"Mining in Wisconsin: Issues Facing County Government"

Frac Sand Mining: The Local Perspective

An overview of experiences in Chippewa County using a County Non-Metallic Mining Reclamation Ordinance (NR135), to permit industrial sand operations.

WI Counties Association
Stevens Point, WI 11/14/11

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INTRODUCTION

Purpose & Structure

• Provide overview of current conditions

• Share experiences and lessons learned under 3 phases of mine development
  - Prospecting
  - Planning & permitting
  - Production
CONDITION & REGULATORY SETTING

OUTCROP AREA OF THE CAMBRIAN SANDSTONES
WISCONSIN AND MINNESOTA

Source: GOLD, IRON, COPPER, ZINC, AND SAND; WHAT’S DRIVING THE NEW INTEREST IN MINING AND MINERAL RESOURCES IN WISCONSIN Bruce A. Brown (WGNHS – UWEX)
Frac sand: Wisconsin sites

Map: Kate Golden, Wisconsin Center for Investigative Journalism. Research: Jason Smathers and Julie Strupp, WCIJ.
BEDROCK SAND RESOURCES

Cambrian Wonewoc Fm.
Important producer and potential resource in west, not exposed elsewhere.

Cambrian Jordan Fm.
Extensive potential in west, currently important source of frac sand from underground mines. Poor exposure in east.

Ordovician St. Peter Fm.
Long production history and good potential in south and east. Channels can make prospecting a challenge in the northeast.

Source: GOLD, IRON, COPPER, ZINC, AND SAND: WHAT’S DRIVING THE NEW INTEREST IN MINING AND MINERAL RESOURCES IN WISCONSIN Bruce A. Brown (WGNHS – UWEX)
CONDITION & REGULATORY SETTING

Regulatory Framework

- ✔ Town/Village powers
  - Developers agreements
  - Licensing

- ❌ Zoning
  - No town
  - No county

- ✔ Co. non-metallic mining reclamation ord.

- ✔ State environmental admin. codes

- ✔ Federal mine safety law
Organizational Chart Showing the Supervisory Structure of the Dept. of Land Conservation and Forest Management

Department Director/Co. Conservationist

- Conservation Programs & Grants Manager 1 FTE
  - Conservation Specialist 1 FTE
    - Forest Maintenance Technician 0.5 LTE
  - Assistant Co. Forest Administrator 1 FTE
- Co. Forest Administrator/Public Liaison 1 FTE
- Office Administrator 1 FTE
  - Project Engineer 1 FTE
- Environmental Engineer 1 FTE
  - Engineering Co-op Intern 1,200 hours
- Recycling Coordinator 1 FTE
CONDITION & REGULATORY SETTING

County role in administering NMM Reclamation Ordinance (NR135):

• Assure plans are complete
• Provide opportunity for public review/comment
• Determine if plan is adequate to meet reclamation standards
• Issue permit and verify compliance
CONDITION & REGULATORY SETTING

- Scope of ordinance is limited
- NR135 requires permit and reclamation activities to meet standards
  - NR135.06 General standards
  - NR135.07 Surface H2O & wetland protection
  - NR135.08 Groundwater protection
  - NR135.09 Topsoil management
  - NR135.10 Final grading and slopes
  - NR135.12 Revegetation
PROSPECTING PHASE

What activity occurs?

- Explanatory drilling
- Deposits secured (lease & land sale)
- Business arrangements for mining/processing/marketing
- Relationships established between mining interests, community, and municipalities
Lessons learned

- Current market demand offers opportunity for multiple mining interests with wide range of experience and capacity

- Business information is shared on “need to know basis” and decisions are made at “business speed”

- Timing and extent of communication between mining interests and town and county government varies
Lessons learned (Cont.)

- Mine proposals can be divisive
  - Property rights conflicts.
  - Economic development – vs – environmental protection

- The siting and operation of new mines is significantly influenced by the existing regulatory framework and extent of interest by town and Co. government
PROSPECTING PHASE

Adjustments to consider

- Define community objectives in advance through public planning processes
  - Comprehensive plans
  - Economic development plans

- Sponsor public informational meetings or community forums to:
  - Establish a dialogue
  - Provide factual information
PLANNING & PERMITTING PHASE

What activity occurs?

- Site specific planning
- Plan review
- Public participation
- Operational permitting
  - Conditional use (if zoned)
  - Road agreements
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  - Reclamation permit
  - Developers agreements
  - DNR air/storm water

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PLANNING & PERMITTING PHASE

Lessons learned

• There are significant differences between industrial sand mines and traditional sand & gravel operations (geologic deposit, landscape position, size, scope, intensity)

• The mine location, depth/thickness of deposit, and the type of onsite processing affects mine design, operations, and reclamation
BEDROCK MINE: EXCAVATION INTO A DEPRESSION

SPECIFIC ISSUES:
- SLOPE STABILITY—LONG, STEEP SLOPES
- GROUNDWATER
- SITE DewaterING
BEDROCK MINE:
EXCAVATION WITH CONTINUOUS SLOPE

SPECIFIC ISSUES:
- SITE RUNOFF
- OFF-SITE SEDIMENT DELIVERY
Lessons learned (Cont.)

• Given their location, scope, and intensity, industrial sand mines require more planning and a higher level of plan review (time, $)

• The reclamation planning and review process works best when:
  - A schedule is established, &
  - There is structured input from all mine operators, consultants, and reg. agencies

• Financial assurance is unique to each mine and must be calculated to cover the cost of reclamation
Lessons learned (Cont.)

• The public participation process is critical and improves the quality of plans and permits.

• There are limits to the scope of permit authority and the conditions that can be placed under co. non-metallic mine ordinance (NR 135)

Visit [www.co.chippewa.wi.us](http://www.co.chippewa.wi.us) to view plans & permits
PLANNING & PERMITTING PHASE

Adjustments to consider

• Operate objectively with full transparency
  - Post all notices, plans, hearing testimony, and permits on web

• Encourage & recognize the value of public participation
  - Record & respond to public comments
PLANNING & PERMITTING PHASE

Adjustments to consider (Cont.)

• Require 3rd party engineering assurance (NR 135.10(1) & (2)

• Require face-to-face pre-application meeting with mine operator and consultants

• Calculate financial assurance based on earth work volumes
Adjustments to consider (Cont.)

• Establish annual planning/reporting mechanism to assure ongoing communication and structured approach toward “contemporaneous reclamation” (NR 135.36)

• Establish permit conditions that assure reclamation standards can be met and verified (NR135.21(2))
Adjustments to consider (Cont.)

• Do time/cost study and establish fee structure to cover full costs of plan review, permit renewal, and program administration (NR 135.39(4))
PRODUCTION PHASE

What occurs?

• Mine site preparation

• Installation of mine infrastructure (roads, processing facility, storm water)

• Establishment of baseline information for environmental monitoring

• Full production & “contemporaneous reclamation”
Lessons learned

- Economic development will occur and jobs will be created.
- The permitted operator may subcontract mining processes and reclamation to multiple contractors.
- Site prep and installation of mine infrastructure are critical steps of mine development and require a high level of planning and oversight.
PRODUCTION PHASE

Lessons learned (Cont.)

• Mine operators are willing to share geologic information and to assist in environmental monitoring

• Environmental impacts will occur

• Issues will arise and management decisions must be made:
  - Plan amendment
  - Enforcement action
Site preparation

S & S mine; EOG
Town of Howard
Site preparation
Soil stripping & storage
USGS gauging station, Trout Creek

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PRODUCTION PHASE

Adjustments to consider

• Implement monitoring

• Schedule weekly site inspections to establish:
  - A professional working relationship, &
  - A regulatory presence

• Avoid winter construction

• Establish structured mechanism(s) to establish working relationships between mining regulations and environmental interests
LOOKING FORWARD

Anticipated issues

• County staffing capacity/workload

• Mine consolidation and expansion

• Transportation and infrastructure constraints

• Supply and demand adjustments
• The franc sand industry is expanding in response to market demand

• Local elected officials represent the “public interest” & work within the authority delegated under state law

• Where mines are permitted, county government must work with industry to assure:
  - Permit standards are met
  - Sites are systematically reclaimed to a productive end land use