

Guidance for Review of NR 140 Requirements at Landfill Expansions



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Description: This guidance interprets how ch. NR 140, Wis. Adm. Code, applies to proposed landfill expansions where the existing landfill has caused exceedances of groundwater standards.

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Expansions of existing landfills frequently present problems implementing NR 140. Impacts from an older landfill may often be difficult to separate from an expansion, especially if the expansion is contiguous. Often there are groundwater impacts from the existing landfill due to an inadequate design, therefore, it may be necessary to upgrade or remediate the existing landfill in order to approve the proposed expansion.

The department may not approve a proposed landfill expansion in an area where an NR 140 groundwater standard has been attained or exceeded unless an exemption under s. NR 140.28, Wis. Adm. Code, has been granted. In order to grant an exemption, the criteria in s. NR 140.28 (2), (3), or (4), Wis. Adm. Code, must be met. To meet the exemption criteria when groundwater contamination has been caused by an existing landfill, we also consider it necessary for one of the following to be met:

1. The proposed monitoring system should be capable of separating impacts between the existing landfill and the proposed expansion or;
2. The proposed design of the expansion coupled with any remedial actions taken at the existing landfill should prevent or contain the further release of those substances with NR 140 exceedances from the existing landfill.

When a groundwater standard is attained or exceeded at any groundwater monitoring well the owner or operator of the existing facility is required to respond in accordance with s. NR 508.04, Wis. Adm. Code. The responses include:

1. Notify the department in accordance with s. NR 507.30, Wis. Adm. Code.
2. Respond in accordance with s. NR 140.24 or 140.26, Wis. Adm. Code.
3. If required by the department, develop a site investigation workplan and site investigation report in accordance with ch. NR 716, Wis. Adm. Code.
4. If required by the department, evaluate and select remedial action option(s) and develop a remedial action option(s) report in accordance with ch. NR 722, Wis. Adm. Code. Evaluate any soil contamination in accordance with ch. NR 720, Wis. Adm. Code.

The remainder of this guidance outlines how the remedial action response(s) should be coordinated with the landfill siting process for proposed expansions of landfills that have caused exceedances of a NR 140 groundwater standard.

1. The applicant submits a report which assesses the cause and significance of the groundwater standard exceedance(s) based on consideration of the factors identified in s. NR 140.24(1)(c), Wis. Adm. Code, and proposes remedial action(s) at the existing site prior to the department making a feasibility determination. If this information is not adequate to show that an exemption under s. NR 140.28, Wis. Adm. Code is justified, the department cannot make a feasibility determination.
2. The remedial action is approved to achieve compliance with groundwater standards in ch. NR 140, Wis. Adm. Code.
 - a. For sites where impacts can be separated, our goal would be to approve the remedial action(s) prior to licensing the new facility.
 - b. For sites where impacts cannot be separated, such as contiguous expansions, the remedial action(s) should be approved prior to granting the feasibility determination. (The department should require remedial action(s) to be in-place prior to accepting waste at the new facility.)
3. The proposed landfill expansion is designed to achieve the lowest possible concentration of the elevated substances that is technically and economically feasible. The extent of engineering and monitoring required will vary depending on several factors, such as:
 - a. Waste type;
 - b. Hydrogeologic conditions;
 - c. Whether there are private wells downgradient;
 - d. Whether enforcement standards or preventive action limits are exceeded for public health or public welfare parameters and how many wells have exceedances;
 - e. Whether the proposed landfill is downgradient or upgradient of the existing landfill.
4. In general, the following engineering or monitoring conditions will be required:
 - a. An adequate distance between the two landfills will be encouraged to allow separate monitoring of any impacts.
 - b. If the proposed site is upgradient and not contiguous, monitoring to distinguish impacts from the two sites will be required.
 - c. If the proposed site is downgradient of the existing site, a double liner, groundwater gradient control or other means may be necessary to insure the lowest possible release of contaminants from the new facility. (This is true for both contiguous and noncontiguous expansions.) Site design and monitoring will be more restrictive in this case than if the proposed site were upgradient because of the difficulty in monitoring the performance of the proposed landfill.
 - d. Where the existing and proposed landfill will be contiguous, the site design and remedial action must prevent or contain any additional release of those substances exceeding NR 140 standards from the existing landfill.

To assure compliance with ch. NR 140, Wis. Adm. Code, it is crucial that each hydrogeologist investigate NR 140 exceedances at existing landfills which plan to expand early in the process and preferably before a feasibility report is submitted for the expansion. If the NR 140 response process starts at the same time or before the feasibility completeness review, the department's goal of receiving an NR 140 report (site investigation report) and approving remedial action(s) before the expansion takes place is much more likely to be met.

The attached parallel time lines illustrate how the department would hope the two processes would progress.

Note: It is important that the department keep the NR 140 response process separate from the feasibility/plan of operation review process to make it clear that the remedial action(s) is the responsibility of the facility, even after the long-term care period. If, instead, the remedial action is required as a condition of a department determination or plan of operation approval, it might be argued that the department becomes responsible for maintenance of the remedial action following the long-term care period.

PARALLEL TIME LINES

NR 140 Response Process

Facility owner: Notifies the department of groundwater standard exceedances in accordance with s. NR 507.30, Wis. Adm. Code. The notification must include a preliminary assessment of the cause and significance of the concentration in accordance with s. NR 140.24(1)(a) or 140.26(1)(a), Wis. Adm. Code.

DNR: Reviews the preliminary assessment of cause and significance of exceedances and effectiveness of the existing landfill's design and operation. If further information is needed, the department may require the owner to submit a site investigation workplan and a site investigation report under ss. NR 716.05 to 716.11 and 716.15 to 716.17, Wis. Adm. Code..

Facility owner: Submits site investigation workplan.

DNR: Sends letter approving workplan.

Facility: Submits site investigation report and proposed remedial action.

DNR: Sends letter approving remedial action.

Facility owner: Submits design for selected remedial action.

DNR: Approves remedial action design.

Landfill Approval Process

Facility owner: Submits an initial site report (ISR) for the proposed landfill expansion. The ISR must include (among other things) a thorough discussion of land uses, which may impact site suitability or groundwater quality. (see s. NR 509.06, Wis. Adm. Code) This should include a discussion of the cause and significance of any known groundwater standard exceedances and the effectiveness of the existing landfill's design and operation.

DNR: Reviews the ISR and sends an opinion on the potential of the proposed site for use as a landfill. The ISR opinion letter includes review comments that reference the need for any site investigation workplan or report at the existing landfill. Generally, the department would require that the workplan or report be submitted prior to or in conjunction with the feasibility report for the expansion.

Facility owner: Submits feasibility report. The feasibility report must address all department review comments on the ISR and include an exemption request under ss. NR 140.28 and NR 507.29, Wis. Adm. Code. (see ss. NR 512.05 and NR 512.13(4), Wis. Adm. Code)

Facility: Submits feasibility addendum if requested.

DNR: Sends feasibility determination, which includes exemptions to the groundwater standards under s. NR 140.28, Wis. Adm. Code.

Facility owner: Submits plan of operation.

DNR: Sends plan of operation approval.

PARALLEL TIME LINES

NR 140 Response Process

Facility: Implements remedial action and submits construction documentation.

DNR Approves remedial action construction documentation and sets up long-term monitoring of remedy.

Landfill Approval Process

Facility owner: Constructs expansion area and submits construction documentation.

DNR: Approves construction documentation.

DNR: Issues license.

Contact 608/266-2111 or DNRWasteMaterials@Wisconsin.gov for further information.

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