Water Quality Standard Variances in Wisconsin

Jason Knutson
Wastewater Section Chief
Wisconsin Department of Natural Resources
Outline

• Workflow for Processing Variances
  • Permits Staff vs. Standards Staff
  • Work Flow
• Variance Outcomes (Mercury as an example)
• MDV for Phosphorus
Wisconsin DNR’s Water Quality Bureau Structure

- Water Quality Program
  - Monitoring
  - Water Evaluation
  - Wastewater
  - Permits
  - Business/IT
    - Lakes & Rivers
      - AIS
      - Grants

Who is best positioned to handle the variance requests? How to work together?

- Assess Progress
- Monitor surface waters
- Water Quality Standards
- 303(d) list TMDLS
- Permits Plan Review Pretreatment

(Wisconsin Dept of Natural Resources)
Who should lead on variance requests?

• Standards Staff:
  • Knowledge of standards regs
  • Central contact person
  • Variances are temporary standards revisions

• Permits Staff:
  • Facility-specific knowledge
  • Knowledge on treatment feasibility
  • Involvement in permitting process/schedule

It Depends…
In Wisconsin...

- Permitting staff coordinate
- Created Variance Coordinator
  - ~0.5 FTE
  - Reviews all variances
  - Coordinates with standards staff at EPA (and WI)
- Established Process with EPA Region 5

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Standard(s)</th>
<th>Number of Variances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury</td>
<td>1.3 ng/L</td>
<td>~76</td>
</tr>
<tr>
<td>Chloride</td>
<td>395 mg/L (chronic) 757 mg/L (acute)</td>
<td>~66</td>
</tr>
<tr>
<td>Copper</td>
<td>Variable (hardness)</td>
<td>~19</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.1 mg/L (River) 0.075 mg/L (Stream) 0.03-0.04 (Lakes)</td>
<td>92 MDV 14 individual</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.2 ug/L (Public Water Supply)</td>
<td>1</td>
</tr>
</tbody>
</table>
Variance Processing

Wisconsin Drafting

- Permit Staff
- Standards Staff

EPA Review

- Permit Staff
- Standards Staff

Permits → Variances

Permits

Variances
Standards Staff Involvement:
Triennial Standards Review – Priorities for 2018-2020

A: In Progress
B: New Priorities
C: Priorities, but limited progress expected
D: Barriers to progress
E: Not Priorities

**Antidegradation**
- Bacteria Criteria Revision
- Biocriteria
- Chloride Variance Streamlining
- Designated Uses Process Revision
- P Assimilative Capacity in GLs
- P Site Specific Criteria
- Wetlands Floristic Assessment
- Numeric Benchmarks

**Aquatic Life Criteria Revisions**
- Cyanobacteria
- Human Health Criteria Revisions
- Mercury MDV
- Outstanding/Exceptional Resource
- Water Process Revision
- PFOS/PFOA

**Ammonia**
- Arsenic
- Chloride
- Total Suspended Solids (TSS)
- Copper
- Nitrate/Nitrogen

**P Criteria for 2-Story Lakes**
- Arsenic Variance Process

**Human Health Criteria Revisions**
- Mercury MDV
- Outstanding/Exceptional Resource
- Water Process Revision
- PFOS/PFOA

**PFOS/PFOA**
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**Arsenic Variance Process**
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**Cyanobacteria**
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**Human Health Criteria Revisions**
- Mercury MDV
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- Water Process Revision
- PFOS/PFOA

**Mercury MDV**
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**Wetlands Floristic Assessment**
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**Numeric Benchmarks**
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**Arsenic Variance Process**
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Wisconsin’s Variance Process

1. WPDES Reissuance Application
2. Preliminary WQBEL Memo
3. Variance Application
4. Draft Permit
5. Facility’s Permit Fact Check
6. EPA Pre-Preliminary Review
7. EPA Preliminary Review
8. 45-day Public Notice & Hearing
9. EPA Final Review (60 days)
10. Facility Action & Annual Reports
11. HAC
Variance Outcomes: Mercury

Change in 1-day P99 from 1st to 2nd Term

Change in 1 day P99 from 2nd to 3rd Term

Percent Change
There is a similar shift for the 4-day $P_{99}$
Variance Outcomes: Mercury

- **85%** of facilities show a long term downward trend
- **71%** of facilities were able to decrease 1-day $P_{99}$s between first and second terms
- **67%** of facilities were able to decrease 4-day $P_{99}$s between first and second terms
- **37%** of facilities were able to decrease 1-day $P_{99}$ between second and third term
- **36%** of facilities were able to decrease 4-day $P_{99}$s between second and third term
Multidischarger Variance for Phosphorus

• Eligibility:
  • 1. Be in an eligible county
  • 2. Require a major facility upgrade
     • Tertiary Filtration or similar
  • 3. Meet Primary/Secondary Screeners
     • >2% MHI
     • Incur costs in top 75% of industry
     • MHI<$53,000
     • Population Growth < 4.4%
     • Etc.
Multidischarger Variance for Phosphorus

- **Reduce phosphorus discharge**: reduce phosphorus load each permit term of MDV coverage

**Typical interim limits:**

<table>
<thead>
<tr>
<th>Permit Term</th>
<th>Limit</th>
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<tbody>
<tr>
<td>1</td>
<td>0.8 mg/L, monthly average</td>
</tr>
<tr>
<td>2</td>
<td>0.6 mg/L, monthly average</td>
</tr>
<tr>
<td>3</td>
<td>0.5 mg/L, monthly average</td>
</tr>
<tr>
<td>4</td>
<td>MDV concludes, TP WQBEL included in WPDES permit</td>
</tr>
</tbody>
</table>

Separate EPA approval required
Multidischarger Variance for Phosphorus

- **Reduce phosphorus discharge**: reduce phosphorus load each permit term of MDV coverage

  AND

- **Implement a watershed project that reduces nonpoint source phosphorus pollution**:
  1. Implement watershed project directly;
  2. Work with a third party to implement a watershed project; or
  3. Make payments to County LCDs to implement ag practices (cost sharing + NR 151 compliance)

- **Projection**: >$1M available to counties in 2020

- To be reevaluated through triennial standards review
MDV Funding Distribution: Hypothetical Example

Total MDV dollars available in 2020: $1.2 M

- Dodge= $948,000
- Washington= $168,000
- Waukesha= $84,000

Facility A payment in 2020: $30,700

- Dodge= $24,250
- Washington= $4,300
- Waukesha= $2,150

HUC 8 Watershed
Questions