

Non-Metallic Mining Reclamation Plan HWY M & 40 Mine – 2023 Revision

Operator: Raymond J & Lanna B Michels

Owner: Michels Sand & Gravel LLC

Contents

Reclamation Plan Narrative

Site Information

Site Operations

Final Site Plan

Site Maps

Initial Site Map

Operations Site Map

Final Site Map

Final Cross Sections

Parcels - Appendix A

Soils - Appendix B

DNR Wetlands - Appendix C

Nearby Wells - Appendix D

WI DOT Seed Mix No. 20 - Appendix E

Summary

This plan is an update to an original nonmetallic mining reclamation plan for the Hwy M & 40 Mine dated 4/2/2002. This update describes existing conditions, site operations, and erosion and reclamation procedures to be employed during the reclamation of the mine. Future mining will occur as a progressive expansion that will limit disturbed area and incorporate contemporaneous reclamation of mined areas. This will result in an efficient mining operation with reduced environmental impact to neighboring properties. The M and 40 mine will continue to remain internally drained and possess little, if any, risk to adjacent properties. The total footprint of the proposed permitted area is 17.85 acres.

A. Site Information

1. Landowner

Landowner: Raymond J and Lanna B Michels
13601 State Highway 64
Bloomer, WI 54724

Applicant: Michels Sand and Gravel, LLC
13601 State Highway 64
Bloomer, WI 54724

Mine Location: SE ¼ of SW ¼, Sec 26, T32N, R09W, Town of Sampson, Chippewa County, Wisconsin

The Hwy M and 40 mine is located on County Hwy M approximately 1,050 feet west of the intersection of County Hwy M and State Highway 40. The property and the pit entrance are on the north side of County Highway M. .

Original topography of the Hwy M and 40 Mine and neighboring buildings and residences are shown in the original nonmetallic mine reclamation permit for the site dated 4/2/2002. There were no man-made structures within the permit request area. The Initial Site Map and Cross Sections included in this document show the current site conditions as of January 2023.

The area of proposed sand and gravel excavation is relatively flat with local relief of approximately 15 feet. No major streams or rivers traverse the mining site. Drainage in the unmined areas is predominately to the west. Other than drainage off the outer slopes of seeded overburden berms, surface drainage of the active excavation area is and will continue to be contained within the excavation areas and allowed to flow into the ground.

The land use of neighboring properties is primarily woodland, aggregate mining, residential, and passive recreation. The present land use of the permitted mining area is gravel mining.

The post-reclamation post-mining land use is Conservation/Ecological Use, Grassland/Prairie, held by a Private Institution.

2. Lease

There is no lease associated with the M and 40 Mine because the land and the mining company are both owned by Raymond J and Lanna B Michels.

3. Legal Description:

PLSS Description: SE ¼ of SW ¼, Sec 26, T32N, R09W, Town of Sampson, Chippewa County, Wisconsin.

Chippewa County Parcel Tax ID: 23209-2634-00020000

CSM Description: SE SW LYING W OF STATE HWY 40 EX CSM #321 & EX CSM #1730 & EX .12 A. FOR IMPROVING STATE HWY 40 AS DESCRIBED IN DOC #589786 INCLUDES EASEMENT

4. Property Owners within 660 Feet of the Project Site

Land ownership of surrounding properties within 660 ft of the min is shown in the following table.

Lyle F and Corrine E Worthington 26255 STH 40 New Auburn, WI 54757	Kenneth P and Tamera A Mccormick 26381 STH 40 New Auburn, WI 54757	David Ludwigson 26348 STH 40 New Auburn, WI 54757
David T Skaw 26407 100th Street New Auburn, WI 54757	HH Farm Properties LLC 11147 147th Ave Bloomer, WI 54724	Raymond and Lanna B Michels 13601 STH 64 Bloomer, WI 54724
Robert J and Barbara J Pecha 26093 STH 40 New Auburn, WI 54757	Candice Fedie 11734 CTH M New Auburn, WI 54757	Paul and Sandra Reed 11658 CTH M New Auburn, WI 54757
River Country Co-op 1080 W River Street Chippewa Falls, WI 54729	Phillip T and Michelle L Rayburn 11510 CTH M New Auburn, WI 54757	Thomas L and Elaine M Ryder 2014 S Main Street Bloomer, WI 54724
Thomas Ryder 26011 STH 40 New Auburn, WI 54757	Linda M Blecha-Schultz 26002 STH 40 New Auburn, WI 54757	Ronald E Hanson H&H Services 29565 CTH F New Auburn, WI 54757
Ric L and Lori A Boelkes 26092 STH 40 New Auburn, WI 54757	Jeffrey A Cronin 26160 STH 40 New Auburn, WI 54757	Dakota and Sara Brady 11410 CTH M New Auburn, WI 54757
David Hetchler 11409 CTH M New Auburn, WI 54757	Joshua J and Tanya H Nelson 11408 CTH M New Auburn, WI 54757	Terry W and Ann L Ludwigson 11404 CTH M New Auburn, WI 54757

Soil Information

The primary soils within and in proximity to the mine site are Chetek, Rosholt, and Spencer, as shown in the table below. A soils map can be found in Appendix B. The NRCS Soil Survey of Chippewa County shows the soils at the mine site are mapped as follows:

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CkB	Chetek sandy loam, 1 to 6 percent slopes	8.7	39.2%
CkC2	Chetek sandy loam, 6 to 12 percent slopes	4.9	21.9%
RoB	Rosholt sandy loam, 2 to 6 percent slopes	7.5	33.6%
SrB	Spencer silt loam, 2 to 6 percent slopes	1.2	5.3%
Totals for Area of Interest		22.2	100.0%

Beneath the soil is glacial sand and gravel outwash. The outwash was deposited during the Johnstown phase of the Wisconsin Glaciation and occurred between 13,000-30,000 years ago. The outwash is approximately 20 feet thick, though some local deposits may be up to 100 feet thick, and overlays the Mt. Simon formation of Cambrian age (approximately 500-600 million years old). The Mt. Simon formation is zero to several hundred feet thick and directly overlies the 1,100-1,900-million-year-old Precambrian aged Proterozoic granite and gneiss bedrock.

No mapped wetlands are located on site. A wetland too small to delineate is noted by the DNR's wetland inventory to be located in the north end of the operational boundary. Appendix C is a map of the DNR mapped wetlands at the site. Site operations will not come into contact with the "wet spot" by leaving a 100' buffer around it.

5. Hydrogeology

The regional groundwater flow direction is to the east and north towards McCann Creek. Most of the water wells of residences and farms surrounding the M & 40 Mine are drilled into glacial outwash. The glacial sand, Mt. Simon sandstone aquifers, and Proterozoic granite aquifer are all good sources for potable water. Most of the wells drilled for household uses in the vicinity are six-inch diameter and yield approximately 12-15 gallons per minute. Wells in the vicinity terminating in the outwash are 45-70 feet below ground surface) with a static water level of approximately 25 to 65 feet below ground surface.

This operation should have no effect on groundwater table elevation. Static water level elevations vary about 10 feet above and below 1075'. Groundwater elevation in the vicinity of the M & 40 mine as determined by the average of area wells is approximately 1,075 feet.

The bottom elevation of the previously mined extent is 1,065 feet. It is expected that future mining will extend below the currently mined elevation. Other similar operations in the area have likewise had no effect on the regional groundwater table. Nearby wells are detailed in Appendix D.

B. Site Operations

1. Description of Materials to be Extracted

Sand, gravel, and rock of up to 12" in diameter. Much of the material will be crushed into road base or hauled as common fill.

2. Extraction and Processing to be Conducted at the Site

The material will be extracted from the open pit mine using excavators. Dug material may be stockpiled within the mine floor for intermittent crushing or loaded directly into trucks as common fill. Screening may be used to collect rock that is three (3) inches and larger and may be graded and stockpiled for use. Stockpiled construction material will commonly be loaded into trucks using a payloader. There is no aggregate washing planned for this site.

3. Volumes of Materials

It is estimated that approximately 40,000 cubic yards, in total, will be extracted from this site.

4. Methods of Site Dewatering and Effluent Discharge

No site dewatering or effluent discharge will be performed.

5. Stormwater Permits/Management

The site is internally drained and has no external drainage. Rain that falls in the pit area will be contained and allowed to seep naturally into the underlaying sand or be directed to on-site containment areas. When and where necessary to prevent surface runoff from entering the sand and gravel excavation, temporary small earthen berms will be constructed to direct surface water flow from the site.

This mine site will be covered under Wisconsin DNR WPDES Stormwater Permit prior to expansion of operations.

6. Erosion Control

Existing stands of trees and topsoil stockpiles are primarily in buffer areas near property boundaries. Buffer area trees will be left in place, to provide an established vegetative cover to prevent erosion. Temporary berms may be constructed to control stormwater runoff. Berm height may vary somewhat in different areas of the property depending on the need to effectively contain and divert stormwater, but are planned to be approximately four to eight feet in height. A site screening berm between five and fifteen feet in height has been constructed around the property of the mining area.

Earthen berms will be constructed to contain and direct stormwater runoff and store overburden and/or topsoil. The temporary berms will be comprised of topsoil and subsoil removed from future areas to be mined, constructed at slope no greater than 3:1, and stabilized and seeded. When possible, the topsoil and subsoil stripped and removed will be placed directly into areas undergoing active reclamation. This procedure will reduce soil handling and help to preserve the soil viability for final reclamation and vegetation. Reclamation of depleted areas will continue to be completed when all mining excavation is complete.

Section 628 of the Wisconsin DOT Standard Specifications will serve as the standard for erosion control of soils. Erosion control mats, fences, screens, blankets, bale checks, dikes, and other erosion control devices will be used as needed to minimize soil loss during soil disturbance activities. These erosion control devices will meet the minimum requirements as described in Section 628.2. Materials and be installed according to the methods and procedures described in Section 628.3 Construction Methods of the Wisconsin DOT Standard Specifications.

The mine entrance is a location where sediment can be exported from a mine and end up reaching a stream or wetland. In order to decrease the risk for sediment export, the mine entrance road may be routinely scraped and swept, any sediment that settles in the ditch may be removed, and if needed an armored roadway that is appropriately graded will be used.

7. Reclamation Activities During Operations

Reclamation will be completed progressively as the sand and gravel reserves are depleted. Reclamation will start in areas no longer required for processing or stockpiling and continue progressively in conjunction with mining operations. The area to be reclaimed is shown in the Final Site Map. Initial efforts will be directed towards stabilizing internal slopes through grading and landscaping. Reclamation will continue to occur progressively and concurrently until all permitted areas have been reclaimed.

8. Sequence of Operations

Reclamation of the excavation and operation areas will occur on a regular basis throughout all mining areas. Reclamation will begin as sand and gravel is depleted and the land is no longer needed for product sales, stockpiling, equipment setup, or other facilities.

9. Timetable

This mine operation is expected to last for 30 years (2053), or until sand and gravel resources are exhausted. It is estimated that each cell of the mine will take about 10 years to complete.

C. Final Site Plan

1. Disposition of Structures and Roads

All roads and structures used during active mining will be removed prior to or during reclamation. The pond created during mining will remain in place as shown on the final site map. The size of the pond will be approximately 7.5 acres with a depth of up to 30 feet. There will be no areas of concentrated flow within or flowing to or from the site.

2. Soil Reapplication & Reconditioning

The reclamation process will primarily involve the grading and sloping of the pit face. Only native soil materials will be used to backfill excavated areas if required for land restoration. The subsoil will be reapplied first and the topsoil will then be applied uniformly over the area and seeded with appropriate seed mixtures as recommended in the seeding plan prescribed in Section C. All disturbed land areas will be graded to a slope less than or equal to 3:1 horizontal to vertical.

As overburden is removed in each new area of operation, the topsoil removed will be separated and immediately placed on areas recently sloped and graded. If the topsoil is not immediately used, then the topsoil will be stockpiled, sloped, and seeded according to the seeding plan prescribed in Section C. Otherwise, topsoil will be reapplied to recently reclaimed areas in the manner as described above.

If topsoil and subsoil quantities are less than estimated, the remaining soils will be evenly spread and used in reclamation. No subsoil or topsoil from outside of the permitted mine area will be moved into the mine.

3. Safety Assurances

Slopes on the reclaimed mine site will not exceed 3:1. This will include the slopes of the pond perimeter as well as grassland and prairie habitat areas. At a minimum, a 3:1 slope will extend vertically 6 feet below the lowest season water level to satisfy requirements outlined in NR135.10(3).

4. Seeding Plan

Disturbed and reclaimed areas will be seeded with Seed Mixture No. 20, as specified in Section 630 of the Wisconsin DOT Standard Specification (Appendix D) or a native seed mixture at an appropriate rate for the selected native seed mixture. Oats or rye may be used as a cover crop if seeding occurs in the spring or early summer. The seed mixture is detailed in Appendix F. The area below the ordinary high-water mark of the shallow pond will be allowed to revegetate naturally.

Mulching, if required, will be applied according to the standards in Section 627 of the DOT Standard Specifications. Areas will be checked for nutrients and the recommended fertilizer will be applied to seeded areas according to the methods and rates prescribed in section 629 of the DOT Standard Specifications.

5. Future Use

Areas disturbed by the mining operation will be reclaimed to a post mining land use of Conservation/Ecological Use. The land cover type will be Grassland/Prairie. The areas to be reclaimed are showing the Final Site Map. A final cross section shows the proposed final grading.

6. Successful Reclamation

Successful reclamation will be evaluated using the County's "Successful Reclamation Criteria" tables for surface water ponds and grassland/prairie cover:

- Sheet, rill, channel, or gully erosion will not be present along the shoreline of the pond. The seasonal water depth and duration will function as intended. Water chemistry shall comply with DNR permits.
- For grassland/prairie cover areas, percent cover of vegetation will determine successful reclamation. Randomly selected sample sites (square meter quadrants, two per acre) will be employed. Sampling will be conducted during peak growing periods. A minimum of 80 percent vegetation will qualify as successful reclamation. Additionally, the volume and weight of planted and volunteer species will be comparable to soil survey mapping unit capabilities. The percent presence of planted species will be >50%, as compared to volunteer species. Noxious weed and invasive plants will not be present.
- Soil will be tested and amended to required standards: a) pH greater than 5.6; b) fertilizer concentrations of 12ppm of nitrogen, 10 ppm phosphorus, and 60 ppm potassium; and c) greater than 0.5% organic matter. The soil will maintain 70% or greater of the stated permeability of the soil map unit. The minimum depth of unrestricted root growth shall be 12 inches.

Annual site inspections will be performed to ensure standards for revegetation and reclamation are followed. If the county during these inspections recommends grading, seeding, remedial repair measures, and/or erosion control, it will be implemented and later reevaluated to accomplish successful reclamation and a release of financial assurance.

7. Estimated Cost of Reclamation

Cell #	Reclamation Activity	Estimated Price
1 (3.03ac final above water upland area)	Recontouring	\$6,060
	Topsoil Reapplication	\$4,545
	Seeding	\$606
	Erosion Control	\$4,545
2 (3.14ac final above water upland area)	Recontouring	\$6,280
	Topsoil Reapplication	\$4,710
	Seeding	\$628
	Erosion Control	\$4,710
3 (2.35ac final above water upland area)	Recontouring	\$4,700
	Topsoil Reapplication	\$3,525
	Seeding	\$470
	Erosion Control	\$3,525

Total Estimated Cost of Reclamation = \$44,304