Aquaculture WPDES Permitting

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2024 WI/MN Aquaculture Conference

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Agenda

• Wisconsin/Federal Aquaculture Regulations
• Permitting Process
• Permit Requirements
State and Federal Regulations
Wisconsin Regulations

• In Wisconsin: Defer to Federal Regulations

• s. 283.31(5m), Wis. Stats.
  • “The department shall include the requirements of 40 CFR 451.11 in permits issued under this section for concentrated aquatic animal production facilities described in 40 CFR 451.10. The department may not include additional conditions in a permit for a fish farm except as necessary for the farm to meet the applicable limitations, standards, and other provisions described in sub. (3) (a) to (f). Any conditions included in a permit issued under this section for a fish farm shall be limited to site-specific best management practices to the greatest extent allowed under federal law.”
Federal Regulations

- **40 CFR 122.24, Appendix C:**
  - CAAP: Contains, grows, or holds aquatic animals in either of the following categories:
    - **Cold Water Fish (Trout/Salmon), discharge ≥30 days/year**
      - Produce ≥20,000 lbs/year, or
      - Use ≥5,000 lbs food/maximum month of feeding
    - **Warm Water Fish (and Cool Water Fish), discharge ≥30 days/year**
      - Produce ≥100,000 lbs/year
WPDES Permitting Process
WPDES Program Overview

• Covers ‘Point Source’ discharges to ‘Waters of the State’
  • Point Source: Discrete conveyance of water (i.e., a pipe, ditch, channel, conduit)
  • Waters of the state: Surface waterbodies, wetlands, and (in Wisconsin) groundwater

• Two goals for all waters of the state:
  • Fishable
  • Swimmable

• Water quality standards protect a waterbody’s designated uses
Permitting Process

- Step 1: Provide DNR with feeding and production numbers.
- Step 2: Submit Pre-Application Checklist (1.5 Years before discharging)
- Step 3: Receive Permit Application (1 Year before discharging)
- Step 4: Submit completed Permit Application (6 months before discharging)
- Step 5: Draft permit is public noticed for 30 days
- Step 6: Commence discharge (5 Year Terms)
WPDES Permits for CAAPs
WPDES Permit Requirements

- Effluent limitations and standards
  - Narrative or numeric requirements
    - Narrative: Federal CAAP ELGs
    - Numeric: A number calculated based on water quality standards for that particular waterbody
      - Example: WQBELs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit Type</th>
<th>Limit and Units</th>
<th>Sample Frequency</th>
<th>Sample Type</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Flow Rate</td>
<td>MGD</td>
<td>Monthly</td>
<td>Measure</td>
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<tr>
<td>BOD₅, Total</td>
<td>Weekly Avg</td>
<td>6.2 mg/L</td>
<td>Monthly</td>
<td>3-Hr Comp</td>
<td>May-Oct</td>
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<td>BOD₅, Total</td>
<td>Weekly Avg</td>
<td>10 mg/L</td>
<td>Monthly</td>
<td>3-Hr Comp</td>
<td>Nov-Apr</td>
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<td>BOD₅, Total</td>
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<td>59 lbs/day</td>
<td>Monthly</td>
<td>Calculated</td>
<td>May-Oct</td>
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<td>98 lbs/day</td>
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<td>Nov-Apr</td>
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<tr>
<td>Suspended Solids, Total</td>
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<td>10 mg/L</td>
<td>Monthly</td>
<td>3-Hr Comp</td>
<td>See 2.2.1.1 below re pond harvest extra sampling</td>
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<td>Suspended Solids, Total</td>
<td>Daily Max</td>
<td>20 mg/L</td>
<td>Monthly</td>
<td>3-Hr Comp</td>
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<tr>
<td>Nitrogen, Ammonia (NH₃-N) Total</td>
<td>Daily Max</td>
<td>6.3 mg/L</td>
<td>Monthly</td>
<td>3-Hr Comp</td>
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<td>Nitrogen, Ammonia (NH₃-N) Total</td>
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<td>3.6 mg/L</td>
<td>Monthly</td>
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<td>May - Sep</td>
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<td>Monthly</td>
<td>3-Hr Comp</td>
<td>Oct - April</td>
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<td>Temperature</td>
<td>deg F</td>
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<td>Measure</td>
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<td>Temperature monitoring not required Dec, Jan, Feb</td>
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<td>pH Field</td>
<td>Daily Max</td>
<td>9.0 su</td>
<td>Monthly</td>
<td>Grab</td>
<td>pH monitoring not required Dec, Jan, Feb</td>
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<tr>
<td>pH Field</td>
<td>Daily Min</td>
<td>6.0 su</td>
<td>Monthly</td>
<td>Grab</td>
<td>pH monitoring not required Dec, Jan, Feb</td>
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<td>Chronic WET</td>
<td>rTU₅</td>
<td>1/ 6 Months</td>
<td>3-Hr Comp</td>
<td></td>
<td>Once each in 2007, 2008 and 2009 during period of chemical addition. See 2.2.1.2 below</td>
</tr>
</tbody>
</table>
A Note about WQBELs

- WQBELs = Water Quality-Based Effluent Limits
  - Apply at the point of discharge
  - Calculated from water quality standards
    - WQS apply in the receiving waterbody
  - Most pollutants allow a mixing zone
    - Limit often higher than the standard
Best Management Practices (BMP) Plan

- A facility’s “game plan”
- Living document, should change as facility learns what works
- In Wisconsin, required for all facilities with WPDES permit
- Should outline what actions are taken daily to comply with WPDES permit
- Should closely follow narrative requirements
- Facilities are the experts
Best Management Practices (BMP) Plan

- Solids Control
  - Feed Management
    - Use high quality feeds
    - Efficient feeding practices
      - Fish size, dissolved oxygen levels, CO2 levels, temperature, health status, and number of feedings in a day should all be considered
      - Walk through how decisions are made
    - Feed conversion ratio (FCR)
      - Allows for tracking of feed use over time, useful for keeping feeding practices in check
  - Solids Management
    - How solids are removed/How often
- Solids Disposal
- Solids Storage
- Mortalities disposal
Best Management Practices (BMP) Plan

• Other aspects:
  • Facility Overview
  • Materials storage
  • Additive Usage
  • Maintenance
  • Record-keeping
  • Training
Additional Resources

• WI DNR Aquaculture Page:  
  https://dnr.wisconsin.gov/topic/Fishing/aquaculture

• EPA Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category:  

• EPA Compliance Guide + Reporting forms:  