, 3.d, Parts B and C). ADEQ may require you to conduct additional analyses to further characterize your discharges. For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24-hour period. For grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24-hour period.

If you measure more than one daily value for a pollutant, you must report all measurements. You must describe your method of testing and data analysis as an attachment to this form. You also must determine the average of all values within the last year and report the concentration and mass under the "LONG TERM AVG. VALUE" columns (column 2.c, Parts A and D, and column 3.c Parts B and C) and the total number of daily values under the "NUMBER OF ANALYSES" columns (column 2.d, Parts A and D, and columns 3.d, Parts B and C). Also, determine the average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30-day Values" columns (column 2.b, Parts A and D, and column 3.b, Parts B and C).

B. Sampling: The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact ADEQ for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods must be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample must be representative of your normal operations, to the extent feasible, with all processes which contribute wastewater in normal operation and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

For pH, temperature, cyanide, total phenols, residual chlorine, oil and grease and fecal coliform, grab samples must be used. For all other pollutants 24-hour composite samples must be used. However, a minimum of one grab sample may be taken for effluent from holding ponds or other impoundments with a retention period of greater than 24 hours. For stormwater discharges, a minimum of one to four grab samples may be taken, depending on the duration of the discharge. One grab must be taken in the first hour (*or less*) of discharge, with one additional grab (*up to minimum of four*) taken in each succeeding hour of discharge for discharges lasting four or more hours. ADEQ may waive composite sampling for any outfall for which you demonstrate that use of an automatic sample is infeasible and that a minimum of four grab samples will be representative of your discharge.

"Grab or discrete" and "composite" samples are defined as follows:

Grab or discrete sample: An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

Composite sample: Is a sample derived from two (2) or more discrete samples (aliquots) collected at

equal time intervals and preferably proportional to the flow rate over a 24-hour compositing period (e.g., a 24-hour composite sample may be taken as three discrete samples each collected eight hours apart, four discrete samples each collected six hours apart, or eight discrete samples each collected three hours apart). Discrete samples may be collected manually or automatically. For GC/MS Volatile Organic Analysis (VOA), discrete samples must be combined in the laboratory immediately before analysis. Four (4) discrete samples should be collected for VOA.

Data from samples taken more than one (1) year ago may be used, provided that:

- ! All data requirements are met;
- ! Sampling was done no more than three years before submission; and
- ! All data are representative of the present discharge. [*Among the factors which would cause the data to be unrepresentative are significant changes in production level, changes in raw materials, processes or final products and changes in wastewater treatment. ADEQ may request additional information, including current quantitative data, if ADEQ determines it to be necessary to assess your discharges.*]

C. Analysis: You must use test methods, other than Hach Methods, promulgated in 9 A.A.C. 14, Article 6 for wastewater. The number or title of the analytical method and method-specific MDL or method-specific ML, and any applicable data qualifiers using Arizona Data Qualifiers Revision 1(03/15/2002) must be reported. If no wastewater test method has been promulgated for a particular pollutant, you may use any suitable method, other than a Hach method, in Article 6 for measuring the level of that pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description must include the sample holding time, preservation techniques, method-specific MDL or method-specific ML, any applicable data qualifiers, and the quality control measures which you used. All samples shall be analyzed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. If you have two or more substantially identical outfalls, you may request permission from ADEQ to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by ADEQ, identify which outfall you did test and on a separate sheet attached to the application form, describe why the outfall(s) which you did not test is/are substantially identical to the outfall which you did test.

D. Reporting of Intake Data: You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. AZPDES regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the "intake" columns report the average of the results of analyses on your intake water (*if your water is treated before use, test the water after it is treated*) and discuss the requirements for a net limitation with ADEQ.

Part V.A. (BOD₅, COD, TOC, TSS, Ammonia, Flow, Temperature, and pH)

All applicants must report quantitative data for all outfalls, including outfalls containing only non-contact cooling water or storm runoff. See discussion in General Instructions to Item V for definitions of the columns in Part A. Use composite samples for BOD₅, COD, TOC, TSS, and Ammonia, and discrete samples for pH and temperature.

Part V.B. (27 Conventional and Non-conventional Pollutants)

Part V.B must be completed by all applicants for all outfalls, including outfalls containing only non-contact cooling water or storm runoff. You must check *column 2-a* for any of the 27 pollutants if you know or have reason to believe that the pollutant is discharged or expected to be discharged from each outfall. Similarly, you must check *column 2-b* for any of the 27 pollutants if you know or have reason to believe that the pollutant is not discharged or is not expected to be discharged from each outfall. Furthermore, you must

report quantitative data if the pollutant(s) in question is (are) limited in an effluent limitation guideline either directly or indirectly but expressly through limitation on an indicator (e.g. *use of TSS as an indicator to control the discharge of iron and aluminum*). If the pollutant(s) in question is (are) not limited in an effluent limitation guideline, provide quantitative data or explain the reasons why the pollutant(s) in question is (are) discharged or is (are) expected to be discharged from each outfall.

Part V.C

Table 2C-2 lists the 34 “primary” industry categories in the left hand column.

Part V.C.1. (15 Toxic Metals, Cyanide and Total Phenols)

If you have any processes in one or more of the 34 primary industry categories contributing to a discharge, you must mark “X” in “TESTING REQUIRED” column (*column 2-a*) and report quantitative data for the 15 toxic metals, cyanide and phenols in each outfall containing wastewater.

If you do not have processes in one or more of the 34 primary industry categories contributing to a discharge, you must check “BELIEVE PRESENT” column (*column 2-b*) for any of the 15 pollutants if you know or have reason to believe that the pollutant is discharged or is expected to be discharged from each outfall. Furthermore, you must report quantitative data for every pollutant checked in *column 2-b* which is discharged or is expected to be discharged in concentrations of 10 ug/l or greater. If any of the 15 pollutants checked in *column 2-b* is discharged or is expected to be discharged in concentrations of less than 10 ug/l, you must either report quantitative data or briefly describe the reasons why the pollutant is discharged or is expected to be discharged from each outfall. On the other hand, you must check “BELIEVE ABSENT” column (*column 2-c*) for any of the 15 pollutants if you know or have reason to believe that the pollutant is not discharged or is not expected to be discharged from each outfall. In that case you will not be required to submit quantitative data for that pollutant unless specifically requested by ADEQ. The inclusion of total phenols in Part V.C.1. is not intended to classify total phenols as a toxic pollutant.

Part V.C.2. (2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin or TCDD)

You are required to mark “X” in “TESTING REQUIRED” column (*column 2-a*) for dioxin (TCDD) if you use or manufacture one the following compounds:

- ! 2, 4, 5-trichlorophenoxy acetic acid, (2, 4, 5-T);
- ! 2-(2, 4, 5-trichlorophenoxy) propanoic acid (Silvex, 2, 4, 5 TP);
- ! 2-(2, 4, 5-trichlorophenoxy) ethyl 2,2-dichloropropionate, (Erbon);
- ! 0, 0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate, (Ronnel);
- ! 2, 4, 5-trichlorophenol, (TCP); or
- ! hexachlorophene, (HCP).

For each outfall, if you know or have reason to believe that dioxin is discharged or is expected to be discharged, you must check “BELIEVE PRESENT” column (*column 2-b*). If you know or have reason to believe that dioxin is not discharged or is not expected to be discharged, you must check “BELIEVE ABSENT” column (*column 2-c*). If you mark “TESTING REQUIRED” or “BELIEVE PRESENT” column, you must perform a screening analysis for dioxins, using gas chromatography with an electron capture detector. A TCDD standard for quantitation is not required. Describe the results of this analysis in the space provided; for example, “no measurable baseline deflection at the retention time of TCDD” or a “measurable peak within the tolerances of the retention time of TCDD.” ADEQ may require you to perform a quantitative analysis if you report a positive result.

Part V.C.3. (110 GC/MS Fraction-Volatile Compounds, Acid Compounds, Base/Neutral Compounds, and Pesticides)

The organic toxic pollutants are listed in GC/MS fractions on pages in Part V.C.3. of "ADDENDUM" to Form 2C. Again, Table 2C-2 lists the 34 "primary" industry categories in the left hand column. For example, the Organic Chemicals Industry has an asterisk in all four fractions; therefore, applicants in this category must test for all organic toxic pollutants in Part V.C. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category (*for example, for deciding whether an effluent guideline is applicable*) before your permit is issued.

If you have processes in one or more of the 34 primary industry categories contributing to a discharge, you must mark "X" in "TESTING REQUIRED" column (*column 2-a*) and report quantitative data for organic toxic pollutants in fractions designated in Table 2C-2 unless your business qualifies as a small business. If you qualify as a small business, you are exempt from testing for the organic toxic pollutants.

If you do not have processes in one or more of the 34 primary industry categories contributing to a discharge, you must check "BELIEVE PRESENT" column (*column 2-b*) for any of the 110 organic toxic pollutants for each outfall if you know or have reason to believe that the pollutant is discharged or is expected to be discharged. Furthermore, you must report quantitative data for every pollutant (except for acrolein, acrylonitrile, 2,4-dinitrophenol, and 2-methyl-4,6 dinitrophenol) checked in *column 2-b* which is discharged or is expected to be discharged in concentrations of 10 ug/l or greater. You must report quantitative data for acrolein, acrylonitrile, 2,4-dinitrophenol, and 2-methyl-4,6 dinitrophenol if any of them is discharged or is expected to be discharged in concentrations of 100 ug/l or greater. If any of the pollutants (except for acrolein, acrylonitrile, 2,4-dinitrophenol, and 2-methyl-4,6 dinitrophenol) checked in *column 2-b* is discharged or is expected to be discharged in concentrations of less than 10 ug/l or in the case of acrolein, acrylonitrile, 2,4-dinitrophenol, and 2-methyl-4,6 dinitrophenol, in concentrations of less than 100 ug/l, you must either report quantitative data or briefly describe the reasons why the pollutant is discharged or is expected to be discharged from each outfall. On the other hand, you must check "BELIEVE ABSENT" column (*column 2-c*) for any of the pollutants if you know or have reason to believe that the pollutant is not discharged or is not expected to be discharged from each outfall. In that case you are not required to submit quantitative data for that pollutant unless specifically requested by ADEQ.

Small Business Exemption: If you qualify as a "small business," you are exempt from the reporting requirements for the organic toxic pollutants, listed in Part V.C.3. of the ADDENDUM. There are two ways in which you can qualify as a "small business." If your facility is a coal mine and your probable total annual production is less than 100,000 tons per year, you may submit past production data or estimated future production (*such as a schedule of estimated total production under 30 CFR § 795.14(c)*) instead of conducting analyses for the organic toxic pollutants. If your facility is not a coal mine and if your gross total annual sales for the most recent three years average less than \$100,000 per year (*in second quarter 1980 dollars*), you may submit sales data for those years instead of conducting analyses for the organic toxic pollutants. The production or sales data must be for the facility which is the source of the discharge. The data should not be limited to production or sales for the process or processes which contribute to the discharge, unless those are the only processes at your facility. For sales data, in situations involving intracorporate transfer of goods and services, the transfer price per unit should approximate market prices for those goods and services as closely as possible. Sales figures for years after 1980 should be indexed to the second quarter of 1980 by using the gross national product price deflator (*second quarter of 1980=100*). This index is available in National Income and Product Accounts of the United States (*Department of Commerce, Bureau of Economic Analysis*).

Part V.D. (State Surface Water Quality Standards)

You must report quantitative data for any of the State of Arizona surface water quality standards applicable to the receiving water (see A.A.C. R18-11-109, Appendix A and Appendix B) not covered in Item V, Parts A,

B, C, and E of Form 2C if you know or have reason to believe that the pollutant(s) is (are) discharged or is (are) expected to be discharged from each outfall. See discussion in General Instructions to Item V for definitions of the columns in Part D.

Part V.E. (80 Toxic Pollutants and Hazardous Substances)

For each outfall, you must list any of the 80 pollutants in Table 2C-3 that you know or have reason to believe is discharged or is expected to be discharged. You must also explain why the pollutant is discharged or is expected to be discharged from each outfall. You are not required to submit analysis to ADEQ unless specifically requested, but if you have analytical data, you must report it.

Note: Under 40 CFR 117.12(a)(2), certain discharges of hazardous substances (*listed in Table 2C-4 of these instructions*) may be exempted from the requirements of section 311 of CWA, which establishes reporting requirements, civil penalties and liability for cleanup costs for spills of oil and hazardous substances. A discharge of a particular substance may be exempted if the origin, source and amount of the discharged substances are identified in the AZPDES permit application or in the permit, if the permit contains a requirement for treatment of the discharge and if the treatment is in place. To apply for an exclusion of the discharge of any hazardous substance from the requirements of section 311, attach additional sheets of paper to your form, setting forth the following information:

1. The substance and the amount of each substance which may be discharged;
2. The origin and source of the discharge of the substance;
3. The treatment which is to be provided for the discharge by:
 - a. An on-site treatment system separate from any treatment system treating your normal discharge;
 - b. A treatment system designed to treat your normal discharge and which is additionally capable of treating the amount of the substance identified under paragraph 1 above; or
 - c. Any combination of the above.

See 40 CFR 117.12(a)(2) and (c), published on August 29, 1979 in 44 FR 50766 or contact ADEQ for further information on exclusions from section 311.

Item VI . Potential Discharge Not Covered by Analysis

This requirement applies to current use or manufacture of a toxic pollutant as an intermediate or final product or by-product. ADEQ may waive or modify the requirement if you demonstrate that it would be unduly burdensome to identify each toxic pollutant and ADEQ has adequate information to issue your permit. You may not claim this information as confidential, however, you do not have to distinguish between use or production of the pollutants or list the amounts.

Item VII. Biological Toxicity Testing Data

Self explanatory. ADEQ may ask you to provide additional details after your application is received.

Item VIII. Contract Analysis Information

Self-explanatory. If any of the analyses reported in Item V were performed by a contract laboratory or consulting firm, list the name, address and telephone number of and pollutants analyzed by, each such laboratory or firm in the space provided.

Item IX. Certification

All permit applications must be signed and certified as provided by 40 CFR Part 122.22(d) incorporated by

reference under A.A.C. R18-9-A905(A)(1)(c). *The signature must be of a qualified person as indicated below and the application can not be signed by a consultant who prepares it.*

An application submitted by a *municipality, State, Federal or other public agency* **must be signed by either a principal executive officer or ranking elected official**. A principal executive officer of a Federal agency includes: (1) The chief executive officer of the agency or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

An application submitted by a corporation **must be signed by a responsible corporate officer**. A responsible corporate officer means:

1. A president, secretary, treasurer or vice president in charge of a principal business function or any other person who performs similar policy or decision making functions; or
2. The manager of manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25million (in second quarter 1980 dollars), if the authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

An application submitted by a partnership or sole proprietorship **must be signed by a general partner or the proprietor**, respectively. Federal and state statutes provide for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the CWA provides that, "any person who knowingly makes any false statement, representation or certification in any application . . . shall upon conviction, be punished by a fine of no more than \$10,000 or by imprisonment for not more than six months or both."

A.R.S. § 49-262 (C) provides that any person who violates any provision of a rule adopted pursuant to A.R.S. Article 3.1 of Title 49, Chapter 2, Water Quality Control is subject to a civil penalty of up to \$25,000 per day per violation.

TABLE 2C-1. CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES

1-A Ammonia Stripping	1-G Flocculation
1-B Dialysis	1-H Flotation
1-C Diatomaceous Earth Filtration	1-I Foam Fractionation
1-D Distillation	1-J Freezing
1-E Electrodialysis	1-K Gas-Phase Separation
1-F Evaporation	1-L Grinding (Comminutors)
1-M Grit Removal	1-S Reverse Osmosis (Hyperfiltration)
1-N Microstraining	1-T Screening
1-O Mixing	1-U Sedimentation (Settling)
1-P Moving Bed Filters	1-V Slow Sand Filtration
1-Q Multimedia Filtration	1-W Solvent Extraction
1-R Rapid Sand Filtration	1-X Sorption

CHEMICAL TREATMENT PROCESSES

2-A Carbon Adsorption	2-G Disinfection (Ozone)
2-B Chemical Oxidation	2-H Disinfection (Other)
2-C Chemical Precipitation	2-I Electrochemical Treatment
2-D Coagulation	2-J Ion Exchange
2-E Dechlorination	2-K Neutralization
2-F Disinfection (Chlorine)	2-L Reduction

BIOLOGICAL TREATMENT PROCESSES

3-A Activated Sludge	3-E Pre-Aeration
3-B Aerated Lagoons	3-F Spray Irrigation/Land Application
3-C Anaerobic Treatment	3-G Stabilization Ponds
3-D Nitrification-Denitrification	3-H Trickling Filtration

OTHER PROCESSES

4-A Discharge to Surface Water	4-C Reuse/Recycle of Treated Effluent
4-B Ocean Discharge Through Outfall	4-D Underground Injection

SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A Aerobic Digestion	5-M Heat Drying
5-B Anaerobic Digestion	5-N Heat Treatment
5-C Belt Filtration	5-O Incineration
5-D Centrifugation	5-P Land Application
5-E Chemical Conditioning	5-Q Landfill
5-F Chlorine Treatment	5-R Pressure Filtration
5-G Composting	5-S Pyrolysis
5-H Drying Beds	5-T Sludge Lagoons
5-I Elutriation	5-U Vacuum Filtration
5-J Flotation Thickening	5-V Vibration
5-K Freezing	5-W Wet Oxidation
5-L Gravity Thickening	

TABLE 2C-2. TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY *

PRIMARY INDUSTRY CATEGORY	GC/MS FRACTION ¹			
	Volatile	Acid	Base/Neutral	Pesticide
1. Adhesives and sealants	x	x	x	-
2. Aluminum forming	x	x	x	-
3. Auto and other laundries	x	x	x	x
4. Battery manufacturing	x	-	x	-
5. Coal mining	x	x	x	x
6. Coil coating	x	x	x	-
7. Copper forming	x	x	x	-
8. Electric and electronic compounds	x	x	x	x
9. Electroplating	x	x	x	-
10. Explosives manufacturing	-	x	x	-
11. Foundries	x	x	x	-
12. Gum and wood chemicals	x	x	x	x
13. Inorganic chemicals manufacturing	x	x	x	-
14. Iron and steel manufacturing	x	x	x	-
15. Leather tanning and finishing	x	x	x	x
16. Mechanical products manufacturing	x	x	x	-
17. Nonferrous metals manufacturing	x	x	x	x
18. Ore mining	x	x	x	x
19. Organic chemicals manufacturing	x	x	x	x
20. Paint and ink formulation	x	x	x	x
21. Pesticides	x	x	x	x
22. Petroleum refining	x	x	x	x
23. Pharmaceutical preparations	x	x	x	-
24. Photographic equipment and supplies	x	x	x	x
25. Plastic and synthetic materials manufacturing	x	x	x	x
26. Plastic processing	x	-	-	-
27. Porcelain enameling	x	-	x	x
28. Printing and publishing	x	x	x	x
29. Pulp and paperboard mills	x	x	x	x
30. Rubber processing	x	x	x	-
31. Soap and detergent manufacturing	x	x	x	-
32. Steam electric power plants	x	x	x	-
33. Textile mills	x	x	x	x
34. Timber products processing	x	x	x	x

* See note at conclusion of 40 CFR 122, Appendix D (1983) for explanation of effect of suspensions on testing requirements for primary industry categories

¹ The pollutants in each fraction are listed in V-C; 'x' means testing required; '-' means testing not required.

TABLE 2C-3. TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT

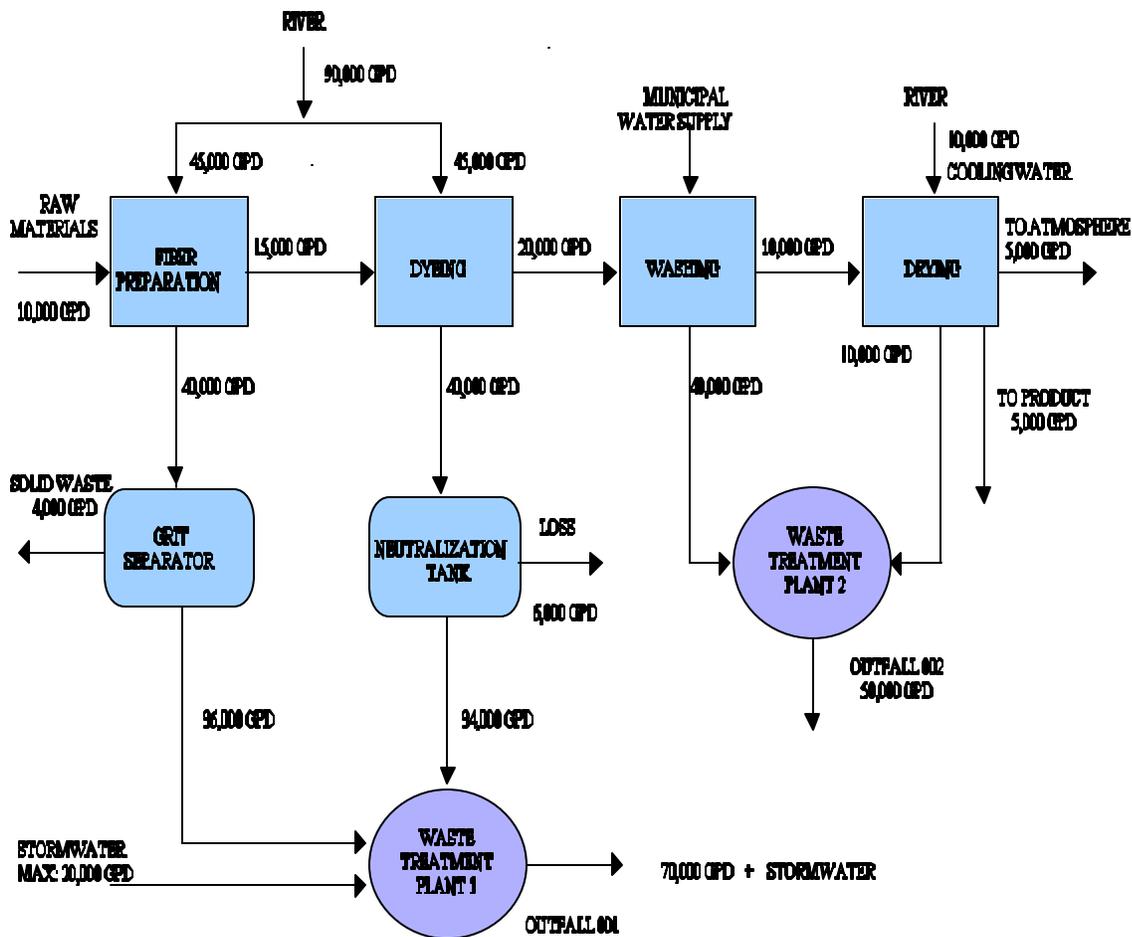
TOXIC POLLUTANT	
Asbestos	Isoprene
	Isopropanolamine
	Kelthane
HAZARDOUS SUBSTANCES	Kepone
Acetaldehyde	Malathion
Allyl alcohol	Mercaptodimethur
Allyl chloride	Methoxychlor
Amyl acetate	Methyl mercaptan
Aniline	Methyl methacrylate
Benzonitrile	Methyl parathion
Benzyl chloride	Mevinphos
Butyl acetate	Mexacarbate
Butylamine	Monoethyl amine
Captan	Monomethyl amine
Carbaryl	Naled
Carbofuran	Napthenic acid
Carbon disulfide	Nitrotoluene
Chloropyrifos	Parathion
Coumaphos	Phenolsulfonate
Cresol	Phosgene
Crotonaldehyde	Propargite
Cyclohexane	Propylene oxide
2,4-D (2,4-Dichlorophenoxyacetic acid)	Pyrethrins
Diazinon	Quinoline
Dicamba	Resorcinol
Dichlobenil	Strontium
Dichlone	Strychnine
2,2-Dichloropropoionic acid	Styrene
Dichlorvos	2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
Diethyl amine	TDE (Tetrachlorodiphenyl ethane)
Dimethyl amine	2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Dinitrobenzene	Trichlorofon
Diquat	Triethanolamine
Disulfoton	Triethylamine
Diuron	Trimethylamine
Epichlorohydrin	Uranium
Ethion	Vanadium
Ethylene diamine	Vinyl acetate
Ethylene dibromide	Xylene
Formaldehyde	Xylenol
Furfural	Zirconium
Guthion	

TABLE 2C-4. HAZARDOUS SUBSTANCES

1. Acetaldehyde	60. n-Butylphthalate	116. Dichlorvos
2. Acetic acid	61. Butylamine	117. Dieldrin
3. Acetic anhydride	62. Butyric acid	118. Diethylamine
4. Acetone cyanohydrin	63. Cadmium acetate	119. Dimethylamine
5. Acetyl bromide	64. Cadmium bromide	120. Dinitrobenzene
6. Acetyl chloride	65. Cadmium chloride	121. Dinitrophenol
7. Acrolein	66. Calcium arsenate	122. Dinitrotoluene
8. Acrylonitrile	67. Calcium arsenite	123. Diquat
9. Adipic acid	68. Calcium carbide	124. Disulfoton
10. Aldrin	69. Calcium chromate	125. Diuron
11. Allyl alcohol	70. Calcium cyanide	126. Dodecylbenzenesulfonic acid
12. Allyl chloride	71. Calcium dodecylbenzene- sulfonate	127. Endosulfan
13. Aluminum sulfate	72. Calcium hypochlorite	128. Endrin
14. Ammonia	73. Captan	129. Epichlorohydrin
15. Ammonium acetate	74. Carbaryl	130. Ethion
16. Ammonium benzoate	75. Carbofuran	131. Ethylbenzene
17. Ammonium bicarbonate	76. Carbon disulfide	132. Ethylenediamine
18. Ammonium bichromate	77. Carbon tetrachloride	133. Ethylene dibromide
19. Ammonium bifluoride	78. Chlordane	134. Ethylene dichloride
20. Ammonium bisulfite	79. Chlorine	135. Ethylene diaminetetracetic acid (EDTA)
21. Ammonium carbamate	80. Chlorobenzene	136. Ferric ammonium citrate
22. Ammonium carbonate	81. Chloroform	137. Ferric ammonium oxalate
23. Ammonium chloride	82. Chloropyrifos	138. Ferric chloride
24. Ammonium chromate	83. Chlorosulfonic acid	139. Ferric fluoride
25. Ammonium citrate	84. Chromic acetate	140. Ferric nitrate
26. Ammonium fluoroborate	85. Chromic acid	141. Ferric sulfate
27. Ammonium fluoride	86. Chromic sulfate	142. Ferrous ammonium sulfate
28. Ammonium hydroxide	87. Chromous chloride	143. Ferrous chloride
29. Ammonium oxalate	88. Cobaltous bromide	144. Ferrous sulfate
30. Ammonium silicofluoride	89. Cobaltous formate	145. Formaldehyde
31. Ammonium sulfamate	90. Colbatous sulfamate	146. Formic acid
32. Ammonium sulfide	91. Coumaphos	147. Fumaric acid
33. Ammonium sulfite	92. Cresol	148. Furfural
34. Ammonium tartrate	93. Crotonaldehyde	149. Guthion
35. Ammonium thiocyanate	94. Cupric acetate	150. Heptachlor
36. Ammonium thiosulfate	95. Cupric acetoarsenite	151. Hexachlorocyclopentadiene
37. Amyl acetate	96. Cupric chloride	152. Hydrochloric acid
38. Aniline	97. Cupric nitrate	153. Hyrdofluoric acid
39. Antimony pentachloride	98. Cupric oxalate	154. Hydrogen cyanide
40. Antimony potassium tartrate	99. Cupric sulfate	155. Hydrogen sulfide
41. Antimony tribromide	100. Cupric sulfate ammoniated	156. Isoprene
42. Antimony trichloride	101. Cupric tartrate	157. Isopropanolamine dodecylbenzene-sulfonate
43. Antimony trifluoride	102. Cyanogen chloride	158. Kelthane
44. Antimony trioxide	103. Cyclohexane	159. Kepone
45. Arsenic disulfide	104. 2,4-D acid (2,4-Dichlorophenoxy-acetic acid)	160. Lead acetate
46. Arsenic pentoxide	105. 2,4-D esters (2,4-Dichlorophenoxy-acetic acid esters)	161. Lead arsenate
47. Arsenic trichloride	106. DDT	162. Lead chloride
48. Arsenic trioxide	107. Diazinon	163. Lead fluoborate
49. Arsenic trisulfide	108. Dicamba	164. Lead flourite
50. Barium cyanide	109. Dichlobenil	165. Lead iodide
51. Benzene	110. Dichlone	166. Lead nitrate
52. Benzoic acid	111. Dichlorobenzene	167. Lead stearate
53. Benzointrile	112. Dichloropropane	168. Lead sulfate
54. Benzoyl chloride	113. Dichloropropene	169. Lead sulfide
55. Benzyl chloride	114. Dichloropropene-dichloropropene mix	170. Lead thiocyanate
56. Beryllium chloride	115. 2,2-Dichloropropionic acid	171. Lindane
57. Beryllium fluoride		172. Lithium chromate
58. Beryllium nitrate		
59. Butylacetate		

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|--------------------------------------|--|--|
| 173. Malathion | 218. Potassium cyanide | 257. 2,4,5-TP acid (2,4,5-Trichlorophenoxy propanoic acid) |
| 174. Maleic acid | 219. Potassium hydroxide | 258. 2,4,5-TP acid esters (2,4,5-Trichlorophenoxy propanoic acid esters) |
| 175. Maleic anhydride | 220. Potassium permanganate | 259. TDE (Tetrachlorodiphenyl ethane) |
| 176. Mercaptodimethur | 221. Propargite | 260. Tetraethyl lead |
| 177. Mercuric cyanide | 222. Propionic acid | 261. Tetraethyl pyrophosphate |
| 178. Mercuric nitrate | 223. Propionic anhydride | 262. Thallium sulfate |
| 179. Mercuric sulfate | 224. Propylene oxide | 263. Toluene |
| 180. Mercuric thiocyanate | 225. Pyrethrins | 264. Toxaphene |
| 181. Mercurous nitrate | 226. Quinoline | 265. Trichlorofon |
| 182. Methoxychlor | 227. Resorcinol | 266. Trichloroethylene |
| 183. Methyl mercaptan | 228. Selenium oxide | 267. Trichlorophenol |
| 184. Methyl methacrylate | 229. Silver nitrate | 268. Triethanolamine dodecylbenzenesulfonate |
| 185. Methyl parathion | 230. Sodium | 269. Triethylamine |
| 186. Mevinphos | 231. Sodium arsenate | 270. Trimethylamine |
| 187. Mexacarbate | 232. Sodium arsenite | 271. Uranyl acetate |
| 188. Monoethylamine | 233. Sodium bichromate | 272. Uranyl nitrate |
| 189. Monomethylamine | 234. Sodium bifluoride | 273. Vanadium pentoxide |
| 190. Naled | 235. Sodium bisulfite | 274. Vanadyl sulfate |
| 191. Naphthalene | 236. Sodium chromate | 275. Vinyl acetate |
| 192. Napthenic acid | 237. Sodium cyanide | 276. Vinylidene chloride |
| 193. Nickel ammonium sulfate | 238. Sodium dodecylbenzenesulfonate | 277. Xylene |
| 194. Nickel chloride | 239. Sodium fluoride | 278. Xylenol |
| 195. Nickel hydroxide | 240. Sodium hydrosulfide | 279. Zinc acetate |
| 196. Nickel nitrate | 241. Sodium hydroxide | 280. Zinc ammonium chloride |
| 197. Nickel sulfate | 242. Sodium hypochlorite | 281. Zinc borate |
| 198. Nitric acid | 243. Sodium methylate | 282. Zinc bromide |
| 199. Nitrobenzene | 244. Sodium nitrite | 283. Zinc carbonate |
| 200. Nitrogen dioxide | 245. Sodium phosphate (dibasic) | 284. Zinc chloride |
| 201. Nitrophenol | 246. Sodium phosphate (tribasic) | 285. Zinc cyanide |
| 202. Nitrotoluene | 247. Sodium selenite | 286. Zinc fluoride |
| 203. Paraformaldehyde | 248. Strontium chromate | 287. Zinc formate |
| 204. Parathion | 249. Strychnine | 288. Zinc hydrosulfite |
| 205. Pentachlorophenol | 250. Styrene | 289. Zinc nitrate |
| 206. Phenol | 251. Sulfuric acid | 290. Zinc phenolsulfonate |
| 207. Phosgene | 252. Sulfur monochloride | 291. Zinc phosphide |
| 208. Phosphoric acid | 253. 2,4,5-T acid (2,4,5-Trichlorophenoxyacetic acid) | 292. Zinc silicofluoride |
| 209. Phosphorus | 254. 2,4,5-T amines (2,4,5-Trichlorophenoxyacetic acid amines) | 293. Zinc sulfate |
| 210. Phosphorus oxychloride | 255. 2,4,5-T esters (2,4,5-Trichlorophenoxyacetic acid esters) | 294. Zirconium nitrate |
| 211. Phosphorus pentasulfide | 256. 2,4,5-T salts (2,4,5-Trichlorophenoxyacetic acid salts) | 295. Zirconium potassium fluoride |
| 212. Phosphorus trichloride | | 296. Zirconium sulfate |
| 213. Polychlorinated biphenyls (PCB) | | 297. Zirconium tetrachloride |
| 214. Potassium arsenate | | |
| 215. Potassium arsenite | | |
| 216. Potassium bichromate | | |
| 217. Potassium chromate | | |

Figure 2C-1-Line Drawing



**SCHEMATIC OF WATER FLOW
 NODES**
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