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Millions of gallons of sand mine water could affect streams, wetlands and wells

CHIPPEWA FALLS The bottom line is that the Chippewa County Land Conservation Department really has no idea how water usage from on-site sand processing plants northeast of Colfax could affect streams, rivers, wetlands and residential wells.

The Chippewa County land conservation committee held a public informational meeting May 3 about water usage for sand processing. Chippewa County has received many requests for base maps, has approved reclamation permits and is reviewing additional reclamation permits, so that all together, if the desired sand is located on the parcels and agreements can be worked out with landowners, more than 1,800 acres of sand mining operations could be located between the two townships of Cooks Valley and Howard.

According to David Nashold of Chippewa County Land Conservation, six high capacity wells have been proposed for the on-site wet-processing of sand. Each high capacity well could account for 200 million gallons of water used over the eight months that wet-processing would occur each year, said Seth Ebel of Chippewa County Land Conservation.

Each high capacity well would pump 3,000 gallons per minute, but because some of the water would be recycled, the actual usage would be 500 gallons per minute, he said. Using 500 gallons per minute would result in 200 million gallons per year being used for each high capacity well, Ebel said.

Perspective
To put 200 million gallons into perspective, a 40-acre irrigated field uses 17 million gallons over the course of a dry growing season. A 100-cow dairy uses 2 million gallons per year. A residential dwelling might use about 200,000 gallons per year, depending on how many people live in the home, Ebel said.

To put it even further into perspective, the Village of Colfax pumps 100,000 gallons of water per day in the winter and spring and 160,000 gallons per day in the summer, said Mike Boyd, the village employee responsible for managing and maintaining the village's sewer and water utilities.

In a year, Colfax uses about 30 million gallons of water, he said. In other words, every year, one high capacity well for wet-processing sand would use the equivalent amount of water as seven villages the size of Colfax, or six high capacity wells would use the equivalent of 42 villages the size of Colfax.

Not sure
We're just not sure how (the wet-processing plants) will affect the surface water and the wetlands, Ebel said at the Chippewa County meeting, noting that several creeks listed as exceptional or outstanding water resources could be impacted by the high capacity wells: Elk Creek, Trout Creek, and Como Creek.

In this area of Wisconsin, groundwater and surface water are connected; the groundwater is always discharging to the streams, said Dan Masterpole, Chippewa County conservationist. Under those conditions, a large draw-down of the aquifer could cause streams, wetlands and wells to go dry, he said. A major hydrologic study to establish baseline conditions will be needed so that the impact of the high capacity wells can be assessed,
Masterpole said.

We're not sure how drawing water from the Mount Simon (aquifer) will affect wells and surface water, he said.

An inventory of the wetlands, streams and elevation of the groundwater is necessary, and the location of the groundwater is critical, Masterpole said. The sand mine operating in the Town of Howard on the Jeff Sikora and Robert Schindler properties is proposing to excavate within five feet of the groundwater.

More inquiries
In recent months, Dunn County, St. Croix County, Barron County and Chippewa County have received numerous inquiries from sand mining companies because this area of Wisconsin has exactly the kind of sand they are seeking: sandstone in the Jordan and Wonewoc formations that is relatively close to the surface.

The West Side on Wisconsin Public Radio did a show on sandstone mining April 28. During the radio show, Jeff Johnson, air management officer with the state Department of Natural Resources, said crystalline silica is a known carcinogen that needs to be regulated. At this point, the DNR does not have enough information about the health effects of crystalline silica to set a standard, Johnson said, adding that it could take two or three years to gather enough information to set standards and thresholds.

Frac sand
The sand acquired from mining sandstone is used in oil and gas wells to fill the fractures to improve the yield from the wells, which is why the sand is often referred to as frac sand.

Four different sand mining companies are operating in Chippewa County: EOG Resources, Preferred Sands, Superior Silica Sand and the Chippewa Sand Company. Canadian Sand and Proppant sold out to EOG Resources last year.

The Bloomer City Council recently turned down a proposal for a sand processing plant in the industrial park.

Unfortunately, much of Chippewa County is unzoned so there is little control over the sand mining operations except for the reclamation permits issued by the county, said Steven Kubacki, Chippewa County administrator. In terms of county control, we are significantly limited, he said. Out of the 22 townships in Chippewa County, only six are zoned, and in the unzoned townships, it is a matter of Katy bar the door when it comes to regulating sandstone mines, Kubacki said.

The land conservation department has no control over the processing plants at the mine sites, he said.

The county's reclamation ordinance only covers reclamation and does not deal with other problems associated with sand mining operations such traffic, road damage, noise and air pollution, Nashold noted. In the Town of Howard, a total of 30 million tons of sand is expected to be mined from the Sikora and Schindler site, and the mine is expected to have a 50-year lifespan. A total of 185 acres are under permit, and 146 acres will be excavated.

EOG Resources is building a sand processing plant in Chippewa Falls. The sandstone formations are like layers of pancakes and consist of the Jordan, Tunnel City, Wonewoc, Eau Claire, Mount Simon (groundwater) and igneous bedrock. According to state standards, high capacity wells cannot disrupt or pollute wells off-site.

Unzoned in Dunn
Of the 22 townships in Dunn County, 15 have adopted the county's comprehensive zoning ordinance and seven townships are unzoned. The unzoned townships are Eau Galle on the southwestern corner of Dunn County, Elk Mound, New Haven on the northwestern corner of Dunn County, Rock Creek on the southeastern corner of the county, Sand Creek at the northeastern corner, Spring Brook (south of the Village of Elk Mound) and Stanton along the western edge of the county and southwest of Boyceville. The Dunn County Board of Supervisors adopted an ordinance amendment in November of 2007 eliminating non-metallic mining as a special exception on agricultural land. Under the ordinance amendment, agricultural land would have to be rezoned to industrial to allow mining activities. The unzoned townships in Dunn County are not covered by the ordinance amendment, although the county's mine reclamation ordinance would apply in all 22 townships.