

PRELIMINARY DRAFT RULE LANGUAGE 10/1/2014

MNDNR SILICA SAND RECLAMATION STANDARDS

PURPOSE OF THIS DOCUMENT: *This document contains preliminary draft language related to silica sand reclamation rules – standards. This document is to be for discussion purposes only and presented at the Silica Sand Rulemaking Advisory Panel (SSRAP) at the October 1st, 2014 Meeting. The formation of the draft rules is and will continue to be an iterative process. The goal is to work with the SSRAP members to produce draft rules for public comment.*

XXXX.0000 APPLICABILITY OF STANDARDS

Subpart 1. The standards of this subchapter do not apply to any portion of a silica sand mining site that meets the criteria in XXXX.0000..... (possible exemptions)

Subpart 2. The standard of this subchapter apply to silica sand mining site that occurs (DATE).

DISCUSSION TOPIC WITH PANEL: *Include language that addresses sites that transition from limestone to silica sand, expand or re-permit for expansion, others?*

XXXX.0000 GENERAL STANDARDS

Subpart 1. Refuse and other solid wastes. Silica sand mining refuse shall be reused in accordance with a reclamation plan. Other solid wastes shall be disposed of in accordance with applicable rules of the department adopted pursuant to XXXX.0000.

Subpart 2. Area disturbed and contemporaneous reclamation. Silica sand mining reclamation shall be conducted, to the extent practicable, to minimize the area disturbed by silica sand mining and to provide for silica sand mining reclamation of portions of the silica sand mining site while silica sand mining continues on other portions of the silica sand mining site.

Subpart 3. Public health, safety and welfare. All silica sand mining sites shall be operated and reclaimed in a manner so as to comply with federal, state and local regulations governing public health, safety and welfare.

Subpart 4. Habitat restoration. *When the land use required by the reclamation plan approved regulatory authority requires habitat restoration, it shall be restored, to the extent practicable, to a condition at least as suitable as that which existed before the lands were affected by silica sand mining operations using native multi-species ground cover or trees.*

Subpart 5. Final Topography. *Unless specified by the final reclamation plan and approved by the regulatory authority, final topography shall comprise sinuous contours, rolling mounts and hills, and*

generally blend with adjacent topography to a reasonable extent. Straight planar slopes and right angles should be avoided.¹

Subpart 6. Compliance with Environmental Regulations. Reclamation of silica sand mining sites shall comply with any other applicable federal, state and local laws including those related to environmental protection, zoning and land use control.

Subpart 7. Water Quality. Silica sand mining reclamation shall be conducted and completed in a manner that assures compliance with water quality standards contained in Chapter 7050.

Subpart 8. Discharge. Silica sand mining shall be conducted and completed in a manner that assures compliance with discharge standards contained in Chapter 7053. Floors of mines shall generally grade gently into postmining drainages to preclude sheet-wash erosion during intense precipitation, except where grading is appropriate to control drainage or trap sediment.

Subpart 9. Groundwater Quantity. A silica sand mining site shall be reclaimed in a manner that does not cause a permanent lowering of the water table that result in adverse effects on surface waters or a significant reduction in the quantity of groundwater reasonably available for future users of groundwater.

YELLOW HIGHLIGHT = Is this redundant and covered in Subpart 6.

XXXX.0000 TOPSOIL AND OVERBURDEN MANAGEMENT

Subpart 1. Volume. The operator shall obtain the volume of soil required to perform final reclamation by removal of on-site topsoil or topsoil substitute material or by obtaining topsoil as needed to make up the volume of topsoil as specified in the reclamation plan.

Subpart 2. Removal. All topsoil shall be carefully removed and separated from overburden. Topsoil shall be stockpiled on site for use in reclamation, or immediately moved to reclaim adjacent segments in an environmentally acceptable manner, except when the approved subsequent land use does not require replacing topsoil. No topsoil shall be sold or permanently moved off-site.

Subpart 4. Storage. The location of stockpiled topsoil or topsoil substitute material shall be chosen to protect the material from erosion or further disturbance or contamination. Runoff water shall be diverted around all locations in which topsoil or topsoil substitute material is stockpiled. Topsoil shall be stored in separate piles from overburden and when possible separate from subsoil.

Subpart 5. Substitution. If topsoil is of insufficient quantity or of poor quality for sustaining vegetation, topsoil may be substituted, amended, or brought in off-site to achieve reclamation goals. Topsoil

¹ State of Washington – RCW 78.44.141 Reclamation Minimum Standards:
<http://app.leg.wa.gov/RCW/default.aspx?cite=78.44.141>, viewed 9/8/2014

amendments, substitution, or replacement shall be free of contamination by toxic material and is in a usable condition for sustaining vegetation when restored during reclamation².

Subpart 6. Redistribution. Topsoil or topsoil substitute material shall be redistributed in accordance with the approved reclamation plan in a manner which minimizes compaction and prevents erosion. Topsoil and overburden shall be replaced in original stratigraphic order. Topsoil or topsoil substitute material shall be uniformly redistributed except where uniform redistribution is undesirable or impractical. Topsoil or topsoil substitute material redistribution may not be performed during or immediately after a precipitation event until the soils have sufficiently dried.

XXXX.0000 GRADING AND SLOPES

Subpart 1. Safe Conditions. All areas affected by mining shall be addressed in the approved reclamation plan, pursuant to XXXX.0000, to provide that a stable and safe condition consistent with the operational procedures and post-mining land use is achieved.

Subpart 2. Highwalls. Upon approval of regulatory authority, the reclamation plan may designate highwalls or other unmined and undisturbed natural solid bedrock as stable and safe and not in need of reclamation or designate other areas affected by mining including slopes comprised of unconsolidated materials that exceed a 3:1 slope, whether or not graded, as stable and safe. For slopes designated as stable under this subsection, the regulatory authority may require the following:

- A. a site-specific engineering analysis be performed by a registered professional engineer to demonstrate that an acceptable slope stability factor is attainable at a steeper slope, or
- B. the operator perform a field test plot demonstration to demonstrate that a stable and safe condition will be achieved and that the post-mining land use specified in the reclamation plan will not be adversely affected.

Subpart 3. Final Slopes. All surface-mined slopes shall be reclaimed to the following standards:

- A. May not be steeper than a 3:1 horizontal to vertical incline, unless found acceptable through one or more of the following
 - (1) steeper slopes are shown to be stable through a field plot demonstration approved as part of an approved reclamation plan; or
 - (2) stable slopes can be demonstrated based on site-specific engineering analysis performed by a registered professional engineer. All areas in the silica sand mine site where topsoil or topsoil substitute material is to be reapplied shall be graded or otherwise prepared prior to topsoil or topsoil substitute material redistribution to provide the optimum adherence between the topsoil or topsoil substitute material and the underlying material, or
 - (3) Alternative requirement approved by the regulatory authority specified in XXXX.0000

² State of New Hampshire RSA 12-EL7: <http://www.gencourt.state.nh.us/rsa/html/l/12-E/12-E-7.htm>, viewed 9/8/2014.

- B. Shall have varied steepness and have no rectilinear topographic elements.
- C. Be compacted if significant backfilling is required to produce the final reclaimed slopes and if the regulatory authority determines that compaction is necessary.
- D. Final reclaimed slopes and surfaces should be left roughly graded, preserving equipment tracks, depressions, and small mounds to trap clay-bearing soil and promote natural revegetation. Where reasonable, final equipment tracks should be oriented in order to trap soil and seeds and to inhibit erosion.³

XXXX.0000 MINELAND WATER BODIES

Subpart 1. Above Ground Ponds. Above ground pond with engineered dikes must meet the requirements in items A to C.

- A. Proper measures shall be taken to prevent undesirable seepage that could cause flooding outside the permitted area or adversely affect the stability of the impoundment dikes or adjacent slopes.
- B. Above ground ponds shall be designed by professional engineers, registered in this state, who are proficient in the design, construction, operation, and reclamation of settling ponds.
- C. Above ground ponds design shall:
 - 1. Provide a rationale for the site selection, with regard to dam safety and characteristics or the site that could affect, or could be affected, by the pond.
 - 2. Describe materials, construction, and operating performance specifications and limitations that must be maintained to ensure protection of human safety and natural resources;
 - 3. Ensure that precipitation events do not result in overtopping the pond
 - 4. Describe the specific steps that must be taken to achieve reclamation on the pond and dam surfaces;
 - 5. Identify monitoring locations to ensure compliance with the design;
 - 6. Include a schedule for a registered engineer to inspect the construction, operation, and reclamation of the pond, including closure and postclosure maintenance, to assure compliance with the design.

Subpart 2. When the approved post-mining land use includes a body of water, the following standards apply:

- A. The approved final grade at the edge of a body of water shall extend vertically 6 feet below the lowest seasonal water level.
- B. A slope no steeper than 3:1 shall be created at a designated location or locations, depending on the size of the water body to allow for a safe exit.
- C. The operator shall provide measures to establish a beneficial water body by developing natural wildlife habitat and incorporating such measures as irregular shoreline configurations, sinuous

³ State of Washington – RCW 78.44.141 Reclamation Minimum Standards:
<http://app.leg.wa.gov/RCW/default.aspx?cite=78.44.141>, 4d (i) viewed 9/30/2014

bathymetry and shorelines, varied water depths, peninsulas, islands, and subaqueous areas less than 1.5 foot deep.⁴

XXXX.0000 REVEGETATION AND SITE STABILIZATION

Subpart 1. Applicability. Except for permanent roads or similar surfaces identified in the reclamation plan, all surfaces affected by nonmetallic mining shall be reclaimed and stabilized by revegetation or other means. Revegetation and site stabilization shall be in accordance with the approved reclamation plan and shall be performed as soon as practicable after mining activity has permanently ceased in any part of the mine site.

Subpart 2. Requirements. After three growing seasons following initiation of vegetation, a 90 percent ground cover within a 90 percent statistical confidence interval, consisting of living vegetation and its litter, must exist on all areas, except slopes that primarily face south and west. Such sloped areas shall attain the 90 percent ground cover requirement within five growing seasons following the point when initiation of vegetation is required. If this standard is not met, or if unvegetated rills or gullies more than nine inches deep form and erosion is occurring, the surface shall be repaired and replanted during the next normal planting period.⁵

XXXX.0000 ASSESSING COMPLETION OF SUCCESSFUL RECLAMATION

Subpart 1. The criteria for assessing when reclamation is complete and, therefore, when the financial assurance may be released shall be specified in the reclamation plan. Criteria to evaluate reclamation success shall be quantifiable.

Subpart 2. Determination. Compliance with the revegetation success standards in the approved reclamation plan shall be determined by:

- A. On-site inspections by the regulatory authority or its agent;
- B. Reports presenting results obtained during reclamation evaluations including summarized data on revegetation, photo documentation or other evidence that the criteria approved in the reclamation plan to ascertain success have been met; or
- C. A combination of inspections and reports.

Subpart 3. Pre-Mining Condition. In those cases where the post mining land use specified in the reclamation plan requires a return of the mining site to a pre-mining condition, the operator shall obtain baseline data on the existing plant community for use in the evaluation of reclamation success pursuant to this section. Revegetation success may be determined by:

- A. Comparison to an appropriate reference area;
- B. Comparison to baseline data acquired at the mining site prior to its being affected by mining; or

⁴ State of Washington – RCW 78.44.141 Reclamation Minimum Standards:
<http://app.leg.wa.gov/RCW/default.aspx?cite=78.44.141>, 4c (iv) viewed 9/8/2014

⁵ MN Rules 6132.2700 Subpart 2, C. (1).

C. Comparison to an approved alternate technical standard.

Subpart 4. Native Vegetation. Revegetation using a variety of plants indigenous to the area is favored.

Subpart 5. Maintenance. During the period of the site reclamation, after the operator has stated that reclamation is complete but prior to release of financial assurance, the operator shall perform any maintenance necessary to prevent erosion, sedimentation or environmental pollution, comply with the standards of this subchapter, or to meet the goals specified in the reclamation plan.

XXXX.0000 INTERMITTANT MINING

Intermittent mining may be conducted provided that the possibility of intermittent cessation of operations is addressed in an operator's reclamation permit, no environmental pollution or erosion of sediments is occurring, and financial assurance for reclamation pursuant to XXXX.0000 is maintained covering all remaining portions of the site that have been affected by silica sand mining and that have not been reclaimed.

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