

Rule Revisions: NR 538 Wis. Adm. Code

Public Hearings – July 25, 2019/Green Bay
July 29, 2019/Madison

Beneficial Use of Industrial Byproducts

Philip Fauble, Beneficial Use Coordinator
Wisconsin Department of Natural Resources



Regulatory Authority

- The Department of Natural Resources is required to promulgate, by rule, standards for the reuse of high-volume industrial waste per s. 289.05(4), Wis. Statutes. The rules must be designed to “...allow and encourage, to the maximum extent possible consistent with the protection of public health and the environment, the beneficial reuse of high-volume industrial waste...”.

Existing Rules

The ch. NR 538 beneficial use rule was enacted in December of 1997:

- Established a streamlined approval process for the majority of beneficial uses
- Maintained a case-specific approval option for uses and byproducts that don't fit the streamlined approach.

Existing Rules

- Ch. NR 538 set up a mostly self-implementing approval process with the following elements:
 - Initial certification & annual reporting
 - Industrial byproduct testing to assign categories of use
 - Storage & transportation requirements
 - Specifications for use
 - Placement restrictions
 - Public participation process for large projects
 - Submittal of notification to DNR requesting project concurrence required with some projects
 - Property owner notification

Technical Advisory Committee

- Section 9142(6t) of 1995 WI Act 27, required the creation of a technical advisory committee (TAC) for the purpose of advising the DNR on the development of beneficial use rules.
- The TAC, consisting of 9 members from potentially affected parties, met in a total of 9 public meetings from March, 2016 to Sept., 2018.
- At each meeting, the DNR presented proposed rule language changes, suggested by both DNR staff and TAC members, and discussed their merits.

Proposed Rules

- The proposed rules are intended to:
 - revise the existing rules to address updated environmental standards, laws and changes in manufacturing and air pollution control processes,
 - continue encouraging the beneficial use of waste material,
 - ensure that the materials continue to be responsibly managed and reused.
- In addition, new federal rules issued on April 17, 2015 under 40 CFR Part 257, Subpart D governing the regulation of one class of industrial byproducts, coal combustion residuals (CCRs), required revisions to ch. NR 538 to ensure consistency.

Proposed Rules

- Each section of the existing rule was evaluated to determine if changes were needed:
 - Can the requirement(s) be simplified or reorganized to make compliance easier?
 - Do the standards need to be updated or revised to meet current specifications or environmental protection standards for reuse?
 - Is language needed to accommodate new uses, byproducts or activities?

Affected Industries

- Potential affected industrial byproduct generators include:
 - Iron, Steel and Aluminum Foundries
 - Electric Utilities with Coal-fired Boilers
 - Paper Mills
 - Lime Kilns
- Potential affected industrial byproduct users include:
 - Road Builders
 - Cement Manufacturers
 - Aggregate Producers
 - Drywall Manufacturers
 - Asphalt Producers
 - Concrete Manufacturers
 - Farmers/CAFOS
 - WisDOT
 - Construction Firms
 - Industrial Byproduct Brokers

Fiscal Impact

- Several of the rule changes related to testing, recharacterization, concurrences, and new uses are anticipated to result in either direct or indirect cost savings for generators and users
- Some of the rule changes will result only in minor fiscal impacts since they are codifications of existing policy and guidance.
- An Economic Impact Analysis (EIA) was prepared by the DNR which indicated that the proposed rule revisions would result in some cost savings and some additional costs resulting in an overall minor increase in compliance costs of approximately \$37,500/yr statewide.

Rule Changes

Definitions		
Encapsulated use (new)	Byproduct is bound into a solid matrix	Aligns with federal definition in 40 CFR Part 257
Excess quantities (new)	Volumes that exceed the project purpose	Aligns with federal definition; included at request of TAC
Industrial byproduct	Added a list of exclusions and better definitions to clarify what materials could be regulated under ch. 538; note added to explain other regulations used to approve beneficial uses	Codify existing policy and guidance; conform to Act 285 exclusion for ferrous slag; note included at request of TAC
Productive manner (new)	Criteria for determining if a use can be considered a “beneficial use”	Clarifies statutory language
Soil or plant additive (new)	Definition language from ATCP 40, Subchapter III	New use category; will eliminate need for case-specific approvals

Rule Changes

Eligible Uses		
Geotechnical fill	All covered uses considered the same; simplified highway embankments; added use at livestock operations; reduced topsoil from 6" to 4" per DOT	Simplified and updated standards; better defined use standards; adjusted to meet DOT standards for use
Nonmetallic Mine Reclamation	Uses restricted to what is necessary to restore the site to a "stable and safe condition"; must have a reclamation plan; 5 foot separation distance to water table; Silurian dolomite	Added definitions to conform to ch. NR 135 mine reclamation standards; address TAC concerns; groundwater sensitivity
Private well setback for fill projects	Reduced setback from 200' to 100' from geotechnical fill sites	Reduction based on UW modelling; ~80% contaminant reduction after 100 feet
Construction uses	Moved some previously "confined" uses; added "base aggregates"; eliminated bridge abutments and fully encapsulated highway embankments	Updated to meet DOT specs and policy changes; update ASTM references
Unconfined uses	Update surface course uses and winter road abrasives; added manufacture soil blends, eliminate decorative stone	Updated to meet DOT specs; added soils at request of WCMA; little stone demand

Rule Changes

Reporting		
Initial Certification	Concurrence from the DNR will now be required to confirm eligible uses; DNR response in 10 days	Provides an accurate list of who is participating in the BU program; aligns with other States; risk management
Recharacterization	Consolidate 1-5 year sampling schedule to a uniform 4-year schedule; exemption for generators under 1000 cy per year; DNR confirmation of eligible uses	Less testing for most byproducts will reduce costs; requested by TAC to reduce burden on smaller generators
“Unconfined” geotechnical fills	Geotechnical fills with a soil cover will only have to obtain a concurrence if projects exceeds 5000 cy	Cost savings and reduction in reporting for smaller projects
Surface course material	Eliminates need for concurrence for both bonded and unbonded uses	Cost savings and reduction in reporting

Rule Changes

Reporting		
Geotechnical Fills greater than 5000 cy	New information submittal requirements for projects to provide GIS locational information	GIS locational information will allow future excavations to avoid expensive investigations
Annual reporting	New requirements that generators report the uses and names of byproduct recipients	Will assist in tracking material; assure public that the material is being properly reused
Modifications	New requirement that some requested modifications to approved projects obtain a concurrence	Formalizes the process of requesting modifications and DNR responses; more certainty
Property owner notification	Simplified notification procedure by consolidation into one form; information will be submitted to DNR	Verify that owner was notified; creates record to facilitate redevelopment at sites; do not have to rely on property owner to maintain records

Rule Changes

Standards		
Elimination of “Categories”	Categories 1-5 will be eliminated and replaced with “eligible uses” approved by the DNR	Response to user and public confusion regarding the category designations; eligible uses allows for use of specific materials in certain uses; aligns with approach of other States; less reliance on numeric standards
Appendix format	Appendix is simplified; number of tables reduced	Simplified and clarified for ease of use and compliance
Water leach standards	Table 1A standards set at NR 140 ES groundwater quality; Table 1B at 5x the NR 140 ES standards	Updated to reflect the latest groundwater quality protection standards
Totals standards for unconfined uses	Table 2 standards set from DHS specific ingestion/inhalation exposure models	Updated to reflect human health protection standards

Rule Changes

Standards		
Storage sites	Runoff calculations removed – refer to stormwater permits; exempt small municipal storage yards; exempt temporary or staged storage sites used for less than 16 months; better defined storage management requirements; an impervious surface is required for byproducts that exceed Table 1B standards; storage areas for byproducts less than Table 1B standards may use compacted soil or an aggregate surface	Clarify storage requirements; small storage yard exemption at request of municipalities; defer runoff requirements to stormwater management permits; define when an impervious surface is necessary and how that surface is defined

Rule Changes

Standards		
Geotechnical fill sites	Cover exposed byproduct with final or intermediate cover within 12 months of placement; 16 months if site is secured by fencing	Necessary to prevent potential ingestion/inhalation exposure; 12 months at request of DHS reviewers in lieu of new exposure standards
FGD gypsum for soil amendment	FGD gypsum must meet USDA contaminant standards in Table 3	Maximum contaminant standards in Table 3 developed from published USDA study and guidance document for land application of FGD byproducts
Soil and Plant Additives	Newly added uses for FGD gypsum and liming agents; adhere to DATCP standards for use	Will eliminate need to issue case-specific approvals; cost savings for generators

Separation to Water Table

Existing Rules

- Minimum separation to water table of 3 feet at time of placement and
- DNR concurrence required for separation distances less than 5 feet
- Applies to “confined” geotechnical fill projects greater than 5000 cy
- Applies to all categories of byproducts except Cat. 1

Proposed Rules

- Minimum separation to water table of 3 feet at time of placement for Table 1A or less byproducts
- Minimum separation to water table of 5 feet at time of placement for Table 1B or less byproducts or any byproduct used in mine reclamation projects
- Applies to all geotechnical fill projects under 538.10(2)

Separation to Water Table

- Proposed Rule
 - Simplifies a confusing standard; adds clarity to aid in concurrence determinations
 - Protects groundwater quality:
 - 3-foot separation standard based on UW research showing vadose zone is necessary for 80% reduction of contaminants leaching from industrial byproducts
 - 5-foot separation necessary to account for groundwater table fluctuations; no need to establish a seasonal high water table level
 - 5-foot separation aligns with federal rules for placement of CCR materials

Revised Rules

- Maintains a streamlined approval process for the majority of beneficial uses
- Adds additional uses.
- Creates a mechanism for future management after initial use.
- Maintains a case-specific approval option for additional byproducts and uses that don't meet the rule standards.

Proposed revisions of the NR 538 rule can be viewed at the Department of Natural Resources Administrative Rules website: <https://dnr.wi.gov/news/input/ProposedPermanent.html>
Search: WA-11-15

Contact: Philip Fauble, 608-267-3538

philip.fauble@wisconsin.gov

Andrea Keller, 608-267-3121

andrea.keller@wisconsin.gov