

# Improve Your Closure Request: Maintenance Plans & Maps

RR-983

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NOTE: This article was originally released in the Remediation and Redevelopment program newsletter, ReNews, in June, 2009.

There are several ways to improve closure requests and increase your chances for an earlier approval. Program staff have identified two general areas as problematic – maps and maintenance plans – and have offered suggestions for improving the quality of these submittals. A revised maintenance plan template can be found in our publication called "[Maintenance Plan Template for a Straightforward Site \(RR-980\)](#)".

## Maintenance Plans

Maintenance plans are required whenever an engineering control feature is needed to mitigate risks from contamination that will remain after case closure; be it soil, vapors or groundwater. The feature requiring maintenance may be an engineered soil cap, an asphalt parking lot, a building, a floor or a venting system. Maintenance plan details will vary, depending on contaminant types and concentrations, design of engineering control features, and anticipated site use.

A good maintenance plan will include the following:

- a. *A brief description of the type, concentration, and extent of contamination* – including a general description of the type of contamination, the level of contamination, and the location of the contamination, including depth, in relation to the feature for which maintenance is required. Reference a map for more site-specific details.

For example: "Soil contaminated by perchloroethylene, a common drycleaning compound, is located at a depth of 2 to 12 feet in the area behind the loading dock, and in the groundwater in the northeastern quarter of the property. The extent of this soil and groundwater contamination, and the extent of the capped area which needs to be maintained to prevent direct contact with the contaminated soil are identified on the attached map. See fig. xy."

- b. *An accurate map*, so that the current property owner, any future property owner, or a staff person conducting an audit, can easily identify at the property what feature needs to be maintained, where that feature is located, and the extent of the feature. Identify the extent of contamination on the map as well. In some cases, a diagram may be needed in addition to a map, for example, a floor must be maintained to limit vapor migration.

If a cover (cap or barrier) is required, the actual cover should extend laterally beyond the area of the residual soil contamination. Identify both the horizontal extent of the cover, and the extent of soil contamination on the map, with reference to on-site features. How to determine the appropriate horizontal extent of a cover is discussed in the "[Guidance for Cover Systems as Soil Performance Standard Remedies \(RR-709\)](#)."

- c. *Final construction specifications of any engineering control feature*, such as a cover, cap or barrier or a vapor mitigation system. Photographs can be very helpful for identifying specific locations subject to inspection or maintenance.



- d. *the following provisions, as appropriate to the site*, if a vapor mitigation system is required to minimize exposure:
- *an explanation of the required maintenance of the fan/blower/venting system* – Provide detailed drawings of the system, including electrical connections, and manufacturers' specification sheets for the fan/blower. Labeled photographs may also be very useful.
  - *a clear description of how to verify that an active system is operating properly, and the frequency of monitoring and record keeping* to document proper operation.
  - *maintenance of the floor as a barrier to vapor intrusion*, especially when vapor concentrations below the floor pose a risk.
  - *reassessment of the potential for vapor intrusion if the use of the space changes, or if the air exchange changes* (especially reductions in space).
- e. A provision for *maintaining an inspection log on site*. The closure letter will identify whether the inspection log needs to be submitted to the DNR as well, and at what frequency. The inspection log is DNR [Form 4400-305](#).
- f. A statement that *the following activities are prohibited*, in cases where pavement, a building foundation, a soil cover or an engineered cap or other barrier is used, or a vapor mitigation system is required:
- removal of the existing barrier,
  - replacement with another barrier,
  - excavating or grading of the land surface,
  - filling on capped or paved areas,
  - plowing for agricultural cultivation,
  - construction or placement of a building or other structure,
  - (for commercial or industrial use properties) changing the use or occupancy of the property to a residential exposure setting, which may include certain uses, such as single or multiple family residences, a school, day care, senior center, hospital or similar residential exposure settings, or
  - (for multi-family residential use properties) changing the use or occupancy of the property to a single-family residential use,
  - (for properties with a vapor mitigation system) changing the construction of a building that has a vapor mitigation system in place.

Clarify that the DNR needs to be notified BEFORE any prohibited action takes place which would disturb a maintenance feature, if some work needs to be done. NR 727.13 also requires that the DNR be notified at least 45 days before an action is taken. **Note:** In some cases, the closure approval letter requires written approval from the DNR before the action is conducted.

- g. A statement that identifies where more site-specific information may be found:
- the case file in the regional office,
  - [BRRTS on the Web](#) (the DNR's web based tracking system for sites), which includes a link to the GIS Registry PDF for further information on the nature and extent of contamination.
  - Site locations are shown on the GIS Registry layer in the [RR Sites Mapping Application](#), with links to BRRTS on the Web for site-specific information.
- h. Identify a DNR point of contact for questions on specific actions.

## Maps

As students, many of us were given helpful mapmaking hints, such as "If it doesn't have a north arrow and a scale, it isn't a map." Below are a few additional tips to follow when submitting maps with your closure request.

- a. Make sure the scales on all maps are accurate, and make sure all features are to scale. Careless photocopying of a map may result in a skewed scale, rendering the map inaccurate and useless for many purposes.
- b. Avoid using hand-drawn features on photocopied maps.
- c. Point the north arrow to the top of the map. This makes comparison of maps much easier.
- d. Maps should not end at the property boundary – they need to include the entire extent of contamination, and all information necessary to understanding the context of the site. If the site covers a relatively small area on a large property – e.g. a half-acre area of soil contamination on a 40-acre property – include a separate map, or an inset drawing on the site location map, that clearly identifies the location of the site on the property.
- e. Maps need to have the following details in order to comply with NR 700 rules (sec. NR 716.15).
  - A site location map must contain:
    - a base map of USGS topographical or plat map;
    - boundaries of all affected properties; and
    - municipal and potable well locations within 1200' of the site.
    - A detailed site map must contain:
      - buildings on all affected properties;
      - roads;
      - property boundaries of all affected properties;
      - contaminant sources;
      - utility lines;
      - monitoring wells and potable wells; and
      - contaminated rights-of-way (street, highway, railroad).
    - The extent of contamination maps and/or isoconcentration maps must contain:
      - sample locations (wells or soil borings);
      - sample results per location;
      - sample collection date;
      - areal extent of contamination;
      - isoconcentration/s of samples exceeding applicable standards; and
      - flow direction for groundwater, with variation.
  - Submit separate isoconcentration maps for soil and groundwater.

Following these reminders may help you develop a more complete maintenance plan. If you have questions on what is acceptable for a specific site, [contact the Project Manager](#). Also, remember that maintenance plans must be included in Attachment D of the Case Closure request form (4400-202).

This document contains information about certain state statutes and administrative rules but does not necessarily include all of the details found in the statutes and rules. Readers should consult the actual language of the statutes and rules to answer specific questions.

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