NONMETALLIC MINING RECLAMATION PERMIT

This permit is issued under the Chippewa County Nonmetallic Mining Reclamation Ordinance and Wisconsin Administrative Code NR135.

Operator: Northern Sands, LLC

Landowner: Kenneth & Sue Anderson, Ronald Anderson, John Bethmann & Nan Torgerson Bethmann, Robert & Lana Christoffel, Harvey & Audrey Dreger, Raymond Dreger, Beverly Geissler, Daniel Geissler, Alan & Judith Grossmeier, Lee & James Jensen, James & Rebecca Kiesow, Sherry Lemler, Daniel Rothbauer, Robert & Karla M Rasmussen Trust, Daniel Svee, Donald & Colleen Schwartz, Olav & Gail Svee Trust

Permit Number: 2015-01

Date: November 18, 2015

Permit Conditions

1. Standards & Implementation
   a. All mining and reclamation shall be conducted in compliance with the reclamation plan that is comprised of the following documents:

      (i) A plan packet titled "Howard Township Properties; Nonmetallic Mine Reclamation Plan; Northern Sands, LLC; Howard Township; Chippewa County, Wisconsin", received June 17, 2015. The packet includes a narrative, figures depicting the site, eight appendices, and lease information.

      (ii) An addendum to the reclamation plan titled "Addendum to the Howard Township Properties; Nonmetallic Mining Reclamation Plan; Northern Sands, LLC; Howard Township; Chippewa County, Wisconsin.", received November 18, 2015.

   b. The operator shall provide the County with signed certification from each landowner stating that they concur with the reclamation plan addendum, as listed in condition 1.a.(ii), and will allow for its implementation; and that they agree to allow access to Northern Sands for mining and reclamation activities and to Chippewa County and Wisconsin DNR for monitoring of site activities. These certifications must be provided to the County prior to beginning mining and reclamation activities at the site.

   c. All graphic depictions as illustrated in the site maps are approximate and based upon best estimates and projections of planned activities. These mapped depictions are subject to change in response to ongoing mining and reclamation operations, and may be refined by the mine Operator to reflect actual conditions.

   d. All mining and reclamation shall be conducted in compliance with all provisions and standards of the Chippewa County Nonmetallic Mining Reclamation Ordinance and Wisconsin Administrative Code NR135.

   e. All mining and reclamation shall be conducted to meet or exceed provisions of Reclamation Standards for Non-Metallic Mines in Chippewa County (July 2007) and Plan Content Specifications and Engineering Requirements for Non-Metallic Mine Construction in Bedrock (9/17/2009).

f. Prior to commencing any mining activity, the Operator shall obtain all required permits and legal authorizations including, but not limited to, those required to protect public health and safety under all applicable federal, state, or municipal jurisdictions.

g. The mine site and permitted area shall be systematically mined and reclaimed using a process of contemporaneous reclamation, using the planned cells of mine site development and reclamation as a guide. To monitor the extent of contemporaneous reclamation, a Reclamation Report & Activities Plan shall be filed with the Department of Land Conservation & Forest Management (hereinafter the "Department") for each calendar year. This plan shall be submitted no later than January 31st of each calendar year. This plan shall contain the items listed in section 3.9 of the reclamation plan and any other items as required by this permit.

2. Financial Assurance

a. Financial Assurance in the form of Surety Bond or Irrevocable Letter of Credit meeting the requirements of the Chippewa County Nonmetallic Mining Reclamation Ordinance and NR135.40 shall be submitted by the Operator for approval prior to beginning any mining activity at the site. Financial Assurance is required throughout the life for the mine.

b. The amount of financial assurance shall equal as closely as possible the cost to Chippewa County of hiring a contractor to complete reclamation according to the approved reclamation plan. The amount of financial assurance shall be reviewed periodically by the Department to assure it equals the current estimated reclamation costs.

3. Size & Scope

a. The total permitted area of the mine site is 1310 acres, as shown on Figure 2 of the reclamation plan. The mine site includes all areas of nonmetallic mineral extraction, haul roads, stormwater ponds, soil berms, and other areas meeting the definition of "nonmetallic mining site" or "site" in the Chippewa County Nonmetallic Mining Reclamation Ordinance.

b. The approximate floor elevation and excavation limits of the mine shall be no lower than 1025 feet above MSL as listed in section 2.4 of the reclamation plan and shown on Figure 13 of the reclamation plan. A minimum 10 foot separation distance between the mine floor and the regional water table shall be maintained at all times.

c. Changes to the areal extent or depth of the mine, or changes to the mining and reclamation operation that may affect the capacity to meet reclamation standards of NR 135 and Chippewa County Nonmetallic Mining Reclamation Ordinance as documented in the Reclamation Plan, shall require a revised Reclamation Plan and permit modification under NR 135.24.

d. An assessment of the existing biological resources at the mine site shall be conducted for each spatial phase of the mine development as depicted in Figure1 of the reclamation plan.

(i) These assessments shall be conducted during the appropriate growing season and a written report of findings shall be filed with the Department before beginning the planned mining activities under each phase of the mine development.

(ii) These assessments shall be conducted using the "Wisconsin Forest Habitat Type Classification System" or an alternative system as approved the Department.

(iii) The assessment for Phase 1 of the mine shall be completed, and a written report of findings submitted to the Department by July 31, 2016, or by an alternative date as mutually agreed to by the Operator and the Department.

4. Stream, Stream Corridor & Wetland Protection

a. A baseline hydrologic inventory shall be conducted to define the location of seeps, springs, wetlands, and surface waters located within the permitted mine boundary, and those located on adjacent properties.

(i) This inventory shall be based upon an examination of available resource maps and shall be verified through a general field assessment of the mine site, and adjacent properties if access to the adjacent properties is allowed.

(ii) This inventory shall be completed, and a written report of findings shall be submitted to the Department by July 31, 2016 or by an alternative date as mutually agreed to by the Operator and the Department.

b. A site specific hydrologic analysis shall be conducted by a Professional Hydrologist or Professional Geologist to evaluate and assess the potential for mining operations and reclamation activities to affect naturally occurring seeps, springs, wetlands, and surface waters as documented through the hydrologic inventory required under condition 4.a.

(i) This assessment shall be conducted for each phase of the mine site prior to beginning any mining activities in that mine phase.

(ii) This assessment shall document and describe the source of the water creating the hydrologic condition and shall assess the extent to which these features may be impacted by mining operations and reclamation activities. It shall also specify mitigation measures that can used to reduce any potential impacts to seeps, springs, wetlands, and surface waters.

(iii) The assessment for Phase 1 of the mine shall be completed and a written report of findings shall be submitted to the Department by July 31, 2016 or by an alternative date as mutually agreed to by the Operator and the Department.

c. The location of areas of concentrated flow, waterways, wetlands, and areas that convey runoff to the Elk Creek & Eighteen Mile Creek stream networks, and the corresponding jurisdictional authority to regulate those areas shall be determined by Chippewa County, the Wisconsin Department of Natural Resources (DNR), the U.S. Army Corps of Engineers (USACOE), and any other responsible federal regulatory agency using their respective legal authorities as established under Section 404 of the Clean Water Act, and any other applicable laws that may apply.

d. A continuous riparian corridor and vegetative buffer shall be established to prevent environmental pollution and meet standards for surface water and wetland protection, as established in NR 135.07. The buffer shall be established to be 100 feet from the boundary of wetlands and centerline of watercourses with defined bed and banks. No mining or mine-related activities are permitted within this buffer. Pre-existing agricultural uses including cultivated cropland fields and agricultural pastures shall be allowed within the buffer. The wetland buffer shall be monumented with markers for the life of the mine.

e. The riparian corridor and vegetative buffer areas as defined under condition 4.d. shall be documented on a map by the Operator based upon field determinations of the watercourses and wetlands. This map shall be submitted to the Department for review and approval by July 31, 2016 or an alternative date as mutually agreed to by the Operator and the Department.

f. The Operator shall determine the location of all wetlands within a mine phase using a recognized wetland delineator following procedures established in the 1987 edition of the USACOE Wetlands Delineation Manual.

g. Wetland delineations may be performed over time (in stages), to coincide with the planned phases of mining and reclamation.

h. All wetland delineations shall be completed and a written report submitted to the Department for review prior to beginning mining activities in any phase. The report shall include a map that shows the delineated boundary of the wetlands. The wetland delineation for Phase 1 of the mine shall be completed and a written report submitted to the Department by July 31, 2016 or by an alternative date as mutually agreed to by the Operator and the Department.

i. As indicated by the wetland delineations and as dictated by applicable state and federal regulations, the Operator will either avoid impacts to regulated waters of the state and waters of the U.S., or will seek the appropriate permits for any impacts that could occur as a result of mining and processing activities. Such permits could include wetland mitigation measures as dictated by the applicable state or federal laws.

j. In circumstances where a wetland impact is authorized through DNR or USACOE permit, that wetland area shall not be subject to the 100 foot buffer requirement under condition 4.b.

k. In circumstances where wetland mitigation is required the Department will encourage and support the concept of on-site in-kind wetland mitigation, to be pursued through the reclamation process.

5. Stormwater Management

a. The Operator shall fully comply with the terms of the DNR Wisconsin Pollution Discharge Elimination System (WPDES) Runoff Discharge Permit WI-0046515-05 (general permit of nonmetallic mining operations) and any subsequent permit revisions.

b. A stormwater management system shall be designed, installed and maintained to meet the nonmetallic mine standards established for surface water and groundwater protection in NR135.07 & 135.08. The system shall provide sufficient capacity to store and infiltrate runoff for all rainfall events smaller than the 100 year, 24 hour event (5.8 inches).

c. Stormwater shall be managed through infiltration and evaporation to prevent the discharge of stormwater from the mine site. If stormwater discharges are necessary they will be managed to minimize the rate and volume of flow, and to avoid lengthy or continuous discharges of stormwater to downstream resources. Any stormwater discharge will be managed in a manner that replicates the pre-mining surface drainage characteristics of the area.

d. Stormwater plan designs shall be submitted to the Department for review and approval at the onset of each mining cell, prior to beginning mining activities and the installation of mine infrastructure.

(i) The design documentation for components of the system, including stormwater ponds and conveyances, shall include computations to show that the stormwater management system will meet the design requirements.

(ii) Components of the stormwater system shall be planned and designed to meet the WPDES permit requirements and shall be prepared for each planned cell of mining and reclamation.

(iii) The Department shall coordinate stormwater plan review with the DNR, recognizing the sequences and timeframes for permit administration established under the WPDES permit process.

e. In the event that stormwater runoff exceeds the capacity of the stormwater management system and stormwater runoff leaves the mine site, the Operator shall immediately contact the Department.

f. The stormwater management system shall be routinely inspected and maintained by the Operator to assure the system continues to function as designed.

g. The Operator shall routinely asses the accumulation of sediment in each stormwater pond. Any sediment that reduces the infiltration or design capacity of the pond shall be removed.

h. Sediment removed from stormwater ponds shall be stockpiled, seeded, and stabilized; or used immediately in mine reclamation.

i. If any component of the stormwater management system fails to perform as designed the Operator shall re-design the stormwater management system to achieve stormwater treatment that is greater than or equal to the design in the reclamation plan.

j. Whenever changes to the stormwater management system are proposed or required the Operator shall retain a Professional Engineer to re-design the storm water management system. The re-design documentation shall include computations to show that the changes to the stormwater management system will meet the design requirements. This information shall be submitted to the Department for review and approval prior to construction of the changes.

Site Clearing

k. The Department shall be contacted at least 72 hours prior to commencement of any new land clearing or stripping activities of greater than 1 acre in undisturbed areas of the mine site.

l. All topsoil, subsoil and overburden in areas of mining shall be systematically and individually stripped and stockpiled for future use in reclamation. The location of these stockpiles shall be identified with signage and shall be identified on a map that shows the location and volume of all stockpiles of topsoil, subsoil, and overburden. This map shall be updated each year and submitted to the Department in the annual Reclamation Report & Activities Plan.

m. No topsoil, subsoil, or overburden material shall leave the mine site during the entirety of the mining and reclamation operations.

n. The burning of stumps, or any other material at the mine site, is prohibited. All residual woody biomass that is the byproduct of timber harvesting, excluding stumps, shall be retained and composted on site, to be used as a soil amendment during final reclamation.

6. Groundwater

a. The Operator shall install a groundwater monitoring well network for the purpose of, establishing the actual groundwater elevation at the mine site and for monitoring changes to the groundwater elevation and chemistry that may occur over time.

(i) The network shall be planned and designed by a Professional Hydrologist, Geologist, or Engineer, in consultation with the Department, to triangulate the elevation of the water table surface and to establish the direction of groundwater flow at the mine site.

(ii) The monitoring well network shall be adequate to reasonably define the approximate location of groundwater divides and groundwater surface elevations as needed to refine the 1988 map titled "Generalized Water Table Map of Chippewa County, WI" and, to establish groundwater elevation contours and flow directions across the full extent of the permitted mine site.

(iii) The network shall consist of a minimum of 12 monitoring wells. Seven monitoring wells shall be installed at the onset of mining to document the groundwater conditions at the mine prior to mining and reclamation activities. This initial installation shall include all five monitoring wells in Phase 1, one monitoring well in Phase 2, and one monitoring well in Phase 3, all as depicted in Figure 11 of the reclamation plan.

(iv) Remaining five monitoring wells shall be installed at planned location prior to beginning mining activities in each mine phase, as depicted in Figure 11 in the reclamation plan. All monitoring wells installed shall remain in place and be used to monitor site conditions for the life of the mine.

(v) The well construction report for any new well shall be included as part of the annual Reclamation Report & Activities Plan.

b. Using the hydrogeological information gathered from the monitoring well network and other available sources, the Operator shall prepare an initial mine site specific groundwater elevation map. The Operator shall provide this initial map to the Department within 120 days of beginning mining activities.

(i) The groundwater elevation map shall be refined as mining and reclamation progresses, and additional information becomes available from additional monitoring wells, or from other sources.

c. The elevations of the water table surface in each of the wells shall be recorded monthly the first year of mining and reclamation operations and quarterly thereafter for the life of the mine and be included as part of the annual Reclamation Report & Activities Plan.

d. The Operator shall provide a copy of any application and permit for a high capacity well that is subject to state permit requirements. The application and permit shall be provided to the Department as part of the annual Reclamation Report & Activities Plan.

e. The Operator shall keep records of pumping rates and volumes for all high capacity wells at the mine site on a monthly basis following procedures established in NR 820.13. The Operator shall provide a copy of those records to the Department as part of the annual Reclamation Report & Activities Plan.

f. The Operator shall prepare a Water Conservation Plan to limit consumptive use of groundwater. For this section the term "consumptive use" has the meaning set forth in Wis. Stat. 281.35(c). The plan shall include a water budget for the mining and reclamation operation that shows the typical annual volume of gains and losses to mining and reclamation activities. The plan shall also describe the processes and best management practices used in mining and reclamation to reduce the consumptive use of groundwater at the mine site.

g. In the event that offsite monitoring shows that mining or reclamation activities at the mine site are proven to have caused a lowering of the water table that results in adverse effects on surface waters or a significant reduction in the quantity of groundwater reasonably available for future users of groundwater, the Operator will mitigate these effects by revising the Water Conservation Plan to limit the pumping frequency, rate or volume of groundwater or to implement water conservation practices to restore groundwater elevations. Any changes to the Water Conservation Plan are subject to review and approval by the Department.

7. Water Quality
   a. In the event that offsite monitoring shows that mining or reclamation activities at the mine site are proven to have caused a degradation of groundwater quality that exceeds the standards of Wisconsin Administrative Code NR140 at a point of standards application, the Operator shall seek to mitigate these effects by altering mining and reclamation operations.

   b. This permit does not relieve the Owner or Operator of the responsibility for compliance with all provisions of Wisconsin State Statute 281, Wisconsin Administrative Code NR 820, or Wisconsin Administrative Code NR 812, as they may pertain to waters of the state and the operation of any private wells on neighboring properties, and any associated liability under state law.

   c. The Operator shall sample the monitoring well network two times a year at the mine site. Half of the monitoring wells will be sampled between April 1 and May 31, and the other half will be sampled between September 1 and October 31 of each calendar year. These samples shall be tested for the presence of pH, Total dissolved solids, Total suspended solids, turbidity, specific conductance, total coliform bacteria, nitrates, chloride, acrylamide, aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, strontium, thallium, titanium, vanadium, and zinc. The Operator shall provide a copy of these test results to the Department as part of the annual Reclamation Report & Activities Plan.

   d. The sampling methods shall comply with DNR Groundwater Sampling Field Manual. The analytical test methods and procedures shall comply with Wisconsin Administrative Code NR 219 or alternative test methods proposed by the Operator and agreed to by the Department.

   e. To establish a pre-operational baseline and to evaluate the effects of site reclamation, the Operator shall conduct groundwater sampling and testing for the constituents listed in condition 8.c. of this permit within 30 days of commencing mining activities at the site.

   f. To monitor the groundwater quality during mining and reclamation operations and for the reclaimed post-mining land use the Operator shall conduct groundwater sampling and testing for the constituents listed in condition 8.c. of this permit annually for the life of the mine until final reclamation is certified by the Department.

8. Settling Ponds
   a. The Operator has not proposed to install process water or settling ponds. In the event that process water or settling ponds are installed the Operator shall apply for and shall conduct mining and reclamation operations in accordance with permit requirements for water pollution control as issued under the WPDES, and any other applicable permits administered under the jurisdiction of the DNR.

   b. In the event that the Operator uses chemicals as part of mining and reclamation operations that may affect materials to be used in reclamation or the Operator's capacity to meet the reclamation standards established in NR 135 the Operator shall:

      (i) Select chemical products that limit the potential for groundwater pollution, such as products approved for use in potable water. The type, volume and frequency of flocculent, coagulants, or other chemicals used shall be included as part of the annual Reclamation Report & Activities Plan.

      (ii) Use chemical products in accordance with the product label requirements to limit the potential for water pollution.

(iii) Test the process water for pH, total Kjeldahl nitrogen phosphorus, potassium, chloride, fluoride, sulfate, total coliform, aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, selenium, silver, sodium, strontium, thallium, titanium, vanadium, zinc, and any residual materials associated with the type of chemicals used in processing, such as acrylamide. Testing will be performed annually or at any time when there are changes to the type of chemicals used. These test results will be included as part of the annual Reclamation Report & Activities Plan. The analytical test methods and procedures used shall comply with Wisconsin Administrative Code NR 219 or alternative test methods proposed by the Operator and agreed to by the Department.

(iv) Apply appropriate best management practices when managing liquids and sediment removed from the settling ponds. In selecting the best management practices for materials management, storage, and disposal, the Operator shall consider the results of material testing and material characterization, and shall apply these practices to minimize the potential for groundwater leaching of soluble materials during or after mine reclamation.

c. In the event that the Operator uses chemicals as part of mining or wash plant operations that may affect the materials to be used in reclamation or the Operator's capacity to meet the reclamation standards established in NR 135 the Operator shall:

(i) Line settling ponds and associated conveyances to limit the infiltration and leaching of chemical constituents that may be used in mining processes. Liners shall be designed by a Professional Engineer and constructed under their supervision to meet standards and specifications of Wisconsin Administrative Code NR 213.

(ii) Implement best management practices that limit the potential for damaging the settling pond liner during dredging or excavation of accumulated sediment. The settling pond liners shall be maintained defect free and repairs shall be made as necessary to maintain the integrity of the liner.

9. <u>Alternative Settling Pond Liner</u>

a. In the event that the Operator uses chemicals as part of mining and reclamation operations that may affect the materials to be used in reclamation or the Operators capacity to meet the reclamation standards established in NR 135 the Operator may, as an alternative to condition 9.c.(i), construct settling ponds and associated conveyances with an alternative settling pond liner if all of the conditions under section 10. of this permit are met.

b. The Operator shall construct settling ponds with earthen liners that meet the Alternative Settling Pond Liner Specification, (LCFM 9/29/09) contained in Appendix I of the reclamation plan.

c. The Operator shall install a monitoring well immediately down gradient from the settling pond(s).

d. The Operator shall notify the Department at least 72 hours prior to beginning construction of the liner.

e. The Operator shall provide post-construction documentation of the liner material and construction methods used, and that the liner was constructed to meet the Alternative Settling Pond Liner Specification.

f. The Operator shall routinely inspect and maintain the settling pond liner to assure that the liner remains intact. If the inspections show that the liner no longer meets the Alternative Settling Pond Liner Specification, the Department shall be notified immediately and repairs to the liner will be made as necessary to meet the requirements of the specification.

g. A major liner inspection will be performed once every five years. This inspection shall include multiple test pits or soil borings to document the liner thickness and composition. The Department shall be contacted at least 72 hours prior to the liner inspection. If the inspections show that the liner no longer meets the Alternative Settling Pond Liner Specification, the Department will be notified immediately and repairs to the liner will be made as necessary to meet the requirements of the specification.

h. The Operator shall provide an engineering analysis to document the potential for groundwater pollution. The engineering analysis shall be conducted to assess the risk of chemicals that are proposed for use and shall be submitted to the Department for review prior to their use.

The engineering analysis shall:

(i) Document the potential risk of surface water and groundwater pollution associated with using the chemicals as they may apply to water quality standards as established in NSF Standard 60 and NR 140.

(ii) Identify the best management practices that can be used to limit the risk of surface water and groundwater pollution.

i. In the event that the results of the engineering analysis show a significant risk of surface water or groundwater pollution, the Operator shall prescribe a sampling and testing protocol to document and verify the effectiveness of the best management practices as proposed.

j. If polyacrylamide flocculant is used as part of mining and reclamation activities the monitoring well required under section 10.c of this permit shall be sampled twice a year and the samples tested for the presence of acrylamide using a test method proposed by the Operator and agreed to by the Department.

10. Solid Waste & Spills

a. The import, storage or disposal of any solid waste, recyclable materials or nonmetallic mine refuse generated outside the mine site is subject to the registration provisions of Chapter 30-77 of the Chippewa County Nonmetallic Mining Reclamation Ordinance.

(i) Reject materials generated from offsite processing facilities may be returned to the mine site and used in reclamation. These materials shall be tested for pH, total Kjeldahl nitrogen phosphorus, potassium, chloride, fluoride, sulfate, total coliform, aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, selenium, silver, sodium, strontium, thallium, titanium, vanadium, zinc, and any residual materials associated with the type of chemicals used in processing, such as acrylamide. These test results will be included as part of the annual Reclamation Report & Activities Plan. The analytical test methods and procedures shall comply with Wisconsin Administrative Code NR 219 or alternative test methods proposed by the Operator and agreed to by the Department.

(ii) Material tests will be conducted: 1) prior to disposition of any off-site material; 2) on an on-going basis at least twice per year; 3) at the time of any changes to the properties or chemistry of the waste products associated with new sources of waste materials or new processing additives, including flocculants.

(iii) If polyelectrolytes are used in association with the production of these materials, annual testing will be required for the appropriate polyelectrolyte contaminants identified in NSF/ANSI Standard 60. The analytical test methods and procedures for these chemicals shall be proposed by the Operator and agreed to by the Department.

b. In the event that groundwater monitoring shows that the preventive action limits referenced in Wisconsin Administrative Code NR 140 or the allowable concentration in drinking water referenced in NFS/ANSI Standard 60 have been exceeded the Operator shall dispose of the reject material at a different location in accordance with federal, state, and local laws and seek to remediate the associated groundwater pollution.

c. In the event of fuel spills or other hazardous waste spills the Operator shall immediately contact the Department.

d. Fueling within the excavated areas of the mine site shall be discouraged and limited to vehicles such as tracked equipment that cannot readily access an off-site fueling station. Fueling of highly mobile equipment such as rubber tired loaders, scrapers and trucks shall occur in areas that pose a reduced risk of groundwater pollution. In all cases, spill containment practices; such as drip pans, absorbent pads or other recognized practices shall be used to contain drips and spills during fueling.

11. Site Reclamation & Post-Mining Land Use

a. The mine site shall be systematically mined and reclaimed using a process of contemporaneous reclamation for the purpose of establishing the post-mining land uses of:

(i) Commercial Development managed as a commercial or agricultural materials business hub, potentially to include grain storage and transfer.

(ii) Wildlife Habitat managed as native prairie.

(iii) Wildlife Habitat managed as woodland.

b. The location of each post-mining land use is shown on Figure 17 in the reclamation plan.

c. The Operator shall routinely provide updated information regarding mining and reclamation to the Department as part of the annual Reclamation Report & Activities Plan. This information shall include the estimated volume of topsoil, subsoil, overburden, reject materials, and soil amendments that have been used in reclamation in the past year, the estimated volume of those materials that will be used for reclamation in the coming year, and the estimated volume of those materials that are stockpiled on site for future use.

d. The Operator shall provide a topographic map of the areas reclaimed in the previous year and the areas to be reclaimed in the upcoming year. This map shall be included as part of the annual Reclamation Report & Activities Plan. This map shall show the actual surface elevations of the reclaimed areas and the proposed surface elevations for the areas to be reclaimed in the upcoming year, using the reclamation material volumes provided.

e. A freestanding Site Restoration & Vegetative Management Plan shall be developed for each plant community as specified in the reclamation plan. This plan will be implemented by the Operator to guide ongoing efforts to systematically manage, restore, and monitor the property as a management unit. This plan will define management options and recommendations that can be used to enhance the site's ecological and economic value.

(i) This plan shall include a description of the methods that will be used to manage areas disturbed by mining, the methods that will be used to establish and maintain a native prairie and woodlands plantings, and the methods that will be used to control noxious weeds and invasive species.

(ii) This plan shall include a minimum of two seed mixes for each plant community that account for varying soil textures and physical site conditions that may range from dry to mesic.

(iii) This plan shall include best management practices for managing prairie and woodland plantings, a timeline showing recommended seeding windows and deadlines, and a multi-year maintenance program.

(iv) This plan shall be provided to the Department by January 31, 2017 or by an alternative date as mutually agreed to by the Operator and the Department.

f. Existing agricultural lands within the mine boundary may, at the discretion of the Operator, remain in agricultural production or may be taken out of production. For agricultural lands that remain in production, the Operator shall assure that agricultural operations are conducted in accordance with all applicable local, state and federal laws, and administrative rules. All surface water runoff generated from agricultural areas shall be diverted from disturbed areas of the mine site including stockpiles, soil berms, processing, and excavation areas.

g. For agricultural fields that remain in production, the agricultural producer and the Operator shall, before May 31, 2017, or an alternative date as mutually agreed to by the Operator and the Department. or before an alternative date as mutually agreed to by the Department and by the Operator, develop a nutrient management plan that meets the specifications of WI NRCS Technical Guide Standard 590.

(i) The nutrient management plan shall be implemented by the responsible agricultural producer(s) to assure that agricultural operations meet or exceed state agricultural nonpoint pollution control standards, as specified in WI Admin. Rule NR 151. The agricultural producer(s) and mine Operator shall report and certify on an annual basis that the nutrient management plan is being followed and that the agricultural pollution control standards are being met.

h. The completion of successful reclamation shall be determined through physical site inspections. In making the determination of successful reclamation, the Department may take into account other supporting information, provided by the Operator, including information generated from onsite test plots or from other areas of the mine site that have been previously reclaimed.

i. The determination of successful reclamation of areas undergoing reclamation shall made by the Department using the performance measures defined in the reclamation plan, and any standardized evaluation criteria subsequently adopted by Chippewa County.

(i) When applying the criteria and evaluating the quality of the mine site reclamation, the Department shall recognize and consider the physical site conditions and limitations that existed at the restored mine site before mining.

j. Unless otherwise released under provisions of condition 12.m., the post-mining land use specified in the reclamation plan shall be maintained for all areas of the mine site subject to reclamation while the mine site is under the permit.

k. The Operator shall manage and maintain each reclamation planting for a period of 10 years to demonstrate the viability of the intended reclamation, and to provide the basis for an evaluation of successful reclamation following the procedures under NR 135.13.

(i) Upon completion of the 10 year performance period the Department will determine if the reclamation for that portion of the mine is complete and if the planned post-mining land use has been successfully achieved. If not compete, the performance period will be extended. Reclamation will not be certified if the Department makes a determination that the post-mining land use has not been achieved in compliance with the standards for reclamation as established in NR 135 subchapter II including the general standards, and standards for groundwater, surface water, and wetland protection.

l. The Department will evaluate the extent and completion of successful reclamation using the evaluation criteria established under condition 12.i. by comparing the extent of site restoration and ecological development achieved to that that exists at native prairie and woodland monitoring sites or reclamation research test plots that have been previously established for this purpose in the surrounding area.

m. Upon receiving certification that reclamation is complete for any part of the mine, the Operator may propose to change the mine boundary following the permit modification process established in NR 135.24 to remove reclaimed parcels from the reclamation permit.

(i) Upon certification that reclamation is complete and release from the reclamation permit, all future land use decisions shall be at the discretion of the landowner and shall comply with all applicable laws, ordinances, and administrative rules that may apply to the use of the land at the time of release.

n. If a lease is cancelled on a parcel that has not been certified as reclaimed, and the lease cancellation occurs for any reason other than the purchase of the parcel by the Operator, the Operator shall immediately reclaim the parcel in accordance with the reclamation plan. If the Operator fails to reclaim the parcel in accordance with the nonmetallic mining reclamation plan, the Operator's financial assurance will be forfeited for that parcel and will be used by Chippewa County to reclaim the mine site.

12. Permit Evaluation and Amendments

a. The Department shall periodically evaluate the extent of contemporaneous reclamation achieved, the extent of compliance with reclamation standards, and the effectiveness of the conditions that have been placed to achieve the reclamation standards.

b. The Department may allow for design variations and may amend or alter operational conditions that do not significantly alter the scope of the reclamation plan or the reclamation permit issued under the authority of Sec. 30-105 of the Chippewa County Non-Metallic Mining Reclamation Ordinance.

c. All permit alterations or amendments shall be mutually acceptable and agreed to by the Department and by the Operator.

As the Operator or authorized representative of the Operator, I hereby acknowledge that I have read, understand, and shall be bound by the above permit conditions.

Signature	Date 11/18/15
Paul van Dijk Printed Name - Operator	President Title

Permit approval by Department of Land Conservation & Forest Management

Signature	Date 11/18/2015
Seth Ebel Printed Name - Authorized Staff	Project Engineer Title

Alternative Settling Pond Liner Specification

Chippewa County
Department of Land Conservation & Forest Management

1. SCOPE

The work shall consist of placing soil liner material for the purposes of creating a settling pond liner with limited potential for leaching of process water and associated chemical constituents.

2. MATERIALS

All soil liner material shall be free of organic material. No frozen soil shall be used in the liner.

Soil liner material shall be classified as ML or CL under the Unified Soil Classification System and contain greater than 50% material by weight passing the No. 200 sieve.

Fill materials shall have a moisture content sufficient to ensure the required compaction. When kneaded in the hand, the soil will form a ball which does not readily separate and will not extrude out of the hand when squeezed tightly.

3. FOUNDATION

The foundation area shall be cleared of trees, stumps, roots, brush, rubbish, and stones greater than 6 inches in diameter. Foundations shall be stripped to remove vegetation and other unsuitable materials. Topsoil shall be stripped from the foundation area.

4. PLACEMENT & COMPACTION

Soil liner material shall be placed in 6 inch lifts. Each lift shall be compacted with using one of the following methods.

- 1 pass of a sheepsfoot roller (minimum of 10,000 lb. operating weight)
- 1 pass of a fully loaded rubber-tired scraper.
- 2 passes Track-type crawler (minimum of 30,000 lb.)

Passes shall be wheel track to wheel track to meet soil liner compaction requirements.

The thickness of the soil liner shall be no less than 1 foot.

5. OTHER

Alternative methods of compaction will be allowed with onsite testing to confirm soil liner compaction to a minimum of 95% standard proctor test (ASTM D-698).

09/2011

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