



NR 538 TAC: Appendix I And NR 538.12-14

Sixth TAC Meeting, Waukesha DNR Service Center
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Welcome!

- We will be trying a new meeting format..
 - In the past, we presented proposed Code revision language...
 - For this meeting, we will try presenting ideas and soliciting comment – leave the exact language for later comment.
 - Let's see how it goes!





Appendix I-Update

- Held 2 sub-committee meetings over the summer (June and August) to discuss Appendix I standards
- No final consensus on the standards, but lots of good discussion
- DNR Proposed several different alternatives:

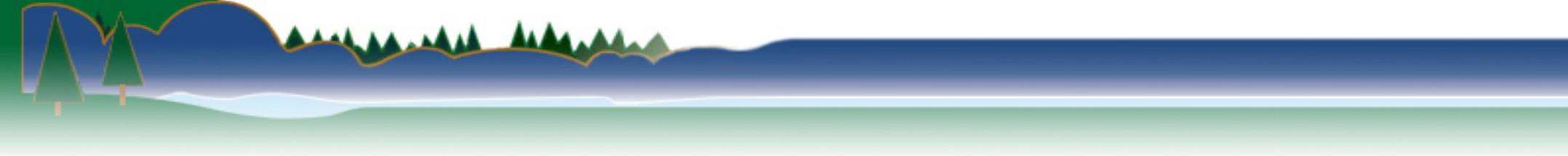




Appendix I Alternatives

- Discussed 4 possible alternatives:
 - Alternative 1: Replace totals standards, all else the same – rejected
 - Alternative 2: New category just for unbonded surface course – unpopular
 - Alternative 3: No totals sampling but eliminate unbonded use – OK, but revise to keep unbonded
 - Alternative 4: Separate table for unbonded use – OK, but objections to sampling totals for initial certification





Alternative 4

This alternative includes creation of a special table for beneficial uses that have the potential for significant inhalation/ingestion exposure, while eliminating the application of totals standards to any other use.

- This alternative eliminates totals standards for byproduct materials not intended for exposed uses. The only applicable exposure pathway for uses other than unbonded surface course would be through groundwater (water leach test),
- A separate table of totals standards (Table 7) is included for any generator that wishes to use their byproduct material as unbonded surface course (aggregate),
- Totals analysis of the compounds in Table 7 would still be required for the initial certification, but would not be required for subsequent recharacterization if the material is not used or intended for use as unbonded surface course.



Coal Ash Industrial Byproduct Characterization

Water Leach Test (ASTM D3987-12)	Category 1	Category 2
Parameter	mg/L	mg/L
Antimony	0.006	0.03
Arsenic	0.01	0.05
Barium	2	10
Beryllium	0.004	0.02
Boron	1	5
Cadmium	0.005	0.025
Chloride	1250	2500
Chromium, Tot.	0.1	0.5
Cobalt	0.04	0.2
Fluoride	4	20
Lead	0.015	0.075
Mercury	0.002	0.01
Molybdenum	0.04	0.2
Selenium	0.05	0.25
Sulfate	1250	2500
Thallium	0.002	0.01



Beneficial Use Methods		Industrial Byproduct Category		
		3	2	1
NR 538.10				
(1)	Encapsulated Uses	x	x	x
(2)	Waste Stabilization / Solidification	x	x	x
(3)	Supplemental Fuel Source / Energy Recovery	x	x	x
(4)	Landfill Daily Cover / Internal Structures at landfills having a leachate collection system	x	x	x
(5)	Confined Geotechnical Fill (a) commercial, industrial or institutional building subgrade fill (b) paved lot subgrade fill (c) paved roadway subgrade fill (d) base aggregates (f) tank, vault or tunnel abandonment (g) slabjacking material (h) soil and pavement base stabilization for structural improvements listed in (5)(a) - (c) (i) controlled low strength material (flowable fill) for structural improvements listed in (5)(a), (d), (e) and (f)		x	x
(6)	Feed and Manure Storage Structures			x
(7)	Transportation Facility Embankment			x
(8)	Unconfined Geotechnical Fill			x
(9)	Nonmetallic Mine Reclamation			x
(10)	Unbonded Surface Course ¹			x
(11)	Bonded Surface Course			x
(12)	Cold Weather Abrasive			x
(13)	Blasting Grit/Abrasive	x	x	x
(14)	Soil or Plant Additives ²			

1 –Byproducts to be used as unbonded surface course must also meet the totals standards in Table 7.

2- Byproducts to be used as soil and plant additives must meet the totals standards in Table 6.





Appendix I-Alternatives

- Sub-committee comments:
 - Preference for standards that are specific to the proposed uses
 - Standard values that reflect the restrictions on use
 - Distaste for standards or multipliers that are “arbitrary” with no science back-up
 - Concerns for confusion with Category changes
 - Allow existing testing results?





Appendix I-GW Standards

- To address some of these concerns:
 - NR 140 groundwater quality standards must be met (ultimate standards)
 - To account for restrictions (separation to water table, cover, well setbacks) we need a model to predict effects on water quality
 - Approached WG&NHS/UW to discuss potential of using a simple model; existing models are close, but need to be modified





Appendix I-New Approach

- Based on our discussions, we are offering a new potential approach that would be possible with standards based on a model:

NO CATEGORIES!!!

- How would this work?





Appendix I-New Approach

- Concepts:
 - Increase importance of Initial Certification
 - Sample a designated list of parameters (Water Leach and Totals)
 - Compare them to standards specific to the proposed uses
 - Submit to the DNR what uses the byproduct is eligible for; DNR concurs or objects
 - If concurrence, DNR responds with a letter confirming acceptable uses



Appendix I-New Approach

Table 1A
Initial Certification and Recertification
ASTM Water Leach Test

Parameter	Ferrous Foundry System Sand	Ferrous and Steel Slag	Coal Ash	FGD Gypsum	Other
Antimony	X	X	X	X	X
Arsenic	X	X	X	X	X
Barium		X	X		X
Beryllium	X	X	X		X
Boron		X	X	X	X
Cadmium	X	X	X		X
Chloride			X		X
Chromium, Total	X	X	X		X
Cobalt	X		X		X
Copper	X				X
Fluoride		X	X	X	X
Lead	X	X	X		X
Manganese				X	X
Mercury			X	X	X
Molybdenum		X	X		X
Nickel	X				X
Nitrite + Nitrate(as N)					X
Phenol	X				X
Selenium			X	X	X
Sulfate			X	X	X
Thallium		X	X	X	X
Vanadium		X			X
Zinc					X



Appendix I-New Approach

Table 2
Geotechnical Fill and Construction Standards
ASTM Water Leach Test

Actual Standards Will Be Based On Model Results

Standard (mg/L)	Parameter	Ferrous Foundry System Sand	Ferrous and Steel Slag	Coal Ash	Other
0.006	Antimony	X	X	X	X
0.01	Arsenic	X	X	X	X
2.0	Barium		X	X	X
0.004	Beryllium	X	X	X	X
1.0	Boron		X	X	X
0.005	Cadmium	X	X	X	X
1250	Chloride			X	X
0.10	Chromium, Total	X	X	X	X
0.04	Cobalt	X		X	X
1.30	Copper	X			X
4.0	Fluoride		X	X	X
0.015	Lead	X	X	X	X
0.30	Manganese				X
0.002	Mercury			X	X
0.04	Molybdenum		X	X	X
0.1	Nickel	X			X
10	Nitrite + Nitrate(as N)				X
2.0	Phenol	X			X
0.05	Selenium			X	X
1250	Sulfate			X	X
0.002	Thallium		X	X	X
0.15	Vanadium		X		X
25	Zinc				X





Appendix I-New Approach

- Why test for totals?
 - Determine eligibility for surface course use
 - To reassure the public of the suitability of the material for reuse
 - Assumption that fill material will be stored or re-exposed at some point in the future
 - Good check to make sure byproduct has not changed; may indicate that other parameters should be included in water leach tests





Appendix I-New Approach

- Other Implications:
 - Re-arrange NR 538.10 – group similar uses together (i.e. Geotechnical Fill, Encapsulated and Contained Uses 1-4) – see handout
 - Same standards for fill regardless of cover (models assume saturation and excavation)
 - Uniform setbacks (private wells and ground water table)
 - May need to determine soil type at fill sites





Options for Discussion

- Is this “no category” approach with modelling worth pursuing further?
- Is there a preference for retaining the “category” system?
- A simplified system of categories like the “Alternative 4” presented over the summer? Elements of each?
- Leave the existing Code as is or with only minor revisions to standards.





Recharacterization

- Recharacterization frequency?
 - Currently varies depending on Category; 1-5 years; would have to change if “no category” option is chosen
 - DNR suggested uniform frequency for simplicity
 - Tiered approach or one frequency?
 - Maintain de-minimus levels? Currently 1000-5000 cubic yards (depending on category) do not have to recharacterize





General Criteria NR 538.12

- Proposed changes for consideration:
 - (2)(b) Groundwater table separation – currently 3 feet (written notice and concurrence if less than 5 feet) for fill projects 5000 cubic yards or more; placement levels
 - Distance must be consistent (models)
 - 5 feet is standard for EPA (CCR rule) and USDA (CAFO farm structures)
 - Clean WI suggests 4 feet from seasonal high water table or 8 feet from placement levels





General Criteria

- Proposed changes for consideration:
 - Groundwater table separation distance should apply to all fill, not just Cat. 3-4 (gw model)
 - (2)(a) Locational Criteria – add prohibition on use in floodplain areas (NR 504.04(3))-only fills projects? 100-year?
 - (2)(br) Maintain 200-foot distance from water supply wells for all fill projects greater than 5000 cubic yards? (no owner consent as current rule)





General Criteria

- Proposed changes for consideration:
 - Establish setbacks from wetlands and surface water bodies? (100 feet?); currently NR 103 and no detrimental effect on surface water
 - Establish setbacks from bedrock, esp. karst? (25 feet?); mine reclamation? Case-specific?
 - Specify that fill projects in excess of 100,000 cubic yards must be approved as a case-specific approval; may need additional monitoring or documentation





General Criteria

- Proposed changes for consideration:
 - Need for some language to ensure that projects are completed in a timely fashion and covered (Dept. of Health concern); must be completed in 1 year or phased if longer? Must not be left uncovered longer than 30, 60, 90 days? Other suggestions?
 - Exclude CCR material from use in non-metallic mine reclamation? (to conform with EPA CCR rules)





Reporting Requirements

- NR 538.14 – Annual Certification
 - Proposed changes for consideration:
 - Volume of byproduct in storage as of Dec. 31 of reporting year (instead of change in volume stored)
 - Storage facilities must identify byproduct generators supplying material (unless storage at generation site)
 - Additional reporting:
 - How was the byproduct used? (class)
 - Who was the byproduct sent or sold to?





Reporting Requirements

- Notification for concurrence
 - Proposed changes for consideration:
 - Addition of GPS coordinates for fill projects; exempt DOT projects; require or still allow maps? Data point or perimeter of fill area?
 - Demonstration that project will meet the performance standards (wetlands, etc.)
 - Proof of publication of public notice (or intent to publish) if required
 - Apply to all fills in excess of 5000 cubic yards (even unconfined – not all)





Reporting Requirements

- Proposed Notification Language:
 - Concurrence response; DNR will send written response within 10 days if project meets performance standards and applicable criteria; DNR notes deficiencies and allows applicant to re-submit; sets out criteria for requiring a case-specific approval (complexity); if no response in 10 days, it is approved
 - Would replace all the scattered notif. requirements (reference this citation)





Reporting Requirements

(5) For proposed projects under s. NR 538.10 (5), (6), (7), (8) and (9) that require submission of a written notification, the department shall reply with a written concurrence within 10 business days provided the applicant demonstrates they can meet the applicable criteria of this chapter. If the applicant cannot demonstrate that the proposed project will meet these criteria, the department will provide a written notice of non-concurrence within 10 business days noting any deficiencies and allowing the applicant an opportunity to correct them or provide additional information. The department may also determine that, due to size, complexity or other considerations related to the project location or design, the applicant shall resubmit the project as a case-specific approval request per s. NR 538.08(7). If the department does not respond to the notification within 10 business days, concurrence is considered to be granted.

- Would define when DNR can concur and how, along with criteria for requiring case-specific approvals





Reporting Requirements

- Proposed addition of language to allow for project modifications (example):

(6) **Modifications.** Any industrial byproduct generator or their designee that wishes to significantly modify a project that was issued a concurrence by the department under s. NR 538.10 (5), (6), (7), (8), and (9) shall notify the department in accordance with s. NR 538.14. Significant modifications include, but are not limited to, an increase in the volume of industrial byproduct to be used in the project, an increase in the footprint of the project area, a change in the final cover, a change in the proposed use, or a delay in placement of final covering of the byproduct material beyond the anticipated project completeness date. The department shall respond to requested significant modifications in accordance with s. NR 538.14(5).

- Would define when a modification is needed and how it would be approved.





Next Steps

- Schedule one more TAC to discuss remaining items:
 - Storage
 - Monitoring
 - Public Notice and Owner Notification
 - Excavation
- Meeting after that to discuss model results, if pursued





Questions?

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