

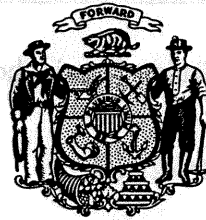
WISCONSIN LEGISLATIVE COUNCIL STAFF

LCRC  
FORM 2

JUL 13 1999

**RULES CLEARINGHOUSE**

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**CLEARINGHOUSE REPORT TO AGENCY**

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[THIS REPORT HAS BEEN PREPARED PURSUANT TO S. 227.15, STATS. THIS IS A REPORT ON A RULE AS ORIGINALLY PROPOSED BY THE AGENCY; THE REPORT MAY NOT REFLECT THE FINAL CONTENT OF THE RULE IN FINAL DRAFT FORM AS IT WILL BE SUBMITTED TO THE LEGISLATURE. THIS REPORT CONSTITUTES A REVIEW OF, BUT NOT APPROVAL OR DISAPPROVAL OF, THE SUBSTANTIVE CONTENT AND TECHNICAL ACCURACY OF THE RULE.]

**CLEARINGHOUSE RULE 99-094**

AN ORDER to amend NR 716.05 (1), 716.11 (3) (b) and (5) (a), 720.02 (1) (intro.), 720.05 (1) (intro.), 720.07 (1) (a), 722.02 (1), (2) and (3), 726.05 (1), (2) (a) and (b) 1. f. and (6), 726.07 (1) and 726.09 (2) (b); and to create NR 716.11 (5) (e), Appendix A in chapter NR 716, 720.02 (1m) and 722.02 (4) and chapter NR 746, relating to sites contaminated with petroleum products from petroleum storage tanks.

Submitted by **DEPARTMENT OF NATURAL RESOURCES**

06-14-99 RECEIVED BY LEGISLATIVE COUNCIL.

07-12-99 REPORT SENT TO AGENCY.

RNS:MCP:jal;ksm

**LEGISLATIVE COUNCIL RULES CLEARINGHOUSE REPORT**

This rule has been reviewed by the Rules Clearinghouse. Based on that review, comments are reported as noted below:

1. STATUTORY AUTHORITY [s. 227.15 (2) (a)]

Comment Attached YES  NO

2. FORM, STYLE AND PLACEMENT IN ADMINISTRATIVE CODE [s. 227.15 (2) (c)]

Comment Attached YES  NO

3. CONFLICT WITH OR DUPLICATION OF EXISTING RULES [s. 227.15 (2) (d)]

Comment Attached YES  NO

4. ADEQUACY OF REFERENCES TO RELATED STATUTES, RULES AND FORMS [s. 227.15 (2) (e)]

Comment Attached YES  NO

5. CLARITY, GRAMMAR, PUNCTUATION AND USE OF PLAIN LANGUAGE [s. 227.15 (2) (f)]

Comment Attached YES  NO

6. POTENTIAL CONFLICTS WITH, AND COMPARABILITY TO, RELATED FEDERAL REGULATIONS [s. 227.15 (2) (g)]

Comment Attached YES  NO

7. COMPLIANCE WITH PERMIT ACTION DEADLINE REQUIREMENTS [s. 227.15 (2) (h)]

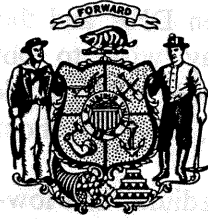
Comment Attached YES  NO

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## CLEARINGHOUSE RULE 99-094

### Comments

**[NOTE: All citations to "Manual" in the comments below are to the Administrative Rules Procedures Manual, prepared by the Revisor of Statutes Bureau and the Legislative Council Staff, dated September 1998.]**

#### I. Statutory Authority

a. Section 101.144 (3m) (a) 3., Stats., requires the Department of Commerce and the Department of Natural Resources (DNR) to set "schedules" for determining whether a petroleum product discharge site should be classified as high, medium or low priority. Nothing in the rule appears to set a schedule.

b. The risk criterion in s. NR 746.06 (2) (b) excludes public roads or street rights-of-way. Is the effect of this exception to allow contaminants in excess of an enforcement standard off site if the contamination is beneath a public road or street right-of-way? If so, how does this provision relate to the requirement under ss. 160.21 (2) (a) 2. and 160.25 (1), Stats., that the enforcement standard must be met at the property boundary, among other places?

c. Section NR 746.07 (3) relates to the errors of measurement, repeatability of test results and statistical significance. This provision also requires the two departments to develop a process for taking these considerations into account. However, s. 160.19 (6), Stats., requires the DNR to "promulgate by rule a scientifically valid procedure for determining if a preventive action limit or enforcement standard is, in fact, attained or exceeded." The DNR has done so in s. NR 140.14. The statute further requires that the procedure developed by DNR be used for "all regulatory and enforcement purposes under [ch. 160, Stats.]." How is it intended that the new procedure in the rule will relate to the existing statutory and rule requirements, and what is the authority for the Department of Commerce's involvement in this process?

## **2. Form, Style and Placement in Administrative Code**

a. The last sentence of s. NR 746.01 notes that ch. NR 746 codifies portions of the memorandum of understanding between DNR and the Department of Commerce. The DNR should consider whether anyone may wish to obtain a copy of the memorandum of understanding. If so, a note after s. NR 746.01 could indicate how to obtain the document. Also, in both sentences of s. NR 746.01, "chapter" should replace "rule."

b. The definitions of high-, medium- and low-priority sites in s. NR 746.03 refer to a "site that is contaminated with a petroleum product." However, the definition of "site" in s. NR 746.03 (20) is "any area where a petroleum product has discharged." One reasonable distinction is that a "site" is any area where a petroleum product has been discharged, even if remedial action is completed, whereas the high-, medium- and low-priority sites are sites that are *currently* contaminated. It might be appropriate to include a note explaining the relationship between these definitions. It may also be possible to change the definitions of high-, medium- and low-priority sites to make these distinctions more apparent.

c. The introductory paragraphs of s. NR 746.03 (8) and (9) require the site to meet both of the criteria in the definition. Each of the two criteria in the definitions should be a separate sentence. The "and" between the two criteria is superfluous. Throughout the rule, subunits should end with a period (except introductory material, which ends with a colon). [See s. 1.03 (intro.), Manual.]

d. The rule refers to "the responsible person or a consultant retained by the responsible person." The latter part of this phrase could be omitted and the duties in the rule could be assigned to the responsible person. An additional substantive provision could be added to the rule providing that any duty of the responsible person may be undertaken by a consultant retained by the responsible person.

## **4. Adequacy of References to Related Statutes, Rules and Forms**

a. The "remedial action performance standards" of ch. NR 720 are included in the definition of "site closure" in s. NR 746.03 (21). If possible, this definition should be clarified by including specific references to the relevant portions of ch. NR 720.

b. The cross-reference to "par. (a)" in s. NR 746.05 (4) is incorrect.

## **5. Clarity, Grammar, Punctuation and Use of Plain Language**

a. The phrase "laterally extensive permeable material" in s. NR 716.11 (5) (a) is vague. This phrase occurs at several other places in the rule.

b. Section NR 720.02 (1m) refers to "petroleum-contaminated" sites. Chapter NR 746 refers to a "site contaminated by a petroleum product." It appears that these terms should be consistent. "Petroleum-contaminated" occurs at several other places in the rule.

c. The apparent intent of s. NR 720.02 (1m), according to the description in the note, is that the exemption applies if soil contamination is within four feet of the ground surface at a site contaminated by a petroleum product *and* the site satisfies the risk criteria in s. NR 746.06 (2). The rule can be redrafted more clearly to indicate this intent.

d. The definition of "low permeability material" in s. NR 746.03 (7) excludes bedrock, but the definition of "permeable material" in s. NR 746.03 (12) does not. Is the latter definition correct?

e. The definition of "remedial action" in s. NR 746.03 (17) defines a remedial action as a type of "response action." "Response action" is not a defined term. It appears that this definition would be clarified by deleting "response." Also, the definition defines "remedial action" as a type of action to control *the discharge of petroleum products*. Is this correct, or is the purpose of a remedial action to control, minimize or eliminate *petroleum products*?

f. In the definition of "remediation target" in s. NR 746.03 (18), the phrase "before a site can be granted" and "before a site . . . is eligible for" closure appear to be mean essentially the same thing.

g. It is not clear in s. NR 746.04 (3) why the setting of remediation targets for sites that are competitively bid or "bundled" with another site must be a joint decision of the agencies. Is it assumed that the sites will include both high-priority sites and either medium- or low-priority sites? Does the DNR intend that a single remediation target will be set for all sites that are competitively bid or bundled with another site? If so, this should be clarified.

h. Section NR 746.04 (3) requires the two departments to "implement a system of joint decision-making" for certain purposes. Several other provisions of the rule require the two departments to undertake further policy development and implementation. Should the rule indicate how this joint effort will be undertaken and what will be the final result? Is the intention to develop a new memorandum of understanding, modify the existing memorandum of understanding, amend or create administrative rules or implement these requirements by other means? Can the intent of the rule be more clearly specified, or an explanatory note included?

i. A closure request is required under s. NR 746.04 (4) (a) to be accompanied by the "appropriate fee." How is this fee established?

j. If a closure request is not submitted and the site has met its remediation target, s. NR 746.04 (4) (b) provides that the department may "solicit a closure request" from the responsible person. The rule does not indicate that the responsible person must respond. Is it optional for the responsible person to submit a closure request?

k. Section NR 746.04 (5) provides a process for resolving disputes under s. NR 746.04 (3) and (4). However, the decisions under s. NR 746.04 (4) appear to be individual decisions of either agency, and it is not clear how these decisions can result in a dispute.

l. "Agreed upon" should be hyphenated in s. NR 746.05 (2).

m. Section NR 746.05 (3) (d) refers twice to the "objectives of this section." It is not clear what are the "objectives" that must be met. Further, it is not clear why these phrases are necessary, if use of an alternative method requires department approval. If the intent of this phrase is to establish the criteria for approval, it would appear more appropriate to require that the alternative method must be expected to result in an adequate determination of hydraulic conductivity.

n. Section NR 746.05 (4) is difficult to understand and would benefit from editing. Also, the last sentence of s. NR 746.05 (4) appears to duplicate in substantial part the requirement of s. NR 746.05 (3) (c) (intro.).

o. The risk criteria, according to s. NR 746.06 (1), are "used to measure" certain risks. However, the risk criteria are not expressed in numerical terms. Other provisions of the rule, such as s. NR 720.07 (1) (a), refer to a site that "satisfies" the risk criteria. In fact, the "risk criteria" in s. NR 746.06 (2) relate primarily to the *absence* of conditions that would create risk for public health or the environment. The department should consider whether this portion of the rule could be clarified by using a different phrase than "risk criteria," or modifying how the risk criteria are described or used in the rule.

The overall purpose of s. NR 746.06 is to establish criteria for screening sites. However, s. NR 746.06 (1) also includes a provision describing how the risk criteria are used. These provisions appear to restate substantive requirements that are established elsewhere in the rule.

p. It is not clear why s. NR 746.06 (2) (intro.) refers only to s. NR 746.07. The risk criteria are also an element of s. 746.05 (1).

q. Some of the criteria in s. NR 746.06 (2) relate to occurrences "at the site" while some do not use this phrase. It appears that this phrase should be included in all of the criteria.

r. In s. NR 746.07 (1) (a), "post closure" should be hyphenated.

s. The requirements imposed by s. NR 746.07 (1) (b) and (c) could be clarified by reducing the length of the sentences and rewriting for clarity. Also, the first two commas in par. (b) are unnecessary.

t. Section NR 746.07 (1) (b) and (2) mention "institutional controls" as required under ch. NR 726. However, the phrase "institutional controls" is not used in ch. NR 726.

u. Should s. NR 746.04 (2) (regarding remediation targets) also be cross-referenced in s. NR 746.07 (2)?

v. Section NR 746.07 (3) requires DNR and the Department of Commerce to take specified actions by June 30, 1999. Since this date has already passed, DNR should consider deleting either the date or the whole sentence.

**ORDER OF THE STATE OF WISCONSIN  
NATURAL RESOURCES BOARD**

**AMENDING AND CREATING RULES**

The Wisconsin Natural Resources Board proposes an order to amend NR 716.05 (1), 716.11 (3)(b) and (5)(a), 720.02 (1)(intro.), 720.05 (1)(intro.), 720.07 (1)(a), 722.02 (1), (2) and (3), 726.05 (1), (2)(a) and (2)(b)1.f., and (6), 726.07 (1) and 726.09 (2)(b); to create NR 716.11 (5)(e), Appendix A in ch. NR 716, 720.02 (1m), 722.02 (4) and ch. NR 746, relating to sites contaminated with petroleum products from petroleum storage tanks.

RR-28-99

Analysis prepared by the Department of Natural Resources

Statutory authority: Section 227.11 (2)(a), Wis. Stats.

Statutes interpreted: Sections 101.143, 101.144, 292.11, and 292.31 and ch. 160, Wis. Stats.

The proposed rule is identical to the version of Comm 46 that is being promulgated by the Department of Commerce.

Chapter NR 746 defines "high priority site", "medium priority site" and "low priority site", and provides that the Department of Natural Resources shall have authority for high priority sites and the Department of Commerce shall have authority for low and medium priority sites. If adopted by the Natural Resources Board, the rule will require the transfer of sites with petroleum contamination in the groundwater below the enforcement standard in ch. NR 140 from the Department of Natural Resources to the Department of Commerce.

Chapter NR 746 requires the two agencies to work cooperatively to develop the following:

1. A system of joint decision-making for the selection of remedial bids and the setting of remediation targets for sites which are competitively bid or bundled with another site or sites.
2. An agreed-upon methodology for determining if there is evidence of an expanding plume and the actions to take if the data provided through the site investigation is not adequate.
3. A process for taking into account the impact of error of measurement, repeatability of results and statistical significance, when determining whether a site is above or below the enforcement standard or any other contaminant level or target.
4. A system for electronically tracking the achievement of remediation targets.
5. A reconciled list of sites in remediation.

Chapter NR 746 also establishes procedures for transferring sites from one agency to the other when information relevant to their classification becomes available.

SECTION 1. NR 716.05 (1) is amended to read:

NR 716.05 (1) Responsible parties shall conduct a site investigation that meets the requirements of this chapter and s. NR 746.05, for discharges of petroleum products from petroleum storage tanks, when site-specific or facility-specific information indicates that soil, sediment, groundwater, surface water, air or other environmental media at a site or facility may have become contaminated. Unless sub. (2) is applicable, responsible parties shall use the factors in s. NR 708.09 (1) (a) through (n) and (2) (a) through (d) to determine whether or not a site investigation is necessary.

SECTION 2. NR 716.11 (3)(b) is amended to read:

NR 716.11 (3)(b) Provide sufficient information to permit evaluation of interim options pursuant to ch. NR 708, and remedial action options pursuant to ch. NR 722, and to permit a determination to be made regarding whether any of the interim or remedial action options require a treatability study or other pilot-scale study, and to provide sufficient data for risk assessment screening and decision-making in accordance with ss. NR 746.05, 746.06 and 746.07, Comm 47.337 and 47.339 and chs. NR 720, 722 and 726.

*githenish?  
janson?*

SECTION 3. NR 716.11 (5)(a) is amended to read:

NR 716.11 (5)(a) Potential pathways for migration of the contamination, including ~~buried utilities and drainage improvements~~ deposits of laterally extensive permeable material, water or sewer line trenches or other buried utility corridors, clay fractures, or any other feature that acts or is anticipated to act as a migration pathway for contaminants, including groundwater contamination and vapor migration.

SECTION 4. NR 716.11 (5)(e) is created to read:

NR 716.11 (5)(e) Groundwater contaminant plume movement in both vertical and horizontal directions, to determine if the plume is expanding, receding or stable. Water table wells and piezometers shall be properly located and screened both within and outside of the source area to intersect the flow lines of the contaminant plume. The site's hydrogeology and degree, extent and type of contaminants shall govern the number of wells and the period of time needed to define plume behavior.



SECTION 5. NR 716 Appendix A is created to read:

**Appendix A**

**STANDARD METHODS FOR DETERMINING HYDRAULIC CONDUCTIVITY**

(1) **TRANSMISSIVITY TEST.** (a) To conduct a transmissivity test, a volume of water is removed from a monitoring well and the water level recovery in the well is measured after a specified time has elapsed. The resultant data may be used to determine the hydraulic conductivity of the area surrounding the monitoring well.

(b) For transmissivity tests, groundwater may not be removed from the well 12 hours prior to beginning the test.

(c) Transmissivity tests shall be conducted in a monitoring well as follows:

1. If using a pump, set the pump intake in the lower half of the screen and allow sufficient time for the water level in the well to equilibrate.
2. Measure and record the initial depth to water and well depth. Subtract the difference to determine the saturated interval of the well, in feet.
3. Pump or bail 2 gallons of groundwater from the well within 2 to 3 minutes.
4. Record the start time and finish time to remove 2 gallons from the well.
5. Measure and record the water level in the well immediately after 2 gallons is removed from the well.
6. After the applicable time listed in Table A has elapsed, measure and record the water level in the well.
7. Calculate hydraulic conductivity utilizing Formula A.

**TABLE A**

Saturated Interval of Well (feet)	Time (minutes)
5	190
6	160
7	140
8	120
9	105
10	95

## FORMULA A

Step 1: Calculate  $T = q / 4 \pi s t$

Where:  $T$  = coefficient of transmissivity, in gallons per day per foot (gpd/ft)

$q$  = volume of groundwater removed (2 gallons)

$s$  = measured residual drawdown, in feet (water level at time in Table A minus initial depth to water in par. (c) 2., above)

$t$  = time, in days, from Table A. (convert minutes to days by dividing by 1440)

Step 2: Convert  $T$  in gpd/ft to  $T$  in  $\text{ft}^2/\text{sec}$  by dividing by 646272.

Step 3: Calculate  $K = T/b$

Where:  $K$  = hydraulic conductivity, in ft/sec

$b$  = saturated interval of well, in feet, as measured in par. (c) 2., above.

Step 4: Convert  $K$  in ft/sec to  $K$  in cm/sec by multiplying by 30.48.

(2) RISING AND FALLING HEAD TEST. (a) To conduct a rising head test, a volume of groundwater is instantaneously removed from a well and the rate of water level recovery in the well is measured. To conduct a falling head test, a solid object is instantaneously inserted into a well and the rate at which groundwater flows out of the well is measured. The results of both tests may be used to determine the hydraulic conductivity of the area surrounding the well. Both tests shall be conducted in accordance with procedures specified by ASTM in guidance number D 4044-96 and D 5912-96, and the relevant criteria in pars. (b) and (c) or (d).

**Note:** ASTM guidance number D 5912-96 is based on the Bouwer and Rice method. Rising head test is also referred to as bail-down test, slug-out test and slug extraction test. Falling head test is also referred to as slug-in test and slug injection test. The criteria listed under pars. (a) to (c) are intended for determining the hydraulic conductivity of low permeability materials. They may not be applicable to saturated materials having a hydraulic conductivity greater than  $1 \times 10^{-5}$  cm/sec.

(b) For both the rising and falling head tests, groundwater may not be removed from the well 12 hours prior to the test, the well shall have at least five feet of water within the well screen or well casing, or both, prior to each test, and the borehole diameter of the well shall be at least six inches.

(c) Hydraulic conductivity shall be determined only by rising head tests in wells where the water table intersects the well screen and shall be conducted in accordance with all of the following criteria:

1. Assume the filter pack's specific yield is 0.20 to 0.25, unless measured by the manufacturer.

2. Remove a minimum of 0.75 gallons and a maximum of 1.5 gallons during the test.  
3. Each test shall continue for 150 minutes or more unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than  $1 \times 10^{-5}$  centimeters per second.

4. Determine if the hydraulic conductivity of the well is less than or equal to  $1 \times 10^{-5}$  centimeters per second based upon the test results.

(d) Both rising head and falling head tests may be conducted in piezometers and shall be conducted in accordance with all of the following criteria:

1. Remove a minimum of 0.75 gallons for the rising head test and add a slug with a volume equivalent to 0.75 gallons or more for the falling head test.

2. The volume of groundwater water removed from the well shall be less than the total volume of water within the well casing above the top of the well screen.

3. The sum of the filter pack length and the filter pack seal shall be used as the length of well screen when calculating hydraulic conductivity.

4. The drawdown in the well may not exceed the top of the filter pack seal.

5. The length of well screen shall be at least four feet.

6. Each test shall continue for 45 minutes or more per well unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than  $1 \times 10^{-5}$  centimeters per second.

7. Determine if the hydraulic conductivity of the well is less than or equal to  $1 \times 10^{-5}$  centimeters per second based upon the test results.

SECTION 6. NR 720.02.(1)(intro.) is amended to read:

NR 720.02 (1) ~~This~~ Except as provided in sub. (1m), this chapter applies to all remedial actions taken by responsible parties to address soil contamination after an investigation has been conducted at a site, facility or portion of a site or facility that is subject to regulation under s. 144.442 292.11 or 144.76 292.31, Stats., regardless of whether there is direct involvement or oversight by the department. This chapter also applies to soil contamination at all of the following:

*add some petroleum product + 720.05(1)*  
SECTION 7. NR 720.02 (1m) is created to read:

NR 720.02 (1m) The requirements of ss. NR 720.07 to 720.19 are not applicable to remedial actions taken to address soil contamination within 4 feet of the ground surface at petroleum-contaminated sites or facilities. These petroleum-contaminated sites or facilities shall also satisfy the risk criteria in s. NR 746.06(2).

Note: Petroleum-contaminated sites and facilities may have soil contamination at a depth greater than 4 feet which is still subject to the requirements of ss. NR 720.07 to 720.19, or they

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*See note - if site doesn't meet risk criteria - subject to 720? - but in any event they would still be subject to 720!!*

may not meet the risk criteria in s. NR 746.06(2) or the closure requirements of NR 746.07(1) in which case the entire site or facility would be still be subject to ss. NR 720.07 to 720.19.

SECTION 8. NR 720.05 (1)(intro.) is amended to read:

NR 720.05 (1) Responsible parties shall select and implement a remedial action to address soil contamination when, after any of the following investigations ~~has~~ have been completed, information collected during the investigation indicates that a remedial action to address soil contamination is necessary to achieve compliance with the requirements of this chapter and, for petroleum product contamination of soil within 4 feet of the ground surface, compliance with the requirements of ch. NR 746:

SECTION 9. NR 720.07 (1)(a) is amended to read:

NR 720.07 (1)(a) Responsible parties shall use information from the sources listed in s. NR 720.05 (1) to determine the residual contaminant levels or performance standards for each exposure or migration pathway of concern for each soil contaminant of concern at a site or facility in accordance with ss. NR 720.09 to 720.19 and, if applicable, to determine whether the risk criteria for screening petroleum-contaminated sites, that are found in s. NR 746.06 (2), are satisfied.

SECTION 10. NR 722.02 (1), (2), (2m) and (3) are amended to read:

NR 722.02 (1) ~~This~~ Except as provided in sub. (4), this chapter applies to all remedial actions taken by the department under the authority of s. 292.11 or 292.31, Stats. This chapter does not apply to immediate actions or interim actions, unless specifically noted in ch. NR 708. In this chapter, where the term "responsible parties" appears, it shall be read to include the department, where a department-funded remedial action is being taken.

(2) ~~This~~ Except as provided in sub. (4), this chapter applies to all remedial actions taken by responsible parties at sites, facilities or portions of a site or facility that are subject to regulation under s. 292.11 or 292.31, Stats., regardless of whether there is direct involvement or oversight by the department.

(2m) ~~This~~ Except as provided in sub. (4), this chapter applies to all remedial actions taken by persons seeking the liability exemption under s. 292.15, Stats. In this chapter, where the term "responsible party" appears, it shall be read to include the "~~purchaser~~ voluntary party" where an action is being undertaken to comply with s. 292.15, Stats.

(3) In addition to being applicable to sites or facilities that are subject to regulation under s. 292.11 or 292.31, Stats., ch. NR 722 applies to the evaluation of proposed remedial action

options for solid waste facilities where remedial action is required by the department pursuant to s. NR 508.20 (11), except as provided in sub. (4).

SECTION 11. NR 722.02 (4) is created to read:

NR 722.02 (4) The requirements of this chapter are not applicable to sites or facilities that satisfy the risk criteria, for screening petroleum-contaminated sites, that are found in s. NR 746.06 (2).

**Note:** Petroleum-contaminated sites and facilities may have soil or groundwater contamination that does not satisfy the risk criteria in s. NR 746.06(2). Petroleum-contaminate sites or facilities that do not satisfy the risk criteria in s. NR 746.06 (2) are subject to this chapter.

SECTION 12. NR 726.05 (1) is amended to read:

NR 726.05 (1) For a site or facility at which a response action other than an immediate action has been conducted and which is classified as complex under s. NR 700.09 (2) or for which the responsible party has chosen to proceed with the complex site process under s. NR 700.11 (2), responsible parties or other interested persons may request that the department close the case under this chapter after compliance with all applicable federal and state public health and environmental laws, including chs. NR 700 to 726-746 where applicable, has been achieved.

SECTION 13. NR 726.05 (2)(a) is amended to read:

NR 726.05 (2)(a) A request for case closure shall be submitted in writing on a close out form supplied by the department and shall be accompanied by a report documenting that the applicable public health and environmental laws, including chs. NR 700 to 724 746 where applicable, have been complied with, or, where ch. NR 140 enforcement standards or preventive action limits are exceeded, that the criteria in par. (b) are satisfied.

SECTION 14. NR 726.05 (2)(b)1.f. is amended to read:

NR 726.05 (2)(b)1.f. The concentration ~~or and~~ mass, ~~or both~~, of a substance and its breakdown products existing in soil or groundwater, or both, have been reduced if the actions are deemed necessary to restore groundwater within a reasonable period of time, to adequately protect public health and the environment, or to prevent groundwater contamination from migrating beyond the boundaries of the property or properties for which groundwater use restrictions have been recorded.

SECTION 15. NR 726.05 (6) is amended to read:

NR 726.05 (6) Following receipt of a request for case closure under this section, the department shall review the information provided under sub. (3) to determine whether the applicable public health and environmental laws, including chs. NR 700 to 724746 where applicable, have been complied with and whether any further threat to public health, safety or welfare or the environment exists at the site or facility. Based on this review, the department shall approve the case closure, conclude that additional response actions, such as additional remedial action or long-term monitoring, are needed at the site or facility, or conclude that there is not sufficient information to allow the department to determine whether the applicable public health and environmental laws have been complied with.

SECTION 16. NR 726.09 (2)(b) is amended to read:

NR 726.09 (2)(b) May require the responsible parties to achieve compliance with the applicable public health and environmental laws, including chs. NR 700 to 724746 where applicable, within a time period established by the department.

SECTION 17. NR 746 is created to read:

CHAPTER NR 746  
PETROLEUM ENVIRONMENTAL CLEANUP FUND INTERAGENCY  
RESPONSIBILITIES

NR 746.01 Purpose. The purpose of this rule is to identify the roles, processes and procedures that guide the departments of commerce and natural resources in the administration of their respective responsibilities for high, medium and low priority petroleum-contaminated sites under ss. 101.143, 101.144, 292.11 and 292.31, and ch. 160, Stats. This rule codifies portions of a memorandum of understanding that has been signed by the two agencies, as required by s. 101.144 (3m), Stats.

*relation to Commerce?*

*note*

*Identify - Date I have to get copies - what is under updated*

NR 746.02 Applicability. This chapter only applies to sites where petroleum products have discharged from petroleum storage tanks.

NR 746.03 Definitions. In this chapter:

- (1) "Commerce" means the department of commerce.
- (2) "Discharge" has the meaning specified in s. 292.01 (3), Stats.

*awh*

**Note:** Under s. 292.01 (3), Stats., "discharge" means, but is not limited to, "spilling, leaking, pumping, pouring, emitting, emptying or dumping."

(3) "DNR" means the department of natural resources.

(4) "Enforcement standard" means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.07, Stats., and s. NR 140.10 or s. 160.09, Stats., and s. NR 140.12.

(5) "Groundwater" has the meaning specified in s. 160.01 (4), Stats.

**Note:** Section 160.01 (4), Stats., defines "groundwater" to mean "any water of the state, as defined in s. 281.01 (18), occurring in a saturated subsurface geological formation of rock or soil. Section 281.01 (18), Stats., defines "waters of the state" to include "those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction."

(6) "High priority site" means a site that is contaminated with a petroleum product and meets one or more of the following criteria:

(a) One or more hazardous substances other than petroleum products from a petroleum storage tank are present at the site.

(b) Contamination from the site discharges to a sensitive environment as defined in s. NR 700.03 (55).

**Note:** Section NR 700.03 (55) defines "sensitive environment" to mean "an area of exceptional environmental value, where a discharge could pose a greater threat than a discharge to other areas, including but not limited to: wetlands; habitat used by state or federally designated endangered or threatened species; national or state fish and wildlife refuges and fish and wildlife management areas; state and federal designated wild and scenic rivers, designated state riverways and state designated scenic urban waterways; riparian areas; rookeries; cold water communities as defined in s. NR 102.04 (3)(b), Lakes Superior and Michigan and the Mississippi river, environmentally sensitive areas and environmental corridors identified in area-wide water quality management plans, special area management plans, special wetland inventory studies, advanced delineation and identification studies and areas designated by the U.S. EPA under section 404 (c), 33 USC 1344 (c); calcareous fens; state forests, parks, trails and recreational areas; state and federal designated wilderness areas; designated or dedicated state natural areas established under ss. 23.27 to 23.29, Stats.; wild rice waters as listed in s. NR 19.09; and any other waters identified as outstanding or exceptional resource waters in ch. NR 102."

2 ? see "site" def. - sh/2th - diff. - site gone - the clean up.

(c) Groundwater contamination that is equal to or greater than an enforcement standard has been confirmed at the site.

(7) "Low permeability material" means subsurface material above bedrock, as defined in s. NR 141.05 (5), that is saturated with groundwater and has a hydraulic conductivity less than or equal to  $1 \times 10^{-5}$  centimeters per second as determined by a method specified in s. NR 746.05.

Note: Section NR 141.05 (5) defines "bedrock" to mean "the solid rock underlying any loose surficial material such as soil, alluvium or glacial drift. Bedrock includes but is not limited to limestone, dolomite, sandstone, shale and igneous and metamorphic rock."

(8) "Low priority site" means a site that is contaminated with a petroleum product and meets both of the following criteria:

(a) There is no confirmed petroleum product in groundwater equal to or greater than a preventive action limit, and

(b) There is no evidence of a hazardous substance on the site other than petroleum products that were discharged from a petroleum storage tank.

yes -  
70 p. 03

(9) "Medium priority site" means a site that is contaminated with a petroleum product and meets both of the following criteria:

(a) There is no evidence of a hazardous substance on the site other than petroleum products that were discharged from a petroleum storage tank, and

(b) There is no confirmed petroleum product in groundwater equal to or greater than an enforcement standard.

(10) "Monitoring well" means a groundwater monitoring well designed, installed, constructed and developed in accordance with the requirements of ch. NR 141, for the purpose of monitoring groundwater or obtaining geologic or groundwater related data. The term "monitoring well" includes piezometers and water table observation wells.

(11) "Natural attenuation" means the reduction in the concentration and mass of a substance and its breakdown products in groundwater due to naturally occurring physical, chemical and biological processes without human intervention or enhancement. These processes include, but are not limited to, dispersion, diffusion, sorption and retardation, and degradation processes such as biodegradation, abiotic degradation and radioactive decay.

(12) "Permeable material" means a subsurface material that is saturated with groundwater and that is not a low permeability material.

see 71 - relation to bedrock?

(13) "Petroleum product" has the meaning specified in s. 101.143 (1)(f), Stats.



**Note:** Section 101.143 (1)(f), Stats., defines "petroleum product" to mean "gasoline, gasoline alcohol fuel blends, kerosene, fuel oil, burner oil, diesel fuel or used motor oil." The term "petroleum product" includes substances that are, or once were, constituents of a petroleum product.

(14) "Petroleum storage tank" has the meaning specified in s. 101.144(1)(bm), Stats.

**Note:** Section 101.144 (1)(bm), Stats., defines "petroleum storage tank" to mean "a storage tank that is used to store petroleum products together with any on-site integral piping or dispensing system." The term "petroleum storage tank" does not include a pipeline facility.

(15) "Preventive action limit" means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.15, Stats., and s. NR 140.10 or 140.12.

(16) "Property boundary" has the meaning specified in s. 160.01(6m), Stats.

**Note:** Section 160.01(6m), Stats., defines "property boundary" to mean "the boundary of the total contiguous parcel of land owned by a common owner, regardless of whether public or private roads run through the parcel."

*I pet probs have been discharged - meant they just "here" - not a discharge*  
*Remedial*  
*e discharge*  
(17) "Remedial action" means a response action taken to control, minimize or eliminate the discharge of petroleum products so that they do not present an actual or potential threat to public health, safety or welfare or the environment. The term "remedial action" includes actions taken to restore the environment to the extent practicable and to meet applicable environmental standards, and includes natural attenuation. Examples include containment, treatment, excavation, disposal, recycling or reuse, and any monitoring required to assure that such actions protect public health, safety and welfare and the environment.

(18) "Remediation target" means the contaminant concentration in groundwater or soil, or both, that must be achieved before a site can be granted, or is eligible for, closure under ch. NR 726.

*e response ?*  
(19) "Responsible person" has the meaning specified in s. 101.144(1)(d), Stats.

**Note:** Section 101.144(1)(d), Stats., defines "responsible person" to mean "a person who owns or operates a petroleum storage tank, a person who causes a discharge from a petroleum storage tank or a person on whose property a petroleum storage tank is located."

*leak ?*  
(20) "Site" means any area where a petroleum product has discharged.

(21) "Site closure" or "site closed" means a determination made pursuant to ch. NR 726 that applicable groundwater quality standards in ch. NR 140 have been met or will be met by relying on natural attenuation and that applicable soil cleanup standards in ch. NR 720 have been met or will be met by relying on a remedial action performance standard.

*Can special NR 720 be provided ?*

(22) "Source control" means actions taken to remove or treat soil or groundwater contamination, or both, actions taken to minimize the leaching of soil contamination to groundwater, and actions taken to prevent the migration of groundwater contamination. The term "source control" includes tank removal, the removal of free product and contaminant hot spot removal or treatment.

**Note:** The term "source control" does not include groundwater monitoring, soil sampling, recycling or reuse of contaminants, reliance on natural attenuation to address residual contamination, or changes to a facility's design, operation, construction or waste handling or disposal practices.

**NR 746.04 Site authority.** (1) **GENERAL.** The assignment of administrative authority for high, medium and low priority petroleum contaminated sites shall be determined according to the following:

- (a) DNR shall have administrative authority for high priority sites.
- (b) Commerce shall have administrative authority for low and medium priority sites.

(2) **ADMINISTRATIVE AUTHORITY.** The administrative authority of Commerce and DNR for a site includes enforcement under ss. 101.02, 101.144 (2) or (3), or 292.11 (7), Stats., setting remediation targets, remediation supervision and direction, and decision making regarding granting or denying closure and deciding whether or not further remedial action is required.

(3) **JOINT DECISION-MAKING.** Commerce and DNR shall implement a system of joint decision-making for the setting of remediation targets for sites that are competitively bid or bundled with another site or sites pursuant to s. Comm 47.337 (4)(a)3, and 4., and the selection of remedial bids.

(4) **CLOSURE DECISIONS FOR SITES WITH GROUNDWATER CONTAMINATION.** At any time following completion of the site investigation, the following steps shall be taken for a site with confirmed groundwater contaminant levels equal to or greater than an enforcement standard:

(a) Where a closure request has been submitted by, or on behalf of, a responsible person with the appropriate fee, the DNR shall review the request, make a determination on closure, and if closure is granted, forward a copy of the closure determination to Commerce.

(b) Where a closure request has not been submitted, if Commerce or DNR identifies a site that either agency believes has met its remediation target, DNR may take action to solicit a closure request from the responsible person.

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P. 6

(5) DISPUTE RESOLUTION. Any disputes between Commerce and DNR under subs. (3) or (4) shall be subject to the following dispute resolution process:

- (a) Project managers shall discuss their differences, and the basis for them, in an attempt to resolve the dispute.
- (b) If the dispute is not resolved by the project managers, the decision shall be referred to the project managers' supervisors.
- (c) If the dispute is not resolved by the project managers' supervisors, the decision shall be referred to the appropriate division administrators.
- (d) If the dispute still remains unresolved at the division administrator level, the department secretaries shall be the final decision-makers.

could supply or general  
managing or  
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R.A.

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99-51 P. 6  
know?

**NR 746.05 Site investigation.** (1) **GENERAL.** In conducting an investigation of petroleum contaminated sites, the responsible person or a consultant retained by the responsible person shall meet applicable ch. NR 716 requirements and minimize costs while providing sufficient data necessary for risk assessment screening and decision-making under this section and ss. NR 746.06 and 746.07, ss. Comm 47.337 and 47.339, and chs. NR 720, 722 and 726.

(2) **GROUNDWATER PLUME EXPANSION DETERMINATION.** Commerce and DNR shall develop an agreed upon methodology for determining if there is evidence of a groundwater-contaminant plume margin expansion and the actions to take if the data provided in the site investigation report are not adequate to make this determination. This methodology shall be utilized in the site investigation process.

(3) **LOW PERMEABILITY DETERMINATION.** (a) *General.* If groundwater is contaminated with petroleum products, the responsible person or a consultant retained by the responsible person shall determine, as part of the site investigation, if the contaminant plume is completely contained within low permeability materials and does not extend into deposits of laterally extensive permeable material, into a water line or sewer line trench or other utility corridor, into a fracture in clay, or into another feature that acts or is anticipated to act as a migration pathway for groundwater contamination.

(b) *Evaluation of existing site data.* Existing site data shall be used to make the determinations required under par. (a), if existing site data are sufficient to make these determinations. Existing site data may include, but are not limited to, monitoring well development data, monitoring well purging and sampling data, rising and falling head test data, yield test data, pump test data, monitoring well and boring logs, grain size analysis, local and regional geology, subsurface description, depositional environment, expected and actual degree and extent of contamination, or a combination of this data. If the responsible person's consultant finds groundwater contamination in low permeability materials, the responsible person or the consultant shall submit to the agency that has administrative authority for the site, for approval,

the results of the evaluation of existing site data that is required by this paragraph, or an explanation of why the existing site data are not sufficient to make the determinations required in par. (a).

(c) *Standard hydraulic conductivity tests.* If the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required under par. (a), the responsible person, or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site utilizing a method described in Appendix A of ch. NR 716, or a method that has been approved under par. (d), in conformance with the following requirements:

1. Hydraulic conductivity shall be determined for at least one monitoring well within the contaminant plume unless subd. 2. is applicable.

2. Notwithstanding the requirements in subd. 1., the agency with administrative authority for the site may determine that hydraulic conductivity test results for one or more monitoring wells outside of the plume are representative of the hydraulic conductivity of the saturated materials within the plume, based upon a comparison of the monitoring well logs for monitoring wells installed inside and outside of the plume, and that it is not necessary to conduct a hydraulic conductivity test for a monitoring well within the plume.

(d) *Alternative methods for determining hydraulic conductivity.* The agency with administrative authority for the site may approve an alternative method for determining the hydraulic conductivity of the saturated materials at a site if the method meets the objectives of this section. The responsible person, or a consultant retained by the responsible person, shall obtain approval from the agency before using an alternative method. If the agency grants approval for use of the alternative method, the responsible person or the consultant shall submit site data and test results, to the agency with administrative authority for the site, documenting that the objectives of this section have been met.

*looking there - isn't it the results that are important?*

(4) SUPPLEMENTAL SITE INVESTIGATION INFORMATION. If the site investigation report for the site was submitted prior to [revisor insert date], supplemental site information, evaluating existing site data to make the determinations required under par. (a), may be required by Commerce or DNR to be included as part of a submittal for approval of a remedial action, setting remediation targets or approving or denying closure. If the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required in sub. (3)(a), the responsible person or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site in compliance with the requirements of sub. (3)(c).

*when?*

*this is a little rough*

*approve*

NR 746.06 Risk assessment screening. (1) GENERAL. The risk criteria in sub. (2) for screening sites shall be used to measure the environmental, public health, safety and welfare risks associated with the discharge of petroleum products to determine whether a remedial action shall be required, which could include, but is not limited to, adequate source control and

*look at (3)(c) / what is VAS? independent maybe another*

*how measure? if one of these items - what effect? 3b*

*why get into this here?*



**Table 1**

Substance	Direct-Contact Soil Contaminant Concentrations (Top 4 ft)	Basis	Contaminant Concentration in Groundwater within Low-Permeability Materials	Basis
	(mg/kg)		(µg/l)	
Benzene	1.10	Cancer risk	1,500.	Cleanup time
1,2-DCA	0.54	Cancer risk	1,500.	Cleanup time
Ethylbenzene	400.	Soil Saturation Limit	7,100.	Soil Saturation Limit
Toluene	670.	Soil Saturation Limit	20,000.	Soil Saturation Limit
Xylene	470.	Soil Saturation Limit	7,800.	Soil Saturation Limit

**NR 746.07 Site closure and approval and tracking of remedial actions. (1) SITE CLOSURE DECISIONS.** Commerce and DNR shall make site closure decisions based upon the following requirements:

(a) Sites where contaminant concentrations are below the enforcement standards at every point on site at which groundwater is monitored, and where all of the risk criteria in s. NR 746.06 (2) are satisfied, shall be closed without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(b) Sites where contaminant concentrations within permeable material outside of the property boundary of the property where the source of the contamination is or was located, are below enforcement standards and where contaminant concentrations within low permeability material outside of the property boundary of the property where the source of the contamination is or was located, are below the groundwater concentrations listed in Table 1, but where contaminant concentrations above enforcement standards exist within the property boundary, of the property where the source of the contamination is or was located, shall be offered closure with institutional controls that satisfy the requirements of ch. NR 726, if all of the risk criteria in s. NR 746.06 (2), except ss. NR 746.06 (2)(b) or 746.06 (2)(e)2., are satisfied. If the owners of all properties on the site with enforcement standard exceedances sign and record a groundwater use restriction, as required under s. NR 726.05 (2)(b)4., the site shall be closed. If the owner of any property on the site with an enforcement standard exceedance does not sign and record a groundwater use restriction, additional remedial action, other than the utilization of natural attenuation, may not be required for areas where all contaminant concentrations that are equal to or greater than enforcement standards are found in low permeability material, except in situations where a risk or potential risk exists to public health, safety or welfare or the environment from

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low  
permeability

ditto

what about site compensation is a separate issue.

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what are not mentioned in NR 726 - see note 39

the residual groundwater contamination in the low permeability material, and where a technically feasible and cost effective response is available. Funding under s. 101.143, Stats., shall be terminated by Commerce for sites that are offered closure under this paragraph, except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

**Note:** DNR is currently developing a geographic information system (GIS) registry as a means for tracking residual groundwater contamination which could replace the groundwater use restriction requirement in ch. NR 726. However, until the GIS registry is operable and ch. NR 726 is amended to allow registration on a GIS registry as a substitute for recording a groundwater use restriction, groundwater use restrictions will continue to be used as the method for notifying future property owners and other interested persons of the existence of the residual groundwater contamination.

(c) After an investigation that satisfies the requirements of ch. NR 716, the agency with administrative authority for the site may approve of site closure under ch. NR 726 for sites that do not meet all of the risk criteria in s. NR 746.06(2) if the requirements of ch. NR 726 are satisfied, or may determine that additional remedial action other than reliance on natural attenuation is not required even though all of the requirements for closure in ch. NR 726 have not been satisfied, without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(d) If the agency with administrative authority for a site determines that pars. (a), (b) and (c) do not apply to the site, the responsible person shall be required to conduct a remedial action, and shall be entitled to reimbursement under ch. Comm 47 for all eligible costs of the remedial action.

**Note:** In compliance with s. 160.21(2)(a), Stats., s. NR 140.22(2)(b) establishes the point of standards application to determine whether an enforcement standard has been attained or exceeded, for facilities, practices or activities that do not have an established design management zone, as "any point of present groundwater use and any point beyond the boundary of the property on which the facility, practice or activity is located and s. NR 140.22 (2)(c) establishes a point of standards application for "discharges, releases, sites or facilities" regulated under s. 292.11 or 292.31, Stats. (among other statutes) as "every point at which groundwater is monitored." The environmental factors in s. Comm 47.337 (3) and the other risk criteria in s. NR 746.06 (2) require an evaluation of groundwater contaminant concentrations at all of these points of standards application.

(2) CLOSURE BASED ON REMEDIATION TARGETS. When the remediation targets developed under s. NR 746.04 (3) are achieved, the site shall be closed utilizing an institutional control that satisfies the requirements of ch. NR 726, if required, without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(3) DETERMINATION OF COMPLIANCE WITH ENFORCEMENT STANDARDS OR REMEDIATION TARGETS. When determining whether contaminant concentrations at a

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could fix this*

*why not (2) also?*

*Does not mention "institutional control" - can this be more specific?*

See 1 or 2 of 19-51

date has passed

how? etc?

site are above or below either an enforcement standard or a remediation target, recognition shall be made of the impact of error of measurement, repeatability of test results and statistical significance. Commerce and DNR shall develop, by June 30, 1999, a process for taking these considerations into account and then revise or adopt administrative rules as appropriate.

(4) TRACKING OF REMEDIATION PROGRESS. (a) Commerce and DNR shall establish a system for electronically tracking remediation progress and shall use the tracking system to determine if remediation funding under s. 101.143, Stats., should end or if a site closure request should be submitted.

(b) Commerce and DNR shall jointly require and enforce the use of the electronic reporting system by claimants for reimbursement under s. 101.143, Stats.

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NR 746.08 Transfer of sites. (1) GENERAL. Except as provided in sub. (2) or (3), DNR shall determine whether Commerce or DNR has administrative authority for a site. Until that determination is made, DNR has administrative authority for the site. DNR shall make this determination within 60 days after receipt by DNR of the site investigation report, unless any of the following apply:

(a) DNR has requested additional information from a responsible person or a consultant retained by the responsible person after reviewing the site investigation report and the requested information has not been submitted to DNR.

(b) The site is the subject of an enforcement action under s. 292.11, Stats., initiated by DNR.

(c) Other circumstances over which DNR has no control have prevented DNR from making a site classification determination.

(2) CONSULTANT DETERMINATION. Consultants performing site investigations may determine, as part of a joint agency site classification pilot, whether a site is high, medium or low priority and submit the investigation report directly to the agency they determine to have administrative authority under s. NR 746.04 (1).

(3) CHANGES IN CLASSIFICATION. If a site is classified as high, medium or low priority, and DNR or Commerce determines that the classification is incorrect, the agency making the determination that a site has been incorrectly classified shall transfer the site file and all related data to the other agency within 14 days after making the determination, if the other agency has administrative authority for the reclassified site.

(4) LIST OF SITES IN REMEDIATION. Commerce and DNR shall develop and maintain a reconciled list of sites in remediation including data on remediation targets, risk criteria for screening sites, expected closure costs and other relevant data.

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The foregoing rule was approved and adopted by the State of Wisconsin Natural Resources Board on \_\_\_\_\_, 1999.

This rule takes effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2)(intro.), Stats.

Dated at Madison, Wisconsin \_\_\_\_\_

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

By \_\_\_\_\_  
George E. Meyer, Secretary

(SEAL)

MAY 10 2000

**ORDER OF THE STATE OF WISCONSIN  
NATURAL RESOURCES BOARD**

**AMENDING AND CREATING RULES**

The Wisconsin Natural Resources Board proposes an order to amend NR 700.11 (1)(b) and (2)(b), 716.05 (1), 716.11 (5)(a), 716.15 (1), 720.02 (1)(intro.), 720.05 (1)(intro.), 722.02 (1), (2), (2m) and (3), 726.05 (1), (2)(a), (2)(b) 1.f., 2. and 3., and (6), 726.07 (1) and 726.09 (2)(b); to create NR 700.03 (66m), 700.11 (2)(e), 716.07 (12), 716.11 (3)(c), 716.15 (2)(g) 9., Appendix A in ch. NR 716, 720.02 (1m), 722.02 (3m) and ch. NR 746, relating to sites contaminated with petroleum products discharged from petroleum storage tanks.

RR-22-00 (E)

Analysis prepared by the Department of Natural Resources

Statutory authority: Section 227.11 (2)(a) and 227.24, Stats. and Section 9110 (3yu) (b) of 1999 Wisconsin Act 9.

Statutes interpreted: Sections 101.143, 101.144, 292.11, and 292.31 and ch. 160, Stats.

The proposed ch. NR 746 is identical to ch. Comm 46 that is being promulgated by the Department of Commerce.

Chapter NR 746 provides that the Department of Natural Resources has authority for "high-risk sites" and that the Department of Commerce has authority for "low and medium risk sites." The rule requires the Department of Natural Resources to transfer authority for sites with petroleum contamination from petroleum storage tanks to the Department of Commerce once the site is classified, unless the site is classified as a "high-risk site" or the site is contaminated by one or more hazardous substances other than petroleum products discharged from a petroleum storage tank. The rule also establishes procedures for transferring sites from one agency to the other whenever new information relevant to the site classification becomes available.

Chapter NR 746 also provides jointly developed requirements for:

1. Selecting remedial bids and the setting of remediation targets for sites that are competitively bid or bundled with another site or sites.
2. Determining when sites may close.
3. Determining when remediation by natural attenuation may be approved as the final remedial action for a petroleum-contaminated site.
4. Tracking the achievement of remediation progress and success.
5. Reporting of program activities.

The amendments and new provisions that are proposed to be added to chs. NR 700, 716, 720, 722 and 726, as part of this rule package, consist of cross-references to ch. NR 746 that are proposed to be inserted in chs. NR 700, 716 and 726, and exemptions from the requirements in chs. NR 720 and 722 that would conflict with the requirements in ch. NR 746: that is, an exemption from the soil cleanup standards in ch. NR 720 and the remedial action option evaluation requirements in ch. NR 722 for those sites contaminated with petroleum products discharged from petroleum storage tanks that satisfy the risk criteria in s. NR 746.06 and are eligible for closure under s. NR 746.07.

SECTION 1. NR 700.03 (66m) is created to read:

NR 700.03 (66m) "Utility corridor" means any utility line that runs underground and any backfilled trench that was constructed to install a water main or lateral, a sewer main or lateral or other utility line.

SECTION 2. NR 700.11 (1)(b) is amended to read:

NR 700.11 (1)(b) Responsible parties shall submit a final report for the response action at the site or facility which includes the information required by chs. NR 700 to ~~726~~ 746, as applicable, and a letter of compliance documenting that the response action has complied with the requirements of chs. NR 700 to ~~726~~ 746, as applicable, and any other applicable environmental regulations, so that no further action is necessary for the site or facility.

SECTION 3. NR 700.11(2)(b) is amended to read:

NR 700.11 (2)(b) Responsible parties shall submit a site investigation report, pursuant to ch. NR 716 within 30 days after completion of the report, and a draft remedial options report meeting the requirements of ch. NR 722 within 30 days after completion of both reports the report unless the site is exempt from this requirement under par. (e).

SECTION 4. NR 700.11(2)(e) is created to read:

NR 700.11 (2)(e) Sites that are eligible for closure under s. NR 746.07 are not required to submit a remedial action options report.

SECTION 5. NR 716.05 (1) is amended to read:

NR 716.05 (1) Responsible parties shall conduct a site investigation that meets the requirements of this chapter and s. NR 746.05, for discharges of petroleum products from petroleum storage tanks, when site-specific or facility-specific information indicates that soil, sediment, groundwater, surface water, air or other environmental media at a site or facility may have become contaminated. Unless sub. (2) is applicable, responsible parties shall use the factors in s. NR 708.09 (1) (a) through (n) and (2) (a) through (d) to determine whether or not a site investigation is necessary.

SECTION 6. NR 716.07 (12) is created to read:

NR 716.07(12) For sites with petroleum-product contamination discharged from petroleum storage tanks, the need to gather data to determine the hydraulic conductivity of materials where contaminated groundwater is found utilizing a method described in Appendix A, and to determine whether the site satisfies the risk screening criteria in s. NR 746.06 and the closure criteria in s. NR 746.07 (1).

SECTION 7. NR 716.11 (3)(c) is created to read:

NR 716.11 (3)(c) For sites with petroleum-product contamination discharged from petroleum storage tanks, provide sufficient information to determine the hydraulic conductivity of materials where contaminated groundwater is found utilizing a method described in Appendix A, and to determine whether the site satisfies the risk screening criteria in s. NR 746.06 and the closure criteria in s. NR 746.07 (1).

SECTION 8. NR 716.11 (5)(a) is amended to read:

NR 716.11 (5)(a) Potential pathways for migration of the contamination, including buried utilities and drainage improvements, utility corridors, and permeable material or soil along which vapors, free product or contaminated water may flow.

SECTION 9. NR 716.15 (1) is amended to read:

NR 716.15 (1) **REPORT REQUIREMENT.** Unless otherwise directed by the department, responsible parties shall include the site investigation report information with the final report and accompanying compliance letter for the response action in accordance with s. NR 700.11 (1)(b), if the site or facility meets the criteria for a simple site classification, in s. NR 700.09(1). If, however, the site or facility is classified as a complex site in accordance with s. NR 700.09 (2) or if the responsible party chooses to proceed with the complex site process, responsible parties shall submit the site investigation report to the department within 30 days of completion of the report and the draft remedial options report meeting the requirements of ch.

NR 722 within 30 days of completion of the report unless the site is eligible for closure under s. NR 746.07, in which case the submittal of a remedial action options report is not required.

SECTION 10. NR 716.15 (2)(g) 9. is created to read:

NR 716.15 (2)(g) 9. For sites with petroleum-product contamination discharged from petroleum storage tanks, the hydraulic conductivity of materials where contaminated groundwater is found utilizing a method described in Appendix A, and interpretations of data necessary to determine whether the site satisfies all of the risk screening criteria in s. NR 746.06 and the closure criteria in s. NR 746.07 (1).

SECTION 11. NR 716 Appendix A is created to read:

### **Appendix A**

#### **STANDARD METHODS FOR DETERMINING HYDRAULIC CONDUCTIVITY**

(1) TRANSMISSIVITY TEST. (a) To conduct a transmissivity test, a volume of water is removed from a monitoring well and the water level recovery in the well is measured after a specified time has elapsed. The resultant data may be used to determine the hydraulic conductivity of the area surrounding the monitoring well.

(b) For transmissivity tests, groundwater may not be removed from the well 12 hours prior to beginning the test.

(c) Transmissivity tests shall be conducted in a monitoring well as follows:

1. If using a pump, set the pump intake in the lower half of the screen and allow sufficient time for the water level in the well to equilibrate.
2. Measure and record the initial depth to water and well depth. Subtract the difference to determine the saturated interval of the well, in feet.
3. Pump or bail 2 gallons of groundwater from the well within 2 to 3 minutes.
4. Record the start time and finish time to remove 2 gallons from the well.
5. Measure and record the water level in the well immediately after 2 gallons is removed from the well.
6. After the applicable time listed in Table A has elapsed, measure and record the water level in the well.
7. Calculate hydraulic conductivity utilizing Formula A.

#### **TABLE A**

Saturated Interval of Well (feet)	Time (minutes)
5	190
6	160
7	140
8	120
9	105
10	95

### FORMULA A

Step 1: Calculate  $T = q / 4 \pi s t$   
 Where:  $T$  = coefficient of transmissivity, in gallons per day per foot (gpd/ft)  
 $q$  = volume of groundwater removed (2 gallons)  
 $s$  = measured residual drawdown, in feet (water level at time in Table A minus initial depth to water in par. (c) 2.)  
 $t$  = time, in days, from Table A. (convert minutes to days by dividing by 1440)

Step 2: Convert  $T$  in gpd/ft to  $T$  in  $\text{ft}^2/\text{sec}$  by dividing by 646272.

Step 3: Calculate  $K = T/b$

Where:  $K$  = hydraulic conductivity, in ft/sec  
 $b$  = saturated interval of well, in feet, as measured in par. (c) 2.

Step 4: Convert  $K$  in ft/sec to  $K$  in cm/sec by multiplying by 30.48.

(2) RISING AND FALLING HEAD TEST. (a) To conduct a rising head test, a volume of groundwater is instantaneously removed from a well and the rate of water level recovery in the well is measured. To conduct a falling head test, a solid object is instantaneously inserted into a well and the rate at which groundwater flows out of the well is measured. The results of both tests may be used to determine the hydraulic conductivity of the area surrounding the well. Both tests shall be conducted in accordance with procedures specified by ASTM in guidance number D 4044-96 and D 5912-96, and the relevant criteria in pars. (b) and (c) or (d).

**Note:** Copies of ASTM Standards D 4044-96 and D 5912-96 may be obtained from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428, and are available for inspection at the offices of the Department of Natural Resources, the Secretary of State and the Revisor of Statutes.

**Note:** ASTM guidance number D 5912-96 is based on the Bouwer and Rice method.

Rising head test is also referred to as bail-down test, slug-out test and slug extraction test. Falling head test is also referred to as slug-in test and slug injection test. The criteria listed under pars. (a) to (c) are intended for determining the hydraulic conductivity of low permeability materials. They may not be applicable to saturated materials having a hydraulic conductivity greater than  $1 \times 10^{-5}$  cm/sec.

(b) For both the rising and falling head tests, groundwater may not be removed from the well 12 hours prior to the test, the well shall have at least 5 feet of water within the well screen or well casing, or both, prior to each test, and the borehole diameter of the well shall be at least 6 inches.

(c) Hydraulic conductivity shall be determined only by rising head tests in wells where the water table intersects the well screen and shall be conducted in accordance with all of the following criteria:

1. Assume the filter pack's specific yield is 0.20 to 0.25, unless measured by the manufacturer.
2. Remove a minimum of 0.75 gallons and a maximum of 1.5 gallons during the test.
3. Each test shall continue for 150 minutes or more unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than  $1 \times 10^{-5}$  centimeters per second.
4. Determine if the hydraulic conductivity of the well is less than or equal to  $1 \times 10^{-5}$  centimeters per second based upon the test results.

(d) Both rising head and falling head tests may be conducted in piezometers and shall be conducted in accordance with all of the following criteria:

1. Remove a minimum of 0.75 gallons for the rising head test and add a slug with a volume equivalent to 0.75 gallons or more for the falling head test.
2. The volume of groundwater water removed from the well shall be less than the total volume of water within the well casing above the top of the well screen.
3. The sum of the filter pack length and the filter pack seal shall be used as the length of well screen when calculating hydraulic conductivity.
4. The drawdown in the well may not exceed the top of the filter pack seal.
5. The length of well screen shall be at least 4 feet.
6. Each test shall continue for 45 minutes or more per well unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than  $1 \times 10^{-5}$  centimeters per second.
7. Determine if the hydraulic conductivity of the well is less than or equal to  $1 \times 10^{-5}$  centimeters per second based upon the test results.

SECTION 12. NR 720.02 (1)(intro.) is amended to read:

NR 720.02 (1) ~~This~~ Except as provided in sub. (1m), this chapter applies to all remedial actions taken by responsible parties to address soil contamination after an investigation has been conducted at a site, facility or portion of a site or facility that is subject to regulation under s. 144.442 292.11 or 144.76 292.31, Stats., regardless of whether there is direct involvement or oversight by the department. This chapter also applies to soil contamination at all of the following:

SECTION 13. NR 720.02 (1m) is created to read:

NR 720.02 (1m) This chapter is not applicable to sites contaminated with petroleum products discharged from petroleum storage tanks that satisfy all of the risk screening criteria in s. NR 746.06 (2) and are eligible for closure under s. NR 746.07.

**Note:** If sites and facilities that are contaminated with petroleum products discharged from petroleum storage tanks do not satisfy the risk screening criteria in s. NR 746.06 (2) or the closure requirements of s. NR 746.07, the site or facility would be still be subject to this chapter.

SECTION 14. NR 722.02 (1), (2), (2m) and (3) are amended to read:

NR 722.02 (1) ~~This~~ Except as provided in sub. (3m), this chapter applies to all remedial actions taken by the department under the authority of s. 292.11 or 292.31, Stats. This chapter does not apply to immediate actions or interim actions, unless specifically noted in ch. NR 708. In this chapter, where the term "responsible parties" appears, it shall be read to include the department, where a department- funded remedial action is being taken.

(2) ~~This~~ Except as provided in sub. (3m), this chapter applies to all remedial actions taken by responsible parties at sites, facilities or portions of a site or facility that are subject to regulation under s. 292.11 or 292.31, Stats., regardless of whether there is direct involvement or oversight by the department.

(2m) ~~This~~ Except as provided in sub. (3m), this chapter applies to all remedial actions taken by persons seeking the liability exemption under s. 292.15, Stats. In this chapter, where the term "responsible party" appears, it shall be read to include the "~~purchaser~~ voluntary party" where an action is being undertaken to comply with s. 292.15, Stats.

(3) In addition to being applicable to sites or facilities that are subject to regulation under s. 292.11 or 292.31, Stats., ~~ch. NR 722~~ this chapter applies to the evaluation of proposed remedial action options for solid waste facilities where remedial action is required by the department pursuant to s. NR 508.20 (11), except as provided in sub. (3m).

SECTION 15. NR 722.02 (3m) is created to read:



NR 722.02 (3m) The requirements of this chapter are not applicable to sites contaminated with petroleum products discharged from petroleum storage tanks that satisfy all of the risk screening criteria in s. NR 746.06 (2) and are eligible for closure under s. NR 746.07.

**Note:** If sites and facilities that are contaminated with petroleum products discharged from petroleum storage tanks do not satisfy the risk screening criteria in s. NR 746.06 (2) or the closure requirements of s. NR 746.07, the site or facility would be still be subject to this chapter.

SECTION 16. NR 726.05 (1) is amended to read:

NR 726.05 (1) For a site or facility at which a response action other than an immediate action has been conducted and which is classified as complex under s. NR 700.09 (2) or for which the responsible party has chosen to proceed with the complex site process under s. NR 700.11 (2), responsible parties or other interested persons may request that the department close the case under this chapter after compliance with all applicable federal and state public health and environmental laws, including chs. NR 700 to ~~726-746~~ where applicable, has been achieved.

SECTION 17. NR 726.05 (2) (a) is amended to read:

NR 726.05 (2) (a) A request for case closure shall be submitted in writing on a close out form supplied by the department and shall be accompanied by a report documenting that the applicable public health and environmental laws, including chs. NR 700 to ~~724-746~~ where applicable, have been complied with, or, where ch. NR 140 enforcement standards or preventive action limits are exceeded, that the criteria in par. (b) are satisfied.

SECTION 18. NR 726.05 (2) (b) 1.f. is amended to read:

NR 726.05 (2) (b) 1.f. The concentration ~~or and mass, or both,~~ of a substance and its breakdown products ~~existing in soil or groundwater, or both, have been reduced if the actions are deemed in groundwater have been reduced due to naturally occurring physical, chemical and biological processes as necessary to restore groundwater within a reasonable period of time, to~~ adequately protect public health and the environment, ~~or to and~~ prevent groundwater contamination from migrating beyond the boundaries of the property or properties for which groundwater use restrictions have been recorded, except that sites contaminated with petroleum products discharged from petroleum storage tanks that satisfy all of the risk screening criteria in s. NR 746.06 (2) and are eligible for closure under s. NR 746.07 (1) (b) or (2) (b) shall be considered to have satisfied the criterion in this subdivision paragraph without having to provide supporting documentation.

SECTION 19. NR 726.05 (2) (b) 2. is amended to read:

NR 726.05 (2) (b) 2. Natural attenuation will bring the groundwater into compliance with ch. NR 140 groundwater quality standards within a reasonable period of time, considering the criteria in s. NR 722.07, except that sites contaminated with petroleum products discharged from petroleum storage tanks that satisfy all of the risk screening criteria in s. NR 746.06 (2) and are eligible for closure under s. NR 746.07 (1) (b) or (d) or (2) (b) or (d), shall be considered to have satisfied the criterion in this subdivision without having to provide supporting documentation.

SECTION 20. NR 726.05 (2) (b) 3. is amended to read:

NR 726.05 (2) (b) 3. Groundwater contamination exceeding ch. NR 140 preventive action limits will not migrate beyond the boundaries of the property or properties for which groundwater use restrictions have been recorded after the site or facility is closed.

**Note:** If there are no enforcement standard exceedances beyond the boundaries of the property or properties for which groundwater use restrictions have been recorded, a case may still be closed under s. NR 726.05 (2) (b) even though there are ch. NR 140 preventive action limit exceedances beyond the boundaries of the property or properties for which groundwater use restrictions have been recorded if the groundwater contaminant plume is stable or receding and a preventive action limit exemption is granted for the property or properties for which groundwater use restrictions have not been recorded.

SECTION 21. NR 726.05 (2)(b) 4. is amended to read:

NR 726.05 (2)(b) 4. If there are ch. NR 140 enforcement standard exceedances on the property or properties, a groundwater use restriction which satisfies the requirements of sub. (8) (am) has been recorded at the county register of deeds office for each property, except that a groundwater use restriction is not required for a public street or highway right-of-way where there are ch. NR 140 enforcement standard exceedances in a stable or receding plume provided that the municipal clerk, and the municipal department or state agency that is responsible for maintaining the street or highway have been given written notification of the presence of residual soil and groundwater contamination within the right-of-way.

SECTION 22. NR 726.05 (6) is amended to read:

NR 726.05 (6) Following receipt of a request for case closure under this section, the department shall review the information provided under sub. (3) to determine whether the applicable public health and environmental laws, including chs. NR 700 to ~~724~~ 746 where applicable, have been complied with and whether any further threat to public health, safety or welfare or the environment exists at the site or facility. Based on this review, the department shall approve the case closure, or conclude that additional response actions, such as additional remedial action or long-term monitoring, are needed at the site or facility, or conclude that there

is not sufficient information to allow the department to determine whether the applicable public health and environmental laws have been complied with.

SECTION 23. NR 726.07 (1) is amended to read:

NR 726.07 (1) For sites or facilities classified as simple under s. NR 700.09 (1) and for which the responsible party has not chosen to proceed with the complex site process under s. NR 700.11 (2), the responsible party shall submit a final report of the response action taken at the site or facility which includes the information required by chs. NR 700 to ~~724~~ 746, as applicable, s. NR 726.05 (8). The final report shall be accompanied by a letter of compliance documenting that the response action taken complies with the requirements of chs. NR 700 to ~~726~~ 746, as applicable, and all other applicable environmental laws, so that no further action is necessary for the site or facility.

SECTION 24. NR 726.09 (2)(b) is amended to read:

NR 726.09 (2)(b) May require the responsible parties to achieve compliance with the applicable public health and environmental laws, including chs. NR 700 to ~~724~~ 746 where applicable, within a time period established by the department.

SECTION 25. NR 746 is created to read:

CHAPTER NR 746  
PETROLEUM ENVIRONMENTAL CLEANUP FUND INTERAGENCY  
RESPONSIBILITIES

**NR 746.01 Purpose.** The purpose of this chapter is to identify the roles, processes and procedures that guide the departments of commerce and natural resources in the administration of their respective responsibilities under ss. 101.143, 101.144, 292.11 and 292.31, and ch. 160, Stats., for oversight and supervision of high, medium and low risk sites where petroleum products have discharged from petroleum storage tanks. This chapter codifies a memorandum of understanding that is required by s. 101.144 (3m), Stats. It also establishes standards to be applied by both agencies for determining when sites can be closed because it can be documented during either the investigation or remediation phase that the risk screening criteria in s. NR 746.06 and the closure criteria in s. NR 746.07 have been satisfied. The risk screening and closure criteria in this chapter, when used to make closure decisions, define on a site-specific basis when natural attenuation will achieve groundwater enforcement standards within a reasonable time. Nothing in this chapter is intended to limit the independent authority of either agency to carry out responsibilities not specifically described in this chapter, including, without limitation, the authority of the department of commerce to apply ch. Comm 47.

**Note:** This rule, adopted jointly by the Department of Commerce and the Department of Natural Resources, also appears in the Wisconsin Administrative Code as ch. Comm 46.

**NR 746.02 Applicability.** This chapter only applies to sites where petroleum products have discharged from petroleum storage tanks.

**NR 746.03 Definitions.** In this chapter:

(1) "Commerce" means the department of commerce.

(2) "Discharge" has the meaning specified in s. 292.01 (3), Stats.

**Note:** Under s. 292.01 (3), Stats., "discharge" means, but is not limited to, "spilling, leaking, pumping, pouring, emitting, emptying or dumping."

(3) "DNR" means the department of natural resources.

(4) "Enforcement standard" has the meaning specified in s. 160.01 (2), Stats.

**Note:** Section 160.01 (2), Stats., defines "enforcement standard" to mean "a numerical value expressing the concentration of a substance in groundwater which is adopted under ss. 160.07 and 160.09."

(5) "Free product" means petroleum product that is not in dissolved phase, and is present with a thickness of 0.01 feet or more as verified by more than one sampling event.

(6) "Groundwater" has the meaning specified in s. 160.01 (4), Stats.

**Note:** Section 160.01 (4), Stats., defines "groundwater" to mean "any water of the state, as defined in s. 281.01 (18), occurring in a saturated subsurface geological formation of rock or soil." Section 281.01 (18), Stats., defines "waters of the state" to include "those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction."

(7) "High-risk site" has the meaning specified in s. 101.144 (1)(aq), Stats. (as created by 1999 Wis. Act 9).

**Note:** Section 101.144 (1)(aq), Stats., defines "high-risk site" to mean "the site of a discharge of a petroleum product from a petroleum storage tank if at least one of the following applies:

1. Repeated tests show that the discharge has resulted in a concentration of contaminants in a well used to provide water for human consumption that exceeds a preventive action limit, as defined in s. 160.01 (6).

2. Petroleum product that is not in dissolved phase is present with a thickness of 0.01 feet or more, as shown by repeated measurements.

3. An enforcement standard is exceeded in groundwater within 1,000 feet of a well operated by a public utility, as defined in s. 196.01 (5), or within 100 feet of any other well used to provide water for human consumption.

4. An enforcement standard is exceeded in fractured bedrock.”

(8) “Low permeability material” means subsurface material above bedrock, as defined in s. NR 141.05 (5), that is at or below the water table and has a hydraulic conductivity less than or equal to  $1 \times 10^{-3}$  centimeters per second as determined by a method specified in s. NR 746.05.

**Note:** Section NR 141.05 (5) defines “bedrock” to mean “the solid rock underlying any loose surficial material such as soil, alluvium or glacial drift. Bedrock includes but is not limited to limestone, dolomite, sandstone, shale and igneous and metamorphic rock.”

(9) “Low risk site” means the site of a discharge of a petroleum product from a petroleum storage tank where contaminants are contained only within the soil on the source property and there is no confirmed contamination in the groundwater.

(10) “Medium risk site” means the site of a discharge of a petroleum product from a petroleum storage tank where contaminants have extended beyond the boundary of the source property, or there is confirmed contamination in the groundwater, but the site does not meet the definition of a high-risk site.

(11) “Monitoring well” means a groundwater monitoring well designed, installed, constructed and developed in accordance with the requirements of ch. NR 141, for the purpose of monitoring groundwater or obtaining geologic or groundwater related data. The term “monitoring well” includes piezometers and water table observation wells.

(12) “Natural attenuation” has the meaning specified in s. 101.143 (1)(cq), Stats.

**Note:** Section 101.143 (1)(cq), Stats., defines “natural attenuation” to mean “the reduction in the concentration and mass of a substance, and the products into which the substance breaks down, due to naturally occurring physical, chemical and biological processes.” These processes occur without human intervention or enhancement, and include, but are not limited to, dispersion, diffusion, sorption and retardation, and degradation processes such as biodegradation, abiotic degradation and radioactive decay.

(13) “Permeable material” means a subsurface material that is at or below the water table and that is not a low permeability material.

(14) “Petroleum product” has the meaning specified in s. 101.143 (1)(f), Stats.

**Note:** Section 101.143 (1)(f), Stats., defines “petroleum product” to mean “gasoline, gasoline alcohol fuel blends, kerosene, fuel oil, burner oil, diesel fuel or used motor oil.” The term “petroleum product” includes substances that are, or once were, constituents of a petroleum product, including petroleum product additives.

(15) “Petroleum storage tank” has the meaning specified in s. 101.144(1)(bm), Stats.

**Note:** Section 101.144 (1)(bm), Stats., defines “petroleum storage tank” to mean “a storage tank that is used to store petroleum products together with any on-site integral piping or dispensing system.” The term “petroleum storage tank” does not include a pipeline facility.

(16) “Preventive action limit” has the meaning specified in s. 160.01 (6), Stats.

**Note:** Section 160.01 (6), Stats., defines “preventive action limit” to mean “a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.15.”

(17) “Property boundary” has the meaning specified in s. 160.01(6m), Stats.

**Note:** Section 160.01(6m), Stats., defines “property boundary” to mean “the boundary of the total contiguous parcel of land owned by a common owner, regardless of whether public or private roads run through the parcel.”

(18) “Release” means the original discharge to the environment.

(19) “Remedial action” means a response action taken to control, minimize or eliminate the discharge of petroleum products so that they do not present an actual or potential threat to public health, safety or welfare or the environment. The term “remedial action” includes actions taken to restore the environment to the extent practicable and to meet applicable environmental standards, and includes natural attenuation. Examples include containment, treatment, excavation, disposal, recycling or reuse, and any monitoring required to assure that such actions protect public health, safety and welfare and the environment.

(20) “Remediation target” means a goal that may be set for a site, to clearly establish the contaminant concentration in groundwater or soil, or both, that when achieved will result in the granting of site closure.

(21) “Responsible person” has the meaning specified in s. 101.144(1)(d), Stats.

**Note:** Section 101.144(1)(d), Stats., defines “responsible person” to mean “a person who owns or operates a petroleum storage tank, a person who causes a discharge from a petroleum storage tank or a person on whose property a petroleum storage tank is located.”

(22) “Site” means any area where a petroleum product has discharged.

**Note:** Because the term “discharge” has been interpreted by the Wisconsin Supreme Court to include the migration of hazardous substance contamination after it is released to the environment, the term “site” includes all areas to which petroleum-product contamination has migrated, as well as the source property.

(23) “Site closure” or “site closed” means a determination made pursuant to ch. NR 726 that applicable groundwater quality standards in ch. NR 140 have been met or will be met by relying on natural attenuation and that applicable soil cleanup standards in ch. NR 720 have been met or will be met by relying on a remedial action performance standard.

(24) “Soil” has the meaning specified in s. NR 700.03 (58).

**Note:** Section NR 700.03 (58) defines “soil” to mean “unsaturated organic material, derived from vegetation and unsaturated, loose, incoherent rock material, of any origin, that rest on bedrock other than foundry sand, debris and any industrial waste.”

(25) “Source control” means actions taken to remove or treat soil or groundwater contamination, or both, actions taken to minimize the leaching of soil contamination to groundwater, and actions taken to prevent the migration of groundwater contamination. The term “source control” includes tank removal, the removal of free product and contaminant hot spot removal or treatment. The term “source control” does not include groundwater monitoring, soil sampling, recycling or reuse of contaminants, reliance on natural attenuation to address residual contamination, or changes to a facility’s design, operation, construction or waste handling or disposal practices.

(26) “Source property” means the parcel of land on which petroleum-product contamination was originally released to the environment.

(27) “Unsaturated” means soil or other material that is found above the water table.

(28) “Utility corridor” means any utility line that runs underground and any backfilled trench that was constructed to install a water main or lateral, a sewer main or lateral or other utility line.

(29) “Water table” has the meaning specified in s. NR 141.05 (45).

**Note:** Section NR 141.05 (45) defines “water table” to mean “the surface of unconfined groundwater where the water pressure is equal to atmospheric pressure.” The term “water table” is used in this chapter to establish the upper elevation of “groundwater” as that term is defined in s. 160.01 (4), Stats. Section 160.01 (4), Stats., defines “groundwater” to mean “any of the waters of the state, as defined in s. 281.01 (18), occurring in a saturated subsurface geological formation of rock or soil.”

**NR 746.04 Site authority.** (1) **ADMINISTRATIVE AUTHORITY.** The administrative authority of Commerce and DNR for a site includes enforcement, setting remediation targets, remediation supervision and direction, and decision making regarding the granting or denying closure and deciding whether or not further remedial action is required. DNR has the authority under s. 292.11 (7) (c), Stats., to issue orders to a person who possesses or controls a hazardous substance that was discharged, or who caused the discharge of a hazardous substance, specifying the remedial action that the responsible person is required to take under s. 292.11 (3), Stats. Commerce has the authority under s. 101.144 (2) (a), Stats., to issue orders to a person who owns or operates a petroleum storage tank, a person who causes a discharge from a petroleum tank or a person on whose property a petroleum storage tank is located, to require that person to take remedial action in response to those discharges of petroleum products from petroleum storage tanks over which Commerce has jurisdiction. The assignment of administrative authority for high-risk sites and medium and low risk sites, where discharges of petroleum products from petroleum storage tanks have occurred, shall be determined according to the following criteria:

(a) DNR shall have administrative authority for those sites that meet any of the following criteria:

1. Sites that have not been classified.
2. Sites that are classified as high-risk sites.
3. Sites with soil or groundwater that is contaminated by one or more hazardous substances other than petroleum products discharged from a petroleum storage tank, where the petroleum contamination is commingled with one or more hazardous substances other than petroleum products from a petroleum storage tank.

(b) Commerce shall have administrative authority for those sites that meet both of the following criteria:

1. Sites that have been classified as low risk or medium risk.
2. Sites where petroleum contamination is not commingled with one or more hazardous substances other than petroleum products discharged from a petroleum storage tank.

(2) **REMEDIATION TARGETS.** (a) Commerce and DNR shall jointly determine remediation targets for high-risk sites that are competitively bid or bundled with another site or sites pursuant to s. Comm 47.337 (4)(a) 3. and 4., and shall jointly review and select remedial bids.

(b) Commerce shall set remediation targets for low-risk and medium-risk sites that are competitively bid or bundled with another site or sites pursuant to s. Comm 47.337 (4) (a) 3. and 4., and review and select remedial bids.



(c) When a remediation target is not established under par. (a) or (b), the goal that shall be achieved to obtain site closure is prescribed by applicable provisions in this chapter and ch. NR 726.

**NR 746.05 Site investigation.** (1) **GENERAL.** In conducting an investigation of a site where petroleum products have discharged from a petroleum storage tank, the responsible person shall meet the requirements of ch. NR 716 and minimize costs while providing sufficient data necessary for risk assessment screening and decision-making under this section and ss. Comm 47.337 and 47.339, ss. NR 746.06 and 746.07, and chs. NR 720, 722 and 726. If a responsible person does not have the expertise and qualifications required under ch. NR 712 to adequately respond to any of the requirements of this chapter, the responsible person shall retain the services of a qualified consultant to conduct the required work or analysis on behalf of the responsible person.

(2) **SITE DATA.** (a) *General.* The data collected by the responsible person during the site investigation shall include, but not be limited to, the following information:

1. Whether contamination is found in soil or groundwater, or both.
2. The degree and extent of soil contamination and groundwater contamination, if any.
3. Nature and distribution of geologic materials on the site and general hydrogeologic information.
4. The hydraulic conductivities of materials where contaminated groundwater is found, including the downgradient perimeter of the groundwater contaminant plume.
5. Whether the groundwater contaminant plume is contained within low permeability material or extends into permeable material.
6. Whether there is evidence of migration of petroleum product contamination within a utility corridor or a permeable soil layer along which vapors, free product or contaminated water may flow.
7. Whether there is evidence of migration or imminent migration of petroleum product contamination to building foundation drain tile, sumps or other points of entry into buildings.

(b) *Standard hydraulic conductivity tests.* During the site investigation, or during the gathering of additional information as directed by the agency with administrative authority under sub. (3), the responsible person shall determine the hydraulic conductivity of materials where contaminated groundwater is found at the site utilizing a method described in Appendix A of ch. NR 716, or a method that has been approved under par. (c), in conformance with the following requirements:

1. Hydraulic conductivity shall be determined at a monitoring well located within but near the downgradient perimeter of the groundwater contaminant plume unless subd. 2. is applicable.

2. Notwithstanding the requirements in subd. 1., the agency with administrative authority for the site may determine that a hydraulic conductivity result from a monitoring well outside of the plume is representative of the hydraulic conductivity of materials within the plume, based on a comparison of monitoring well logs for monitoring wells installed inside and outside of the plume, and that it is not necessary to conduct a hydraulic conductivity test at a monitoring well within the plume.

3. The need to determine the hydraulic conductivity of materials where contaminated groundwater is found shall be considered part of a ch. NR 716 site investigation and may not be considered a reason or justification for an increase in site investigation funding.

(c) *Alternative methods for determining hydraulic conductivity.* The DNR may approve an alternative method for determining the hydraulic conductivity of the materials where contaminated groundwater is found at a site if the method meets the objectives of this section. The responsible person shall obtain approval from the DNR before using an alternative method. If the DNR grants approval for use of the alternative method, the responsible person shall submit site data and test results, to the agency with administrative authority for the site, documenting that the objectives of this section have been met.

(3) SUPPLEMENTAL SITE INVESTIGATION INFORMATION. If the site investigation report was submitted prior to May 18, 2000, supplemental site information that is necessary to make the determinations required under sub. (1) may be required by the agency with administrative authority. The responsible person shall utilize existing site data unless the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required in sub. (1). Existing site data may include, but are not limited to, monitoring well development data, monitoring well purging and sampling data, rising and falling head test data, yield test data, pump test data, monitoring well and boring logs, grain size analysis, local and regional geology, subsurface description, depositional environment, expected and actual degree and extent of contamination, or a combination of the data. If a determination is made by the agency with administrative authority for the site that existing site data is insufficient, the responsible person shall then gather the information necessary to make the determinations required under sub. (1), including determining the hydraulic conductivity of the materials where contaminated groundwater is found at the site in compliance with the requirements of sub. (2)(b).

(4) GROUNDWATER CONTAMINANT BEHAVIOR. (a) Except where par. (b) is applicable, the responsible person shall collect data during the site investigation to determine whether the groundwater plume margin is expanding. Whenever a responsible person or their agent is required by s. Comm 47.335 (2) to contact Commerce to notify the agency that it will not be possible to complete the site investigation for less than \$40,000, the responsible person shall submit the notice to both DNR and Commerce that summarizes the reasons why the

\$40,000 cost cap will be exceeded. In the notice, the responsible person shall enumerate which, if any, of the conditions described in s. NR 746.06 (2) (a), (f), (g) and (h) have been identified at the site.

(b) For sites where all groundwater contamination is contained within low permeability material, if no evidence is found of groundwater plume margin expansion during the site investigation, and the most recent release of a petroleum product to the environment on the site is more than 10 years old, the assumption for agency decision making on remedial actions, closure and other related decisions shall be that the groundwater plume margin is not expanding.

**NR 746.06 Risk screening criteria.** (1) **GENERAL.** The risk criteria in sub. (2) for screening sites shall be used to determine whether a remedial action shall be required, which could include, but is not limited to, source control and measures to address the risk screening criteria; to set remediation targets; to evaluate consultant reports required under s. 101.143 (2)(h) and (i), Stats., and to determine whether the site may be closed, as provided in s. NR 746.07, at the completion of the site investigation or after remedial action.

(2) **RISK CRITERIA FOR SCREENING SITES.** In making decisions under sub. (1), Commerce and DNR shall utilize, as provided in s. NR 746.07, the following criteria for identifying sites that are eligible for closure:

(a) None of the following environmental factors are present at the site:

1. Documented expansion of plume margin.
2. Verified contaminant concentration in a private or public potable well that attains or exceeds the preventive action limit.
3. Contamination within bedrock or within one meter of bedrock.
4. Petroleum product that is not in dissolved phase is present with a thickness of 0.01 feet or more, and has been verified by more than one sampling event.
5. Documented contamination discharges to a surface water or wetland.

(b) No soil contamination is present at the site that exceeds any of the soil screening levels in Table 1.

**Table 1**  
**Indicators of Residual Petroleum Product in Soil Pores**

	Soil Screening Levels (mg/kg)
Benzene	8.5
1,2-DCA	0.6
Ethylbenzene	4.6
Toluene	38
Xylene	42
1,2,4 – Trimethylbenzene	83
1,3,5 – Trimethylbenzene	11
Naphthalene	2.7

(c) There is no soil contamination within 4 feet of the ground surface that exceeds any of the direct contact soil contaminant concentrations for the substances listed in Table 2.

**Table 2**  
**Protection of Human Health from Direct Contact with Contaminated Soil**

Substance	Soil Contaminant Concentrations (Top 4 ft of the soil) (mg/kg)
Benzene	1.10
1,2-Dichloroethane (DCA)	0.54

(d) For substances not listed in Table 2 that are present within 4 feet of the ground surface and have been approved by the agency with administrative authority for the site as contaminants of concern as defined in s. NR 720.03 (2), any potential human health risk from direct contact has been addressed.

(e) If there are petroleum-product contaminants in soil or groundwater, the most recent release that caused or contributed to the contamination is more than 10 years old.

(f) There is no evidence of migration of petroleum product contamination within a utility corridor or within a permeable material or soil along which vapors, free product or contaminated water may flow.

(g) There is no evidence of migration or imminent migration of petroleum product contamination to building foundation drain tile, sumps or other points of entry into a basement or other enclosed structure where petroleum vapors could collect and create odors or an adverse impact on indoor air quality or where the contaminants may pose an explosion hazard.

(h) No enforcement standard is attained or exceeded in any groundwater within 1000 feet of a well operated by a public utility, as defined in s. 196.01 (5), Stats., or within 100 feet of any other well used to provide water for human consumption.

**Note:** The definition of "public utility" that is found in s. 196.01 (5), Stats., includes, with certain limited exceptions, "every corporation, company, individual, association, their lessees, trustees or receivers appointed by any court, and every sanitary district, town, village or city that may own, operate, manage or control . . . all or any part of a plant or equipment, within the state, for the production, transmission, delivery or furnishing of heat, light, water or power either directly or indirectly to or for the public." This definition includes all wells operated by any entity (city, village, town or private company) that is in the business of distributing water to the public. It would not include wells operated by commercial establishments that conduct some other kind of business (for example, restaurants, bars or golf courses) where the well water is used by the business or by customers of the establishment.

**NR 746.07 Site closure, and approval and tracking of remedial actions.** (1) **SITE CLOSURE DECISIONS AT THE COMPLETION OF A SITE INVESTIGATION.** Commerce and DNR shall make site closure decisions at the completion of a site investigation based on the following requirements:

(a) *Soil contamination only.* Sites that only have soil contamination shall be closed, at the completion of a site investigation that complies with the requirements of ch. NR 716, if the site complies with all of the following requirements:

1. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.
2. The requirements of ch. NR 726 have been complied with, including the signing and recording of any required deed restriction or deed notice.
3. There is at least a 5-foot separation between the soil contamination and the water table.

(b) *Groundwater contamination within low permeability material.* Sites that have groundwater contamination within low permeability material shall be closed at the completion of a site investigation that complies with the requirements of ch. NR 716, if the site complies with all of the following requirements:

1. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.

2. The requirements of ch. NR 726, other than s. NR 726.05 (2)(b) 1.f. and 2., have been complied with, including the signing and recording of a groundwater use restriction for each property where an enforcement standard is attained or exceeded within low permeability material, and the signing and recording of any required deed restriction or deed notice.

3. One of the following criteria is satisfied:

a. All groundwater contamination is contained within low permeability material and there is at least a 5-foot separation between the contamination in the low permeability material and any underlying or downgradient permeable material.

b. If there is any groundwater contamination within downgradient or underlying permeable material, one of the following requirements is satisfied:

i. All groundwater contaminant concentrations in permeable material are below preventive action limits.

ii. All groundwater contaminant concentrations in permeable material are below enforcement standards and where preventive action limits have been attained or exceeded, a preventive action limit exemption has been granted.

iii. The requirements of one of the tests listed in par. (d) 3. have been satisfied for sites where enforcement standards are attained or exceeded in permeable material.

(c) *Groundwater contamination exceeding preventive action limits, but below enforcement standards, within permeable material.* Sites that have groundwater contamination that attains or exceeds preventive action limits, but does not attain or exceed enforcement standards, within permeable material, shall be closed if the site complies with the following requirements:

1. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.

2. The requirements of ch. NR 726 have been complied with, including the signing and recording of any required deed restriction or deed notice.

3. A preventive action limit exemption has been granted.

(d) *Groundwater contamination exceeding enforcement standards within permeable material.* Sites that have groundwater contamination that attains or exceeds enforcement standards within permeable material shall be closed at the completion of a site investigation that complies with the requirements of ch. NR 716, if the site complies with all of the following requirements:

1. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.
2. The requirements of ch. NR 726, other than s. NR 726.05 (2)(b) 2., have been complied with, including the signing and recording of a groundwater use restriction for each property where an enforcement standard is attained or exceeded within permeable material, and the signing and recording of any required deed restriction or deed notice.

3. One of the following tests has been satisfied:

a. There is a minimum of 4 rounds of sampling data that is free of seasonal variation, and those sample results establish, through the use of the Mann-Kendall statistical test that is set forth in Appendix A, that the concentrations of contaminants with confirmed exceedances of enforcement standards are decreasing at the downgradient perimeter and along the centerline of the contaminant plume.

b. An appropriate number and frequency of sampling rounds has been conducted consistent with the requirements of Appendix A, and the sample results establish, through the use of the Mann-Whitney U statistical test that is set forth in Appendix A, that the concentrations of contaminants with confirmed exceedances of enforcement standards are decreasing at the downgradient perimeter and along the centerline of the contaminant plume.

**Note:** In compliance with s. 160.21(2)(a), Stats., s. NR 140.22(2)(b) establishes the point of standards application to determine whether an enforcement standard has been attained or exceeded, for facilities, practices or activities that do not have an established design management zone, as “any point of present groundwater use and any point beyond the boundary of the property on which the facility, practice or activity is located and s. NR 140.22 (2)(c) establishes a point of standards application for “discharges, releases, sites or facilities” regulated under s. 292.11 or 292.31, Stats. (among other statutes) as “every point at which groundwater is monitored.” Groundwater contaminant concentrations at points of standards application have been taken into account in the development of the risk screening criteria in s. NR 746.06 (2) and the closure requirements in s. NR 746.07.

(2) **SITE CLOSURE DECISIONS AFTER REMEDIAL ACTION TO ADDRESS ONE OR MORE OF THE RISK SCREENING CRITERIA.** Commerce and DNR shall make site closure decisions after remedial action to address one or more of the risk screening criteria based on the following requirements:

(a) *Soil contamination only.* Sites that have residual contamination only in soil shall be closed without requiring any additional remedial action other than natural attenuation, if the site complies with all of the following requirements:

1. A site investigation that complies with the requirements of ch. NR 716 has been conducted.

2. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.
3. The requirements of ch. NR 726 have been complied with, including the signing and recording of any required deed restriction or deed notice.
4. There is at least a 5-foot separation between the soil contamination and the water table.

(b) *Groundwater contamination within low permeability material.* Sites that have groundwater contamination within low permeability material shall be closed if the site complies with all of the following requirements:

1. A site investigation that complies with the requirements of ch. NR 716 has been conducted.
2. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.
3. The requirements of ch. NR 726, other than s. NR 726.05 (2) (b) 1.f. and 2., have been complied with, including the signing and recording of a groundwater use restriction for each property where an enforcement standard is attained or exceeded within low permeability material, and the signing and recording of any required deed restriction or deed notice.
4. One of the following criteria is satisfied:
  - a. All groundwater contamination is contained within low permeability material and there is at least a 5-foot separation between the contamination in the low permeability material and any underlying or downgradient permeable material.
  - b. If there is any groundwater contamination within downgradient or underlying permeable material, one of the following requirements is satisfied:
    - i. All groundwater contaminant concentrations in permeable material are below preventive action limits.
    - ii. All groundwater contaminant concentrations in permeable material are below enforcement standards and where preventive action limits have been attained or exceeded, a preventive action limit exemption has been granted.
    - iii. The requirements of one of the tests listed in par. (d) 4. have been satisfied for sites where enforcement standards are attained or exceeded in permeable material.

(c) *Groundwater contamination exceeding preventive action limits, but below enforcement standards, within permeable material.* Sites that have groundwater contamination that attains or exceeds preventive action limits, but not attaining or exceeding enforcement



standards, within permeable material, shall be closed if the site complies with all of the following requirements:

1. A site investigation that complies with the requirements of ch. NR 716 has been conducted.
2. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.
3. The requirements of ch. NR 726 have been complied with, including the signing and recording of any required deed restriction or deed notice.
4. The site has been granted a preventive action limit exemption.

(d) *Groundwater contamination exceeding enforcement standards within permeable material.* Sites that have groundwater contamination that attains or exceeds enforcement standards within permeable material shall be closed if the site complies with all of the following requirements:

1. A site investigation that complies with the requirements of ch. NR 716 has been conducted.
2. All of the risk screening criteria in s. NR 746.06 (2) have been satisfied.
3. The requirements of ch. NR 726, other than s. NR 726.05 (2) (b) 2., have been complied with, including the signing and recording of a groundwater use restriction for each property where an enforcement standard is attained or exceeded within permeable material.
4. One of the following tests has been satisfied:
  - a. There is a minimum of 4 rounds of sampling data that is free of seasonal variation, and those sample results establish, through the use of the Mann-Kendall statistical test that is set forth in Appendix A, that the concentrations of contaminants with confirmed exceedances of enforcement standards are decreasing at the downgradient perimeter and along the centerline of the contaminant plume.
  - b. An appropriate number and frequency of sampling rounds has been conducted consistent with the requirements of Appendix A, and the sample results establish, through the use of the Mann-Whitney U statistical test that is set forth in Appendix A, that the concentrations of contaminants with confirmed exceedances of enforcement standards are decreasing at the downgradient perimeter and along the centerline of the contaminant plume.

**Note:** Deed restrictions and deed notices may be required as a condition of site closure under s. NR 726.05 (8) (a) or (b). Under some circumstances, deed restrictions and groundwater use restrictions are mandatory under s. NR 726.05 (8) (am) and (9). For example, a deed restriction must be required if the responsible person is relying on an industrial land use