

NON-METALLIC MINING RECLAMATION PLAN “QUINN PIT - 2019 REVISION”

Operator: Chippewa County Highway Department

Owner: Chippewa County

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Summary

This reclamation plan has been developed to provide information about the existing site of the proposed mine, the proposed site operations, and how the mine will be reclaimed to the proposed post mining land use.

This reclamation plan is for a 44.82 acre mine located on the north side of County Highway K, 1.0 miles west of State Highway 27. The land is currently an active mine. The site has already been stripped of topsoil for a majority of the mine area.

This reclamation plan is a revision due to a new setback agreement with the property owner to the west. The revision also takes into account DNR wetland limits and setbacks.

The operator will mine sand and gravel that is located on stream sediment of the Copper Falls Formation. A majority of the site will be mined below the water table and reclaimed as a shallow/deep pond. The remainder of the site will be reclaimed to grassland/prairie habitat.

A. Site Information

1. Landowner

Landowner: Chippewa County
711 N. Bridge St.
Chippewa Falls, WI 54729

Applicant: Chippewa County Highway Department
801 East Grand Avenue
Chippewa Falls, WI 54729

Mine Address: 20250 County Highway K
Cornell, WI 54732
Town of Estella

2. Lease:

There is no lease. Operator and landowner are the same.

3. Legal Description

North Parcel

Tax Parcel Number: 23107-2512-50040002

Described as follows: NW ¼ OF NE ¼ OF SECTION 25, T31N, R07W EXCLUDING STRIP 100' WIDE FOR DNR NATURE TRAIL AND EXCLUDING STRIP 100' WIDE FOR NSP R/W.

South Parcel

Tax Parcel Number: 23107-2513-05000000

Described as follows: PART OF SW ¼ OF NE ¼ OF SECTION 25, T31N, R07W LYING WEST OF DNR NATURE TRAIL.

4. Property Owners Within 660 Feet of Project Site

State of Wisconsin - DNR	Northern States Power Company	James D. & Ann P. Novak
John S. Olynick Inc.	Cory M. & Crystal L. Bowe	Raymond L. & Georgetta R. Brown
Ronnie G. Bruyette	Stephen B. & Vivian F. Muma Trust	

5. Soil Information

The NRCS Soil Survey of Chippewa County shows the soils at the mine site are mapped as follows.

Soil Type	Soil Type Symbol	Approximate Percent of Total Area
AfB	Alban fine sandy loam, 2-6% slopes	0.2
AfC	Alban find sandy loam, 6-12% slopes	27.6
CkC2	Chetek sandy loam, 6-12% slopes, eroded	0.5
Fm	Fordum loam, 0-2% slopes	10.2
MdC	Mahtomedi loamy sand, 6-12% slopes	6.4
Me	Markey muck, 0-1% slopes	27.8
Pc	Pits, gravel	22.3
W	Water	5.0

During site investigations the operator documented the following soils horizon thicknesses in the area to be mined.

A horizon – 0 inches of topsoil

B horizon – Pits, gravel (Pc)

Almost all of the topsoil has already been removed in past mining activities. Much of the overburden topsoil has been piled up to the east and south of the pond in Cell 1. This overburden topsoil will be used in the reclamation of the mine.

B. Site Operations

1. Description of Materials to be Extracted

Sand and gravel products will be extracted and processed at the site.

2. Extraction and Processing to be Conducted at the Site

There is an existing driveway in the southwest corner of the mine, accessed through the Chippewa County Highway Department Cornell Shed property on County Highway K. Sand & gravel will be mined, crushed, washed, and removed from the site. A portable crushing & washing plant will be used to process the material and stockpile it on site. Materials within the mine will be excavated and transported using bulldozers, excavators, draglines, dump trucks, front end loaders and conveyors.

Sand and gravel will be excavated from the mine above and below the water table. No flocculants or other chemicals will be used to support sand and gravel processing.

A majority of the east side of the pit is designated as wetland and will not be disturbed. There will be a 100' setback from all wetland edges to where mining will be performed. Mining will begin on the east side of the existing pond. Within the setback between the wetlands and the east side of the existing pond there is a large area of overburden from previous mining activities. This material will be used throughout the mining process for reclamation of the pit. The overburden may be excavated down to the level of the existing pit floor. The northwest corner of the pit abuts the Chippewa River. A 300' setback from the river will be maintained for mining below the pit floor.

There is a sufficient number of trees and vegetation on the north and east side of the pit to provide screening. The south side of the pit abuts additional County owned land that is the site of the County Highway Department Cornell Shed. The west side of the pit abuts another gravel pit owned by Olynick. There is a setback waiver agreement for this boundary so mining below the water table will extend right up to the shared boundary of each pit.

Good, un-contaminated, topsoil may be brought on-site and stockpiled for the purpose of on-site reclamation or for use on off-site Chippewa County Highway Department roadway projects. Additionally, the Highway Department may store typical highway construction materials (such as guardrail, culvert pipe, un-contaminated clay fill material, rock and gravel, etc...) onsite for future use and production of sand and gravel products.

3. Volumes of Materials

A sequence of mine Cells are planned to systematically mine and reclaim the site. The anticipated area of disturbance and estimated volume of raw materials to be removed during the life of the mine is as follows.

Cell	Area (acre)	During 1 st two years (cubic yards)	During Full Life of Operation (cubic yards)
1	2.55	106,037	106,037
2	1.25	51,866	51,866
3	5.25	0	218,164
4	3.13	0	130,337
Total	12.18	157,903	506,404

4. Site Dewatering and Effluent Discharge

This will be an internally drained site. No site dewatering or effluent discharge will take place. It is anticipated that sand and gravel will be mined below the water table in Cells 1 through 4.

5. Stormwater Permits/Management

The operator will obtain a Wisconsin DNR Nonmetallic Mining stormwater permit and manage stormwater in accordance with the standards established in the permit. At a minimum stormwater will be contained within the mine boundaries for all rainfall events up to the 25 year, 24 hour frequency storm (4.87 inches).

The site will be stabilized and direct stormwater runoff towards the excavated floor of the mine where it will infiltrate. Stormwater will be managed this way over the entire life of the mine. A notice of intent will be sent to the DNR.

6. Erosion Control & Permits

All topsoil and subsoil stockpiles will be graded to a slope of 3:1 or flatter and stabilized as soon as conditions allow to conserve soil and limit erosion. Berms will be stabilized using best management practices including seeding, mulching, erosion control mat, hydro-seeding, etc. Erosion and sediment control best management practices will be installed as determined by the current Wisconsin Erosion Control Product Acceptability List (PAL) found on the WisDOT website and the Channel and Slope Erosion Control Matrices (Appendix D).

7. Reclamation Activities During Operations

A process of contemporaneous reclamation will be used to systematically mine and reclaim the site. Under this process the site will be reclaimed as soon as possible after materials have been extracted and processed using the planned Cell sequence.

Cell 1 will be restored as Cell 2 is being mined. Cell 2 will be restored as Cell 3 is being mined. Cell 3 will be restored as Cell 4 is being mined. Cell 4 will be restored at the

completion of mining operations.

At the beginning of the mining operations for each Cell any of the remaining topsoil (estimated 0-6 inches) will be stripped and stockpiled in berms. Mining operations will then excavate, process, and remove sand and gravel from the site.

Upon completion, soils testing will be performed following procedures established in the Wisconsin Nutrient Management Standard 590 to determine the organic matter, phosphorus, potassium and pH. Soil amendments (including lime and fertilizer) will be applied based on the soil test results to meet the fertility requirements needed to achieve the intended post mining land use.

The site will then be seeded. Areas with slopes steeper than 10:1 will have straw mulch applied. Areas flatter than 10:1 will not receive mulch.

Reclamation test plots will be established within the first two years of mining. Test plots will be established for each post mining land use. These test plots will be monitored and used to help determine success in future areas of mine reclamation.

8. Timetable/Sequence of Operations

The following periods of operation/extraction are estimated and may increase or decrease based on Highway Department projects and planning.

<u>Location</u>	<u>Activity</u>
Cell 1	Plant will be set and operator will mine and establish the initial stockpile and plant area. Operator will start at the south end of Cell 1 and mine towards the north until reaching Cell 2. This will take approximately 2 years.
Cell 2	The operator will mine Cell 2 from north to south. The cell will be mined through to the west property line. This will take approximately 2 years. Operator will restore the north and east boundary of Cell 2 during this time.
Cell 3	The operator will mine Cell 3 from north to south. The cell will be mined through to the west property line. This will take approximately 5 years.
Cell 4	The plant will remain in Cell 4 on the south side, and the operator will mine from north to south. The cell will be mined through to the west property line. This will take approximately 5 years. Operator will restore the east boundary of Cells 1 and 4 during this time.
Final	Upon completion of Cell 4 mining, the operator will restore the remaining areas not already restored.

9. Timetable

Estimated period of operation/extraction for each cell:

Cell 1	2 years
Cell 2	2 years
Cell 3	5 years
Cell 4	5 years
Total	14 years

These periods of operation/extraction are estimated and may increase or decrease based on Highway Department projects and planning.

C. Final Site

1. Disposition of Structures and Roads

A gravel paved driveway approximately 150 feet long will remain in place at the location of the mine access. The driveway will provide access to the grassland/prairie habitat area.

Structures such as the scale house and scale will be removed prior to final reclamation. The pond created in Cells 1 through 4 will remain in place as shown on the Final Site Map. There are no areas of concentrated flow entering, leaving, or within the reclaimed mine site.

2. Soil Reapplication & Reconditioning

Overburden piles will be leveled off or used on slopes. This work will be done with scrapers, excavators or bulldozers. Slopes will be stabilized using best management practices including seeding, mulching, erosion control mat, hydro-seeding, etc. Erosion and sediment control best management practices will be installed as determined by the current Wisconsin Erosion Control Product Acceptability List (PAL) found on the WisDOT website and the Channel and Slope Erosion Control Matrices (Appendix D).

Any available topsoil material will then be removed from the berms with excavators or loaders and transported in dump trucks to the sloped areas in the mine to be reclaimed. Trucks will be routed to limit traffic over areas where subsoil or topsoil has already been applied. Trucks will dump topsoil and bulldozers will spread the material to be up to 6 inches thick on the slopes of the mine. The use of tracked equipment while spreading topsoil will limit soil compaction.

In the event that rubber tire equipment cannot be routed to prevent topsoil compaction deep tillage equipment will be used to alleviate compaction in the upper 12 to 14 inches of the soil profile.

Soils testing will be performed following procedures established in the Wisconsin Nutrient Management Standard 590 to determine the organic matter, phosphorus, potassium and pH. Soil amendments (including lime and fertilizer) will be applied based on the soil test results to meet the fertility requirements needed to achieve the intended post mining land use.

3. Safety Assurances

Given the slopes on the reclaimed mine site and the post mining land uses there are very limited safety concerns. The pond will have a 3:1 slope that extends 6 feet below the water line. Areas reclaimed as grassland/prairie habitat will have 3:1 slopes or flatter.

4. Seeding Plan

Seeding will be selected to achieve the post mining land use that is planned for each designated area. Areas that will be reclaimed to grassland/prairie habitat will be seeded to native grasses. Seed will be broadcast seeded and rolled to improve seed – soil contact. DNR Seed Mix 3 (attached) or similar will be used in these areas. The shallow/deep pond area will be allowed to vegetate below the water line using natural seed distribution without seeding by the operator.

5. Future Use

The mine site will be reclaimed to establish two different post mining land uses including grassland/prairie habitat and shallow/deep pond habitat. The approximate location of each post mining land use is shown on the Final Site Map.

Grassland/Prairie Post Mining Land Use

Steep slopes around the perimeter of the mine will be reclaimed to an Grassland/Prairie Wildlife Habitat.

The proposed performance measures used to determine reclamation success are:

- a. The establishment of a mine soil profile with a minimum pH of 6 to 8 and organic matter greater than 1 percent.
- b. The establishment of target soil chemistry and fertility to achieve and sustain the post mining land use.
- c. 75% or more of select plant species are present, 25% or less are weeds, and 2% or less are invasive weeds as measured following standardized methods during and at the end of the established performance period.
- d. A minimum of 70% ground cover during the growing season.
- e. No visible erosion (rills, gullies, sluffing, etc.).
- f. Attainment of “tolerable (sustainable) levels” of select noxious weeds and invasive species as measured following standardized methods during and at the end of the growing season.

Shallow/Deep Pond Post Mining Land Use

Areas of the mine that are below the water table will be reclaimed as a Shallow/Deep Pond.

The proposed performance measures used to determine reclamation success are:

- a. The establishment of irregular shorelines that vary in shape and slope.
- b. The establishment of shoreline slopes that vary from 3:1 to 10:1 and extend a minimum of 6 feet vertically below the water line.
- c. The establishment of a minimum of 6 inches of topsoil placed along the shoreline and on the slope a minimum of two feet vertically below the water line to encourage vegetative growth.

- d. The presence of aquatic vegetation along the shoreline.
- e. No visible erosion (rills, gullies, sluffing, etc.).
- f. Attainment of “tolerable (sustainable) levels” of select noxious weeds and invasive species as measured following standardized methods during and at the end of the growing season.

The approach that will be used to manage and monitor the disturbed areas will be defined in a Soil Rehabilitation and Vegetative Management Plan. At a minimum the Soil Rehabilitation & Vegetative Management Plan shall describe the management practices methods and techniques that will be used to:

- Recondition the disturbed “mine soil” to assure the success of the vegetative planting and the sustainability of selected plant communities and associated habitat.
- Monitor and control noxious weeds and invasive species to target levels.
- Limit or otherwise actively manage the reclaimed area for anticipated plant species that will occur through natural succession.

In order to achieve the prescribed post-mining land use the operator will implement a reclamation program to reclaim, manage, and monitor the reclaimed areas for a prescribed performance period.

Upon reclaiming any portion of the site the post-mining land use specified in the reclamation plan shall be maintained while the mine site is under the permit.

In evaluating whether areas subject to reclamation meet the evaluation criteria and performance measures the County may consider the results of onsite test plots established at the site; or the extent of site restoration and ecological development achieved as compared to existing grassland/prairie habitat monitoring sites or reclamation research test plots that have been previously established for this purpose in the surrounding area.

The criteria that will be used by the county to measure reclamation success include species diversity, plant density, biomass, soil chemistry and fertility, and soil organic matter.

Attachments

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