



**STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES**

**GENERAL PERMIT TO DISCHARGE UNDER THE
WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of Chapter 283, Wisconsin Statutes, any facility discharging

NONCONTACT COOLING WATER OR CONDENSATE AND BOILER WATER

located in the State of Wisconsin and meeting the applicability criteria listed in this General Permit, is permitted to discharge these wastewaters directly to surface waters of the state and/or indirectly to groundwaters of the state

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

State of Wisconsin Department of Natural Resources
For the Secretary

By

A handwritten signature in black ink that reads 'Russell Rasmussen'.

Russell Rasmussen
Director, Bureau of Watershed Management

April 29, 2005

Date Permit Signed/Issued for Modification

PERMIT TERM: EFFECTIVE DATE - May 01, 2004

EXPIRATION DATE BY PERMIT MODIFICATION: March 31, 2006

EFFECTIVE DATE OF MODIFICATION: May 01, 2005

A. APPLICABILITY CRITERIA

- (1) Facilities Covered: With exceptions listed in (2) below, this permit applies to facilities discharging the following types of wastewater:
- (a) noncontact cooling waters,
 - (b) noncontact condensates,
 - (c) boiler water (blowdown and bleed-off), or
 - (d) other similar wastewaters.
- (2) Facilities **Not** Covered: This permit does not apply to discharges:
- (a) of process wastewaters,
 - (b) of water from boiler cleaning operations,
 - (c) of air compressor condensate contaminated with oil and grease,
 - (d) of water treated with biocides, unless the addition and discharge of such compounds is at a rate and quantity necessary to provide a safe drinking water supply (e.g., chlorine),
 - (e) to Great Lakes (Lake Michigan and Lake Superior), greater than 13.2 million gallons per day (MGD),
 - (f) to wetlands, unless the Department determines, in writing, that the facility's discharge meets the wetland protection requirements of ch. NR 103, Wis. Adm. Code.
 - (g) to outstanding resource waters as defined in s. NR 102.10, Wis. Adm. Code. This permit does not authorize discharges that would lower the water quality of downstream outstanding resource waters,
 - (h) to exceptional resource waters as defined in s. NR 102.11, Wis. Adm. Code. This permit does not authorize new discharges that would lower the water quality of downstream exceptional water resources,
 - (i) that contain pollutants, other than those specified in this permit, in quantities that must be limited to prevent harm to animal, plant, or aquatic life. No discharge is allowed that would violate the surface water quality standards in chs. NR 102, NR 105, NR 106, and NR 207, Wis. Adm. Code, or the groundwater quality standards in ch. NR 140, Wis. Adm. Code, or

- (j) that adds detectable quantities of any of the following 21 bioaccumulating toxic substances:

alpha - BHC	4,4'-DDT	Polychlorinated Biphenyls (PCB)
beta - BHC	Dieldrin	Pentachlorobenzene
gamma - BHC (Lindane)	Hexachlorobenzene	Photomirex
delta - BHC	Hexachlorobutadiene	1,2,3,4-Tetrachlorobenzene
Chlordane	Mercury	1,2,4,5-Tetrachlorobenzene
4,4'-DDD	Mirex	2,3,7,8-Tetrachlorodibenzo-p-dioxin
4,4'-DDE	Octachlorostyrene	Toxaphene

B. REQUIREMENTS FOR ALL COVERED FACILITIES

(1) Approval of Water Treatment Additives

- a. Discharges containing non-biocide water treatment additives are prohibited under this general permit unless the use of the water treatment additive is approved, in writing, by the Department. Increases in the quantity used in a discharge or in the discharge concentration of a given additive requires a separate written approval from the Department. The Department shall apply s. NR 106.10(1)(a), Wis. Adm. Code, for surface water discharges, and the groundwater standards contained in ch. NR 140, Wis. Adm. Code, for groundwater discharges, to determine if use of a given water treatment additive is allowable.

The permittee shall provide the following information regarding water treatment additives to receive Department approval:

1. commercial name of the additive to be used,
2. the amount or concentration of the additive to be used,
3. anticipated discharge concentration of the additive,
4. the proposed frequency of usage of the additive,
5. for surface water discharges, at least one 48-hour LC₅₀ or EC₅₀ value for daphnia magna or ceriodaphnia dubia for the additive, and at least one 96-hour LC₅₀ or EC₅₀ value for either fathead minnow, rainbow trout, or bluegill for the additive*.

*** Note: The Department will only consider toxicity information on the whole product, not the active ingredient or component of a product.**

- b. Permittees discharging noncontact cooling water that wish to receive approval to use biocide containing water treatment additives by demonstrating that the addition and discharge of such compounds is at a rate and quantity necessary to provide a safe drinking water supply (e.g., chlorine), shall provide the information in a. above, as well as the following additional information:
 - 1. information detailing the use of the biocide in providing a safe drinking water supply, and
 - 2. dosage information and analytical data of biocide levels in the discharge from water supplies using the biocide.

(2) Additive Usage Record

The following water treatment additive records shall be maintained by the permittee:

- a. Name and manufacturer of each additive used,
- b. Daily maximum and monthly average quantity of each additive used, on a monthly basis.

C. ADDITIONAL REQUIREMENTS FOR GROUNDWATER DISCHARGES

Discharges to groundwater shall meet the requirements outlined in this section, including the monitoring requirements specified in Table 1. Samples taken in compliance with the monitoring requirements specified in Table 1 shall be taken at each outfall following treatment (if applicable) and prior to discharge to groundwaters. The samples taken shall be representative of the discharge.

Table 1

Monitoring Requirements for Groundwater Discharges		
Parameter	Sample Frequency	Sample ^(a,b) Type
Flow (Gallons Per Day)	Annually	Estimate
Oil and Grease (mg/l) (c)	Annually	Grab
Ammonia Nitrogen (mg/l) (c)	Annually	Grab
Water Treatment Additives	Monthly	Record Usage
<p>(a) Estimate means a reasonable approximation of the average daily flow based on a water balance, an uncalibrated weir, calculations from the velocity and cross section of the discharge, intake water meter readings, discharge water meter readings, or any other method approved by the Department.</p> <p>(b) A 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 two minute period.</p> <p>(c) After reviewing the results of two years of discharge monitoring, the Department may waive, by letter, monitoring for any of the following: oil and grease and ammonia nitrogen; and may extend this waiver into subsequent permit terms.</p>		

D. ADDITIONAL REQUIREMENTS FOR SURFACE WATER DISCHARGES

Discharges to surface waters shall meet the requirements outlined in this section, including the effluent limitations and monitoring requirements specified in Table 2. Samples taken in compliance with the monitoring requirements specified in Table 2 shall be taken at each outfall following treatment (if applicable) and prior to discharge to surface waters. The samples taken shall be representative of the discharge.

Table 2

Limitations for Surface Water Discharges				Monitoring Requirements	
Parameter	Daily Minimum	Daily Maximum	Temperature Eligibility Value (TEV)	Sample ^(a) Frequency	Sample ^(b,c) Type
Flow (Gallons Per Day)	-	-	-	Quarterly	Estimate
Temperature (°F)	-	-	(d)	Quarterly	Grab
Total Suspended Solids ^(e)	-	40 mg/l	-	Quarterly	Grab
pH ^(e)	6.0 s.u.	9.0 s.u.	-	Annually	Grab
Oil and Grease (mg/l) ^(f)	-	-	-	Annually	Grab
BOD ₅ (mg/l) ^(f)	-	-	-	Annually	Grab
Total Phosphorus (mg/l)	-	-	-	Annually	Grab
Ammonia Nitrogen (mg/l) ^(f)	-	-	-	Annually	Grab
Water Treatment Additives	-	-	-	Monthly	Record Usage

(a) Quarterly sample frequency means performing the associated monitoring four times per year; once anytime during each of the four annual quarters (Jan.-Feb.-March, April-May-June, July-Aug.-Sept., Oct.-Nov.-Dec.). If there is no discharge during a quarter, the permittee shall state this on the discharge monitoring report form.

(b) Estimate means a reasonable approximation of the average daily flow based on a water balance, an uncalibrated weir, calculations from the velocity and cross section of the discharge, intake water meter readings, discharge water meter readings, or any other method approved by the Department.

(c) A 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 two minute period.

(d) The TEV is applied as a daily maximum level. The Department shall specify the TEV in the cover letter accompanying this permit.

(e) pH and total suspended solids monitoring applies only to discharges of boiler blowdown or boiler bleed-off.

(f) After reviewing the results of two years of discharge monitoring, the Department may waive, by letter, monitoring for any of the following: oil and grease, BOD₅, and ammonia nitrogen; and may extend this waiver into subsequent permit terms.

(1) Floating Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts.

(2) Temperature Eligibility Values (TEV) for Surface Water Discharge

The Department shall calculate a TEV, based on the equation below, for spring (April and May), summer (June through September), fall (October and November), and winter (December through March). The permittee shall meet the TEV specified for the respective time period. The TEV shall be calculated as follows:

- (a) For facilities with multiple outfalls to receiving waters, the total discharge flow rate shall be used to determine the TEV.
- (b) No TEV's are given below 60 °F.
- (c) Streams

For discharges to flowing streams classified for fish and aquatic life protection, except when the conditions of 2. below are met, the following equation shall be used;

$$TEV = 5 \left(\frac{Q_s + Q_e(1 - f)}{Q_e} \right) + T_s$$

Where: TEV = Temperature Eligibility Value, in °F.

Q_e = Effluent Flow, in gpd.

Q_s = Stream Flow = 1/4 of the $Q_{7,10}$, in gpd (the $Q_{7,10}$ is the estimated average 7-day low flow which occurs once in 10 years. Convert cfs to gpd by multiplying cfs by 646,272 gpd/cfs).

T_s = Ambient Stream Temperature in °F (T_s = 50 °F for spring, 80 °F for summer, 60 °F for fall, and 40 °F for winter months).

f = water withdrawal factor (fraction of the effluent flow that is withdrawn from the receiving water between 0 and 1).

1. The effluent flow (Q_e) shall be adjusted for heat loss in the ditch or storm sewer. The loss of heat from the discharge point to the receiving water is calculated as follows.
 - a. For distances <1000 feet, the equation above shall not be modified.
 - b. For distances of 1000 to 5000 feet, the Q_e shall be divided by 2 to reflect the loss of 1/2 the BTUs of the effluent.

c. For distances >5000 feet, the Q_e shall be divided by 3 to reflect the loss of 2/3 the BTUs of the effluent.

2. If the amount of water withdrawn from the receiving water that makes up the discharge is greater than 1/4 of the $Q_{7,10}$ [$Q_e \times f > 1/4 Q_{7,10} (Q_s)$], then the TEV is equal to 60 °F for spring, 85 °F for summer, 65 °F for fall, and 60 °F for winter months.

(d) Great Lakes

For discharges to the Great Lakes (Lake Michigan and Lake Superior) allowed under this permit, the TEV shall be 120°F.

(e) Other Receiving Waters

For discharges to surface waters not classified as full fish and aquatic life, the TEV shall be 120°F.

(f) Inland Lakes

For discharges to inland lakes, the following equation shall be used;

$$TEV = T_s + \frac{3}{e^{-\alpha}}$$

Where: TEV = Temperature Eligibility Value, in °F .

T_s = Ambient Lake Temperature ($T_s = 50$ °F for spring, 80 °F for summer, 60 °F for fall, and 40 °F for winter months), in °F.

$e^{-\alpha}$ = An empirical factor.

The quantity α is calculated by the following equation:

$$\alpha = \frac{KA}{PC_p Q_e}$$

Where: K = Energy exchange coefficient
(BTU/ft²-day-°F)
= $15.7 + (0.26 + B) (bW)$
 B = a coefficient which depends on the ambient
lake temperature
= 0.990 for E between 80°F and 90°F.
= 0.555 for E between 60°F and 70°F.
= 0.405 for E between 50°F and 60°F.
 b = experimental evaporation coefficient = 15
 W = Wind speed = 10 mph.
 A = Area in square feet.
 P = Density of water (62.4 lbs/ft³).
 C_p = 1 BTU/lb-°F.
 Q_e = Discharge volume in ft³ per day.
1 ft³/day = 7.48×10^{-6} MGD (million gallons per
day)

The area (A) of the mixing zone from a shoreline outfall is
a 100 foot radius semi-circle (15,708 square feet).

The effluent flow (Q_e) shall be adjusted for heat loss in the ditch or storm
sewer. The loss of heat from the discharge point to the receiving water is
calculated as follows.

1. For distances <1000 feet, the equation above shall not be modified.
2. For distances of 1000 to 5000 feet, the Q_e shall be divided by 2 to
reflect the loss of 1/2 the BTUs of the effluent.
3. For distances >5000 feet, the Q_e shall be divided by 3 to reflect the
loss of 2/3 the BTUs of the effluent.

E. STANDARD REQUIREMENTS

- (1) NR 205: Wisconsin Administrative Code: The conditions in ss. NR 205.07(1) and
NR 205.07(3), Wis. Adm. Code, are included by reference in this permit. The permittee
shall comply with all of these requirements, except for s. NR 205.07(1)(n), which does
not apply to facilities covered under general permits. Selected NR 205.07 requirements
are listed below for convenience.
- (2) Authorized Signature: Reports, records, and monitoring results required by this permit
shall be signed by the permittees authorized representative or, in his or her absence, as
described in s. NR 205.07(1)(g).
- (3) Inspection and Entry: The permittee shall allow an authorized representative of the
Department, upon the presentation of credentials, to enter the permittee's premises, have
access to records, and inspect and monitor the discharge as described in s. NR
205.07(1)(d).

- (4) Property Rights: As set forth in s. NR 205.07(1)(c), this permit does not convey any property rights of any sort, or any exclusive privilege.
- (5) Planned Changes: The permittee shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants as set forth in s. NR 205.07(3)(c).
- (6) Water Quality Sampling and Testing Procedures: Sampling and laboratory testing procedures shall be performed as specified in s. NR 205.07(1)(p) and as set forth below. Sampling and analysis of effluent samples shall be performed as specified in chapters NR 218 and NR 219, Wis. Adm. Code, respectively and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code.
- (7) Recording of Results: For each effluent measurement or sample taken, the permittee shall record the following information as required in s. NR 205.07(1)(e):
 - The date, exact place, method and time of sampling or measurements;
 - The individual who performed the sampling or measurements;
 - The date the analysis was performed;
 - The individual who performed the analysis;
 - The analytical techniques or methods used; and
 - The result of the analysis.
- (8) Noncompliance and Spill Notification: The permittee shall, as required in s. NR 205.07(1)(c) and as set forth below report by a telephone call, fax or e-mail to the Department's regional office within 24 hours any noncompliance which may endanger health or the environment or any spill of a hazardous substance (using the requirements of NR 706, Wis. Adm. Code). A written report describing the noncompliance or spill reported shall also be submitted to the Department's regional office within 5 days unless a waiver from this reporting has been granted by the Department.
- (9) Duty to Halt or Reduce Activity: Upon failure or impairment of treatment facility operation, the permittee shall as required in NR 205.07(3)(e) and to the extent necessary to maintain compliance with its permit, curtail production or wastewater discharges or both until the treatment facility operations are restored or an alternative method of treatment is provided.
- (10) Retention and Submittal of Reports, Records, and Monitoring Results: The permittee shall retain records of all monitoring required by this permit and report monitoring results as set forth in secs. NR 205.07(1)(f) and (r) and as described below. Reports, records, and monitoring results required by this permit shall be retained by the permittee for the duration of this permit or three years after this data is generated, whichever is longer. All reports, records, and monitoring results required by this permit shall be submitted to the Department office identified in the cover letter accompanying this permit. The permittee shall submit a report to the Department, on a form provided by the Department or an acceptable equivalent form, summarizing monitoring results obtained during the previous calendar year. The report shall be postmarked no later than February 15 of the following year.
- (11) Continuation of an Expired General Permit: As provided in NR 205.08(9), the terms and conditions of this general permit shall continue to apply until this general permit is reissued or revoked or until an individual permit is issued for the discharge to which the general permit applied.