Water Withdrawal Regulation and Determination of Significant Adverse Environmental Impact

Wisconsin Legislature
Groundwater Working Group
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DNR Staff Presentation

Water Withdrawals
Existing Regulatory Controls

- s. 281.34, Stats., Groundwater Withdrawals

- s. 30.18, Stats., Withdrawal of Water from Lakes and Streams

- Great Lakes Compact

Groundwater Withdrawals (s. 281.34) I

- "Well" means any drillhole or other excavation or opening deeper than it is wide that extends more than 10 feet below the ground surface and is constructed for the purpose of obtaining groundwater.
  - Dewatering wells
  - Horizontal collector wells
- "High capacity well" means a well that, together with all other wells on the same property, has a capacity of more than 100,000 gallons per day.
  - Approval required before construction (Chs. NR 820, NR 812 and NR 811)
  - Annual Reporting

Groundwater Withdrawals (s. 281.34) II

- Wells with high water loss {s.281.34(5)(c)}
  - Water loss of greater than 95% due to inter-basin transfer, consumptive use or both
  - Subject to environmental review prior to approval and possible conditional approval
- Creates a disincentive for efficient water use as a means of avoiding additional review
- Should address high volume, high loss, year-round uses regardless of whether the loss is 95%
  - Water Bottling Operations
  - Ethanol Plants
- Alternatives
  - Specify high water loss uses
  - Threshold of water loss/area (e.g., 10,000 gpd/acre)

Withdrawal from Surface Water (30.18, Stats.) I

- Permit required if:
  - Withdrawal is from a stream to maintain normal lake level or stream flow
  - Withdrawal is from a stream for agricultural use or irrigation
  - Withdrawal is from a stream <u>or</u> lake and there is 2,000,000 gallon per day water loss over a 30-day period
- Permit issued if water is "surplus", there is no injury to public rights in the water and other riparian owners consent

Withdrawal from Surface Water II

- Examples of withdrawals that may not be regulated under 30.18
  - Nonmetallic mining
  - Aquaculture operations
  - In-stream uses such as power plants
  - Manmade ponds for agricultural irrigation

Great Lakes Compact

- "Withdrawal" means the taking of water from **surface water or groundwater**, including the taking of surface water or groundwater for the purpose of bottling the water. {s. 281.346(1)(z)}
  - Registration/Reporting required if average 100,000 gpd over 30-day period
  - Permits required if withdrawal is in Great Lakes Basin

Key Concepts for Regulating Water Withdrawals

- Regulate to protect the resource (e.g trout streams, ORW, ERW and springs)
- Resultant impacts to sensitive waters can be similar regardless of the source
- Regulate surface water and groundwater withdrawals in an equal and coordinated manner
- Don’t create false incentives for an operator to select one option over another

Significant Adverse Environmental Impact

- NR 820.12(19) Significant adverse environmental impact means alteration of groundwater levels, groundwater discharge, surface water levels, surface water discharge, groundwater temperature, surface water temperature, groundwater chemistry, surface water chemistry, or other factors to the extent such alterations cause significant degradation of environmental quality including biological and ecological aspects of the affected water resource.

- Only applies to high capacity wells within a groundwater protection area, with high water loss or potential to affect a 1 cfs spring

- Case-by case, professional judgment

- Allows for consideration of impacts beyond just flow and water levels – consideration of biological and ecological factors

Addressing Environmental Impacts from High Capacity Well Withdrawals

- Since 9/2007 20 wells have been approved within a GPA – most satisfied the screening criteria of Ch. NR 820 and were approved without a formal environmental review
  - –Size of well relative to the water body
  - –Residential well for single residence
  - –Sporadically used well (e.g., a fire suppression well)
  - –Temporary dewatering well

- 3 wells have been subject to formal environmental review
  - –Case by case review and finding of no significant impact

- Wells with possible impacts to springs
  - –Modeling demonstrated no significant impact expected
  - –Field investigation documented <1 cfs flow
  - –Research documented presence of a confining layer

Typical Conditions of Approval for Wells within GPAs

- Must prevent adverse environmental impact
  - Minimum distance to protected resource
  - Maximum allowable daily water pumped
  - Pumping schedule restrictions
  - Reduce pumping from other wells on property
  - Well construction details
  - Monitoring of water resource
  - Reduction in pumping at certain times of year

Cumulative Impacts I

- Act 310 and Ch. NR 820 provide for very limited consideration of cumulative impacts
  - May consider impacts from existing wells on the same property if the new well is within GPA – may revise approvals for existing wells
  - In evaluating proposed well within a GPA, consider actual (reduced) flow of potentially affected trout stream, ERW or ORW
- No authority to revise existing approvals for other wells that could be contributing to a significant adverse environmental impact
  - If mitigation is ordered, DNR must provide full funding

Cumulative Impacts Alternatives

- Additional regulatory tools in specified areas with unsustainable water use (GMA, GAA)
- Expanded review of proposed withdrawals outside of designated areas to allow consideration of impacts to protected waters as a result of existing wells on other properties
  - Encourage cooperation and voluntary measures to address local issues
  - Authority to revise existing well approvals