

NR 700 RULE  
UPDATE

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October 16  
2013

# NR 700 REVISIONS WEBINAR

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NR 700 RULE  
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# NR 708 - IMMEDIATE AND INTERIM ACTIONS

Dan Kolberg, P.E.  
Local Governmental Specialist



October 16  
2013

# NR 708

NR 708.01 Purpose.

NR 708.02 Applicability.

NR 708.03 Definitions.

NR 708.05 Immediate actions.

NR 708.07 Additional response actions.

NR 708.09 No further response action.

NR 708.11 Interim actions.

NR 708.13 Free product removal.

NR 708.15 Interim action reports.

**NR 708.17 Local governmental unit (LGU)  
or economic development corporation  
(EDC) exemptions.**

# PURPOSE OF 708.17

To Recognize the  
LGU Exemption [s. 292.11(9)(e)]

and the

Differences in Handling Cases  
Where it's Involved

# LGU EXEMPTION [S. 292.11(9)(E)]

- For LGUs and EDCs
- Acquire contaminated property
- Exempt from:
  - Investigation
  - Remediation
  - Financial responsibility
- Some actions may be needed
- DNR may direct actions to be taken

# SUMMARY OF NR 708 CHANGES

- **NR 708.01 Purpose.** This chapter establishes criteria for emergency and non-emergency immediate actions and interim actions to be taken by responsible parties, **or interim actions taken by local governmental units or economic development corporations when directed by the department,** to protect public health, safety and welfare and the environment; and establishes the documentation requirements associated with these response actions. This chapter is adopted pursuant to ss. 227.11 (2), 287.03 (1) (a), 289.06, 292.11, 292.15 and 292.31, **and ch. 292,** Stats.
- **NR 708.02 Applicability.**  
**(2r) Section NR 708.17 applies to response actions taken by a local governmental unit or economic development corporation when directed by the department under s. 292.11(9) (e) 4, Stats.**

# SUMMARY OF NR 708 CHANGES

- **NR 708.03 Definitions.** The definitions in s. NR 700.03 apply to this chapter. In this chapter:

(1) "Economic development corporation" has the meaning described in s. 501(c) of the Internal Revenue Code, as defined in s. 71.22 (4), Wis. Stats., that is exempt from federal taxation under section 501 (a) of the Internal Revenue Code, or an entity wholly owned and operated by such a corporation, with respect to property acquired to further the economic development purposes that exempt the corporation from federal taxation.

(2) "Local governmental unit" has the meaning specified in s. 292.11(9)(e) 1. Stats.

**Note:** Section 292.11(9) (e) 1. defines "local governmental unit" to mean "a municipality, a redevelopment authority created under s. 66.1333, a public body designated by a municipality under s. 66.1337 (4), a community development authority or a housing authority."

# SUMMARY OF NR 708 CHANGES

- The rule language in NR 708.05 has been modified to allow DNR to approve management of more than 100 cubic yards of contaminated soil as an immediate action.
- The note following NR 708.11(1)(a) has been modified to specify that a site investigation may not always be required following an interim action.

# SUMMARY OF NR 708 CHANGES

- The examples of interim actions have been expanded to include installing or operating a vapor mitigation system.
- Rule language has been added to clarify that DNR may require the use of a vapor mitigation system or other engineering controls to address situations where vapor concentrations exceed the risk screening levels.

# SUMMARY OF THE NR 708 CHANGES

- The section addressing interim action reports has been expanded to specify that an operation and maintenance plan must be included when an engineering control is used.
- This would include cover systems, a groundwater barrier system or a vapor mitigation system.

# NR 708.17 LGU OR EDC EXEMPTIONS

## (1) General

- (a) Dept. may direct actions
- (b) Actions may include
  - Soil removal
  - Investigations beneath demol. bldgs.
  - Replace infiltration barriers
  - Vapor mitigation barriers
- (c) LGU shall submit plans
- (d) Fees shall be paid

# NR 708.17 LGU OR EDC EXEMPTIONS

## **(2) Agency Authority if contamination remains**

- (a) Require maintenance
- (b) Reduce threats if bldg. removed
- (c) Require protective conditions
- (d) Determine actions if impeds. removed
- (e) Additional response actions

## **(3) Dept. database and fees**

- (a) Dept-directed actions on database
- (b) Fee for adding to database

# NR 708.17 LGU OR EDC EXEMPTIONS

**(4) Documentation** – requirements have been developed to be compatible with LGU exemption. Consideration was given to keeping costs low for exempt entities.



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NR 700 RULE  
UPDATE

NR 722  
STANDARDS FOR SELECTING  
REMEDIAL ACTIONS

Jane Lemcke  
Standards & Streamlining Team Leader  
&  
Tom Coogan, WISRR Team Leader



October 16  
2013

# PURPOSE

- establish minimum standards for identifying and evaluating remedial action options and selecting remedial actions

# APPLICABILITY

- Exemption for DERF sites added, as comparison of RA options accomplished through bidding process
- Exemption for PECFA sites removed, due to repeal of NR 746

# GENERAL CHANGES

- Definitions removed, see NR 700.03
- For DNR-funded actions, consideration given to options providing long-term sustainability
- For evaluation of RA options: added criteria
  - Address the pathways of concern
  - Effectively and efficiently address the source of contamination

# SOURCE CONTROL

- Note: For cases involving a discharge and migration of organic contaminants that do not readily degrade in soil or groundwater, an active remedial action that will reduce the contaminant mass and concentration will typically be necessary. Natural attenuation, covers and barriers do not actively reduce contaminant mass and concentrations. Chlorinated compounds are the most common contaminants that fall under this provision. Some organic contaminants, such as PCBs and PAHs may not readily migrate, depending on site characteristics.

# SOURCE CONTROL

- Economic feasibility. The economic feasibility of each appropriate remedial action option that effectively and efficiently addresses the source of the contamination shall be evaluated, using the following (current) criteria:

# RA OPTION EVALUATION

- Removed language regarding 250 cubic yard limit on landfill disposal of contaminated soil
- *Added to a Note* : Any remedy selected should attempt to limit secondary impacts including air and water discharges, destruction of ecosystems, and excessive use of energy.

# EVALUATION CRITERIA

- Added evaluation criteria:
  - The redevelopment potential of the site once the remedy has been implemented.
  - Reduction of greenhouse gases consistent with federal or state climate action policies.
  - i. the degradation potential of the compounds.
    - Note: The biogeochemical environment and the contaminant of concern are critical factors in determining degradation potential. Not all compounds readily degrade in soil or groundwater, while others, such as certain petroleum compounds have a greater degradation potential.

# SELECTION OF A RA - VAPOR

- ... the vapor intrusion pathway shall be evaluated to determine the likelihood of those substances entering the breathing space of a structure. Air contaminated from vapor intrusion shall be restored in accordance with the following requirements:

# VAPOR CRITERIA

- 1. At sites or facilities where vapors have migrated from the source of contamination, active remedial actions shall be taken to limit or prevent, to the extent practicable, potential and actual hazardous substance discharges and environmental pollution that may attain or exceed vapor action levels.

# VAPOR CRITERIA (CONT.)

- 2. The department may take or require the responsible parties to conduct any necessary actions, such as developing site-specific environmental standards in cooperation with the department of health services, to protect public health, safety and welfare or to prevent a significant damaging effect on indoor air quality for present or future use.

# SUSTAINABLE REMEDIAL ACTIONS

- **SUSTAINABLE REMEDIAL ACTION.** Upon selection of the RA, RP to address the following criteria:
  - (a) Total energy use and the potential to use renewable energy.
  - (b) The generation of air pollutants, including particulate matter and greenhouse gas emissions.
  - (c) Water use and the impacts to water resources.

# SUSTAINABLE REMEDIAL ACTIONS

- (d) The future land use and enhancement of ecosystems, including minimizing unnecessary soil and habitat disturbance and destruction.
- (e) Reducing, reusing and recycling materials and wastes, including investigative or sampling wastes, and

# SUSTAINABLE REMEDIAL ACTIONS

- (f) Optimizing sustainable management practices during long-term care and stewardship.
- Note: Tradeoffs will exist when evaluating these criteria and responsible parties need to balance both the benefits and risks to human health and the environment when selecting and implementing the best overall approach. Additional information can be obtained from U.S. EPA at: <http://www.clu-in.org/greenremediation/>.



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# WISCONSIN INITIATIVE FOR SUSTAINABLE REMEDiation & REDEVELOPMENT (WISRR)

- DNR Remediation & Redevelopment Team
- Promote Environmentally & Socioeconomically responsible practices

# WISCONSIN INITIATIVE FOR SUSTAINABLE REMEDiation & REDEVELOPMENT (WISRR)

## The WISRR Team

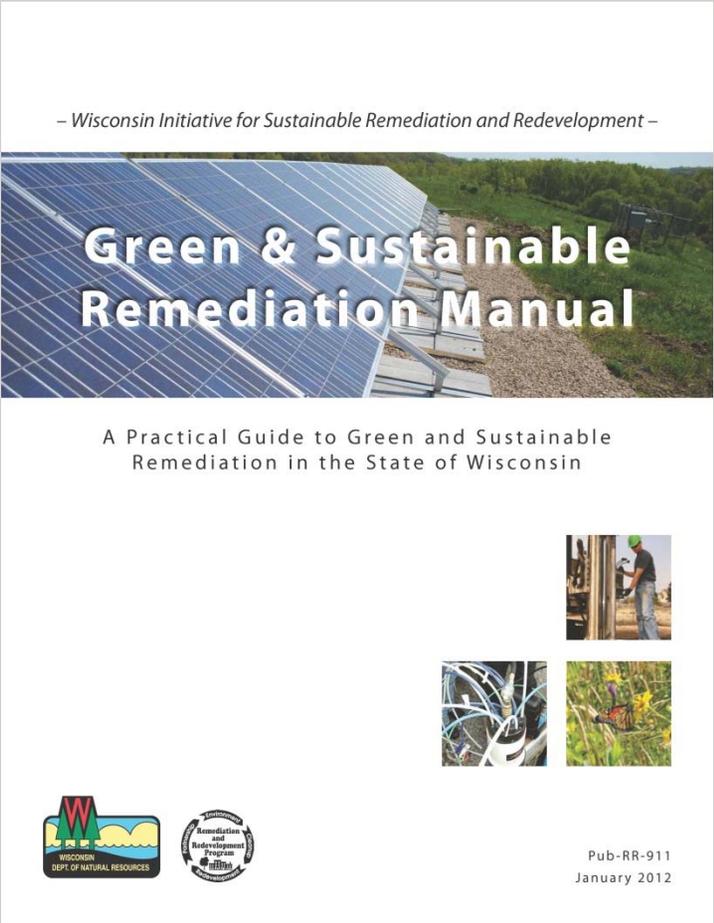
### Central Office

- Tom Coogan (Team Leader)
- Tim Cooke
- Chris Zenchenko
- Mark Giesfeldt (Sponsor)

### Regional PMs

- Jennifer Borski, NER
- Mark Drews, SER
- Erin Endsley, NOR
- Gina Keenan, WCR
- Larry Lester, SCR

# RESOURCES



# INSIDE THE MANUAL

- GSR Overview
- Integrating GSR into all Phases of the Project Life Cycle
- Sustainability Baseline Development
- **Remedial Process Optimization**
- **Alternative Energy**
- **Sustainability Options Evaluation**
- Appendix A – Example Qualitative Checklist and Carbon Footprint Calculations
- Appendix B – Life Cycle Cost Analysis

# QUICK REFERENCE GUIDES

PUB RR-937

## QUICK REFERENCE GUIDE: Greener Remediation Optimization Techniques

March 2013

This quick reference guide is intended to supplement Wisconsin DNR's Green & Sustainable Remediation Manual (PUB-RR-911). For more information about optimization techniques and strategies, see U.S. EPA's Green Remediation (GR) Best Management Practices (BMPs) fact sheets, available at [clu.in.org/greenremediation](http://clu.in.org/greenremediation).

### Optimization Techniques for all remediation technologies

- Perform adequate site investigation to develop good conceptual site model
- Perform semi-annual evaluation of system effectiveness. Make changes or shut system down as appropriate
- Evaluate the concurrent use of phytoremediation
- Evaluate natural attenuation
- Use renewable energy (e.g. solar, wind) to power equipment
- Minimize land disturbance
- Implement idling policies to reduce fuel consumption

REMEDIATION TECHNOLOGY	OPTIMIZATION TECHNIQUES	REMEDIATION TECHNOLOGY	OPTIMIZATION TECHNIQUES
Pump & Treat	<ul style="list-style-type: none"> <li>• Design system for easy modification as site conditions change</li> <li>• Intermitent pumping</li> <li>• Use real-time monitoring to identify influent changes and modify treatment accordingly</li> <li>• Discharge to surface water or groundwater</li> <li>• Evaluate concurrent use of in situ chemical oxidation, thermal remediation, or bioremediation in source area</li> <li>• Evaluate chemicals and process materials for carbon footprint</li> <li>• Minimize process-derived solid waste</li> <li>• Evaluate beneficial onsite reuse of treated water</li> <li>• Use appropriately sized (i.e. not oversized) pumps, fans, and motors</li> <li>• Use green building methods for construction of Pump &amp; Treat building</li> <li>• Use existing building to house Pump &amp; Treat equipment</li> <li>• Perform routine system maintenance to optimize equipment efficiency</li> <li>• Use real-time measurement technologies and alarms for off-site system monitoring</li> </ul>	In Situ Thermal Technologies	<ul style="list-style-type: none"> <li>• Minimize piping runs from extraction well field to treatment system</li> <li>• Consider phased approach to reduce equipment needs</li> <li>• Use direct-push technology for well installation to minimize waste</li> <li>• Winterize aboveground piping</li> <li>• Reclaim treated groundwater for use onsite</li> <li>• Choose materials with recycled content</li> </ul>
	Bioremediation		<ul style="list-style-type: none"> <li>• Conduct bench-scale soil treatability tests</li> <li>• Conduct on-site pilot tests to evaluate methods of delivering substrate or amendment</li> <li>• Use non-traditional reagents and additives, such as manure compost, municipal biosolids, wood ash, and paper sludge</li> <li>• Use direct-push technology for construction of wells</li> <li>• Maximize reuse of existing or new wells and boreholes for injections</li> </ul>
			Excavation & Surface Restoration



Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 dnr.wis.gov, search: "Brownfields"

This document contains information about certain state statutes and administrative rules, but does not necessarily include all of the details found in the statutes and rules. Readers should consult the actual language of the statutes and rules to answer specific questions. The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20248. This publication is available in alternative format upon request. Please call 608-267-3543 for more information.



PUB RR-938

## QUICK REFERENCE GUIDE: Greener Site Investigation Techniques

March 2013

This quick reference guide is intended to supplement Wisconsin DNR's Green & Sustainable Remediation Manual (PUB-RR-911). For more information about greener site investigations, see U.S. EPA's Green Remediation (GR) Best Management Practices (BMPs) Site Investigation fact sheet (EPA 542-F-09-004, December 2009), available at [clu.in.org/greenremediation](http://clu.in.org/greenremediation).

### BMPs for all Site Investigations

- Evaluate feasibility of mobile lab, field analytical methods or direct sensing tools
- Schedule activities for appropriate seasons to reduce weather delays and heating and cooling
- Identify local sources of energy efficient machinery, vehicles, and alternative fuels
- Establish electronic data transfers and document preparation
- Select accommodation facilities with green policies
- Identify options for integrating renewable energy resources throughout the project
- Incorporate green specifications into solicitations and contracts
- Select local service providers, product suppliers, and analytical labs
- Specify lab analytical methods that generate less waste and solvents

**Energy**  
Reduce total usage & increase renewables

**Materials & Waste**  
Improve waste management & reduction efforts

**CORE ELEMENTS**

**Land & Ecosystems**  
Enhance land management & ecosystem protection

**Air**  
Reduce pollutants & greenhouse gas emissions

**Water**  
Reduce usage & negative impacts on water quality

CORE ELEMENT	GREENER SITE INVESTIGATION TECHNIQUES	CORE ELEMENT	GREENER SITE INVESTIGATION TECHNIQUES
Energy	<ul style="list-style-type: none"> <li>• Use real-time data collection technologies to reduce the number of field mobilizations needed to complete the site investigation</li> <li>• Limit the number of vehicles deployed to the site; Rent electric, hybrid, or hydrogen fuel cell vehicles</li> <li>• Institute idle reduction plans</li> <li>• Use in situ data loggers to monitor water levels and water quality parameters</li> <li>• Use solar-powered telemetry systems to remotely transmit logging data</li> <li>• Use rechargeable batteries for handheld field instruments</li> <li>• Use direct-push technology for well drilling and soil sampling</li> <li>• Dispose of investigative-derived waste (IDW) at the nearest permitted facility</li> </ul>	Water	<ul style="list-style-type: none"> <li>• Use waterless drilling techniques (such as direct-push technology)</li> <li>• Reuse operations graywater and capture rainwater for irrigation or dust control</li> <li>• Return unused clean water to surface water bodies or groundwater vs. discharge to public sewer system</li> <li>• Use low-flow sampling equipment</li> <li>• Use steam-cleaning or phosphate-free detergents for equipment decontamination</li> <li>• Quickly restore disrupted vegetated areas to control stormwater runoff and prevent soil erosion</li> </ul>
	Air		<ul style="list-style-type: none"> <li>• Reduce air pollutants and Greenhouse Gas (GHG) emissions by                             <ul style="list-style-type: none"> <li>◦ Installing diesel emission control filters on equipment</li> <li>◦ Using ultralow-sulfur fuels</li> <li>◦ Reducing duration of drilling by employing sonic drilling techniques</li> </ul> </li> <li>• Reducing duration of groundwater pumping by using passive sampling devices</li> </ul>
			Materials & Waste



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# SITE SPECIFIC ANALYSES

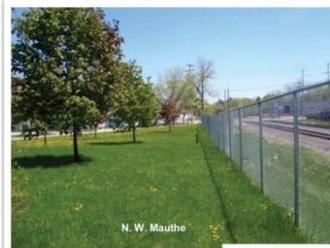


## Wisconsin Initiative for Sustainable Remediation and Redevelopment - WISRR -



January 2012

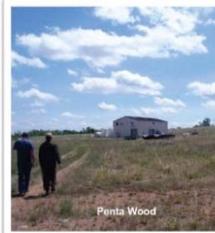
### Site Specific Sustainability Analyses



N. W. Mauthe



Delafield Landfill



Penta Wood



Refuse Hideaway Landfill

Site Specific Sustainability Analysis

Wisconsin Department of Natural Resources



# FUTURE

- Additional External training
  - Green and Sustainable Remediation Manual
  - Quick Reference Guides
- Informational Content
  - Example Green and Sustainable Practices (NR 722.09 (2m) A-F)
  - Showcase Sites with Green and Sustainable Activities

# FOR MORE INFORMATION

- **WISRR Homepage**

- [dnr.wi.gov/topic/brownfields/rrprogram.html](http://dnr.wi.gov/topic/brownfields/rrprogram.html)

- **EPA Webpage**

- [EPA: www.clu-in.org/greenremediation](http://www.clu-in.org/greenremediation)

- **Questions**

- Tom Coogan, 608/267-7560 or [Thomas.Coogan@wi.gov](mailto:Thomas.Coogan@wi.gov)

# RAOR TIMELINES

- Submit report within 60 days of submitting the SIR. (unless otherwise specified)
- For the selected RA, describe how the sustainable RA criteria were addressed.
- Proceed with RA within 90 days of approval or conditional approval. (current)

# DNR RESPONSE TO RAOR

- 1. Require O&M of an engineering control
- 2. Require an investigation of the extent of residual contamination and the performance of any necessary remedial action if a building or other structural impediment is removed that had prevented a complete investigation or remedial action at the site.
- 3. Require that the department be notified prior to a change in land use, if the proposed land use change would be such that any of the exposure assumptions on which a continuing obligation are based would no longer be protective of human health, safety, welfare or the environment.

# DNR RESPONSE TO RAOR (CONT.)

- 4. Require vapor control technologies be used for any new construction on the site, or require interim actions to limit or prevent vapor intrusion be installed, operated and maintained.
- 5. Require site-specific actions or continuing obligations to adequately protect human health, safety, welfare or the environment.
- 6. Require the submittal of the information necessary for listing the site on the department database.

# DATABASE REQUIREMENTS

- If a RA is approved that includes a Continuing Obligation:
  - The site can be included on the database (BRRTS/GIS Registry)
  - Approval letter will be posted to the database
  - Pay GIS fees
  - Follow documentation requirements (for GIS PDF) of NR 726.11 to the extent practicable



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NR 700 RULE  
UPDATE

NR 724 – REMEDIAL AND INTERIM  
ACTION DESIGN,  
IMPLEMENTATION, OPERATION,  
MAINTENANCE AND  
MONITORING REQUIREMENTS

Mark Gordon  
Bureau for Remediation and Redevelopment



October 16  
2013

# SUMMARY OF NR 724 CHANGES

- The Applicability and O&M sections were expanded to cover vapor mitigation systems.
- The language specifying that RP's were responsible for operating and maintaining engineered systems for at least 30 years was replaced with a provision requiring that O&M continue until no longer required by DNR.
- A provision was added to indicate that O&M may need to continue through post-closure.

# SUMMARY OF NR 724 CHANGES

- The language on O&M progress reports has been removed and replaced with a requirement to provide the appropriate information on a DNR reporting form.
- The form is posted for external review. The comments will be evaluated and the necessary changes made.
- An announcement in our electronic newsletter will identify how to access the form.

# SUMMARY OF NR 724 CHANGES

- RP's must provide monitoring results within 10 business days of receiving the data, unless otherwise approved by DNR. This is consistent with the new reporting requirements in NR 716.
- NR 724.19 has been modified slightly to include any applicable environmental standards and not just soil or groundwater.



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# NR 700 REVISIONS

- Next Webinar: Tuesday, October 22, 2013
- 1:00 – 3:00 pm
- Chapters: 746, 749, 750
- Presenters: Mark Gordon & Michael Prager
- Presentations available at <http://dnr.wi.gov/topic/brownfields/training.html>
- Questions after today can be emailed to [DNRRRComments@wisconsin.gov](mailto:DNRRRComments@wisconsin.gov)

