

Chapter NR 722

STANDARDS FOR SELECTING REMEDIAL ACTIONS

NR 722.01	Purpose.	NR 722.09	Selection of a remedial action.
NR 722.02	Applicability.	NR 722.11	Risk assessments.
NR 722.03	Definitions.	NR 722.13	Remedial action options report.
NR 722.05	General.	NR 722.15	Department response.
NR 722.07	Identification and evaluation of remedial action options.		

Note: Corrections made under s. 13.93 (2m) (b) 7., Stats., Register, February, 1997, No. 494.

NR 722.01 Purpose. The purpose of this chapter is to establish minimum standards for identifying and evaluating remedial action options and selecting remedial actions. This chapter is adopted pursuant to ss. 227.11 (2), 287.03 (1) (a), 287.05, 289.06 (1) and (2), 292.11, 292.15 and 292.31, Stats.

Note: The following portions of 40 CFR part 280 have been included in the text of this chapter: portions of s. 280.34 (a) (3); portions of s. 280.66 (a) and (b); and s. 280.66 (c). Additional portions of s. 280.34 (a) (3) are included in chs. NR 706, 708, 716 and 724. Additional portions of s. 280.66 (a) and (b) are included in chs. NR 708 and 724.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95; am. Register, February, 1996, No. 482, eff. 3-1-96.

NR 722.02 Applicability. (1) 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 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 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" 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).

Note: Persons who wish to conduct response actions that will meet the requirements of CERCLA and the NCP may request that the department enter into a contract with them pursuant to s. 292.31 (1) (b), Stats. However, a CERCLA-quality response action may require compliance with additional requirements beyond those contained in chs. NR 700 to 736 in order to satisfy CERCLA and the NCP.

(4) The department may exercise enforcement discretion on a case-by-case basis and choose to regulate a site, facility or a portion of a site or facility under only one of a number of potentially applicable statutory authorities. However, where overlapping restrictions or requirements apply, the more restrictive control. The department shall, after receipt of a request from a responsible party, provide a letter that indicates which regulatory program or programs the department considers to be applicable.

Note: Sites, facilities or portions of a site or facility that are subject to regulation under s. 292.11 or 292.31, Stats., may also be subject to regulation under other statutes, including solid waste statutes, ch. 289, Stats., or the hazardous waste management act, ch. 291, Stats., and the administrative rules adopted pursuant to those statutes. One portion of a site or facility may be regulated under a different statutory authority than other portions of that site or facility. When necessary, the department

will, to the best of its ability, facilitate coordination between the regulatory programs involved.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95; cr. (2m), Register, February, 1996, No. 482, eff. 3-1-96.

NR 722.03 Definitions. In this chapter:

(1) "Sensitive receptor" means a receptor that is affected by slight differences or changes in environmental conditions.

(2) "Unconsolidated material" means soil, sediment or other granular material, such as fill, not including debris.

Note: Section NR 700.03 (58) defines "soil" as unsaturated organic material, derived from vegetation and unsaturated, loose, incoherent rock material, of any origin, that rests on bedrock other than foundry sand, debris and any industrial waste. Section NR 700.03 (54) defines "sediment" as particles in surface waters or wetlands that are derived from the erosion of rock, minerals, soils and biological materials, as well as chemical precipitation from the water column. Sediment particles are transported by, suspended in or deposited by water. Section NR 700.03 (10) defines "debris" as material resulting from the construction, demolition or razing of buildings, roads and other structures and materials that have been discarded at a site or facility.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95.

NR 722.05 General. (1) Responsible parties shall select an appropriate remedial action or combination of remedial actions for implementation under this chapter, unless the department makes the selection under sub. (2).

(2) The department shall select the remedial action for the following types of sites or facilities:

(a) State-lead national priority list sites.

(b) Sites or facilities being addressed under a contract with the department under s. 292.31 (1) (b), Stats.

(c) Department-funded response actions.

(d) Sites or facilities being addressed under an administrative order issued under s. 292.11 (7) (c), Stats.

(3) The department shall document the remedial action selected for those sites or facilities listed in sub. (2) following the requirements of s. NR 722.07, at a minimum, and conduct the applicable public participation and notification activities as required in ch. NR 714.

(4) To select a remedy or combination of remedies, responsible parties shall identify, evaluate and document an appropriate range of remedial action options to address each contaminated medium in accordance with the requirements of this chapter, when one of the following is completed:

(a) A site investigation report developed in accordance with ch. NR 716.

(b) An in-field conditions report prepared in accordance with ch. NR 508.

(5) The identification, evaluation and documentation of an appropriate set of remedial action options, to address each medium and migration or exposure pathway shall be based on the complexity of the site or facility and the legal requirements applicable to the response action and the site or facility.

Note: Each remedial action option identified may be utilized to address more than one contaminated medium or migration or exposure pathway if that remedial action option would be protective of public health, safety and welfare and the environment for each media and migration or exposure pathway that it is proposed to address.

(6) The evaluation and documentation of an appropriate set of remedial action options shall be conducted by a qualified person or persons pursuant to s. NR 712.07 and shall be signed and sealed by the qualified person or persons in accordance with s. NR 712.09.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95.

NR 722.07 Identification and evaluation of remedial action options. (1) **GENERAL.** Unless otherwise directed by the department, responsible parties shall identify and evaluate an appropriate range of remedial action options in accordance with the requirements of this section.

(2) **IDENTIFICATION OF LIKELY REMEDIAL ACTION OPTIONS.** An initial screening of remedial technologies shall be conducted to identify remedial action options for further evaluation which are reasonably likely to be feasible for a site or facility, based on the hazardous substances present, media contaminated and site characteristics, and to comply with the requirements of s. NR 722.09.

Note: The department suggests that responsible parties and their consultants should refer to the following U.S. EPA guidance document as part of their evaluation of remedial action options for sites with petroleum contamination: "How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites," May 1995, U.S. EPA 510-B-95-007 which may be obtained from: Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371945, Pittsburgh, PA 15250-7954, Stock Number 055-000-00499-4.

(3) **EVALUATION OF REMEDIAL ACTION OPTIONS.** (a) Except as provided in par. (b), responsible parties shall use all of the criteria in sub. (4) to further evaluate appropriate remedial action options that have been identified for further evaluation under sub. (2), for each contaminated medium or migration or exposure pathway. This evaluation process shall be used to determine which remedial action option constitutes the most appropriate technology or combination of technologies to restore the environment, to the extent practicable, within a reasonable period of time and to minimize the harmful effects of the contamination to the air, land or waters of the state. Responsible parties shall document their evaluation of a remedial option or combination of options which would utilize recycling or treatment technologies that destroy or detoxify contaminants, rather than transfer the contaminants to another media.

Note: The purpose of the technical and economic feasibility evaluation is to evaluate a range of remedial action options suitable for a particular site or facility to determine the practicability of implementing those options. If a particular option is not suitable for a particular site or facility, such as in situ air sparging in dense clay soils, it should not be evaluated. The department would consider such an evaluation as simply an attempt to give the false impression that a wide range of options were considered. Emphasis must be placed on remedial action options suitable for a particular site or facility.

(b) A detailed evaluation based on the criteria in sub. (4) is not required in those cases where a remedial action option identified during the initial screening meets one or both of the following requirements:

1. Landfill disposal of less than 250 cubic yards of untreated contaminated unconsolidated material, as measured *in situ*, is proposed.

2. The proposed remedial action option results in the reuse, recycling, destruction, detoxification, treatment or any combination thereof of the hazardous substances present at the site and this proposed option:

a. Is proven to be effective in remediating the types of hazardous substances present at the site, based on experience gained at other sites with similar site characteristics and conditions;

b. Can be implemented in a manner that will not pose a significant risk of harm to human health, safety and welfare or the environment; and

c. Is likely to result in the reduction or control, or both, of the hazardous substances present at the site to a degree and in a manner that is in compliance with the requirements of s. NR 722.09 (2) and (3).

Note: Section NR 722.07 (3) (b) is intended to provide a streamlined evaluation process for certain remedial actions that are presumed to meet the evaluation and selection criteria in ss. NR 722.07 and 722.09. A remedial action that results in land-

fill disposal of volumes of untreated contaminated soil or other unconsolidated material of 250 cubic yards or less can be reasonably expected to meet the technical feasibility and economic feasibility criteria in s. NR 722.07 (4) and further detailed evaluation of alternatives would not be warranted. Remedial actions meeting the requirements of s. NR 722.07 (3) (b) 2. can be reasonably expected to be appropriate and further detailed evaluation of alternatives would not be necessary as such remedial actions could be considered "presumptive remedies" as described in U.S. EPA OSWER Directive 9355.0-47FS.

(4) **EVALUATION CRITERIA.** Except as provided in s. NR 722.07 (3) (b), the remedial action options identified by the initial screening shall be evaluated based on the following requirements and in compliance with the requirements of s. NR 722.09.

(a) **Technical feasibility.** The technical feasibility of appropriate remedial action options shall be evaluated using the following criteria:

1. 'Long-term effectiveness.' The long-term effectiveness of appropriate remedial action options, taking into account all of the following:

a. The degree to which the toxicity, mobility and volume of the contamination is expected to be reduced.

b. The degree to which a remedial action option, if implemented, will protect public health, safety and welfare and the environment over time.

2. 'Short-term effectiveness.' The short-term effectiveness of appropriate remedial action options, taking into account any adverse impacts on public health, safety and welfare and the environment that may be posed during the construction and implementation period until case closure under ch. NR 726.

3. 'Implementability.' The implementability of appropriate remedial action options, taking into account all of the following:

a. The technical feasibility of constructing and implementing the remedial action option at the site or facility.

b. The availability of materials, equipment, technologies and services needed to conduct the remedial action option.

c. The potential difficulties and constraints associated with on-site construction or off-site disposal and treatment.

d. The difficulties associated with monitoring the effectiveness of the remedial action option.

e. The administrative feasibility of the remedial action option, including activities and time needed to obtain any necessary licenses, permits or approvals.

f. The presence of any federal or state, threatened or endangered species.

g. The technical feasibility of recycling, treatment, engineering controls or disposal.

h. The technical feasibility of naturally occurring biodegradation at the site or facility, if responsible parties evaluate this option.

4. 'Restoration time frame.' The expected time frame needed to achieve the necessary restoration, taking into account all of the following qualitative criteria:

a. Proximity of contamination to receptors.

b. Presence of sensitive receptors.

c. Presence of threatened or endangered species or habitats, as defined by state and federal law.

d. Current and potential use of the aquifer, including proximity to private and public water supplies.

e. Magnitude, mobility and toxicity of the contamination.

f. Geologic and hydrogeologic conditions.

g. Effectiveness, reliability and enforceability of institutional controls.

h. Naturally occurring biodegradation processes at the site or facility which are expected to reduce the total mass of contamination in an effective and timely manner and which have been demonstrated to be occurring at the site or facility, to the satisfaction of the department in the site investigation report.

Note: A longer restoration time frame may be appropriate to achieve the environmental laws and standards referenced in s. NR 722.07 (2) (a) and (b), if on-site treat-

ment or recycling is selected or if engineering controls are selected for an industrial property to allow urban redevelopment. The purpose of s. NR 722.07 (5) (b) 4. is to provide criteria to determine how quickly environmental laws and standards must be achieved, due to the site-specific hazards that the contamination poses. It is not intended to authorize risk assessments, nor is it the intent of this provision to establish a generic time period that would be applied at all sites or facilities.

(b) *Economic feasibility.* The economic feasibility of each appropriate remedial action option shall be evaluated, using the following criteria:

1. The following types of costs associated with the remedial action option:

- a. Capital costs, including both direct and indirect costs;
- b. Initial costs, including design and testing costs;
- c. Annual operation and maintenance costs;

d. Total present worth of the costs for all national priority list sites or facilities; sites or facilities where the department has entered into a contract pursuant to s. 292.31 (1) (b), Stats.; and sites or facilities where state environmental fund monies or federal LUST trust funds are being expended; and

- e. Costs associated with potential future liability.

2. The economic feasibility of a remedial action option shall be determined by comparing the costs listed in subd. 1. to what is expected to be technically achieved by that option, taking into account long-term effectiveness, short-term effectiveness, implementability and the time until restoration is achieved for each option.

(5) **ADDITIONAL REQUIREMENTS.** (a) *Engineering controls.* If engineering controls are considered, responsible parties shall, at a minimum, evaluate an on-site engineering control to address all hazardous substances, contaminated media and migration or exposure pathways.

Note: Engineering controls include on-site or off-site containment methods, such as solid or hazardous waste landfill covers, liners, gas collection systems, armoring of sediments, erosion controls and groundwater slurry walls. Restricting access to a site or facility, such as constructing a fence, is considered an institutional control, not an engineering control.

(b) *Institutional controls.* Responsible parties shall consider the appropriateness of utilizing institutional controls, including land-use and access restrictions, to supplement engineering controls and treatment remedial actions, as necessary to ensure that adequate protection of public health, safety and welfare and the environment is maintained over time.

(c) *Additional requirements.* Responsible parties shall comply with additional site-specific remedial action evaluation or documentation requirements that may be specified by the department due to the complexity of the site or facility, or the severity of the potential or actual public health or environmental impacts.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95.

NR 722.09 Selection of a remedial action. (1) GENERAL. An option from the range of technically feasible options shall be selected based on the results of the evaluation conducted pursuant to s. NR 722.07, in compliance with this section. If an option's cost, including all the costs listed in s. NR 722.07 (4) (b), is excessive with respect to what is being technically achieved by the option relative to other available options, responsible parties may choose not to select it.

(2) **ENVIRONMENTAL LAWS AND STANDARDS.** Responsible parties shall select a remedial action or combination of remedial actions that achieve restoration of the environment to the extent practicable, minimize the harmful effects from the contamination on the air, lands and waters of the state and comply with all applicable state and federal public health and environmental laws and environmental standards. Environmental laws and standards include:

(a) *Soils.* 1. Contaminated soil shall be restored in compliance with the requirements of ch. NR 720.

2. Where a performance standard will be selected in accordance with s. NR 720.19 (2) for a soil remedial action, the respon-

sible parties shall conduct public participation activities in compliance with s. NR 714.07 (5).

Note: Chapter NR 720 provides for generic residual contaminant levels and for site-specific residual contaminant levels or performance standards. An on-site remedial action or combination of on-site actions that does not meet applicable residual contaminant levels in Tables 1 and 2 in ch. NR 720 may be selected, alone or in combination with off-site remedial actions, if site-specific residual contaminant levels or a performance standard are developed. A performance standard maintains a condition that is protective of human health, safety and welfare and the environment. Use of a performance standard will involve land use restrictions, maintenance agreements, long-term monitoring or a combination of these.

(b) *Groundwater.* Contaminated groundwater shall be restored in accordance with all of the following requirements:

1. For substances that are listed in ch. NR 140, preventive action limits shall be achieved to the extent technically and economically feasible, pursuant to ss. NR 140.24 and 140.26.

Note: In accordance with ss. NR 140.24 and 140.26, both the source control and groundwater restoration components of a response shall be designed to minimize the concentration of the hazardous substances or environmental pollution in groundwater at the point of standards application where technically and economically feasible; and to regain and maintain compliance with the preventive action limit. If the department determines that compliance with the preventive action limit is not technically or economically feasible, compliance with the lowest possible concentration which is technically and economically feasible shall be achieved. The enforcement standard may not be attained or exceeded at the point of standards application.

2. For substances which do not have an established standard in ch. NR 140, the department may take or require the responsible parties to conduct any necessary actions, such as developing site-specific environmental standards in cooperation with the department of health and social services, to protect public health, safety and welfare or to prevent a significant damaging effect on groundwater or surface water quality for present or future consumptive or non-consumptive uses.

(c) *Surface water and wetlands.* 1. Discharges to surface waters or wetlands may not result in a surface water quality standard contained in chs. NR 102 to 106 being exceeded and may not exceed effluent limitations established by the department based on "best available control technology currently available" or, where appropriate, "best available control technology economically achievable," in accordance with ch. NR 220.

2. For substances that do not have established criteria in ss. NR 102.14 and 105.05 to 105.09, discharges to surface waters or wetlands may not exceed site-specific water quality criteria established by the department pursuant to the general standards of ss. NR 102.04 (1) (d) and 103.03 (2) (d).

Note: The water quality standards contained in chs. NR 102 to 106 are comprised of water quality criteria for the prevention of adverse tastes and odors in fish and drinking water (s. NR 102.14), acute and chronic toxicity to aquatic life (ss. NR 105.05 and 105.06, respectively), adverse effects to wild and domestic animals (s. NR 105.07), human threshold and cancer effects (ss. NR 105.08 and 105.09, respectively) and designated uses of the surface waters based on their classification and water quality standards and criteria for wetlands. Chapter NR 220 provides that for those point sources identified in s. NR 220.21 (1), the department shall establish effluent limitations that are achievable by the application of the "best practicable control technology currently available" or, where appropriate, the "best available control technology economically achievable", as required in s. NR 220.21 (2).

3. At sites or facilities in, or in close proximity to, surface water bodies or wetlands, active remedial actions shall be taken to prevent or minimize, to the extent practicable, potential and actual hazardous substance discharges and environmental pollution that may attain or exceed surface water or wetland criteria established in accordance with chs. NR 102 to 106.

(d) *Discharges to the air.* All emissions to the air shall comply with applicable requirements in ch. 285, Stats., chs. NR 400 to 499, and any other applicable federal or state environmental laws.

(e) *Hazardous and solid waste.* 1. Any waste, debris or waste stream generated by the remedial action shall be managed in compliance with all applicable state and federal laws and regulations. Contaminated debris, at a minimum, shall be addressed to minimize the harmful effects to protect health, welfare and safety and the environment.

2. Management of materials contaminated with polychlorinated biphenyls (PCBs) shall comply with the requirements of ch. NR 157.

(3) **ADDITIONAL STANDARDS OF PERFORMANCE.** Each remedial action or combinations of actions shall protect public health, safety and welfare and the environment from all contaminated media, routes of exposure and contamination at the site or facility. Responsible parties shall presume that a remedial action option or combination of options is protective if it meets the criteria in sub. (2), unless the responsible party or the department determines that compliance with applicable public health and environmental laws, including environmental standards, is not protective of public health, safety and welfare and the environment due to multiple pathways of exposure or synergistic effects of contamination. At sites or facilities where there may be synergistic effects of contamination, multiple pathways of exposure or both that pose an unacceptable threat to public health, safety or welfare or the environment, responsible parties shall attain more stringent, facility or site-specific numeric standards to ensure that public health, safety and welfare and the environment are protected. In such a situation, the department may require that the responsible parties develop a site-specific numeric or performance standard, or both, that is protective of public health, safety and welfare and the environment for the specific media, migration or exposure pathways and contamination.

(4) **LANDFILL DISPOSAL OF UNTREATED CONTAMINATED UNCONSOLIDATED MATERIAL.** Responsible parties may only select landfill disposal for untreated contaminated unconsolidated material if such disposal is in compliance with chs. NR 500 to 536, the landfill's approved plan of operation and both of the following requirements:

(a) *Use of untreated contaminated unconsolidated material.* 1. Except as provided in subd. 2., untreated contaminated unconsolidated material may only be accepted by the landfill operator for use as daily cover in accordance with s. NR 514.04 (5), if the volume of untreated contaminated unconsolidated material that is proposed to be used as daily cover does not exceed the landfill's net daily cover needs nor 12.5% of the annual volume of waste received by the landfill, or for use in the construction of soil structures within the fill area when approved for that specific use by the department, unless otherwise specifically provided in the landfill's individual license and approved plan of operation.

2. Untreated contaminated unconsolidated material that is not usable as daily cover or for soil structures and for which there is no technically and economically feasible treatment alternative may be disposed of in a landfill only with prior written approval from the department, unless otherwise specifically provided in the landfill's individual license and approved plan of operation.

(b) *Volume limitations.* 1. Except as provided in subd. 2. or 3., the volume of untreated contaminated unconsolidated material from a single site or facility that is proposed for landfill disposal may not exceed 250 cubic yards as measured *in situ*.

2. Except as provided in subd. 3., volumes of untreated contaminated unconsolidated material that exceed 250 cubic yards may be disposed of in a licensed landfill with a department-approved composite liner, or a liner that is equivalent to a composite liner in terms of environmental protection as determined by the department.

3. Volumes of untreated contaminated unconsolidated material that exceed 2000 cubic yards may be disposed of in a landfill only if prior written approval is obtained from the department after the department has reviewed a remedial action options report.

Note: Material contaminated with polychlorinated biphenyls (PCBs) must be managed in accordance with the requirements of ch. NR 157.

(5) **INSTITUTIONAL CONTROLS.** (a) Institutional controls may not substitute for recycling, treatment or engineering controls.

(b) Institutional controls may not be selected as the sole remedial action at a site or facility, unless recycling, treatment or engineering controls are not practicable, based on an evaluation con-

ducted in compliance with s. NR 722.07 (3) (a) and written approval is obtained from the department after review of the detailed evaluation in the remedial action options report.

Note: Section NR 726.05 (8) requires that land use restrictions be recorded if certain levels of residual soil contamination will remain on-site after completion of the remedial action at a site or facility classified as industrial. The department may also require that institutional controls be put in place, on a case-by-case basis, either during remedy selection or case closure pursuant to ch. NR 726.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95.

NR 722.11 Risk assessments. (1) The responsible party may request, and the department may consider granting, approval to prepare and submit a risk assessment for the purpose of developing environmental standards only if the responsible parties demonstrate to the satisfaction of the department that:

(a) Compliance with the applicable environmental standards listed in s. NR 722.09 (2) will not be protective of public health, safety and welfare and the environment; or

(b) Attaining compliance with the applicable residual contaminant levels in ch. NR 720 is not practicable.

(2) If the department authorizes the use of a risk assessment to develop environmental standards, the responsible parties shall utilize standard exposure assumptions approved by the department. The department may approve, modify or disapprove of the risk assessment prepared by the responsible parties and shall provide a written explanation of the department's action to the responsible parties.

(3) When the department enters into a contract pursuant to s. 292.31 (1) (b), Stats., the department shall determine whether or not a risk assessment should be prepared and by whom.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95.

NR 722.13 Remedial action options report. (1) **GENERAL.** Based on the evaluation and selection of remedial action options required in ss. NR 722.07 and 722.09, responsible parties shall document the evaluation and selection in a remedial action options report in compliance with the requirements of this section. Responsible parties shall submit the remedial action options report to the department, unless the responsible parties are not required to submit it under s. NR 700.11 (1) or are notified by the department that the report is not required to be submitted.

(2) **CONTENTS OF REPORT.** The remedial action options report shall include the following:

(a) *Cover letter.* 1. The department's identification number for the site or facility.

2. The purpose of the submittal and the desired department action or response.

3. Month, day and year of the submittal.

(b) *Executive summary.* A brief narrative summarizing the contents of the report.

(c) *Background information.* 1. Project title, name of the site or facility, its location, the mailing address and telephone number of the responsible parties, and the name, address and telephone number of the person who prepared the report.

2. The regulatory status of the site or facility.

3. A summary of the nature and extent of contamination at the site or facility, based on the data gathered during the site investigation.

4. A summary of the geologic and hydrogeologic characteristics at the site or facility, based on data gathered during the site investigation.

Note: If a site investigation report required under ch. NR 716 and a remedial action options report required under this chapter are prepared as a single submittal, the site investigation information does not need to be restated in the remedial action options portion of the combined submittal.

(d) *Remedial action options.* A brief description of each remedial action option that has been evaluated under s. NR 722.07, including all of the following information:

1. A physical and operational description of each remedial action option.

2. The degree to which each evaluated remedial action option is expected to comply with the environmental laws and standards under s. NR 722.09 (2).

3. The physical location at the site or facility where the environmental standards applicable to the site or facility and the remedial action option are to be complied with.

4. Any local, state or federal licenses, permits or approvals that are required for each remedial action option.

5. A comparison of the expected performance of each remedial action option in relation to the technical and economic feasibility criteria in s. NR 722.07 (4).

6. A statement on whether or not treatment was considered and why a treatment option or combination of treatment options were rejected, if rejected.

(e) *Selected remedial action.* Responsible parties shall document the selected remedial action in compliance with this section, except where the department is selecting the remedial action option under s. NR 722.05 (2). The remedial action options report shall identify the selected remedial action and shall include:

1. A brief summary of the rationale for choosing the remedial action, based on the evaluation required under s. NR 722.07. If appropriate, this summary shall include a brief description of why landfill disposal of more than 250 cubic yards of contaminated media has been selected.

2. A proposed schedule for implementing the selected remedial action option.

3. An estimate of the approximate total cost of implementing the selected remedial action option, including the costs listed in s. NR 722.07 (4) (b) 1.

4. An estimate of the time frame needed for the selected remedial action option to comply with the applicable federal or state environmental laws and standards, whichever are more stringent.

5. A description of how the performance of the selected remedial action option will be measured.

6. A description of how treatment residuals generated in connection with the selected remedial action option will be managed on-site and, if applicable, off-site.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95.

NR 722.15 Department response. (1) GENERAL. The department may respond to the submission of a remedial action options report required by this chapter using one of the following methods:

(a) The department may, in writing, direct responsible parties to submit all of the reports required under this chapter and to proceed to implement the selected remedial action without department approval, review or acknowledgement.

(b) The department may, in writing, direct responsible parties that review and approval of a remedial action options report is necessary prior to proceeding to implement the selected remedial action pursuant to ch. NR 724. The department shall provide written acknowledgement of receipt of each report submitted pursuant to this chapter within 30 days. Department acknowledgement shall include an estimated date for completion of department review.

(2) **DEPARTMENT REVIEW.** In cases where the department is reviewing a remedial action options report under this chapter prior to the implementation of the selected remedial action, the department:

(a) May exercise discretion on a case-by-case basis and request additional information, require revisions, approve, conditionally approve or disapprove of the report.

(b) Shall provide a written explanation of the reasons for any disapproval to the responsible parties.

(c) May establish a schedule for the responsible parties to provide additional information and revisions to the department.

(d) May approve the remedial action options report only after ensuring that implementation of the selected remedial action will adequately protect human health, safety, and the environment. In making this determination, the department shall consider the following factors as appropriate:

1. The physical and chemical characteristics of each contaminant including its toxicity, persistence and potential for migration;

2. The hydrogeologic characteristics of the site or facility and the surrounding area;

3. The proximity, quality and current and future uses of nearby surface water and groundwater;

4. The potential effects of residual contamination on nearby surface water and groundwater;

5. All other relevant assessments prepared and submitted in compliance with the requirements of s. NR 722.11; and

6. All other relevant information contained in the remedial options report.

(3) **AUTHORIZATION TO PROCEED.** Unless otherwise directed, responsible parties shall proceed to implement the selected remedial action in accordance with the following requirements:

(a) At sites or facilities where the department approves or conditionally approves a remedial action report, the responsible parties shall initiate the design and construction of the selected remedial action within 90 days after department approval or conditional approval.

(b) At sites or facilities that meet the simple site criteria referenced in s. NR 700.09 (1), responsible parties shall initiate the design and construction of the selected remedial action within 90 days after completing the evaluation and selection of remedial action options in accordance with ss. NR 722.07 and 722.09.

History: Cr. Register, April, 1995, No. 472, eff. 5-1-95.

The first part of the document discusses the importance of maintaining accurate records. It highlights the need for regular updates and the potential consequences of neglecting this task. The text emphasizes that proper record-keeping is essential for ensuring the integrity and reliability of the data collected.

In the second section, the author explores various methods used to collect and analyze data. This includes a detailed description of the experimental procedures followed, as well as the statistical techniques employed to interpret the results. The goal is to provide a clear and concise overview of the methodology used in the study.

The third part of the document presents the findings of the study. It includes a series of tables and graphs that illustrate the key results. The author discusses the implications of these findings and how they relate to the overall objectives of the research. This section is crucial for understanding the significance of the work.

Finally, the document concludes with a summary of the main points and a discussion of the limitations of the study. The author acknowledges the challenges faced during the research process and offers suggestions for future work. This concluding section provides a comprehensive overview of the entire project and its contribution to the field.

The second part of the document focuses on the theoretical aspects of the research. It provides a background on the current state of knowledge in the field and identifies the specific gaps that the study aims to address. This section is important for contextualizing the research and showing its relevance to the broader scientific community.

The third section of the document describes the experimental setup and the data collection process. It details the equipment used, the procedures followed, and the steps taken to ensure the accuracy and consistency of the data. This section is essential for replicating the study and verifying the results.

The fourth part of the document presents the results of the data analysis. It includes a series of plots and tables that show the relationship between the variables being studied. The author discusses the trends observed and the statistical significance of the findings. This section is critical for interpreting the data and drawing meaningful conclusions.

The final section of the document discusses the implications of the research and its potential applications. It explores how the findings can be used to inform policy decisions and advance the field. The author also discusses the limitations of the study and suggests areas for further research. This section provides a forward-looking perspective on the work.

