

**Wisconsin Pollutant Discharge Elimination System (WPDES)  
Industrial Wastewater Discharge Individual Permit Application  
Instructions for *Form 3400-178*  
Revised October 2015**

This document provides detailed instructions for completing an application for an industrial wastewater discharge individual permit using the Department of Natural Resources's on-line electronic system.

***Completion of this application is required pursuant to ss. 283.37 and 283.53, Stats., and ch. NR 200, Wis. Adm. Code. Failure to provide the requested information may result in fines, forfeitures or other penalties pursuant to ss. 283.89 and 283.91, Stats. Personally identifiable information is not likely to be used by the DNR for any purpose other than the reasons stated in the form or for the purpose the form is being submitted.***

You must use this form (or a DNR-approved modification to this form) to apply for an initial permit or a reissued permit for a discharge that the DNR determines requires an individual permit under ss. NR 200.03(1)(a), (b) and (c), Wis. Adm. Code.

- Initial permit - If you are applying for an initial permit, s. NR 200.04(3), Wis. Adm. Code, requires that you file a complete application with the DNR no later than 180 days prior to the date you intend to commence discharging.
- Reissued permit - If you have an existing permit and wish to continue to discharge after expiration of the permit, s. NR 200.06, Wis. Adm. Code, requires that you must file a complete application with the DNR no later than 180 days prior to the current permit expiration date.

### **Using the on-line system**

The application for a given permittee consists of a number of sections that may differ from another permittee's application, based on whether the facility is municipal or industrial and based on discharge type (surface water, land treatment, land application). If you have made changes to your facility since the last time the DNR reissued your permit and you did not inform the DNR of those changes, this application may not contain all of the correct sections. When you open the application for your facility, the correct discharge type(s) should appear in the menu bar at the left of the opening screen. If your facility has multiple outfalls for a discharge type, you can click on the + sign in front of the discharge type to view the individual outfalls for that discharge type. If the proper sections are not given, you need to notify the DNR. The best option is to use the "contact us" button to inform us of the changes. We will make the necessary changes and re-notify you when the application has been re-tailored to your facility.

You must answer every question in the sections that apply to your facility. If you try to submit the application with required fields missing or inappropriate information, an error message will alert you. You may then go back and supply the required information. These error messages are to help you avoid skipping questions or answering incorrectly. For many questions, any entry into a free-form text box will allow you to submit the application. Other questions require that answers be given in a specific format. The DNR may contact you for information that you did not supply the first time or for additional information that is not specifically requested in this application. Your application will not be considered complete until you supply this required information.

For some outfall types, effluent monitoring for a list of pollutants is required as part of the application. Please plan accordingly so results are available to submit with the application by

180 days before the current permit expiration date. Note, that some pollutants require multiple tests. Your application will not be considered complete until the DNR receives these data.

To begin, check to see if the Permittee and the Facility name shown at the top of the opening page are correct. If the facility name and permittee name are not correct, please use the “contact us” to report the error.

If the information is correct:

- Click on the various sections in the menu bar on the left one at a time and complete the information requested by checking boxes, clicking buttons or entering words and numbers.
- If you have questions about what information to supply for a certain question as you go about filing out the form, click on the **Instructions** button on the left menu bar to reveal these instructions for the section you are working on. Useful tip: After you bring up the instructions, you may print them. However, you should understand that when you do this, the complete instructions will print (about 40 pages).
- As with any computer application, we recommend that you save your work frequently by using the **save** button. At certain points in the process, you may be requested to save. Your work will automatically be saved upon exiting but we recommend using the save button before you exit a section. You may complete some parts of the application, log out of the system and come back at another time to finish.
- When entering information into the text boxes, please note that if you copy/paste any information with special characters (such as quotation marks, semi-colons, etc.) the special characters will cause an “Internal Error 500” message. To remedy this problem, you must manually re-type the special characters that have been pasted into the text box.
- You may print a section or multiple sections at any time by using the **print** button in the left menu bar. This will allow you to select what you want to print, open a PDF file and print pages using normal printing procedures you use for any other PDF document. To get back to the application program, close out of the Adobe Acrobat file and close the print window.
- When you believe a section is complete, click on the **validate** button in the left menu bar. If information is missing, a message will inform you what you need to do. Once all the required information for that section has been supplied, a red check mark will appear in the left menu bar next to the section. You may change your answer to a question in a validated section up until you **submit** your application. After you change an answer in a validated section, you must save and re-validate.
- When all sections are complete, as indicated by red check marks next to the sections, use the **submit** button to send your application to the DNR. When you click on the submit button, you will see a box that warns you that you believe the application is complete and accurate and that you will no longer be able to make changes. Clicking OK, will bring up a Certification Statement page. Print the Certification Statement, get signatures of the Submitter and the Authorized Representative and mail to the address listed. You may

now exit the Certification Statement page to view, print or save the final application as you submitted it.

This set of instructions is for industrial facilities and provides instructions for all possible outfall types that pertain to industrial facilities. The application for your facility will probably not require completion of all sections. So, certain parts of these instructions will not apply to your facility application.

## General Information

**Item 1. Permittee Name** – This field will be pre-populated with the facility's official or legal name to be shown on the permit. Do not use a colloquial name.

**Item 2. Facility Site Name, Address, MCD and County** – This field will likely be pre-populated with the facility's site name and physical location address. Do not use a PO Box number. If the facility lacks a street address and route number, provide alternative geographic information such as a highway or road with the distance and direction from the nearest city, or a quarter-quarter section, town and range description. Also, enter municipal civil division (city, village or township) and county.

**Item 3. Responsible Party** - Provide the official name of the responsible party and contact person and phone number. The *Responsible Party* is the person, firm, parent company, public organization, or any other entity that operates the facility. The responsible party is the legal entity that controls the facility's operation rather than the plant or site manager, or operator-in-charge.

**Item 4. Other Environmental Permits or Approvals** - If the facility's discharge of storm water, cooling water or any process wastewater is currently covered by a WPDES general permit, such as WPDES Permit No. WI-0044938, "Noncontact Cooling Water or Condensate and Boiler Water," provide the permit number and a brief description of the discharge covered by the general permit. If you have received or applied for coverage under any other federal, state or local environmental permit, provide identifying information and describe the activity covered by the permit.

**Item 5. Native American Lands** - Indicate whether or not any part of the facility, including the wastewater treatment system if present, is located on Native American lands. Indicate if the receiving stream for your facility, or the larger body of water that the receiving stream flows into, flows through Native American lands after it receives discharge from your facility. Indicate if sludge or biosolids generated by the facility are stored on, disposed on or land applied on Native American lands. If you answer yes to any of the questions, please give details.

**Item 6. Site Map** - In addition to a USGS topographic map, you may use a plat map or aerial photo. You may trace your map from a geological survey chart or other map that meets the application's specifications. If you do, identify the map or chart from which you traced your map and include on your map the names of nearby towns, water bodies and other prominent points. When filing your application using the electronic system you will need to mail a hard copy of the map with the Certification Statement page.

## Contact Information

**Item 1. Facility Contacts** - Please supply the name(s), address(es), phone number(s), fax number(s) and Email address(es) for one or more persons associated with the entity. If the information is pre-printed on the form, please check for accuracy and make changes and additions where appropriate.

Many of the contact types should be self-explanatory. However:

The *Authorized Representative* is someone who is authorized to sign all applications, reports or other information submitted to the DNR. This person may be; for a corporation, a responsible corporate officer including a president, secretary, treasurer, vice president or manager; and for a municipality, a ranking elected official; for a corporation or a municipality, another person authorized by one of those officers or officials and who has responsibility for the overall operation of the facility or activity regulated by the permit. This is the person to whom we will send information regarding the application, the draft permit and permit reissuance.

The *Discharge Monitoring Contact* is the person to whom blank Discharge Monitoring Reports (DMRs), which are used by the permittee to submit permit required effluent monitoring data, and Groundwater Monitoring Forms, which are used by the permittee to submit permit required groundwater monitoring data, will be sent.

## Description of Industrial Activity

**Item 1. Nature of Business** - Provide a brief description of services provided or products produced at the facility. Include information on production rates, raw materials and processes.

**Item 2. Change in Operations** - Examples of operational changes that could affect discharge quality and/or quantity include increasing production, producing a new product or changing the product or manufacturing process. Examples of treatment system modifications that could affect discharge quality are the addition or deletion of physical, chemical and biological treatment units including sludge treatment processes (for example, flocculation, sedimentation, biological oxidation (e.g., activated sludge), chlorination and dechlorination, filtration, carbon adsorption, heat treatment, etc.).

If changes have occurred or will occur, describe in the space provided the changes and indicate how the quantity and/or quality of the facility's discharge has been affected or is anticipated to be affected.

If you are applying for a first-time permit, click the NA button in 2a. and go on to part 2b.

**Item 3. Days of Operation** - Indicate the facility's normal periods of operating in hours per day, days per week and months per year.

**Item 4. Number of Employees** - Indicate the normal (average) and maximum number of people employed at the facility.

**Item 5. Sanitary Wastes** - Indicate how sanitary wastes, i.e., wastes and wastewaters from lavatories, washrooms, lunch/break room sinks, showers, etc., that are generated at the facility are disposed.

**Item 6. Water Supply** - Indicate the sources of the facility's water supply and provide the average (e.g., over a typical year) volume or flow rate of intake water from each source. Acceptable units are gallons per day and million gallons per day.

**Item 7. Surface Water Intake** – Indicate if you have a surface water intake. If yes, click on the “Add Surface Water Intake Details” button and answer the questions. Use the following formula to determine the “intake through-screen velocity” (question #13) and attach your calculations.

### Through-screen Velocity Determination

You need 3 pieces of information to establish a through-screen velocity:

\*Design flow rate (1 MGD = 1.547 cubic feet per second or cfs)

\*Wetted screen area (total screen face area minus portion above the water line; water line based on the low lake/river level)

\*Percent free area of screen (screen manufacturer should be able to provide this number)

To calculate a through-screen velocity, divide design flow rate (in cfs) by wetted screen area, then divide that result by % free area.

### Example

Design Flow = 150 MGD

3 traveling screens, each 17-feet wide

“Wetted” height (from plant records) = 10 feet

Screen specifications say 50% free area

$150 \text{ MGD} \times 1.547 = 232 \text{ cfs}$   
 $232 / (3 \times 17 \times 10) = 0.455 \text{ ft/sec (fps)} = \text{gross screen area}$   
 $0.455 / 0.455 = 0.9 \text{ fps} = \text{through-screen velocity}$

**Item 8. Flow Diagram** -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 storm water runoff. You may group similar operations in a single unit. The water balance should show average flows. Show all significant losses of water to products, atmosphere and discharge. Use actual measurements whenever available; otherwise use your best estimate. You will need to mail a hard copy of the drawing with the Certification Statement page.

**Item 9. Storm Water Management** - Storm water at industrial facilities may come into contact with a wide variety of pollutants including heavy metals, oil & grease, sediment, PCBs, de-icing salts, and more. The determination of whether or not an industrial facility must obtain a storm water discharge permit is based on the facility's Standard Industrial Classification (SIC) code and on the facility's potential to contaminate storm water. Chapter NR 216, Wis. Adm. Code, contains a list of industrial facilities that must obtain a storm water discharge permit. Other industrial facilities need a permit only if they have outdoor materials or operations that could contaminate storm water.

To help the DNR determine whether your facility has been or needs to be evaluated for coverage, select the appropriate button. If you don't know how to answer this question go to <http://dnr.wi.gov/topic/stormwater/>

## Surface Water Outfall Information

This section of the application must be completed for each surface water outfall excluding those that discharge only storm water runoff. If you have more than one such outfall, your application packet should contain a copy for each outfall identified with an outfall number.

**Item 1. Receiving Water** - The space should be populated with the name of the receiving water to which the outfall discharges or will discharge. If the correct receiving water is not shown, you may supply the information if you know it. You will not be able to input information into the space, however you may provide the information in the comments section of the application (last section).

**Item 2. Outfall Location** - Provide a brief description of the outfall location (for example, east bank of Wisconsin River one-quarter mile down stream of Second Street Bridge).

**Item 3. Wetlands** - Indicate whether or not the outfall discharges to a wetland. Contact the DNR contact identified in the cover letter that accompanied the application if you are unsure whether or not the receiving water is a wetland.

If this is a first-time permit application or if you are requesting increased (less restrictive) effluent limitations or you anticipate that the volume of your discharge will increase over the term of the reissued permit and your discharge will potentially impact a wetland directly or indirectly, you are required to provide additional information with the permit reissuance application pursuant to Wisconsin Administrative Code, Chapter NR 103, Water Quality Standards. You may request a document titled, "Chapter NR 103 Water Quality Standards for Wetlands Information Request".

You may obtain the document by clicking on the link provided. You will need to mail a hard copy of the completed document with the Certification Statement page.

**Item 4. Seasonal or Intermittent Discharges** – Specify how the discharge, with the exception of storm water runoff and spillage or leaks, varies with time of the year.

- A discharge is year round if it occurs daily, without interruption, during the operating hours of the facility.
- For intermittent discharges, describe the frequency of discharge and the duration and volume of each discharge.
- A discharge is seasonal if it occurs only during certain periods of the year. For seasonal discharges, provide the period from starting day and month to ending day and month during which wastewater is discharged.

**Item 5. Type of Wastewater Discharged** - Indicate the types and volumes of wastewater discharged from the outfall. Acceptable units for the average (i.e., annual average) flow are gallons per day (gpd) and million gallons per day (MGD). If water is first used for one purpose and then is subsequently used for another purpose, indicate the type and amount for the last use. The sum of all the flows provided in response to this item should equal the annual average flow for the outfall.

*"Noncontact Cooling Water"* means water used for cooling which does not come into contact with any raw material, intermediate or finished product, or waste product and has been used in heat exchangers, air or refrigeration compressors, or other cooling means where contamination with process waste, other than heat, is not normally expected.

*"Contact Cooling Water"* means water used for cooling which comes into contact with a raw material, intermediate or finished product, or waste product other than heat. Quench tank water and vegetable can cooling water are 2 examples of contact cooling water.

*"Sanitary Wastewater"* means wastes and wastewaters from lavatories, washrooms, lunch/break room sinks, showers, etc.

*"Process Wastewater"* Means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product, and is likely to contain in solution or suspension various components of such raw materials or products. Contact cooling water flow, while normally classified as a process wastewater, should not be included in the average flow of process wastewater provided in response to this item of the application.

*"Storm Water"* means water resulting from melting snow, rainfall or other precipitation.

*"Boiler Blowdown"* means water that is periodically or, in some cases, continuously purged from a boiler to prevent the buildup of materials in the boiler above the limits of best engineering practice.

*"Cooling Tower Blowdown"* means water that is periodically or, in some cases, continuously purged from a recirculating cooling system that uses an open tower to dissipate heat. Blowdown is discharged from the system to prevent the buildup of materials in the cooling water above the limits of best engineering practice.

"Other" types of wastewater might be any other wastewater type not previously listed, such as the discharge from drinking fountains and bubblers, landfill leachate, etc.

**Item 6. Discharge Flow Rates** - Provide the requested maximum discharge flow rates for the outfall and identify the date or dates that the maximum discharges occurred. You may use any discharge data that were collected during the term of the current permit if the data represent potential flow rates from current operations. Acceptable units for the flow rates are gallons per day (gpd) and million gallons per day (MGD).

**Item 7. Process Streams Contributing to the Outfall Discharge** – Describe and provide the Standard Industrial Classification (SIC) code for each production process that contributes process wastewaters to the discharge from the outfall. Briefly describe the production process and, if a technology-based (categorical) effluent standard is applicable to the production process, provide the production rate for the process. If you are unsure whether or not technology-based effluent standards are applicable to your facility, contact DNR. Use the “contacts us” button to request information.

**Item 8. Treatment System Description** - The description of the wastewater treatment system should include all physical, chemical and biological treatment units including sludge treatment units. Examples include but are not limited to flocculation, filtration, reverse osmosis, sedimentation, carbon adsorption, chemical precipitation, coagulation, dechlorination, disinfection (chlorination), ion exchange, neutralization, biological oxidation (e.g., activated sludge, aerated lagoons, etc.), aerobic and anaerobic digestion, belt or pressure filtration, heat treatment, etc.

**Item 9. Schematic Diagram of Treatment System** - Attach a schematic diagram of the wastewater treatment system showing all treatment units and processes that you identified in the previous item and any treatment system bypasses. Indicate the location of all sample points and outfalls that are specified in the permit and addition points of treatment chemicals and additives (for example, identify points of addition of pH adjustment chemicals, alum, polymers, nutrients such as ammonia and phosphorus, defoamers, chlorine and dechlorination chemicals, etc.). You will need to mail a hard copy of the schematic with the Certification Statement page.

**Item 10. Effluent Flow Monitoring and Sampling** - Identify the flow monitoring type as a "V" notch weir, Parshall flume, magnetic flow meter, etc. and provide its age and location (relative to other units). Identify the sampling type as 24-hr composite (flow proportional), composite (and specify number of hourly samples), grab, etc. Provide a brief description of locations of composite sampling devices and all locations where effluent grab samples are or will be taken.

**Item 11. Sludge Disposal** – Indicate if your wastewater treatment produces a sludge. If so, indicate the method of disposal.

**Item 12. Additives** - Report **the number** of biocides, water quality conditioners and certain process additives that you add to the waters that are discharged from this outfall. Rather than reporting the total number of additives used over a long period of time, report the maximum number of additives that may be used during any one day. Include those biocides that are used to treat intake waters, added as part of the production process and used to treat wastewaters. Include those water quality conditioners (excluding biocides) that are used to treat intake waters and wastewaters. Report the number of dyes and surfactant-based detergents used in production processes. Note whether any additives are used less frequently than once in any four-day period. If any additives are used, the Additives Grid must be completed.

**Item 13. Biological Toxicity Data** - Indicate whether or not acute or chronic toxicity tests were performed on the receiving water or the discharge from the outfall in the last 5 years. If tests were performed, provide test dates and types of tests (acute or chronic). For any test not previously reported to the DNR, mail a report with results to the address identified in the current permit to Kari Fleming, Department of Natural Resources, 101 South Webster Street, Box 7921, Madison WI 53707.

**Item 14. Phosphorus** - You may wish to consider the compliance options for phosphorus listed in parts a, b and c (“Alternative Technology Based Effluent Limit”, “Adaptive Management/Trading” and “Variance”). Review each option and check the ‘Yes’ box for any option that you have chosen. (Check the ‘No’ box for options not chosen.) Note that each option has a link that you can click to find the form that must be completed for that option. You will need to mail a hard copy of your request with the Certification Statement.

**Item 15. Chloride Variance** – A significant number of permittees, particularly those in hard-water areas of the State or industrial food processing facilities that use significant quantities of salt, may have discharge concentrations that approach or exceed 395 mg/L as a weekly average. Limits for facilities that discharge to streams that provide dilution of the effluent will likely be raised above the 395 mg/L limit that would apply to effluent dominated situations as more and more dilution is available. In recent rule-making the DNR has put in place a variance process that accounts for problems with meeting limits including that:

- the cost of end-of-pipe treatment may cause an adverse social and economic impact,
- some permittees cannot consistently meet necessary effluent levels for chloride without additional action (treatment or source reduction), and
- in many cases, source reduction measures are preferable to treatment options because the concentrated brine that results from treatment may more of a liability than the untreated effluent

If you believe that you may have trouble meeting limits for chloride discharge, you should fill out the chloride variance request worksheet. Based on the chloride data you submit with this application, the DNR will determine if there is reasonable potential that your facility will exceed water quality based effluent limits. If the DNR determination concludes that limits are not necessary in your permit, no limits will be imposed in your permit, although some additional monitoring could be required. If the determination is that your discharge may exceed limits, the DNR will contact you to discuss options for source reduction efforts.

You may obtain the proper form to apply for a chloride variance by clicking on the link provided. You will need to mail a hard copy of the completed form with the Certification Statement page.

**Item 16. Mercury Variance** – If your facility is considered by the DNR to be an industry that is likely to discharge quantities of mercury and you have collected at least 12 quantified mercury results that meet the data quality requirements necessary for low-level analyses, the DNR will determine if your permit needs to limit mercury discharge. Based on data collected, you may have an idea that the DNR’s determination will result in the need to impose effluent limitations. You may anticipate the DNR’s determination and request a variance to water quality standards based on the costs of meeting the extremely low effluent limitations that apply. For many facilities, the effluent limitation would be set equal to the water quality criterion of 1.3 ng/L. Or, if your water supply is comprised of intake water from the water body that receives your effluent, your limit may be equal to the concentration of the intake water.

If your previous permit did not require that you collect the necessary low-level data, there is no need for

you to apply for a mercury variance. The DNR may include in your permit the requirement to collect the low-level mercury data for evaluation at the time of your next reissuance application.

You may obtain the proper form to apply for a mercury variance (alternative mercury effluent limitation) by clicking on the link provided. You will need to mail a hard copy of the form with the Certification Statement page.

**Item 17. Temperature Alternative Effluent Limit (AEL)** – If your facility is subject to effluent temperature limits, you may submit an application for an alternative effluent limit per s. NR 106.72, Wis. Adm. Code. The application must demonstrate that your effluent temperature limits are more stringent than necessary to protect aquatic life and wildlife. You may obtain the proper form to apply for the temperature AEL by clicking on the link provided. You will need to mail a hard copy of the form with the Certification Statement.

**Item 18. Variance to a Water Quality Standard and/or Water Quality Trading** – Click on the links provided to learn more about variances and water quality trading.

**Item 19. Discharge Monitoring Report (DMR) Information** - When evaluating effluent quality, the DNR usually assumes that the information reported by the permittee on their Discharge Monitoring Reports (DMR), Forms 3200-28 or 3200-40, for the last 36 months is representative of the permittee's current discharge. Generally, if your current permit requires regular monitoring and reporting of any parameter, the application does not require additional testing.

If this is a first-time permit application for a facility that does not yet have a discharge to monitor, select the first button.

If you agree that the last 36 months of DMR information accurately represents the current discharge from your outfall, select the second button.

If you believe that a time period other than the last 36 months is representative of the current discharge, select the third button, specify the time period over which you believe DMR data are representative of the current discharge and provide the reasons for your belief. For example, a time period less than 36 months would be appropriate if 18 months ago a contributing industry added or modified a significant production process or a wastewater treatment process. If you believe certain DMR data points over the selected time period are not representative of the current discharge, identify the data points and provide the reasons for your belief.

**Item 20. Hazardous Substances** – You must evaluate each parameter listed in [Table 3](#), at the back of these instructions, to decide if you know or have reason to believe that the substance is present in the discharge from the outfall. Select the appropriate button and for any substances you think are present, provide the information requested. Enter the name of the parameter and:

- Provide any monitoring data that you may have for the parameter, except if you have already provided that data on any recent Discharge Monitoring Reports (DMR). If you have previously reported results for the substance on DMRs, place a check mark in the *DMR Reported* box.
- Place a check mark in the *Intake Only* box if you expect the parameter is present in the discharge solely as a result of its presence in your intake water.
- Explain why you believe the parameter is present in the discharge from the outfall.

**Note:** No analytical testing is required for Table 3 parameters.

## Required Effluent Monitoring (for surface water outfalls)

All industrial permittees discharging to surface waters and applying for a permit reissuance must monitor the physical, chemical and biological characteristics of each outfall. The monitoring that each permittee must perform is based on the category of discharger and also on individual circumstances. Results of monitoring must be reported on one or more monitoring grids. Generally if your current permit requires regular monitoring and reporting of any parameter the application does not require additional testing.

These instructions are provided to help you properly complete the required monitoring. To help avoid problems, you might want to forward a copy of these instructions and any information on effluent limitations that have been calculated for your facility (if you know them) to your laboratory. Generally, effluent limitations do not get calculated until after the DNR receives your application. However, you may have calculated limits for many of these substances from the last time your permit was reissued. Unless there have been changes in your facility, these limits will likely not have changed significantly since then. Exceptions are limits for phosphorus and temperature. Rules relating to water quality requirements for phosphorus and temperature became effective in 2010 per NR 106 and NR217, Wis. Adm. Code.

For any primary industry outfall, part 21. c. of the form will ask you to identify the industrial category, and the corresponding organic chemicals group that apply to that industry category, from a list in Table 4 at the end of these instructions. The answers you provide to that question will help determine which grids you are required to complete. Grids corresponding to the groups you did not check in part 21. c. will not be clickable.

There are conditions under which you are not required to provide results of monitoring. These conditions are shown on part 21. c. of the form (or part 21.d. for primary industry outfalls). You must either select the first button and provide monitoring for all substances in the grid or select the second button and indicate which one of the special conditions applies. Note that the fourth and fifth conditions still require that you submit information. The fourth condition allows you to submit the information late, after a seasonal discharge resumes. The fifth condition only exempts you from monitoring for one or more parameters on the standard list as directed by the application notification letter. The last condition allows you to fulfill the data submittal requirement by submitting hard copies of the lab reports, if directed by the application notification letter.

### What are my testing requirements?

You must complete one or more grids for each outfall that discharges effluent to surface waters. Specifically:

- **Outfalls Discharging Solely Non-contact Cooling Water**  
You must monitor each outfall containing exclusively non-contact cooling water (during dry weather flows) as follows:
  - Unless exempted by one of the conditions described in part c. of the Required Effluent Monitoring portion, you must provide test results for the parameters listed in the Common Pollutants Grid (for non-contact cooling water) of the application.
  - You must use the Additional Values Grid to report on any parameter not found in the monitoring grid but listed in [Tables 1](#) and [2](#) near the back of these instructions that you believe may be present in the discharge from the outfall at a concentration of 10 µg/L or greater. Note that you may also use the Additional Values Grid to report test results for any

- parameter that you test more frequently than there are rows in the Common Pollutants Grid.
  - Information on Additives used in the non-contact cooling water must be provided in the Additives Grid.
  - If the non-contact cooling water outfall contains other process wastewaters it must be tested as specified below as a primary or secondary industry process wastewater. Non-contact cooling water is defined as water used for cooling that does not come in contact with any raw material, waste material, intermediate product or finished product. The non-contact cooling water must have been used in heat exchangers, air or refrigeration compressors, or other cooling system where contamination of the water is not expected.
- **Outfalls Discharging Process Wastewater from a Secondary Industry**

You must monitor each outfall discharging process wastewaters from a secondary industry (i.e., an industry that is not included in the industrial categories listed in [Table 4](#) of these instructions), cooling water, contact cooling water or boiler blowdown as follows:

    - Unless exempted by one of the conditions described in part c. of the Required Effluent Monitoring portion, you must provide test results for the parameters listed in the Common Pollutants Grid (for secondary industries). Note that multiple tests, as indicated by additional lines, are required for some of the parameters listed.
    - You must use the Additional Values Grid to report on any parameter listed in [Tables 1](#) and [2](#) of these instructions that you believe may be present in the discharge from the outfall at a concentration of 10 µg/L or greater. Note that you may also use the Additional Values Grid to report test results for any parameter that you test more frequently than there are rows in the Common Pollutants Grid.
    - Information on Additives used must be provided in the Additives Grid.
    - Cooling water (as opposed to non-contact cooling water) means water which has been used primarily for cooling but which may be contaminated with process waste or airborne material. Barometric condenser cooling water, can cooling water and cooling tower blowdown are examples of cooling water that must be treated as a secondary industry outfall. Secondary industries, such as vegetable canning and dairy products, are industries not listed as primary industries in [Table 4](#) of these instructions. Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, or finished product, byproduct or waste product. Process wastewater is likely to contain, in solution or suspension, various components of such raw materials or products.
  - **Outfalls Discharging Process Wastewater from a Primary Industry**

You must monitor each outfall discharging process wastewater from a primary industry (i.e., an industry that is included in the industrial categories listed in [Table 4](#) of these instructions) as follows.

    - Unless exempted by one of the conditions described in part d. of the Required Effluent Monitoring portion, you must provide test results for the parameters listed in the Common Pollutants Grid (for primary industries) and the Metals, Cyanide, Hardness and Total Phenols grids. Note that multiple tests, as indicated by additional lines, are required for some of the parameters listed.
    - Based on how you answered part c. of the Required Effluent Monitoring portion, you may also be required to provide test results for parameters listed in the Volatile Organics, Acid Extractable Compounds (Phenols), Base/Neutral Compounds, and Pesticides grids. For example, if you operate a battery manufacturing facility, your primary industrial category from [Table 4](#) is “Battery manufacturing” and you also need to test for the Volatile Organics group and the Base/Neutral Compounds group. You are not required to test for parameters in

- the Acid Extractable Compounds group or Pesticides group.
- You must use the Additional Values Grid to report on any parameter listed in [Tables 1](#) and [2](#) of these instructions that you believe may be present in the discharge from the outfall at a concentration of 10 µg/L or greater. Note that you may also use the Additional Values Grid to report test results for any parameter that you test more frequently than there are rows in the Common Pollutants Grid.

### **Additional Things to Consider When Planning Monitoring**

Remember to analyze at least one sample for each line on the form. If you analyze additional samples, report results on the Additional Values Grid. You must fill in all of the boxes in the grid. Other general instructions are:

- **Past Monitoring Results** - Any monitoring results collected within the last 5 years may be used toward the monitoring required by the application if the monitoring results are representative of the current discharge. If you have monitored for phosphorus, you may be asked to provide additional test results using low level analytical methods as part of the application process.
- **Identical Outfalls** - If you have two or more outfalls that discharge substantially identical wastewaters, you may request permission from the DNR to sample and analyze only one of the outfalls. If your request is granted, make the appropriate selection in the Effluent Monitoring Requirements for the outfall that you have not tested and leave the grid for that outfall blank. Indicate in the Comments Section which outfalls you are providing only one set of tests for.
- **Intake Testing** - You are not required to submit results of "intake" testing, unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants. If you do wish to submit results of intake testing, print a PDF hard copy of the appropriate monitoring grid or grids before entering effluent data on it, cross off the outfall number (and enter intake) and use that hard copy to record intake results. Be sure to indicate if samples were collected before or after the point of source water treatment or addition of chemical additives. You may then attach that completed grid with the Certification Statement page of the application.

### **How must I perform this testing?**

It is important that you provide the DNR with quality monitoring data, since that data will be used to help determine what regulatory requirements we place in your reissued permit. The three important steps in the process of providing the data are sampling, laboratory testing and data reporting. (For more detailed guidance on steps to follow to accomplish the required monitoring, see the [Monitoring Procedures Guidance](#), which is included as an attachment to these instructions.)

- **Sampling** - Data generated by your laboratory are only as good as the samples you collect. You must insure that the composition of your samples is as close as possible to the composition of the wastewater streams you are sampling. To do this you must consider sample time and location and you must minimize contamination. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes that contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Sample types, preservation methods and maximum holding times are listed in [Table 1](#), attached to these instructions. Although [Table 1](#) specifies 24-hour composite samples for many of the substances, the DNR may waive composite sampling for any outfall for which you demonstrate that use of an automatic sampler is not feasible and that a minimum of four grab samples will be representative of the discharge from the outfall. Any required sample preservation must be performed

immediately. Labs will need to check if samples arrived at the laboratory meeting temperature requirements.

If you are required to monitor for a parameter more than once, you must ensure a sufficient interval between discharge samples. If we have not specified a monitoring interval for a parameter, weekly intervals are generally about right. Please do not sample more frequently than once every 3 days unless we so direct you.

- **Laboratory Testing** - Sample analyses shall be performed by laboratories that are certified by the DNR. You may contact the Laboratory Certification Program, WI DNR, 101 S. Webster St., Box 7921, Madison WI 53707, (608) 267-7633 for a current list of certified labs. Alternatively, visit the Program's Web Site at <http://dnr.wi.gov/regulations/labcert/lablists.html>. Select a lab that can meet your needs for proper sensitivity and data quality.

We suggest that you provide a copy of the monitoring grid or grids, along with these instructions, to your laboratory. The grids will tell your laboratory personnel what substances they need to test and the quality control information they need to supply with the data.

Unless instructed otherwise, you must use approved analytical test methods as identified in ch. NR 219, Wisconsin Administrative Code. For many pollutants, more than one analytical test method is approved. Your lab should pay close attention to analytical detection limits in selecting the proper test methods and should use any available information that might help predict effluent limitations to guide them in this effort. Recognize that detection limits can be affected by analytical test methods and clean up procedures, interference or sample contamination.

The DNR has listed recommended test methods in **Table 1** (attached to these instructions) in an attempt to balance the need to measure compounds below levels that are environmentally significant against method sensitivity and positive compound identification. A number of the substances given in Table 1 are toxic in the environment at levels below the analytical detection limits of even the most sensitive analytical methods. If you report these substances as not detected and your lab did not use a method as sensitive as the one recommended in Table 1 or reports an unusually high detection limit above the DNR's level of concern, the DNR may require you to repeat the testing. However, you may be able to provide an explanation for the high detection limit and indicate those steps taken by your laboratory to lower the detection limit.

For mercury, the regulatory level is most often 1.3 ng/L. Virtually all effluents will have mercury levels low enough that the most sensitive method, EPA Method 1631, will be needed to get quantifiable results. See footnote e. to Table 1 to find a Wisconsin-certified lab who has demonstrated low-level mercury analysis capability.

For phosphorus, water quality criteria specified in NR 102, Wis. Adm. Code, range from 0.1 mg/L to 0.03 mg/L (and lower for the Great Lakes) so it is possible that calculated effluent limits for many facilities will be very stringent. When testing for phosphorus, the analytical method used should be sensitive enough to quantify the concentration in the sample or quantify the phosphorus down to the lowest potential effluent limit, whichever is greater.

- **Data Reporting** - You must report the data on one or more monitoring grids.

A numerical test result, by itself, is not very meaningful. The other information you report on the

grid will be used to help determine how accurately the data represents your discharge. It should also serve as a quality check for you. If you find that an unusual circumstance or that qualifying information pertains to a certain piece of data, you should immediately take steps to clarify the situation, such as through re-sampling.

At the present time, you will need to directly enter in all of the grid information. The web-based system is not conducive to copying electronic data from other file formats into the grid. Use of copy and paste functions will speed up data entry. (Select or highlight in a cell of the grid what you want to copy into another cell, right-click to expose a drop-down, click on copy, place the cursor where you want to paste the entry, right-click to expose the drop-down and click on paste. You may continue to paste the same entry multiple times. You may find the keyboard stroke Ctrl+V as a faster option for repeating the paste function.

### Monitoring Grids

**Blank Cells** - Fill in all blank cells in the table. Where the cells have been pre-filled or shaded, you need not record any further information. Use of copy and paste functions will speed up data entry. (Select or highlight in a cell of a grid what you want to copy into another cell, right-click to expose a drop-down, click on copy, place the cursor where you want to paste the entry, right-click to expose the drop-down and click on paste. You may continue to paste the same entry multiple times. You may find the keyboard stroke Ctrl+V as a faster option for repeating the paste function.

- **Parameters** - You must monitor for each parameter in a grid. Grids are pre-printed with the parameters you must test and, when multiple samples are required, contain the correct number of lines for the test results (i.e., one line for each required test result).
- **Additional Sample Results** - You may provide more sample results for a parameter than the number of lines allowed for that parameter in a grid. For example, if your initial sample result for a substance is greater than 1/5 of your expected effluent limitation, or if you have some reason to question if the data results you have are not representative of your discharge, you may want to sample one or more additional times. To report additional data, use the Additional Values Grid by selecting the parameters from the drop-down list and completing the corresponding lines with the required information.
- The information necessary to complete the form should be available to you on the analytical report(s) provided to you by your contract laboratory.

### Column by Column Instructions for Effluent Monitoring Grids

- **Code** - This is a number that is unique to the parameter (pollutant) and will normally be pre-printed. It is used as a reference by the DNR.
- **Name** - The name column will normally be pre-printed with the name of the substance for which you must report data. The CAS (Chemical Abstract Services) number for that parameter is usually also pre-printed on the form. If you are working in the Additional Values Grid, you must select the chemical name using the drop-down list.
- **Sample Result** - Record the numerical result as provided to you by your laboratory. Make sure to

report the correct results for the units listed, which will generally be pre-printed (except on the Additional Values Grid). If a substance is not detected in a sample, report the result as < (less than) the value of the detection limit. For example, if the substance ammonia nitrogen is not detected and your laboratory indicates that the detection limit is 0.1 mg/L, report the result as <0.1 in the sample result cell.

- **QC Flags** - Use the check box to signal that there has been some sort of laboratory quality control (QC) exceedance. Similar to how a footnote is used in printed papers or other documents, explain the meaning of the "flag" at the bottom of the report form. If you place a check in the QC exceedance column, you will need to make an entry in the explanation text box in order to validate the section.

*(NOTE: Flagged data are not necessarily bad data. However, unless your laboratory has documentation, which shows that a quality control exceedance did not affect sample results, please arrange for re-analysis or re-sampling and analysis for affected parameters.)*

- **Units** - The units column normally will be pre-printed with the units of measurement in which you should report the analytical results. If your laboratory reports results for a given substance in different units, you will need to convert them to the pre-printed units. Usually, a change in units requires that you move the decimal point in the result 3 places to the right or left. For example, 0.018 mg/L is the same as 18 µg/L. 8 ng/L is the same as 0.008 µg/L. If you are unsure how to convert the results into the required units, contact the DNR or your lab for help.
- **LOD (Limit of Detection)** - Record a numerical value for the limit of detection (LOD) reported to you by your laboratory. Sometimes this quantity is called the method detection limit (MDL). You need not report a limit of detection for certain substances (the space will be shaded) such as for temperature or pH.
- **LOQ (Limit of Quantitation)** - Record the numerical value for the limit of quantitation (LOQ) reported to you by your laboratory. You need not report a limit of quantitation for certain substances, such as temperature or pH.
- **Analytical Method** - Record what laboratory analytical method was used to test for the parameter. Usually, methods are specified using method numbers. Refer to [Table 1](#) of these instructions for a listing of recommended analytical test methods. When required to test for Total Nitrogen please enter 'Calculate' in the column for Analytical Method.
- **Sample Collection Date** - Record the day, month and year (mm/dd/yyyy) when the sample was collected. If the sample is a 24-hour composite, please show the end date of the compositing period.
- **Sample Type** - Record the type of sampling used for that parameter; comp for 24-hour composite or grab. [Table 1](#) of these instructions lists required sample types by parameter.
- **Lab ID Number** - Provide the nine-digit Wisconsin laboratory certification number of the lab that performed the analyses. If analytical testing was sub-contracted to another lab, you still must provide the certification number of the lab that performed the analyses. Certain tests (for example, chlorine residual) need not be conducted by certified labs. This field will be shaded for

parameters not requiring certified labs.

### Additional Values Grid

- **Purpose of the Additional Values Grid** - This grid should be used for two purposes; reporting analytical results when monitoring is performed more frequently than that required by the required monitoring grids and reporting analytical results for parameters from Tables 1 and 2 of the instructions that you believe are present at levels greater than 10 µg/L in the discharge from the outfall.
- **Reporting Additional Monitoring Results** - If you have sampled for a parameter more frequently than that required by a required monitoring grid, please provide the extra test results on the Additional Values Grid. After clicking on the Additional Values Grid, use the drop-down by clicking on the down-arrow and select the parameter code and name. Repeat that process to select units. Then enter the sample results and other information in the appropriate cells and save to exit. Repeat this process for as many times as you have results to enter.
- **Additional Substances Believed Present In the Discharge** – If you know, or have reason to believe that any parameter listed in [Tables 1](#) and [2](#) is present in the discharge from the outfall at a concentration greater than 10 µg/L, you must provide at least one test result for the parameter. Base your determination that a pollutant is believed present on your knowledge of your raw materials, maintenance chemicals used, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or similar effluent.
  - This excludes those parameters for which you have already reported test results or for which you have reported results on your Discharge Monitoring Report during the current permit term.
  - Place a check mark in the “Intake Only” field if you feel that the parameter is present in the discharge solely as a result of its presence in your intake water.
  - Indicate that you evaluated the presence of all parameters in Tables 1 and 2 by placing a check mark in the appropriate box in the Effluent Monitoring Section.
  - After clicking on the Additional Values Grid, use the drop-down by clicking on the down-arrow and select the parameter code and name. Repeat the process to select units. Then enter the sample results and other information in the appropriate cells and save to exit. Repeat this process for as many times as you have results to enter.

### Additives Grid

- The Additives Grid must be completed when any additives are listed in Item 12.
- For the purposes of this section, additives include all biocides and water quality conditioners that are added to cooling and boiler waters. Examples of water treatment additives include microbicides, fungicides, molluscicides, scale and corrosion inhibitors, pH adjustment chemicals, oxygen scavengers, water softening compounds, etc.
- For each additive listed in the Additives Grid, attach the following information to the Certification Statement page.
  - Additive Review Worksheet - Provide an Additive Review Worksheet for each additive listed

- in the Additives Grid.
- Toxicity Data - Enter aquatic life toxicity data on the Additive Review Worksheet for each additive except chlorine, hypochlorite, bromine, sulfuric and hydrochloric acids, and sodium hydroxide. If aquatic toxicity data is not included on the MSDS, please contact the chemical supplier or manufacturer for this information. If at least one 48-hour LC50 or EC50 for *Daphnia magna* or *Ceriodaphnia dubia* and at least one 96-hour LC50 or EC50 for fathead minnow, rainbow trout or bluegill sunfish are not provided for each additive, the DNR will likely include whole effluent toxicity testing requirements in the reissued permit.
  - For each additive, provide the following information in the Additives Grid.
    - Additive Name and Manufacturer - List the additive name and manufacturer.
    - Purpose of Additive - State the reason why you use the additive. For example, the additive is a biocide, it is used to prevent scale or adjust pH, it is used as a flocculent or water softening agent, etc.
    - Intermittent or Continuous Feed - Indicate whether the additive, when in use, is applied to the system continuously or intermittently. Intermittent feed is the periodic addition of the additive on a sporadic or timed basis, or based on the level of a water characteristic, such as the concentration of dissolved solids, within the system. Continuous feed is the uninterrupted addition of the additive to the system. Continuous feed is often used to maintain the concentration of the additive as a specific level within the system.
    - Frequency of Use (months per year) - Indicate the number of months per year that the additive is used at least once. For example, if the additive is used at least once each month during the entire year, you would enter "12" in the "months per year" column. If the additive is used only during the summer months of May through September, you would enter "5".
    - Frequency of Use (days per week) - On average over the period when the additive is in use, determine the number of days per week that the additive is applied to the system and enter the result in the "days per week" column. For example, if the additive is applied weekly over the summer months enter "1". If the additive is applied every third day over a period of six months, you would enter "2.3". (That is, 60 days of additive application divided by 180 days between the first and last day of additive application, times 7 days per week.)
    - Maximum Quantity Used - Identify the maximum amount of additive, in pounds (lbs) or gallons (gal) per day that you intend to apply to the system during any one day.
    - Average Quantity Used - Identify the average amount of additive, in pounds (lbs) or gallons (gal) per day that you intend to apply to the system over the period of additive use. For example, if 60 pounds of additive will be used over five months the average quantity used would be 0.4 pounds per day. (That is, 60 pounds divided by 150 days.)
    - Concentration of Additive at the Outfall (completing this field is not required) - When determining the need for an effluent limitation for an additive, the DNR will likely assume that the entire amount of additive that is applied to the system during a day will be present in the discharge from the system for that day. The DNR will use the flow information that you provide in earlier parts of this application to perform this calculation. For example, if on average 10 pounds of an additive are applied to the system per day and the annual average discharge from the system is 10,000 gallons per day, the DNR will assume the discharge contains 120 mg/L of additive. (That is, 10 pounds divided by the product of 0.01 million gallons of discharge per day times 8.34.)

If you believe that the above calculation misrepresents the actual concentration of the additive at the discharge outfall, enter the value, in parts per million (ppm), that you believe more accurately represents the discharge concentration and explain how you derived the value.

You may use the Comments section to explain or attach an additional sheet to the Certification Statement page. You may use discharge-monitoring results if available for an additive. You may also estimate an additive's concentration at the outfall using stoichiometry and/or mass balance approaches.

## **Land Treatment System Discharge Information**

Note that you must complete this section for each land treatment system outfall. If you have more than one such outfall, your application should contain a copy for each outfall identified with an outfall number.

**Item 1. Type of Land Treatment System** - Identify the type of land treatment system using the drop-down box. The types of land treatment are:

**Absorption Ponds** (Seepage Cells) are treatment ponds that are designed to infiltrate wastewater into the unsaturated soil zone for treatment and disposal.

**Overland Flow** are land treatment systems in which the applied wastewater flows uniformly down grassy sloped terrain having very low permeability soils and is collected at the bottom of the slope for subsequent discharge.

**Spray Irrigation** is a process where either fixed or traveling spray devices that distribute wastewater onto vegetated fields for treatment and disposal. These are not vehicle hauled wastes. A spray irrigation system is usually dedicated to a specific field and is usually served by a pipeline that transports the wastewater to be irrigated.

**Ridge and Furrow** treatment relies on above ground disposal into a set of infiltration cells that may be dosed and rested as needed. Each cell is partitioned into several furrows by vegetated ridges.

**Subsurface Soil Absorption** treatment is designed as a series of underground perforated pipes that distribute wastewater for infiltration and soil treatment. A subsurface soil absorption system may be divided into cells that may be dosed and rested.

**Item 2. Location of Land Treatment System** - Provide the quarter-quarter section (NE, NW, SE or SW), quarter section (NE, NW, SE or SW), section (1 through 36), township (1 through 53 and always north, 30 N for example) and range (1 through 30 east or 1 through 20 west, 3 E for example) of the tract of land on which the land treatment system is located. The requested location description is similar to the legal description of a tract of land and can be found in a plat book of the county in which the land treatment system is located.

**Item 3. Seasonal or Intermittent Discharges (Discharge Duration)** - Specify how the discharge, with the exception of storm water runoff and spillage or leaks, varies with time of the year.

- A discharge is year round if it occurs daily, without interruption, during the operating hours of the facility.
- For intermittent discharges, describe the frequency of discharge and the duration and volume of each discharge.
- A discharge is seasonal if it occurs only during certain periods of the year. For seasonal discharges, provide the period from starting month to ending month during which wastewater is discharged.

**Item 4. Size of Land Treatment System** - Provide the area in acres that the land treatment system physically covers. It may be necessary to subdivide the area into different components such as lagoon area, ridge and furrow area, etc. to adequately describe the system. The land treatment system is the part of the system that actually receives wastewater for infiltration. In this case, a sealed treatment lagoon would not be part of the land treatment system.

**Item 5. Schematic Diagram of the Land Treatment System** – Include a line drawing of the entire system and its components. The drawing size should not exceed 11 x 17 inches. If necessary, subdivide the drawing into smaller individual drawings, but include a master overview that has a key to all the sub-drawings. Do not include blueprints that exceed the maximum size. Include all areal dimensions and appropriate elevations in the drawing based on a five foot contour interval. Show the relationship of the system to all buildings within 500 feet and the nearest public road. Include all streams and wetlands that may be within the area of the system. Include all locations where samples are collected and all monitoring wells. If you have supplied all of this information as part of the Description of Industrial Activity, Item #7, you need not duplicate that information here.

You will need to mail a hard copy of the map with the Certification Statement page.

**Item 6. Type of Wastewater Discharged** - Indicate the types of wastewater discharged to the land treatment system and the annual average flow for each type. Acceptable units for the average flow are gallons per day (gpd) and million gallons per day (MGD). If water is first used for one purpose and then is subsequently used for another purpose, indicate the type and amount for the last use. The sum of all the flows provided in response to this item should equal the annual average flow for the outfall.

**Noncontact cooling water** means water used for cooling which does not come into contact with any raw material, intermediate or finished product, or waste product and has been used in heat exchangers, air or refrigeration compressors, or other cooling means where contamination with process waste, other than heat, is not normally expected.

**Contact Cooling Water** means water used for cooling which comes into contact with a raw material, intermediate or finished product, or waste product other than heat. Quench tank water and vegetable can cooling water are 2 examples of contact cooling water.

**Sanitary Wastewater** is waste and wastewater from humans from lavatories, restrooms, etc.

**Process Wastewater** means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product, and is likely to contain in solution or suspension various components of such raw materials or products. Contact cooling water flow, while normally is classified as a process wastewater, should not be included in the average flow of process wastewater provided in response to this item of the application.

**Storm Water** means water resulting from melting snow, rainfall or other precipitation.

**Boiler Blowdown** means water that is periodically or, in some cases, continuously purged from a boiler prevent the buildup of materials in the boiler above the limits of best engineering practice.

**Cooling Tower Blowdown** means water that is periodically or, in some cases, continuously purged from a closed loop cooling system that uses an open tower to dissipate heat to prevent the buildup of

materials in the cooling water above the limits of best engineering practice.

**Other** types of wastewater include those not previously listed, such as the discharge from drinking fountains and bubblers and landfill leachate.

**Item 8. Effluent Flow Monitoring and Sampling** - Identify the flow monitoring type as a "V" notch weir, Parshall flume, magnetic flow meter, etc. and provide its age and location (in relation to other units). Identify the sampling type as 24-hr composite (flow proportional), composite (and specify number of hourly samples), grab, etc. Provide a brief description of locations of composite sampling devices and all locations where effluent grab samples will be taken.

**Item 9. Management Plan** – Chapter NR 214, Wisconsin Administrative Code requires the operation of a land treatment system in conformance with a management plan that is prepared by the owner or operator and is approved by the DNR. Indicate whether or not a management plan for the land treatment system has been prepared and approved by the DNR.

If one has been approved, provide that date the plan was approved by the DNR and describe any changes in the land treatment system or in the operation of the system that have occurred since the plan was approved. Examples of changes include an expansion of the system, an increase in the amount of wastewater discharged to the system, production process changes that change the characteristics of the wastewater that is discharged to the system, etc.

If you do not have an approved management plan, your reissued permit will contain a requirement for you to develop a plan.

**Item 10. Monitoring Requirements** - All industrial permittees discharging to land treatment systems and applying for a permit reissuance must monitor for a short list of pollutants for each outfall. Results of the monitoring must be reported on the monitoring grid provided.

There are conditions under which you are not required to provide results of monitoring. These conditions are shown on part 10. b. of the form. You must either select the first button and provide monitoring for all substances in the grid or select the second button and indicate which one of the special conditions applies. Note that the fourth and fifth conditions still require that you submit information. The fourth condition allows you to submit the information late, after a seasonal discharge resumes. The fifth condition only exempts you from monitoring for one or more parameters on the standard list as directed by the application notification letter. The last condition allows you to fulfill the data submittal requirement by submitting hard copies of the lab reports, if directed by the application notification letter.

Remember to analyze at least one sample for each line on the form. You must fill in all of the boxes in the grid. Other general instructions are:

- Past Monitoring Results - Any monitoring results collected within the last 5 years may be used toward the monitoring required by the application if the monitoring results are representative of the current discharge.
- All representative data, generated using approved methods, that was not previously reported to the DNR must be reported with this application. If you monitored more frequently than once, you may print a PDF hard copy of the monitoring grid before entering effluent data on it and make as many copies as you need for the number of results. Another option is to report the information on additional sheets. In either case, you will need to attach these results to the

Certification Statement page.

- **Identical Outfalls** - If you have two or more outfalls that discharge substantially identical wastewaters, you may request permission from the DNR to sample and analyze only one of the outfalls. If your request is granted, make the appropriate selection in the Effluent Monitoring Requirements section for the outfall that you have not tested and leave the grid for that outfall blank. Indicate in the Comments Section which outfalls you are providing only one set of tests for.

**Guidance for Performing Monitoring** - It is important that you provide the DNR with quality monitoring data, since that data will be used to help determine what regulatory requirements we place in your reissued permit. The three important steps in the process of providing the data are sampling, laboratory testing and data reporting. Make sure you sample at times and locations that will generate samples that are as representative as possible of the waste stream. The laboratory you choose must be certified for the parameters listed and should be able to give good advice on whatever questions you may have or you may contact the DNR. Reporting is discussed below. (For more detailed guidance on steps to follow to accomplish the required monitoring, see the [Monitoring Procedures Guidance](#), which is included as an attachment to these instructions.)

The information necessary to complete the form should be available to you on the analytical report(s) provided to you by your contract laboratory.

**Filling out the Monitoring Grids** – Click on the “Enter Test Results” button to open the monitoring grid. Specific column-by-column instructions are as follows:

- **Blank Cells** - Fill in all blank cells in the table. Where the cells have been pre-filled or shaded, you need not record any further information. Use of copy and paste functions will speed up data entry. (Select or highlight in a cell of the grid what you want to copy into another cell, right-click to expose a drop-down, click on copy, place the cursor where you want to paste the entry, right-click to expose the drop-down and click on paste. You may continue to paste the same entry multiple times. You may find the keyboard stroke Ctrl+V as a faster option for repeating the paste function.
- **Parameters** - You must monitor for each parameter in the grid. The grid is pre-printed with the parameters you must test and, when multiple samples are required, it contains the correct number of lines for the test results (i.e., one line for each required test result).
- **Code** - This is a number that is unique to the parameter (pollutant) and will be pre-printed. It is used as a reference by the DNR.
- **Name** - The name will be pre-printed with the name of the substance for which you must report data. The CAS (Chemical Abstract Services) number for that parameter may also pre-printed with the substance name.
- **Sample Result** - Record the numerical result as provided to you by your laboratory. Make sure to report the correct results for the units listed, which is pre-printed. If a substance is not detected in a sample, report the result as < (less than) the value of the detection limit. For example, if the substance ammonia nitrogen is not detected and your laboratory indicates that the detection limit is 0.1 mg/L, report the result as <0.1 in the sample result cell.
- **QC Flags** - Use the check box to signal that there has been some sort of laboratory quality

control (QC) exceedance. Similar to how a footnote is used in printed papers or other documents, explain the meaning of the "flag" at the bottom of the report form. If you place a check in the QC exceedance column, you will need to make an entry in the explanation text box in order to validate the section.

*(NOTE: Flagged data are not necessarily bad data. However, unless your laboratory has documentation, which shows that a quality control exceedance did not affect sample results, please arrange for re-analysis or re-sampling and analysis for affected parameters.)*

- **Units** - The units column is pre-printed with the units of measurement in which you should report the analytical results. If your laboratory reports results for a given substance in different units, you will need to convert them to the pre-printed units. Usually, a change in units requires that you move the decimal point 3 places to the right or left. For example, 0.018 mg/L is the same as 18 µg/L. 8 ng/L is the same as 0.008 µg/L. If you are unsure how to convert the results into the required units, contact the DNR or your lab for help.
- **LOD (Limit of Detection)** - Record a numerical value for the limit of detection (LOD) reported to you by your laboratory. Sometimes this quantity is called to the method detection limit (MDL). You need not report a limit of detection for certain substances (the space will be shaded) such as for temperature or pH.
- **LOQ (Limit of Quantitation)** - Record the numerical value for the limit of quantitation (LOQ) reported to you by your laboratory. You need not report a limit of quantitation for certain substances, such as temperature or pH.
- **Analytical Method** - Record what laboratory analytical method was used to test for the substance. Usually, methods are specified using method numbers. Refer to [Table 1](#) of these instructions for a listing of recommended analytical test methods.
- **Sample Collection Date** - Record the day, month and year (mm/dd/yyyy) when the sample was collected. If the sample is a 24-hour composite, please show the end date of the compositing period.
- **Sample Type** - Record the type of sampling used for that parameter; comp for 24-hour composite or grab. The DNR normally allows use of grab samples for monitoring land treatment and land application outfalls.
- **Lab ID Number** - Provide the nine-digit Wisconsin laboratory certification number of the lab that performed the analyses. If analytical testing was sub-contracted to another lab, you still must provide the certification number of the lab that performed the analyses. Certain tests, for example pH need not be conducted by certified labs. This field will be shaded for parameters not requiring certified labs.

Click on the "Save" button before closing.

## Land Application Discharge Information

You must complete this section for each land application discharge. If your facility has more than one

such discharge, your application should contain a copy for each, identified with an outfall number.

**Item 1. Type of Land Application System** - Identify the type of waste that is applied to the land.

**Liquid Waste** includes silage leachate, whey, whey permeate and filtrate, contact cooling water, cooling and boiler water containing water treatment additives and wash water generated in industrial, commercial and agricultural operations excluding certain fruit and vegetable washing facilities. If you generate by-product solids and collect leachate from a stack or stacks, your permit will regulate each as a separate outfall.

**By Product Solids** are waste materials from animal product or food processing industries including remains of butchered animals, paunch manure, leaves, cuttings, peelings and fresh or actively fermenting sweet corn silage. If you generate by-product solids and collect leachate from a stack or stacks, your permit will regulate each as a separate outfall. If you stack by-product solids, you should also complete a separate form for providing information on the stacking activity.

**Sludge** means the accumulated solids generated during biological, physical or chemical treatment, coagulation or sedimentation of water or wastewater.

**Item 2. Manure Storage Facilities** - This item is only applicable to the land application of liquid wastes. If the land application type for this outfall is byproduct solids or sludge, if liquid wastes will not be land applied or if liquid wastes will not be stored in a manure storage facility, answer “no”. If liquid wastes are being land applied and temporarily stored in a manure storage facility before being land application, answer “yes”. If yes, indicate if you have approvals for all of the storage facilities. If you do not have the required approvals, contact the landspreading specialist or other DNR contact permit to obtain the necessary approvals. If you need help determining who the correct DNR contact person is, click on the button provided.

**Item 3. Waste Sources** - Describe the origin of the wastes that are land applied. Explain the processes that produce the wastes and any unusual materials or toxic chemical compounds that may be included in the wastes.

**Item 4. Waste Volume** - Indicate the amount of liquid wastes in gallons or by-product solids and sludge in tons (on a dry weight basis) that are land applied during a typical year.

**Item 5. Application Frequency** - List the total number of days in the typical year that you will haul wastes for land application. Count days rather than loads. For example, if you haul three truck loads of solids per day, but do this one day a year, list one day per year.

**Item 6. Site Identification** - Indicate whether or not each of the fields being used for land application (field spreading) of the wastes have a DNR identification number. If not, contact your DNR field representative or Regional Land Application Specialist to generate DNR identification numbers for all sites.

**Item 7. Waste Storage** - Indicate where you store the waste prior to land application, the type of storage structure used, the location of the storage structure if other than at the site generated, and the owner of the storage site if you do not own it.

**Item 8. Waste Hauler** - Indicate who hauls the waste to the land application site. If you hire a

commercial hauler to apply the waste, provide the name and address of the operator of the hauling company. If someone other than you or a commercial hauler hauls the waste, provide the name and address of that person.

**Item 9. Management Plan** - Chapter NR 214, Wis. Adm. Code requires the operation of a land application system to conform with a management plan that is prepared by the owner or operator and approved by the DNR. Indicate whether or not the DNR has approved a management plan for land application of the waste. If one has been approved, provide the approval date and describe any changes in the waste or operation that have occurred since the plan was approved. Examples of changes include an increase in the amount of wastes that are land applied, production process changes that change the characteristics of the waste that is land applied, a change in the method of land application, etc. If you do not have an approved management plan, your reissued permit will contain a requirement for you to develop a plan.

**Item 10. Sample Location** – Indicate where in the process stream samples are collected to test the quality of the liquid waste, sludge or by-product solids.

**Item 11. Test Results** – All industrial permittees discharging to land application systems and applying for a permit reissuance must monitor for a short list of pollutants for each outfall. Results of the monitoring must be reported on the monitoring grid provided.

There are conditions under which you are not required to provide results of monitoring. These conditions are shown on part 11. b. of the form. You must either select the first button and provide monitoring for all substances in the grid or select the second button and indicate which one of the special conditions applies. Note that the fourth and fifth conditions still require that you submit information. The fourth condition allows you to submit the information late, after a seasonal discharge resumes. The fifth condition only exempts you from monitoring for one or more parameters on the standard list as directed by the application notification letter. The last condition allows you to fulfill the data submittal requirement by submitting hard copies of the lab reports, if directed by the application notification letter.

Remember to analyze at least one sample for each line on the form. You must fill in all of the boxes in the grid. Other general instructions are:

- Past Monitoring Results - Any monitoring results collected within the last 5 years may be used toward the monitoring required by the application if the monitoring results are representative of the current discharge.
- All representative data generated using approved methods that was not previously reported to the DNR must be reported with this application. If you monitored more frequently than once, you may print a PDF hard copy of the monitoring grid before entering effluent data on it and make as many copies as you need for the number of results. Another option is to report the information on additional sheets. In either case, you will need to attach these results to the Certification Statement page.
- Identical Outfalls - If you have two or more outfalls that discharge substantially identical wastewaters, you may request permission from the DNR to sample and analyze only one of the outfalls. If your request is granted, make the appropriate selection in the Effluent Monitoring Requirements section for the outfall that you have not tested and leave the grid for that outfall blank. Indicate in the Comments Section which outfalls you are providing only one set of tests for.

**Guidance for Performing Monitoring** - It is important that you provide the DNR with quality monitoring data, since that data will be used to help determine what regulatory requirements we place in your reissued permit. The three important steps in the process of providing the data are sampling, laboratory testing and data reporting. Make sure you sample at times and locations that will generate samples that are as representative as possible of the waste stream. The laboratory you choose must be certified for the parameters listed and should be able to give good advice on whatever questions you may have or you may contact the DNR. Reporting is discussed below. (For more detailed guidance on steps to follow to accomplish the required monitoring, see the [Monitoring Procedures Guidance](#), which is included as an attachment to these instructions.)

The information necessary to complete the form should be available to you on the analytical report(s) provided to you by your contract laboratory.

**Filling out the Monitoring Grids** – Click on the “Enter/Edit” button to open the monitoring grid. Specific column-by-column instructions are as follows:

- **Blank Cells** - Fill in all blank cells in the table. Where the cells have been pre-filled or shaded, you need not record any further information. Use of copy and paste functions will speed up data entry. (Select or highlight in a cell of the grid what you want to copy into another cell, right-click to expose a drop-down, click on copy, place the cursor where you want to paste the entry, right-click to expose the drop-down and click on paste. You may continue to paste the same entry multiple times. You may find the keyboard stroke Ctrl+V as a faster option for repeating the paste function.
- **Parameters** - You must monitor for each parameter in the grid. The grid is pre-printed with the parameters you must test and, when multiple samples are required, it contains the correct number of lines for the test results (i.e., one line for each required test result).
- **Code** - This is a number that is unique to the parameter (pollutant) and will be pre-printed. It is used as a reference by the DNR.
- **Name** - The name will be pre-printed with the name of the substance for which you must report data. The CAS (Chemical Abstract Services) number for that parameter may also pre-printed with the substance name.
- **Sample Result** - Record the numerical result as provided to you by your laboratory. Make sure to report the correct results for the units listed, which is pre-printed. If a substance is not detected in a sample, report the result as < (less than) the value of the detection limit. For example, if the substance ammonia nitrogen is not detected and your laboratory indicates that the detection limit is 0.1 mg/L, report the result as <0.1 in the sample result cell.
- **QC Flags** - Use the check box to signal that there has been some sort of laboratory quality control (QC) exceedance. Similar to how a footnote is used in printed papers or other documents, explain the meaning of the "flag" at the bottom of the report form. If you place a check in the QC exceedance column, you will need to make an entry in the explanation text box in order to validate the section.

*(NOTE: Flagged data are not necessarily bad data. However, unless your laboratory has documentation, which shows that a quality control exceedance did not affect sample results, please arrange for re-analysis or re-sampling and analysis for affected*

*parameters.)*

- **Units** - The units column is pre-printed with the units of measurement in which you should report the analytical results. If your laboratory reports results for a given substance in different units, you will need to convert them to the pre-printed units. Usually, a change in units requires that you move the decimal point 3 places to the right or left. For example, 0.018 mg/L is the same as 18 µg/L. 8 ng/L is the same as 0.008 µg/L. If you are unsure how to convert the results into the required units, contact the DNR or your lab for help.
- **LOD (Limit of Detection)** - Record a numerical value for the limit of detection (LOD) reported to you by your laboratory. Sometimes this quantity is called to the method detection limit (MDL). You need not report a limit of detection for certain substances (the space will be shaded) such as for temperature or pH.
- **LOQ (Limit of Quantitation)** - Record the numerical value for the limit of quantitation (LOQ) reported to you by your laboratory. You need not report a limit of quantitation for certain substances, such as temperature or pH.
- **Analytical Method** - Record what laboratory analytical method was used to test for the substance. Usually, methods are specified using method numbers. Refer to [Table 1](#) of these instructions for a listing of recommended analytical test methods.
- **Sample Collection Date** - Record the day, month and year (mm/dd/yyyy) when the sample was collected. If the sample is a 24-hour composite, please show the end date of the compositing period.
- **Sample Type** - Record the type of sampling used for that parameter; comp for 24-hour composite or grab. The DNR normally allows use of grab samples for monitoring land treatment and land application outfalls.
- **Lab ID Number** - Provide the nine-digit Wisconsin laboratory certification number of the lab that performed the analyses. If analytical testing was sub-contracted to another lab, you still must provide the certification number of the lab that performed the analyses. Certain tests, for example pH need not be conducted by certified labs. This field will be shaded for parameters not requiring certified labs.

Click on the “Save” button before closing.

## **By-Product Solids and Silage Stacks**

You must complete this section for each stack location. If your facility has stacks in more than one location, use the form to report on one of the stacks and click on the button to bring up a copy of another reporting sheet; and so on. There will be only one outfall number for your by-product solids even if you have more than one stack location.

**Item 1. Type of By-product Solids** - Indicate what type of by-product solids is being staked: sweet corn silage or some other type such as beans, peas etc.

**Item 2. Location of By-product Solids Stack** - Provide the location of the stack to the nearest quarter-

quarter section. The requested location description is similar to the legal description of a tract of land and can be found in a plat book. Provide the quarter-quarter section (NE, NW, SE or SW), quarter section (NE, NW, SE or SW), section (1 through 36), township (1 through 53 and always north, 30 N for example) and range (1 through 30 east or 1 through 20 west, 3 E for example) of the tract of land on which the stack is located.

**Item 3. Maximum Size of By-products Solids Stack** - Provide the maximum size of the stack, in tons, that will be stored in the stack.

**Item 4. Anticipated Volume of Leachate** - Estimate the volume of leachate that will be produced at the stack. Indicate the number of gallons that will be produced per day, per week, or per month.

**Item 5. Location and Size of Leachate Disposal Sites** - List the leachate disposal sites you use and provide the acreage of the site and the location of the site to the nearest quarter-quarter section. Indicate the primary site used as well as two alternate sites you may have. List all leachate sites used, if more than three are available.

**Item 6. Stack Owner or Operator** - Provide the name of the owner of the by-products solids or silage stack if different from the facility owner. If the stack is owned by one party, used by the facility, but maintained by a third party, give the name of the owner and the third party that maintains the stack.

## **Groundwater Monitoring Information**

You must complete and return this section if your current WPDES discharge permit requires groundwater monitoring or you are applying for a new permit for a facility that will require groundwater monitoring wells.

**Item 1. Groundwater Monitoring** – If this is a permit reissuance application, you are required to complete this section of the application only if your current WPDES permit requires groundwater monitoring using monitoring wells. If it does not, check the box labeled "No" and continue on to the next section of the application.

If your current WPDES permit requires groundwater monitoring, click the "Yes" button and indicate whether or not the Groundwater Monitoring Reports that the DNR sends you to report groundwater monitoring results are consistent with the monitoring requirements of the permit and reflect the current regulated materials in your discharge. For example, if you have begun a new operation that discharges chlorides (or another material), do the Groundwater Monitoring Reports show chlorides as a parameter that requires monitoring? If not, click the "No" button and indicate the materials that need to be added to the Groundwater Monitoring Reports. Or, if conditions have changed at the facility, indicate which parameters need to be removed from the Groundwater Monitoring Reports.

If this application is for a new land treatment discharge that will require groundwater monitoring, click the "Does not apply" button and continue to item 2.

**Item 2. Existing Land Use** – Describe the land use on or near your facility. "Near the facility" means within one mile in radius of each groundwater monitoring well that is now in place. Examples of land use include agricultural cropland, forest land, residential subdivision and commercial use.

**Item 3. Other Existing Wells** – If all the groundwater monitoring wells that are located on your facility's

property and/or land treatment site(s) are required to be monitored by your current WPDES click the “No” button. Also click “No” if this is an application for a new permit and there are no existing wells on the site. Continue to item #4.

If there are operable groundwater monitoring wells on the site that your current WPDES does not require you to monitor, click on the “Yes” button. If yes, then answer if another DNR program or state agency requires you to monitor the well(s).

- If the answer to that second question is yes, click on the second “yes” button and supply the name of the program or state agency.
- If the answer to the second question is no (monitoring is not required by any agency), click on the second “no”, describe the location of the well(s) and explain how you use the wells or, if the wells are no longer monitored, explain why the well(s) have not been abandoned.

**Item 4. Abandoned Wells** – If you have abandoned (i.e., stopped monitoring) any groundwater monitoring well(s) and have not submitted a copy of Well/Drillhole/Borehole Abandonment Form 3300-5B, submit a copy of the form for each well with this application. Note that ch. NR 141, Wis. Adm. Code requires any permanent groundwater monitoring well no longer being used to be abandoned within 60 days after its use has been discontinued. Attach a paper copy of any completed forms to the application Comments/Signature page.

**Item 5. New Wells** – If, during the term of your current permit or in preparation for a new discharge, you installed a new well(s) to monitor your land application (spreading) or land treatment site(s) and you have not submitted Monitoring Well Construction Form 4400-113A, Well Development Form 4400-113B and Soil Boring Log Form 4400-122, submit the forms. Also, submit a site map showing the locations of all wells. If this is an application for a new permit that will require groundwater monitoring but wells have not yet been installed click on the appropriate button and supply the necessary information when it is available. Attach the necessary materials with the application Comments/Signature page.

**Item 6. Monitoring Data for New Permits** – Provide any groundwater monitoring well data that is available at the time of this application. Attach a paper copy of the data summary with the application Comments/Signature page.

## **Additional Comments**

You may use this section of the application to report any information that is not specifically requested by this application, but that you believe is pertinent to the reissuance of your WPDES permit. You may also use the section to report or clarify any answers that you could not report due to lack of space or specific questions.

## **WPDES Permit Application Certification Statement**

**The Authorized Representative of the permitted facility must sign and date the Certification Statement. If someone different than the Authorized Representative submits the application, that person should also sign and date as appropriate.**

**When filing your permit application electronically, you must mail the signed Certification Statement to the DNR at the address listed on the Certification Statement for the application to be considered complete. Include any attachments that are not part of the electronic file as directed by other sections of the application.**

## ADDITIONAL INFORMATION

### TABLE 1. - SAMPLING, PRESERVATION AND ANALYTICAL INFORMATION

#### Substances Which May Require Testing With Permit Applications

Parameter	Sample Type <sup>a</sup>	Recommended Analytical Test Methods <sup>b</sup>	Preservation <sup>c</sup>	Maximum Holding Time <sup>c</sup>
<u>COMMON POLLUTANTS</u>				
Biochemical Oxygen Demand (BOD <sub>5</sub> )	24-hr. comp.	-	Cool to 6°C	48 hours
Chemical Oxygen Demand (COD)	24-hr. comp.	-	Cool to 6°C	28 days
Chlorides, Total	24-hr. comp.	-	None required	28 days
Chlorine, Total Residual	Grab	EPA 330.2 (amperometric), 330.5, or electrode	Analyze immediately	-
Nitrogen (all forms including NO <sub>2</sub> <sup>-</sup> + NO <sub>3</sub> <sup>-</sup> , NH <sub>3</sub> and TKN)	24-hr. comp.	-	Cool to 6°C, H <sub>2</sub> SO <sub>4</sub> to pH < 2	28 days
Oil and Grease	Grab	EPA 1664	Cool to 6°C, pH to < 2	28 days
PH	Grab	-	Analyze immediately	-
Phosphorus, Total	24-hr. comp.	EPA 365.1	Cool to 4°C, H <sub>2</sub> SO <sub>4</sub> to pH < 2	28 days
Suspended Solids, Total	24-hr. comp.	-	Cool to 6°C	7 days
Temperature	Grab	-	Analyze in field	-
<u>METALS, CYANIDE HARDNESS AND PHENOLS</u>				
Antimony, Total Recoverable	24-hr. comp.	EPA 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Arsenic, Total Recoverable	24-hr. comp.	EPA 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Beryllium, Total Recoverable	24-hr. comp.	EPA 200.7 or 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Cadmium, Total Recoverable	24-hr. comp.	EPA 200.7 or 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Chromium, Hexavalent	Grab	EPA 218.6	Cool to 6°C	24 hours
Chromium, Total Recoverable	24-hr. comp.	EPA 200.7 or 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Copper, Total Recoverable	24-hr. comp.	EPA 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Cyanide, Total	Grab	EPA 335.4	Cool to 6°C, NaOH to pH > 12, neutralize Cl <sub>2</sub>	14 days
Cyanide, Amenable	Grab	EPA 335.1	Cool to 6°C, NaOH to pH > 12, neutralize Cl <sub>2</sub>	14 days
Lead, Total Recoverable	24-hr. comp.	EPA 200.7 or 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Mercury, Total Recoverable	Grab <sup>e</sup>	EPA 1631E	See Method	90 days
Nickel, Total Recoverable	24-hr. comp.	EPA 200.7 or 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Selenium, Total Recoverable	24-hr. comp.	EPA 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Silver, Total Recoverable	24-hr. comp.	EPA 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Thallium, Total Recoverable	24-hr. comp.	EPA 200.7 or 200.9 <sup>d</sup>	HNO <sub>3</sub> to pH < 2	6 months
Zinc, Total Recoverable	24-hr. comp.	SW-846 7950 or EPA 200.7	HNO <sub>3</sub> to pH < 2	6 months
Hardness (Total as CaCO <sub>3</sub> )	24-hr. comp.	-	HNO <sub>3</sub> to pH < 2	6 months
Phenols, Total	24-hr. comp.	-	Cool to 6°C, H <sub>2</sub> SO <sub>4</sub> to pH < 2	28 days
<u>VOLATILE ORGANICS</u>				
Acrolein	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , adj. pH to 4-5	14 days
Acrylonitrile	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Benzene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , HCl to pH < 2	14 days
Bromodichloromethane (dichlorobromo-methane)	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days

Parameter	Sample Type <sup>a</sup>	Recommended Analytical Test Methods <sup>b</sup>	Preservation <sup>c</sup>	Maximum Holding Time <sup>c</sup>
Bromoform	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Carbon tetrachloride	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Chlorobenzene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , HCl to pH < 2	14 days
Chlorodibromo-methane (dibromochloromethane)	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Chloroethane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Chloroform	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Chloromethane (methyl chloride)	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,2-Dichlorobenzene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , HCl to pH < 2	14 days
1,3-Dichlorobenzene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , HCl to pH < 2	14 days
1,4-Dichlorobenzene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , HCl to pH < 2	14 days
1,1-Dichloroethane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,2-Dichloroethane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,1-Dichloroethylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
<i>cis</i> -1,2 Dichloroethylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
<i>trans</i> -1,2-Dichloroethylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,2-Dichloropropane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,3-Dichloropropane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,1-Dichloropropylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
<i>cis</i> -1,3-Dichloropropylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
<i>trans</i> -1,3-Dichloropropylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
2,3-Dichloropropylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Ethylbenzene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , HCl to pH < 2	14 days
Methyl bromide (bromomethane)	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Methylene chloride (dichloromethane)	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,1,2,2-Tetrachloroethane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Tetrachloroethylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Toluene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub> , HCl to pH < 2	14 days
1,1,1-Trichloroethane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
1,1,2-Trichloroethane	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Trichloroethylene	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
Vinyl Chloride	Grab	SW-846 8260B	Cool to 6°C, neutralize Cl <sub>2</sub>	14 days
<b>ACID EXTRACTABLE COMPOUNDS (Phenols)</b>				
2-Chlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
3-Chlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
4-Chlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
3-Methyl-6-chlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,3-Dichlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,4-Dichlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,5-Dichlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>

Parameter	Sample Type <sup>a</sup>	Recommended Analytical Test Methods <sup>b</sup>	Preservation <sup>c</sup>	Maximum Holding Time <sup>c</sup>
2,6-Dichlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
3,4-Dichlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,4-Dimethylphenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,4-Dinitrophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,5-Dinitrophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2-Methyl-4-chlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
3-Methyl-4-chlorophenol ( <i>para</i> -chloro- <i>meta</i> --cresol)	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2-Methyl-4,6-dinitrophenol (4,6-dinitro- <i>ortho</i> -cresol)	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2-Nitrophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
4-Nitrophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Pentachlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Phenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,3,4,6-Tetrachlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,4,5-Trichlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,4,6-Trichlorophenol	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
<b><u>BASE/NEUTRAL COMPOUNDS</u></b>				
Acenaphthene	24-hr. comp.	SW-846 8270C or 8310	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Acenaphthylene	24-hr. comp.	SW-846 8270C or 8310	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Benzidine	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Bis(2-chloroethoxy) methane	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Bis(2-chloroethyl) ether	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Bis(2-chloroisopropyl) ether	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Bis(2-ethylhexyl) phthalate	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
4-Bromophenyl-phenyl ether	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Butyl benzyl phthalate	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
2-Chloronaphthalene	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
4-Chlorophenyl-phenyl ether	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
3,3'-Dichlorobenzidine	24-hr. comp.	SW-846 8270C	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Diethyl phthalate	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
Dimethyl phthalate	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
Di- <i>n</i> -butyl phthalate	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
2,4-Dinitrotoluene	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
2,6-Dinitrotoluene	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Di- <i>n</i> -octyl phthalate	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
1,2-Diphenylhydrazine	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Hexachloroethane	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
Isophorone	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
N-Nitrosodi- <i>n</i> -butylamine	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
N-Nitrosodiethylamine	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
N-Nitrosodimethylamine	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>

Parameter	Sample Type <sup>a</sup>	Recommended Analytical Test Methods <sup>b</sup>	Preservation <sup>c</sup>	Maximum Holding Time <sup>c</sup>
N-Nitrosodiphenylamine	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
N-Nitrosodi- <i>n</i> -propylamine	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
N-Nitrosopyrrolidine	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Naphthalene	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Nitrobenzene	24-hr. comp.	SW-846 8270C	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
1,2,4-Trichlorobenzene	24-hr. comp.	SW-846 8270C	Cool to 6°C	7 days <sup>f</sup>
<u>Chlorinated Hydrocarbons Requiring Specialized Testing</u>				
Hexachlorobenzene	24-hr. comp.	SW-846 8121 (GC)	Cool to 6°C	7 days <sup>f</sup>
Hexachlorobutadiene	24-hr. comp.	SW-846 8121 (GC)	Cool to 6°C	7 days <sup>f</sup>
Hexachlorocyclopentadiene	24-hr. comp.	SW-846 8121 (GC)	Cool to 6°C	7 days <sup>f</sup>
Pentachlorobenzene	24-hr. comp.	SW-846 8121 (GC)	Cool to 6°C	7 days
1,2,4,5-Tetrachlorobenzene	24-hr. comp.	SW-846 8121 (GC)	Cool to 6°C	7 days <sup>f</sup>
<u>Polynuclear Aromatic Hydrocarbons Requiring Specialized Testing</u>				
Anthracene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Benzo( <i>a</i> )anthracene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Benzo( <i>a</i> )pyrene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Benzo( <i>b</i> )fluoranthene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Benzo( <i>ghi</i> )perylene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Benzo( <i>k</i> )fluoranthene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Chrysene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Dibenzo( <i>a,h</i> )anthracene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Fluoranthene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Fluorene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Indeno( <i>1,2,3-cd</i> )pyrene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
Phenanthrene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days
Pyrene	24-hr. comp.	SW-846 8310 (HPLC)	Cool to 6°C, Store in the dark, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>
<u>PESTICIDES</u>				
Aldrin	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
<i>alpha</i> -BHC ( - hexachlorocyclohexane)	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
<i>beta</i> -BHC ( - hexachlorocyclohexane)	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
<i>delta</i> -BHC ( - hexachlorocyclohexane)	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
<i>gamma</i> -BHC ( - hexachlorocyclohexane, Lindane)	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Chlordane	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
4,4'-DDT	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
4,4'-DDE	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
4,4'-DDD	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Dieldrin	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
<i>alpha</i> -Endosulfan	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
<i>beta</i> -Endosulfan	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Endosulfan sulfate	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Endrin	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>

Parameter	Sample Type <sup>a</sup>	Recommended Analytical Test Methods <sup>b</sup>	Preservation <sup>c</sup>	Maximum Holding Time <sup>c</sup>
Endrin aldehyde	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Heptachlor	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Heptachlor epoxide	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Toxaphene	24-hr. comp.	SW-846 8081A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Chlorpyrifos	24-hr. comp.	SW-846 8141A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Parathion, (ethyl)	24-hr. comp.	SW-846 8141A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
Parathion, (methyl)	24-hr. comp.	SW-846 8141A	Cool to 6°C, pH 5-9	7 days <sup>f</sup>
PCB-1016	24-hr. comp.	SW-846 8082	Cool to 6°C	7 days <sup>f</sup>
PCB-1221	24-hr. comp.	SW-846 8082	Cool to 6°C	7 days <sup>f</sup>
PCB-1232	24-hr. comp.	SW-846 8082	Cool to 6°C	7 days <sup>f</sup>
PCB-1242	24-hr. comp.	SW-846 8082	Cool to 6°C	7 days <sup>f</sup>
PCB-1248	24-hr. comp.	SW-846 8082	Cool to 6°C	7 days <sup>f</sup>
PCB-1254	24-hr. comp.	SW-846 8082	Cool to 6°C	7 days <sup>f</sup>
PCB-1260	24-hr. comp.	SW-846 8082	Cool to 6°C	7 days <sup>f</sup>
<b><u>DIOXINS AND FURANS</u></b>				
All dioxin and furan congeners including 2,3,7,8-Tetrachlorodibenzo- <i>p</i> -dioxin (TCDD) and 2,3,7,8-Tetrachloro-dibenzofuran (TCDF)	24-hr. comp.	EPA 1613 B	Cool to 6°C, neutralize Cl <sub>2</sub>	7 days <sup>f</sup>

**Notes on Table 1:**

<sup>a</sup> Grab sample means a single sample taken at one moment of time or a combination of several smaller samples of equal volume taken in less than a 2 minute period. Where the term is used in connection with monitoring temperature or pH it means a single measurement.

24 hour composite sample means a combination of individual samples taken at intervals of not more than one hour such that the volumes of each of the individual samples and of the combination are proportional to the volumes of flow during each interval and during the 24 hour period respectively.

<sup>b</sup> Each method recommendation assumes a commonly achievable sensitivity and the strictest regulatory level. If the recommended method, or one which is comparably sensitive, is used with reasonable care, a "not detected" result is generally considered sufficient demonstration of a pollutant's absence, even if the detection limit is above the regulatory level. Any other approved method may be used for analyses if sample results are comfortably in the range of quantitation of the method or if the method's detection limit is below the regulatory level. However, if a result from a less sensitive method is reported as "not detected" and the level of detection is above the regulatory level, the DNR may require the permittee to repeat the analysis using the more sensitive method. If there is no recommended method listed, any method approved in s. NR 219, Wisconsin Administrative Code may be used.

If preliminary limits are included with the permit application, the permittee, in conjunction with their lab, may use these limits to help decide if methods other than those recommended may be used (and to decide if additional sample results should be collected). If preliminary limits have not been provided for any substance, please use the recommended (or comparably sensitive) method. If a recommended method is not listed, any approved method in Chapter NR 219, Wis. Adm. Code, may be used.

For many of the most toxic of the metals, we have listed inductively coupled plasma atomic emission spectrometry (ICP) as well as graphite furnace atomic absorption spectrometry (GFAA) because many labs report ICP sensitivities that rival those of GFAA. Labs should use preliminary limits to help decide which method is most appropriate for the required sensitivity.

We have avoided recommending the older EPA metals methods from Chemical Analysis of Water and Wastes, first published in 1979 with several subsequent versions. We anticipate these methods will be de-commissioned. Instead, we have recommended the methods from Methods for the Determination of Metals in Environmental Samples, 1991 (first version). Note that, the ICP method in this more recent version, specifies use of CAL solutions with concentrations toward the lower end of the linear range.

For metals sample preparation (digestion), the older methods distinguished between "total" and "total recoverable" metals, while the newer versions drop the total designation. While the older definitions and methods are still listed in NR 219, we wish to move to the convention of only using the total recoverable designation and urge use of the total recoverable digestion detailed in method 200.2 from Methods for the Determination of Metals in Environmental Samples.

<sup>c</sup> See NR 219, Table F and associated footnotes for further details on sample preservation and holding times.

<sup>d</sup> Standard Methods 3113B may be substituted for EPA's AA furnace method.

<sup>e</sup> NR 106.145 requires that permittees perform field blanks and other data quality steps for mercury. We strongly recommend that any permittee that uses surface water as its water supply source performs side-by-side intake or background surface water monitoring whenever performing effluent testing for mercury.

At this time, the following list of laboratories are certified or registered to perform the low-level mercury testing. Method 1631 is performance-based (permittees and labs may use alternative procedures so long as those procedures are demonstrated to yield reliable results at the levels of interest). The DNR recognizes the capabilities of these labs to perform this low-level work because they have documented use of appropriate quality control steps for the level of sensitivity stated. The DNR has asked these labs to prepare special sampling instructions aimed at minimizing sample contamination for this low-level work.

Facility sampling personnel should closely follow the instructions provided by their lab.

Commercial Labs

Northern Lake Service, Crandon, Wisconsin (Telephone (715) 478-2777, contact Mal Gross).

North Shore Analytical, Inc., Duluth, Minnesota (Telephone (218) 729-4658, contact Christopher Gross)

Other Recognized Labs

NEW Water Green Bay Metropolitan Sewerage District, Green Bay, Wisconsin (Telephone (920) 438-1074).

Madison Metropolitan Sewerage District, Madison, Wisconsin (Telephone (608) 222-1201).

Wisconsin State Laboratory of Hygiene, Madison, Wisconsin (Telephone (800) 442-4618).

ERCO (registered), Port Edwards, Wisconsin (Telephone (715)887-4000.

WE Energies Wisconsin Electric Power Company, Milwaukee, Wisconsin (Telephone (414)221-2828).

<sup>f</sup> The holding time is 7 days prior to extraction, 40 days after extraction.

**TABLE 2. - PARAMETERS REQUIRED TO BE TESTED IF BELIEVED PRESENT  
(Use Additional Monitoring Form)**

Parameter#	Parameter Name (CAS#)	Parameter#	Parameter Name	Parameter#	Parameter Name
	Bromide (24959-67-9)		Radioactivity, Alpha, Total		Aluminum, Total Recoverable (7429-90-5)
	Color		Radioactivity, Beta, Total		Barium, Total Recoverable (7440-39-3)
	Fecal Coliform		Radioactivity, Radium, Total		Boron, Total Recoverable (7440-42-8)
	Fluoride (16984-48-8)		Radioactivity, Radium 226		Cobalt, Total Recoverable (7440-48-4)
	Nitrate plus Nitrite Nitrogen (as N)		Sulfate (as SO <sub>4</sub> ) (14808-79-8)		Iron, Total Recoverable (7439-89-6)
	Nitrogen, Total Organic (as N)		Sulfide (as S)		Magnesium, Total Recoverable (7439-95-4)
			Sulfite (as SO <sub>3</sub> ) (14265-45-3)		Manganese, Total Recoverable (7439-96-5)
			Surfactants		Molybdenum, Total Recoverable (7439-98-7)
					Tin, Total Recoverable (7440-31-5)
					Titanium, Total Recoverable (7440-32-6)

**TABLE 3. - TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES TO BE IDENTIFIED  
(if Believed Present)  
(Use with Hazardous Substances Form)**

Asbestos	Dimethyl amine	Nitrotoluene
Acetaldehyde	Dinitrobenzene	Parathion
Allyl alcohol	Diquat	Phenolsulfanate
Allyl chloride	Disulfoton	Phosgene
Amyl acetate	Diuron	Propargite
Aniline	Epichlorohydrin	Propylene oxide
Benzonitrile	Ethion	Pyrethrins
Benzyl chloride	Ethylene diamine	Quinoline
Butyl acetate	Ethylene dibromide	Resorcinol
Butylamine	Formaldehyde	Strontium
Captan	Furfural	Strychnine
Carbaryl	Guthion	Styrene
Carbofuran	Isoprene	2,4,5-T (2,4,5-Trichloro- phenoxy acetic acid)
Carbon disulfide	Isopropanolamine	TDE (Tetrachloro- Diphenylethane)
Chlorpyrifos	Dodecylbenzenesulfonate	2,4,5-TP [2-(2,4,5-Trichloro- phenoxy) propanoic acid]
Coumaphos	Kelthane	Trichlorofan
Cresol	Kepone	Triethanolamine dodecyl- Benzenesulfonate
Crotonaldehyde	Malathion	Triethylamine
Cyclohexane	Mercaptodimethur	Trimethylamine
2,4-D (2,4-Dichlorophenoxy acetic acid)	Methoxychlor	Uranium
Diazinon	Methyl mercaptan	Vanadium
Dicamba	Methyl methacrylate	Vinyl acetate
Dichlobenil	Methyl parathion	Xylene
Dichlone	Mevinphos	Xylenol
2,2-Dichloropropionic acid	Mexacarbate	Zirconium
Dichlorvos	Monoethyl amine	
Diethyl amine	Monomethyl amine	
	Naled	
	Napthenic acid	

**TABLE 4 - PRIMARY INDUSTRIES AND POLLUTANT GROUPS REQUIRING TESTING**

INDUSTRIAL CATEGORY	POLLUTANT GROUPS				
	Volatile Organics	Acid Extractable Compounds	Base/Neutral Compounds	Pesticides	Dioxins and Furans
Adhesives and sealants	X	X	X		
Aluminum forming	X	X	X		
Auto and other laundries	X	X	X	X	
Battery manufacturing	X		X		
Coal mining	X	X	X	X	
Coil coating	X	X	X		
Copper forming	X	X	X		
Electric and electronic compounds	X	X	X	X	
Electroplating	X	X	X		
Explosives manufacturing	X	X	X		
Foundries	X	X	X		
Gum and wood chemicals					
All subparts except D and F	X	X			
Subpart D	X	X	X		
Subpart F	X	X	X		
Inorganic chemicals manufacturing	X	X	X		
Iron and steel manufacturing	X	X	X		
Leather tanning and finishing	X	X	X		X
Mechanical products manufacturing	X	X	X		
Nonferrous metals manufacturing	X	X	X	X	
Ore mining (applies to Subpart B)		X			
Organic chemicals manufacturing	X	X	X	X	X
Paint and ink forming	X	X	X		
Pesticides	X	X	X	X	
Petroleum refining	X				X
Pharmaceutical preparations	X	X	X		
Photographic equipment and supplies	X	X	X		
Plastic and synthetic materials manufacturing	X	X	X	X	
Plastic processing	X				
Porcelain enameling					
Printing and publishing	X	X	X	X	
Pulp, paper and paperboard mills					
Subpart A - Dissolving Kraft	X	X			X

INDUSTRIAL CATEGORY	POLLUTANT GROUPS				
	Volatile Organics	Acid Extractable Compounds	Base/Neutral Compounds	Pesticides	Dioxins and Furans
Subpart B - Bleached Papergrade Kraft and Soda	X	X			X
Subpart C - Unbleached Kraft		X		X	X
Subpart D - Dissolving Sulfite	X	X			X
Subpart E - Papergrade Sulfite	X	X	X		X
Subpart F - Semi-chemical		X			X
Subpart G - Mechanical Pulp	X	X			X
Subpart H - Non-Wood Chemical Pulp	?	?	?	?	X
Subpart I - Secondary Fiber Deink	X	X		X	X
Subpart J - Secondary Fiber Non-Deink	X	X		X	X
Subpart K - Fine and Lightweight Papers from Purchased Pulp					
Nonintegrated Fine		X			X
Nonintegrated Lightweight	X	X		X	X
Subpart L - Tissue, Filter, Non-Woven and Paperboard from Purchased Pulp	X	X		X	X
Rubber processing	X	X	X		
Soap and detergent manufacturing	X	X	X		
Steam electric power plants	X	X			
Textile mills (excluding Subpart C)	X	X	X		
Timber products processing	X	X	X	X	

## MONITORING PROCEDURES GUIDANCE

*A generalized procedure for obtaining chemical specific monitoring data follows. Use it to tailor your own procedure.*

- A. Review specific requirements of permit or application request.
- B. Hire a certified laboratory. Supply your laboratory with appropriate parts of your permit application, including the Effluent Monitoring Form, preliminary limits, if included in the application package, and associated instructions.
- C. Decide when to sample.
  1. Industrial discharges should be at normal to maximum levels, usually this means mid-week but avoid always sampling on the same day(s) of the week.
  2. The treatment plant should be operating normally.
  3. If unusual circumstances occur just before or during sampling, stop and start over after the situation has stabilized.
  4. Consider sample holding times and lab workload when scheduling sampling events. Consult your laboratory prior to initiating sampling to make sure that the dates you select do not conflict with the laboratory's scheduling.
  5. Consider sample transportation and laboratory arrival times.
- D. Determine proper sample location.
  1. The proper location is the plant effluent after all unit processes.
  2. Chlorination/dechlorination processes may affect samples for various substances. Keep this in mind if disinfection processes are in operation when sampling is performed. For example, if you need to sample for cyanide amenable to chlorination and you chlorinate seasonally, collect the grab sample prior to chlorination. Also, as indicated in Table 1, the presence of chlorine also affects sample preservation requirements for certain substances.
  3. The effluent stream should be well mixed at the point of sampling.
- E. Prepare for sampling.
  1. Obtain sample containers and proper preservation chemicals. (These items should be obtained from your laboratory.)
  2. Prepare equipment; clean sampler(s). If using an automatic sampler, adhere to sampler cleaning requirements given below. For "flow through" samplers, careful cleaning and acclimation to the wastewater may be appropriate.
  3. Coordinate routine testing to help serve as a measure of plant performance.
  4. Contact your laboratory again to make sure they are ready for your samples.
- F. Collect samples.
  1. Grab samples -- Collect according to precautions and preserve. (If doing composite sampling for other parameters, the grab samples should be taken during the composite sampling.)
  2. Composite sampling: NR 218 requires that composite samples be **flow-proportional**

- G. Ship samples to a certified laboratory (most laboratory chain of custody forms should contain this information).
1. Ship with ice or refrigeration to maintain 4°C. If ice packs are used or if ice is not in direct contact with the sample containers, include a 250 ml. or larger temperature blank with the samples.
  2. Make sure all sample containers are clearly marked with contents, including preservatives.
  3. Enclose information regarding the exact date(s) and time(s) of sampling.
  4. Remember sample holding time limits.
- H. When data comes back from the laboratory, report data to the DNR.
1. Check data for errors. Does it look reasonable?
  2. Assemble all information, including remarks on sampling and analysis.
  3. Fill in all blanks on the Effluent Data Reporting Form(s)

### **Cleaning Automatic Samplers**

Special provisions should be considered if using automatic samplers to collect composite samples for priority pollutant analysis. The following cleaning procedures have been suggested for suction/tubing type samplers. Alternately, consider replacing tubing and cleaning before use.

#### **A. Pump Tubing and Line Hose Cleaning**

1. Rinse by pumping hot water through the tubing for at least 2 minutes.
2. Acid rinse the tubing by pumping 20 percent hydrochloric acid or 20 percent nitric acid through the tubing for at least 2 minutes. The acid rinse should be recirculated. The acid rinse may be reused up to 4 times.
3. Repeat Step 1.
4. Rinse by pumping distilled water through the hose for at least 1 minute. After 1 minute, stop the pump and allow water to stand in the hose for at least 1 minute. After 1 minute, continue pumping rinse water for 1 additional minute. The distilled rinse should not be recirculated.
5. For priority pollutants (organics and trace metals), the hose should be flushed with pesticide grade or redistilled acetone, then rinsed again with distilled water. (Note: hose must be Teflon for organics).
6. Beware of possible zinc contamination with silicon pump tubing.

#### **B. Sampler Cleaning - General Washing**

1. Flush assembled sampler (manual or automatic) with tap water.
2. Disassemble, submerge and/or rigorously scrub all parts, which contact the sample with hot tap water and a non-phosphorus detergent.
3. Rinse and drain all items three times with tap water, and then follow with three distilled water rinses.

**NOTE:** Sampler bottles can be glass or polyethylene for metals, but only glass for organics. Use glass sampler bottles if sampling for metals and organics simultaneously.