



# WPDES PERMIT

*STATE OF WISCONSIN*  
*DEPARTMENT OF NATURAL RESOURCES*  
**PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE  
ELIMINATION SYSTEM**

**WPL - RIVERSIDE ENERGY CENTER**

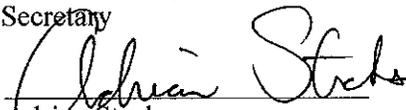
is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility  
located at  
1401 W B-R Townline Rd, Beloit, Wisconsin – Riverside Plant  
4201 South Walters Road – West Riverside Plant  
to

**Rock River (Rock River Watershed, LR18 – Lower Rock River Basin) in Rock County**

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

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources  
For the Secretary

By   
Adrian Stocks  
Director, Bureau of Water Quality

12/20/2018  
Date Permit Signed/Issued

**PERMIT TERM: EFFECTIVE DATE - January 01, 2019**

**EXPIRATION DATE - December 31, 2023**

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# 1 Influent Requirements

## 1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
701	INTAKE: Combination of groundwater from a radial horizontal collector well and water from the Rock River. Four flow meters are used: three for the new plant and one at the existing plant. There is no surface water intake. Any river water in the well is from the surrounding soil.

## 1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

### 1.2.1 Sampling Point 701 - Intake Water

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	

#### 1.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

## 2 In-Plant Requirements

### 2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)
199	FIELD BLANK: Collect total recoverable mercury field blanks using standard sample handling procedures.
101	IN-PLANT: Riverside Low volume wastewater consisting of Multimedia Filter backwash and RO concentrate. 24-hr flow proportional composite and grab samples shall be taken within the building housing the filters and RO system prior to discharge to the wastewater sump pit.
102	IN-PLANT: Riverside Wastewater consisting of cooling tower blowdown, raw water, condenser effluent, aux cooling effluent, and various flows from sump pumps around the plant. 24-hr flow proportional composite samples shall be taken from within the chemical building prior to discharge to the wastewater sump pit.
111	IN-PLANT: Wastewater consisting of LVW from West Riverside prior to commingling with cooling tower blowdown if a discharge occurs from West Riverside through Outfall 001.
112	IN-PLANT: Wastewater consisting of cooling tower blowdown from West Riverside prior to commingling with LVW if a discharge occurs from West Riverside through Outfall 001.

### 2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

#### 2.2.1 Sampling Point 199 - Field Blank for Mercury Sample

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Quarterly	Grab	

##### 2.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

#### 2.2.2 Sampling Point 101 – Riverside Low Volume Wastewater

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
Suspended Solids,	Daily Max	100 mg/L	Weekly	24-Hr Flow	

Total				Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	Weekly	24-Hr Flow Prop Comp	
Oil & Grease (Hexane)	Daily Max	20 mg/L	Weekly	Grab	
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	Weekly	Grab	
pH (Minimum)	Daily Min	4.0 su	Continuous	Continuous	
pH (Maximum)	Daily Max	11 su	Continuous	Continuous	
pH Total Exceedance Time Minutes	Monthly Total	446 minutes	Monthly	Calculated	
pH Exceedances Greater Than 60 Minutes	Daily Max	0 Number	Daily	Calculated	

### 2.2.2.1 Continuous pH Monitoring

The permittee shall maintain the pH of the discharge within the range of 6.0 to 9.0 standard units (s.u.) except excursions are permitted subject to the following conditions:

- The pH is monitored continuously;
- The total time during which the pH is outside the range of 6.0 to 9.0 s.u. shall not exceed 446 minutes in any calendar month;
- No individual pH excursion outside the range of 6.0 to 9.0 s.u. shall exceed 60 minutes in duration;
- No individual pH excursion shall be outside the range of 4.0 to 11.0 s.u.; and
- On a daily basis, the permittee shall report the minimum and maximum pH, the total time that the pH is outside the range of 6.0 to 9.0 s.u. and the number of pH excursions outside the range of 6.0 to 9.0 that exceed 60 minutes in duration.

### 2.2.3 Sampling Point 102 – Riverside Cooling Tower Blowdown

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
Zinc, Total Recoverable	Daily Max	1.0 mg/L	Quarterly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable	Monthly Avg	1.0 mg/L	Quarterly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable	Daily Max	0.2 mg/L	Quarterly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable	Monthly Avg	0.2 mg/L	Quarterly	24-Hr Flow Prop Comp	
pH (Minimum)	Daily Min	4.0 su	Continuous	Continuous	
pH (Maximum)	Daily Max	11 su	Continuous	Continuous	
pH Total Exceedance Time Minutes	Monthly Total	446 minutes	Monthly	Calculated	
pH Exceedances Greater Than 60	Daily Max	0 Number	Daily	Calculated	

Minutes					
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### 2.2.3.1 Metals Analyses

Unless specified otherwise in the table above, metals analyses shall measure metals as total recoverable. Measurements of total metals and total recoverable metals shall be considered as equivalent.

### 2.2.3.2 Continuous pH Monitoring

The permittee shall maintain the pH of the discharge within the range of 6.0 to 9.0 standard units (s.u.) except excursions are permitted subject to the following conditions:

- The pH is monitored continuously;
- The total time during which the pH is outside the range of 6.0 to 9.0 s.u. shall not exceed 446 minutes in any calendar month;
- No individual pH excursion outside the range of 6.0 to 9.0 s.u. shall exceed 60 minutes in duration;
- No individual pH excursion shall be outside the range of 4.0 to 11.0 s.u.; and
- On a daily basis, the permittee shall report the minimum and maximum pH, the total time that the pH is outside the range of 6.0 to 9.0 s.u. and the number of pH excursions outside the range of 6.0 to 9.0 that exceed 60 minutes in duration.

### 2.2.4 Sampling Point 111 - West Riverside: LVW

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	Only required if a discharge occurs from West Riverside through Outfall 001.
Suspended Solids, Total	Daily Max	100 mg/L	Weekly	24-Hr Flow Prop Comp	Only required if a discharge occurs from West Riverside through Outfall 001.
Suspended Solids, Total	Monthly Avg	30 mg/L	Weekly	24-Hr Flow Prop Comp	Only required if a discharge occurs from West Riverside through Outfall 001.
Oil & Grease (Hexane)	Daily Max	20 mg/L	Weekly	Grab	Only required if a discharge occurs from West Riverside through Outfall 001.
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	Weekly	Grab	Only required if a discharge occurs from West Riverside through Outfall 001.
pH (Minimum)	Daily Min	4.0 su	Daily	Continuous	Only required if a discharge occurs from West Riverside through Outfall 001.
pH (Maximum)	Daily Max	11 su	Daily	Continuous	Only required if a discharge occurs from West Riverside through Outfall 001.
pH Total Exceedance Time Minutes	Monthly Total	446 minutes	Monthly	Calculated	Only required if a discharge occurs from West Riverside through Outfall 001.

pH Exceedances Greater Than 60 Minutes	Daily Max	0 Number	Daily	Calculated	Only required if a discharge occurs from West Riverside through Outfall 001.
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### 2.2.4.1 Continuous pH Monitoring

The permittee shall maintain the pH of the discharge within the range of to 9.0 standard units (s.u.) except excursions are permitted subject to the following conditions:

- The pH is monitored continuously;
- The total time during which the pH is outside the range of 6.0 to 9.0 s.u. shall not exceed 446 minutes in any calendar month;
- No individual pH excursion outside the range of 6.0 to 9.0 s.u. shall exceed 60 minutes in duration;
- No individual pH excursion shall be outside the range of 4.0 to 11.0 s.u.; and
- On a daily basis, the permittee shall report the minimum and maximum pH, the total time that the pH is outside the range of 6.0 to 9.0 s.u. and the number of pH excursions outside the range of 6.0 to 9.0 that exceed 60 minutes in duration.

### 2.2.5 Sampling Point 112 - West Riverside: Cooling Tower

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	Only required if a discharge occurs from West Riverside through Outfall 001.
Zinc, Total Recoverable	Daily Max	1.0 mg/L	Quarterly	24-Hr Flow Prop Comp	Only required if a discharge occurs from West Riverside through Outfall 001.
Zinc, Total Recoverable	Monthly Avg	1.0 mg/L	Quarterly	24-Hr Flow Prop Comp	Only required if a discharge occurs from West Riverside through Outfall 001.
Chromium, Total Recoverable	Daily Max	0.2 mg/L	Quarterly	24-Hr Flow Prop Comp	Only required if a discharge occurs from West Riverside through Outfall 001.
Chromium, Total Recoverable	Monthly Avg	0.2 mg/L	Quarterly	24-Hr Flow Prop Comp	Only required if a discharge occurs from West Riverside through Outfall 001.
pH (Minimum)	Daily Min	4.0 su	Daily	Continuous	Only required if a discharge occurs from West Riverside through Outfall 001.
pH (Maximum)	Daily Max	11 su	Daily	Continuous	Only required if a discharge occurs from West Riverside through Outfall 001.
pH Total Exceedance Time Minutes	Monthly Total	446 minutes	Monthly	Calculated	Only required if a discharge occurs from West Riverside through Outfall 001.
pH Exceedances Greater Than 60 Minutes	Daily Max	0 Number	Daily	Calculated	Only required if a discharge occurs from West Riverside through Outfall 001.

### **2.2.5.1 Continuous pH Monitoring**

The permittee shall maintain the pH of the discharge within the range of 6.0 to 9.0 standard units (s.u.) except excursions are permitted subject to the following conditions:

- The pH is monitored continuously;
- The total time during which the pH is outside the range of 6.0 to 9.0 s.u. shall not exceed 446 minutes in any calendar month;
- No individual pH excursion outside the range of 6.0 to 9.0 s.u. shall exceed 60 minutes in duration;
- No individual pH excursion shall be outside the range of 4.0 to 11.0 s.u.; and
- On a daily basis, the permittee shall report the minimum and maximum pH, the total time that the pH is outside the range of 6.0 to 9.0 s.u. and the number of pH excursions outside the range of 6.0 to 9.0 that exceed 60 minutes in duration.

### 3 Surface Water Requirements

#### 3.1 Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	EFFLUENT: Combined discharge of in-plant sampling. 24-hr flow proportional composite and grab samples shall be taken from each power plant prior to discharge to the Rock River and a flow weighted average shall be applied to the waste streams.

#### 3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

##### 3.2.1 Sampling Point (Outfall) 001 - Combined WW to the Rock River

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
Suspended Solids, Total		mg/L	Weekly	24-Hr Flow Prop Comp	
Chlorine, Total Residual	Daily Max	38 µg/L	Daily	Grab	
Chlorine, Total Residual	Monthly Avg	38 µg/L	Daily	Grab	
Zinc, Total Recoverable	Daily Max	650 µg/L	Quarterly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable	Monthly Avg	650 µg/L	Quarterly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable	Daily Max	12.5 lbs/day	Quarterly	Calculated	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	
Temperature Maximum		deg F	Daily	Continuous	
Acute WET		TU <sub>a</sub>	See Listed Qtr(s)	24-Hr Flow Prop Comp	
Phosphorus, Total	Rolling 12 Month Avg	1.0 mg/L	Weekly	24-Hr Flow Prop Comp	
Phosphorus, Total		lbs/day	Weekly	Calculated	
WQT TP Credits		lbs/day	Weekly	Calculated	
WQT TP Credits		lbs/month	Monthly	Calculated	
WQT TP Computed Compliance	Monthly Avg	0.65 lbs/day	Weekly	Calculated	

**3.2.1.1 Mercury Monitoring**

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

**3.2.1.2 Phosphorus Water Quality Trading (WQT)**

The permittee may use water quality trading to demonstrate compliance with WQBELs for total phosphorus (TP) of 0.65 lbs/day monthly average. Pollutant reduction credits for total phosphorus are available as specified in Water Quality Trading Plan **WQT-2018-0005** or approved amendments thereof.

**Table 2. Available Phosphorus Credits per WQT-2018-0005**

Year	Available TP Credits (lbs/yr)
2019	36.1
2020	136.3
2021	381.5
2022	341.4
2023	161.9
2024	163.0
2025	163.1
2026	163.2
2027	159.4

Only those pollutant reduction credits established by a water quality trading plan approved by the Department may be used by the permittee to demonstrate compliance with the WQBELs identified in this subsection. If the permittee wishes to use pollutant reduction credits not identified in an approved water quality trading plan, the permittee must amend the plan or develop a new plan and obtain Department approval of the amended or new plan prior to use of the new pollutant reduction credits. Prior to Department approval, the amended or new water quality trading plan will be subject to notice and opportunity for public comment. Any change in the number of available credits requires a permit modification.

In the event pollutant reduction credits as defined in the approved water quality trading plan are no longer generated, the permittee shall comply with the WQBELs for TP contained in this subsection.

**3.2.1.2.1 Demonstrating Compliance with TP WQBELs Using Water Quality Trading**

Use the following methods to demonstrate compliance with the TP WQBELs contained in the Water Quality Trading subsection above.

### **WQT TP CREDITS**

**Use the following method to calculate the credits to be used expressed as a mass in lbs/day:**

- Select and report as “WQT TP Credits” the TP pollutant reduction credits (in lbs/day) that will be used for each day that discharge is monitored for TP.
  - $\text{WQT TP Credits (in lbs/day)} = \text{TP discharged (in lbs/day)} - 0.65 \text{ lbs/day}$ ; or

Note: When the TP discharge is less than 0.65 lbs/day for a given day, report 0 (zero) as the “WQT TP Credits” for that day.

**Use the following method to calculate the credits to be used expressed as a mass in lbs/month:**

- On a monthly basis, average the reported daily TP credits used for the month, then multiply the average by the number of days of discharge during the month and report the product as “WQT TP Credits” (in lbs/month) for the last day of the month on the DMR.
  - $\text{WQT TP Credits (in lbs/month)} = \text{Average of daily WQT TP Credits (in lbs/day)} \times \text{Number of days of discharge/month}$

Note: The total number of TP credits selected for the twelve months of a calendar year shall not exceed that specified in the Water Quality Trading Plan approved by the Department.

### **WQT TP COMPUTED COMPLIANCE**

**Use the following method to demonstrate compliance with TP WQBELs expressed as a mass in lbs/day:**

- Subtract the TP credits in lbs/day for the day from the day’s TP discharge in lbs/day and report the difference as “WQT TP Computed Compliance” in lbs/day.
  - $\text{WQT TP Computed Compliance (lbs/day)} = \text{TP discharged (in lbs/day)} - \text{WQT TP Credits (in lbs/day)}$

### **3.2.1.3 Additional Water Quality Trading Requirements**

When using water quality trading to demonstrate compliance with WQBELs for TP, the permittee shall comply with the following:

- Failure to implement any of the terms or conditions of the approved water quality trading plan is a violation of this permit.
- Each month the permittee shall certify that the nonpoint source management practices installed to generate pollutant reduction credits are operated and maintained in a manner consistent with that specified in the approved water quality trading plan. Such a certification may be made by including the following statement as a comment on the monthly discharge monitoring report:

I certify that management practices identified in the approved water quality trading plan as the source of pollutant reduction credits are installed, established and properly maintained.

- At least once a year the permittee or the permittee’s agent shall inspect each nonpoint source management practice that generates pollutant reduction credits to confirm the implementation of the management practice and their appropriate operation and adequate maintenance.

- The permittee shall notify WDNR by telephone within 24 hours or next business day of becoming aware that pollutant reduction credits used or intended for use by the permittee are not being implemented or generated as defined in the approved trading plan. A written notification shall be submitted to the Department within 5 days regarding the status of the permittee's pollutant reduction credits.
- The permittee shall provide WDNR written notice within 7 days of the trade agreement upon which the approved water quality trading plan is based being amended, modified, or revoked. This notification shall include the details of any amendment or modification in addition to the justification for the changes.
- The permittee shall not use pollutant reduction credits for the demonstration of compliance when pollutant reduction credits are not being generated.

#### **3.2.1.4 Annual Water Quality Trading Report**

When using water quality trading to demonstrate compliance with WQBELs, the permittee shall report by January 31<sup>st</sup> each year the following information:

- The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance;
- The source of each month's pollutant reduction credits by identifying the approved water quality trading plan that details the source;
- A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and
- Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.

#### **3.2.1.5 Water Quality Trading Reopener Clause**

Under any of the following conditions as provided by s. 283.53(2), Wis. Stats., and NR 203.135 and ss. NR 203.136, Wis. Adm. Code, the Department may modify or revoke and reissue this permit to modify or eliminate permit terms and conditions related to water quality trading:

- The permittee fails to implement the water quality trading plan as approved;
- The permittee fails to comply with permit terms and conditions related to water quality trading;
- New information becomes available that would change the number of credits available for the water quality trade or would change the Department's determinations that water quality trading is an acceptable option.

#### **3.2.1.6 Alternative Approaches to Phosphorus WQBEL Compliance**

The permittee may implement an upgrade to its wastewater treatment facility in combination with Water Quality Trading to achieve compliance, provided that the permit is modified, revoked and reissued, or reissued to incorporate any such alternative approach.

#### **3.2.1.7 Submittal of Permit Application for Next Reissuance and Pollutant Trading Plan**

The permittee shall submit the permit application for the next reissuance at least 6 months prior to expiration of this permit.

The permittee has submitted a Water Quality Trading Plan that was approved by WDNR on October 17, 2018. If the permittee intends to pursue pollutant trading to achieve compliance in a manner that differs from that allowed in this permit, the permittee shall submit a new application for water quality trading with the application for the next reissuance. If system upgrades will be used in combination with pollutant trading the permittee shall submit plans for any system upgrade.

### 3.2.1.8 Polychlorinated Biphenyls

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

### 3.2.1.9 Additives

The permittee shall maintain a record of the dosage rate of all additives used on a monthly basis. The additives may be changed during the term of the permit following procedures in the 'Additives' subsection of the Standard Requirements.

### 3.2.1.10 Whole Effluent Toxicity (WET) Testing

**Primary Control Water:** Lab Water

**Dilution series:** At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.

#### **WET Testing Frequency:**

**Acute** tests shall be conducted once each year in rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Acute:** January to March 2019, April to June 2020, July to September 2021, October to December 2022, January to March 2023.

Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in January to March 2024.

**Testing:** WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

**Reporting:** The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2<sup>nd</sup> Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

**Determination of Positive Results:** An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU<sub>a</sub>) is greater than 1.0 for either species. The TU<sub>a</sub> shall be calculated as follows:  $TU_a = 100 \div LC_{50}$ .

**Additional Testing Requirements:** Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90 day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

### 3.2.1.11 Total Suspended Solids Total Maximum Daily Load (TMDL) Limitations

The Rock River TMDL Waste Load Allocation (WLA) for Phosphorus and Total Suspended Solids was approved by the U.S. Environmental Protection Agency on September 28, 2011. The Riverside Facility is located

on Reach 79 of the Rock River; however, the reduction target for the facility is unspecified. The Total Suspended Solids load reduction target for wastewater treatment facilities in this reach is 34%.

**Narrative Interim Total Suspended Solids Limitation:** The permittee shall monitor total suspended solids during periods of active discharge and operate the facility in accordance with a TSS optimization plan

## 4 Schedules

### 4.1 Annual Water Quality Trading (WQT) Report

Annual report of implementation of WQT for computed compliance.

Required Action	Due Date
<b>Annual WQT Report:</b> Submit an annual WQT report that shall cover the first year of the permit term. The WQT shall include the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspections performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading plan.	01/31/2020
<b>Annual WQT Report #2:</b> Submit an annual WQT report that shall cover the previous year.	01/31/2021
<b>Annual WQT Report #3:</b> Submit an annual WQT report that shall cover the previous year.	01/31/2022
<b>Annual WQT Report #4:</b> Submit the 4th annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2023
<b>Annual WQT Report Required After Permit Expiration:</b> In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification on noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.	

### 4.2 ELG Requirements for Cooling Tower Blowdown

Annually review the quality and source of additives to ensure that additives are of highest quality with regard to avoiding contribution of toxics to boiler blowdown.

Required Action	Due Date
<b>Annual Report:</b> Submit annual report based on the previous calendar year according to details listed above.	01/31/2020
<b>Submit Annual Report #2:</b> Submit annual report based on the previous calendar year according to details listed above.	01/31/2021
<b>Submit Annual Report #3:</b> Submit annual report based on the previous calendar year according to details listed above.	01/31/2022
<b>Submit Annual Report #4:</b> Submit annual report based on the previous calendar year according to details listed above.	01/31/2023

## 5 Standard Requirements

**NR 205, Wisconsin Administrative Code (Conditions for Industrial Dischargers):** 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. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(3).

### 5.1 Reporting and Monitoring Requirements

#### 5.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

#### 5.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sample collection and analysis shall be performed in accordance with ch. NR 140, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

#### 5.1.3 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- 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 results of the analysis.

#### **5.1.4 Reporting of Monitoring Results**

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For purposes of calculating NR 101 fees, the 2 mg/l lower reporting limits for BOD<sub>5</sub> and Total Suspended Solids shall be considered to be limits of quantitation
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a 0 (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.

#### **5.1.5 Records Retention**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application, except for sludge management forms and records, which shall be kept for a period of at least 5 years.

#### **5.1.6 Other Information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

#### **5.1.7 Reporting Requirements – Alterations or Additions**

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

### **5.2 System Operating Requirements**

### 5.2.1 Noncompliance Reporting

The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- any noncompliance which may endanger health or the environment;
- any violation of an effluent limitation resulting from a bypass;
- any violation of an effluent limitation resulting from an upset; and
- any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department as directed at the end of this permit within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

**NOTE:** Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources **immediately** of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

### 5.2.2 Bypass

Except for a controlled diversion as provided in the 'Controlled Diversions' section of this permit, any bypass is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the 'Noncompliance Reporting' section of this permit.

### 5.2.3 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the 'Controlled Diversions' section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for unscheduled bypassing are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant

public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

### **5.2.4 Controlled Diversions**

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation provided the following requirements are met:

- Effluent from the wastewater treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in wastewater treatment facility records and such records shall be available to the department on request.

### **5.2.5 Proper Operation and Maintenance**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

### **5.2.6 Operator Certification**

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

### **5.2.7 Spill Reporting**

The permittee shall notify the Department in accordance with ch. NR 706 (formerly NR 158), Wis. Adm. Code, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations established in this permit, or the spill or accidental release of the material is unregulated in this permit, unless the spill or release of pollutants has been reported to the Department in accordance with s. NR 205.07 (1)(s), Wis. Adm. Code.

### **5.2.8 Planned Changes**

In accordance with ss. 283.31(4)(b) and 283.59, Stats., 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. The report shall either be a new permit application, or if the new discharge will not violate the effluent limitations of this permit, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of

this report, the Department may modify this permit to specify and limit any pollutants not previously regulated in the permit.

### 5.2.9 Duty to Halt or Reduce Activity

Upon failure or impairment of treatment facility operation, the permittee shall, 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.

## 5.3 Surface Water Requirements

### 5.3.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

### 5.3.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

**Weekly/Monthly/Six-Month/Annual Average Concentration** = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

**Weekly Average Mass Discharge (lbs/day):** Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

**Monthly Average Mass Discharge (lbs/day):** Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

**Six-Month Average Mass Discharge (lbs/day):** Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

**Annual Average Mass Discharge (lbs/day):** Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

**Total Monthly Discharge:** = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

**Total Annual Discharge:** = sum of total monthly discharges for the calendar year.

**12-Month Rolling Sum of Total Monthly Discharge:** = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

### 5.3.3 Effluent Temperature Requirements

**Weekly Average Temperature** – The permittee shall use the following formula for calculating effluent results to determine compliance with the weekly average temperature limit (as applicable): Weekly Average Temperature = the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

**Cold Shock Standard** – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock. ‘Cold Shock’ means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

**Rate of Temperature Change Standard** – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state.

### **5.3.4 Energy Emergency Events**

The Department will use enforcement discretion whenever there are exceedances of effluent temperature limitations for the electric generating facility during an energy emergency warning or when an energy emergency event has been declared under a Federal Energy Regulatory Commission order (Standard EOP-002, North American Electric Reliability Corporation).

### **5.3.5 Visible Foam or Floating Solids**

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

### **5.3.6 Surface Water Uses and Criteria**

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

- a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
- b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.
- c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
- d) Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

### **5.3.7 Total Residual Chlorine Requirements (When De-Chlorinating Effluent)**

Test methods for total residual chlorine, approved in ch. NR 219 - Table B, Wis. Adm. Code, normally achieve a limit of detection of about 20 to 50 micrograms per liter and a limit of quantitation of about 100 micrograms per liter. Reporting of test results and compliance with effluent limitations for chlorine residual and total residual halogens shall be as follows:

- Sample results which show no detectable levels are in compliance with the limit. These test results shall be reported on Wastewater Discharge Monitoring Report Forms as "< 100 µg/L". (Note: 0.1 mg/L converts to 100 µg/L)
- Samples showing detectable traces of chlorine are in compliance if measured at less than 100 µg/L, unless there is a consistent pattern of detectable values in this range. These values shall also be reported on

Wastewater Discharge Monitoring Report Forms as "<100 µg/L." The facility operating staff shall record actual readings on logs maintained at the plant, shall take action to determine the reliability of detected results (such as re-sampling and/or calculating dosages), and shall adjust the chemical feed system if necessary to reduce the chances of detects.

- Samples showing detectable levels greater than 100 µg/L shall be considered as exceedances, and shall be reported as measured.
- To calculate average or mass discharge values, a "0" (zero) may be substituted for any test result less than 100 µg/L. Calculated values shall then be compared directly to the average or mass limitations to determine compliance.

### 5.3.8 Compliance with Phosphorus Limitation

Compliance with the concentration limitation for phosphorus shall be determined as a rolling twelve-month average and shall be calculated as follows:

First, determine the pounds of phosphorus for an individual month by multiplying the average of all the concentration values for phosphorus (in mg/L) for that month by the total flow for the month in Million Gallons times the conversion factor of 8.34.

Then, the monthly pounds of phosphorus determined in this manner shall be summed for the most recent 12 months and inserted into the numerator of the following equation.

$$\text{Average concentration of P in mg/L} = \frac{\text{Total lbs of P discharged (most recent 12 months)}}{\text{Total flow in MG (most recent 12 months)} \times 8.34}$$

The compliance calculation shall be performed each month with a reported discharge volume after substituting data from the most recent month(s) for the oldest month(s). A calculated value in excess of the concentration limitation will be considered equivalent to a violation of a monthly average.

### 5.3.9 Additives

In the event that the permittee wishes to commence use of a water treatment additive, or increase the usage of the additives greater than indicated in the permit application, the permittee must get a written approval from the Department prior to initiating such changes. This written approval shall provide authority to utilize the additives at the specific rates until the permit can be either reissued or modified in accordance with s. 283.53, Stats. Restrictions on the use of the additives may be included in the authorization letter.

### 5.3.10 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2<sup>nd</sup> Edition*" (PUB-WT-797, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this permit, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow species. Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

### **5.3.11 Whole Effluent Toxicity (WET) Identification and Reduction**

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;
- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including some or all of the following actions:
  - (a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)
  - (b) Identify the compound(s) causing toxicity
  - (c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)
  - (d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)
- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;
- If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

## 6 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Annual Water Quality Trading (WQT) Report -Annual WQT Report	January 31, 2020	13
Annual Water Quality Trading (WQT) Report -Annual WQT Report #2	January 31, 2021	13
Annual Water Quality Trading (WQT) Report -Annual WQT Report #3	January 31, 2022	13
Annual Water Quality Trading (WQT) Report -Annual WQT Report #4	January 31, 2023	13
Annual Water Quality Trading (WQT) Report -Annual WQT Report Required After Permit Expiration	See Permit	13
ELG Requirements for Cooling Tower Blowdown -Annual Report	January 31, 2020	13
ELG Requirements for Cooling Tower Blowdown -Submit Annual Report #2	January 31, 2021	13
ELG Requirements for Cooling Tower Blowdown -Submit Annual Report #3	January 31, 2022	13
ELG Requirements for Cooling Tower Blowdown -Submit Annual Report #4	January 31, 2023	13
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	14

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:  
Southeast Region - Waukesha, 141 NW Barstow St., Room 180, Waukesha, WI 53188