



Maryland Department Of The Environment Voluntary Cleanup Program

Section Six Response Action Plan

The RAP contains a specific remedial approach and schedule for addressing environmental concerns at a property not eligible for a NFRD. The decision to conduct a RAP for a property can be made voluntarily by the participant early in the application process or by MDE at the time the property is accepted into the VCP.

It is the participant's responsibility to develop the RAP and comply with the public participation requirements. The role of MDE is to ensure that the plan is protective of human health and the environment, available for public review and comment, adequate to address the environmental concerns at the property, and properly implemented and completed to the satisfaction of the Department.

Once MDE verifies that a RAP has been successfully implemented and completed, a COC (see Section 7) will be issued to the participant stating that the plan has achieved the applicable cleanup criteria at the property.

6.1 NOTICE OF INTENT TO PROCEED

After an application has been approved for the VCP and the participant has been notified that a RAP must be developed, the participant must notify MDE in writing within 30 days whether the participant intends to proceed with or withdraw from the program. If the participant fails to provide the required notification within 30 days, the application will be considered withdrawn. See Section 1.7 for more information about the VCP withdrawal provisions.

6.2 RAP DEVELOPMENT ASSISTANCE

The proposed RAP must focus on constructing a remedial strategy that addresses all environmental concerns at the site, is protective of human health and the environment, ensures the health and safety of the workers implementing the plan, and has a clearly defined schedule for implementation and completion.

To assist with RAP development, participants may review previously approved RAPs for other VCP properties that may be relevant to the participant's site. MDE also recommends that participants meet with VCP staff early in the development process to get feedback on the RAP approach and discuss any questions. The VCP project manager can help participants with both of these activities.

6.3 RAP SUBMISSION AND REVIEW

At the time the proposed RAP is submitted to MDE, the 75-day review period will begin provided the following have also been completed:

- Publication of a notice of the proposed RAP, including the date and location of the public informational meeting, in a local newspaper of general circulation (see Section 6.4.1); and
- Posting at the eligible property a notice of intent to conduct a RAP at the property (see Section 6.4.2).

Please note that publication of the first newspaper notice and posting of the notice of intent to conduct a RAP at the property should be completed at the same time the proposed RAP is submitted to MDE.

On or before the end of the 75-day review period, MDE shall inform the participant in writing whether the RAP has been approved or rejected. If the proposed RAP is rejected, MDE shall state the modifications necessary to receive approval.

6.4 RAP PUBLIC PARTICIPATION REQUIREMENTS

MDE will receive written comments from the public for 30 days after publication of the first newspaper notice and placement of a notice on the property or five days after the public informational meeting, whichever is later.

MDE will hold a public informational meeting at the expense of the participant on the proposed response action plan within 40 days after publication of the first newspaper notice. MDE will attend the meeting and accept written public comments on the proposed plan for five days after the meeting, or 30 days after publication and posting of the public notice, whichever date is later.

The following sections describe the public participation requirements associated with the RAP process.

6.4.1 Newspaper Notice

The notice for the proposed RAP must be published once a week for two consecutive weeks in a daily or weekly newspaper of general circulation where the eligible property is located. Attachment 7 provides a template for the content of the notice.

All newspaper notices must be reviewed by MDE prior to publication. The participant must submit documentation confirming that the selected newspaper's circulation coverage area includes the property and vicinity as well as proofs of publication from the newspaper.

6.4.2 Property Sign

The participant shall post a notice of the proposed response action plan at the property. The participant must submit photographs, either digital or print, documenting that the sign is located in an area with high visibility and traffic volume. In addition, the participant must provide a close-up photograph showing the text of the sign. A template for the sign is provided in Attachment 7. The text of the posted notice must be reviewed by MDE prior to placing the sign on the property. The posted notice must:

- Be located in an area of the property with the greatest visibility and highest volume of traffic;
- Contain the same information as the newspaper notice;
- Be no smaller than six (6) feet wide by four (4) feet high; and

- Remain standing, and its printed message maintained in a legible condition, for the full 30-day public comment period.

6.4.3 Public Informational Meeting

MDE shall hold a public informational meeting on the proposed response action plan at the expense of the participant within 40 days after publication of the notice in a newspaper of general area circulation. During the public informational meeting, the participant should present the history of the property, the contamination determined to be present at the property, a description of the proposed response action plan, and future development plans for the property.

The participant is responsible for all costs associated with the meeting, which shall take place in a public building at a location and time that are readily accessible and convenient to the majority of citizens living near the property.

6.5 PROPOSED RAP PREPARATION

The proposed RAP must meet the requirements outlined in Section 7-508 of the Environment Article, Annotated Code of Maryland. It should be prepared in the following format and, at a minimum, must include the information described below.

MDE may request any additional information or provisions it determines necessary to achieve the cleanup criteria or protect public health or the environment as set forth in Section 7-508 of the Environment Article, Annotated Code of Maryland.

A. Site Overview: This section of the RAP must provide a brief description of the property and a summary of the site history. It should identify the specific areas of the site requiring remediation and provide a map clearly delineating each area. This section should summarize the proposed response actions, including the applicable future land use category (see Section 1.6.1), each proposed remedial technology, and each proposed land use control.

B. Additional Investigatory Information: Any post-Phase II investigatory work completed or proposed must be summarized in this section. This includes any additional monitoring or sampling data that may be collected after approval of the VCP application for the purpose of selecting the appropriate remedial actions. Types of additional information include further sampling for source or plume delineation or additional investigation completed as part of a remediation pilot study.

C. Exposure Assessment: Information presented in the exposure assessment should include:

- Current and future use as defined by the VCP land use definitions (see Section 1.6.1);
- All media of concern, including fate and transport assumptions and the rationale for excluding any medium;
- Potentially exposed populations, based on current and future use, including specific subpopulations such as children or the elderly;
- A discussion of all potential exposure pathways and complete exposure pathways (i.e., pathways for which a contaminant, receptor and contact are present), and the rationale used to determine whether an exposure pathway is complete; and

- Ecological receptors.

D. Cleanup Criteria: A proposed RAP must demonstrate achievement of the appropriate cleanup criteria selected by the participant and the protection of public health and the environment (see Section 4).

E. Selected Technologies and Land Use Controls: Discuss each land use control and selected technology that will be used to address contaminated media at the site:

- Provide the rationale for selecting the remedial technology and demonstrate the applicability and effectiveness of the selected technology in protecting public health and the environment;
- Clearly indicate any proposed deed restrictions, or land use controls to address a risk to public health or the environment or to meet the RAP objectives;
- Discuss the appropriateness of each selected technology based on site-specific conditions (e.g. geology, hydrogeology, type of contaminant, medium, area of concern);
- Demonstrate the applicability and effectiveness of the selected technologies to significantly reduce the toxicity, mobility, or volume of contamination at the site;
- Provide supporting documents such as design tests, pilot tests, case studies, and literature surveys;
- Discuss additional work that may be necessary to develop a remedial design (e.g. pump tests, or any other pilot tests which have not yet been conducted); and
- Propose post-remediation requirements if they are needed to achieve the remedial objectives and maintain the selected cleanup criteria (e.g. post-confirmatory samples, maintenance, long-term monitoring).

F. Evaluation Criteria for the Selected Technology: The RAP must establish evaluation criteria to define specific conditions that must be met for MDE to issue the COC. In addition, in certain cases, a RAP must propose criteria (e.g. action levels) that would trigger contingency measures if site conditions change or the approved response actions are not effective.

Criteria for COC (Project Completion): The RAP must establish project completion goals or objectives that must be achieved prior to issuance of the COC. These project completion goals must be based on the cleanup criteria (see Section 4) and may include other objectives or conditions, such as decreasing source area concentrations, steady-state plume conditions, or a change in receptors (e.g. municipal water extended to downgradient residences to replace domestic wells). In addition, the completion of fate and transport modeling after confirmatory sampling or a groundwater monitoring program may be required as one criterion for issuing the COC.

Criteria for Contingency Measures: In certain cases, the RAP must propose contingency measures that must be implemented if site conditions change or the proposed response actions are not effective. The RAP must specify criteria, such as specific action levels, that will trigger the contingency measures if contaminant concentrations increase or other conditions change. Initial contingency measures may include notifying MDE and collecting confirmatory samples. Based on site specific circumstances, further contingency measures may include preparing a RAP addendum to outline more frequent groundwater sampling, installation of additional monitoring wells or other site investigation, modeling, residential well sampling, or other active remediation options.

Action Levels: A RAP may include proposed action levels that will trigger contingency measures when exceeded. The action levels must be established to ensure that changing site conditions (e.g. increasing contaminant concentrations) do not pose a threat to potential on-site and off-site receptors. Since VCP authority does not extend to off-site issues, MDE encourages close cooperation between the applicant and the OCP or CHS Enforcement/Fund Lead Site Assessment Division.

As an example, for on-site receptors, a groundwater action level could be set based on vapor intrusion modeling to calculate the concentration of contaminants of concern that would pose an unacceptable health risk considering the site's future use scenario. The vapor intrusion modeling would provide a basis for establishing an on-site action level to trigger contingency measures if exceeded.

For off-site receptors (e.g. domestic wells), appropriate action levels would be MCLs at the downgradient monitoring wells and other values derived from fate and transport groundwater modeling. The appropriate action levels will be established in consultation with the CHS Enforcement/Fund Lead Site Assessment Division or the OCP.

Establishing Action Levels: MDE's remedial action standards have been set at a carcinogenic value of 1.0×10^{-5} and noncarcinogenic HQ value of 1. An exceedance of either of these remedial action standards represents an unacceptable risk to human health. Contingency plan trigger levels generally should be set for carcinogens between 1.0×10^{-6} and 1.0×10^{-5} and for noncarcinogens between a HQ of 0.1 and 1. The resulting action levels will then be below MDE's remedial action standards to account for the presence of multiple contaminants and to trigger appropriate contingency measures before site conditions reach unacceptable levels.

G. Proposed Response Actions: This section must include a plan for all work necessary to perform the proposed RAP, including long-term monitoring and maintenance of the site, if necessary. The following items must be considered during preparation of the work plan:

Reporting Requirements: The work plan must outline notification and reporting time frames for sampling and report submittal. All analytical reports and documentation generated as a result of an approved RAP must be submitted to MDE for review. This includes manifests for off-site disposal of contaminated solid or hazardous material.

Maintenance: A detailed maintenance plan is required to ensure that future conditions at the site do not compromise the integrity of any physical maintenance controls, which must be visually inspected on a periodic basis.

Excavations and Clean Fill: All excavated material must be disposed in accordance with applicable local, State and federal laws and regulations. The source of backfill material must be documented, and MDE may require laboratory analysis to certify its cleanliness.

Asbestos, Lead, Oil: Any demolition activities at the site must be performed in accordance with all applicable federal, State, and local regulations regarding asbestos containing material and lead based paint. To ensure compliance with asbestos regulations, State law requires notification of the Division of Asbestos Licensing & Enforcement of MDE at 410-537-3200 at least ten days

prior to beginning demolition. Please contact the Environmental Lead Division of MDE at 410-537-3825 regarding regulations concerning demolition activities and lead based paint. Please contact the OCP of MDE at 410-537-3442 for guidance on the proper abandonment and removal of storage tanks.

H. Permits, Notifications, and Contingencies: The participant must comply with all local, State, and federal laws and regulations by obtaining all necessary approvals and permits to conduct the activities pursuant to an approved RAP.

- An approved RAP does not negate or otherwise affect any other provision of law requiring a person to report a release or a threat of a release of a controlled hazardous substance on a site.
- MDE must be notified immediately of any previously undiscovered contamination, changes to the RAP schedule, previously undiscovered storage tanks and other oil-related issues, and citations from regulatory entities related to health and safety practices.
- The work plan must outline procedures for amending the RAP in the event of unexpected conditions such as encountering free product, buried tanks, or other issue not contemplated in the work plan.

I. Implementation Schedule: The RAP must provide a detailed schedule for all work necessary to perform the proposed action, including post-remediation requirements (e.g. long-term monitoring). The proposed plan must specify the dates and time frames for implementing and completing each phase of the work.

- For the project tasks in the proposed plan, the implementation schedule shall list the start-complete time frames in days from RAP approval (e.g. “30 days from RAP approval”). Upon RAP approval, the schedule should be finalized with actual anticipated dates for each phase of work.
- MDE encourages the use of Gantt charts and flow charts to present the implementation schedule and track the on-going project.
- During implementation of the RAP, MDE must be notified in writing of all requested changes to the schedule.

J. Administrative Requirements: This section of the RAP must include the following items (see Section 6.6 for details):

Written Agreement: A written agreement that if the RAP is approved, the participant agrees to comply with the provisions of the plan.

Zoning Certification: A certified statement that the eligible property meets all applicable zoning requirements.

Bond or other Security: A proposal to file a performance bond or other security with MDE within ten days after receiving approval of the RAP. The performance bond or other security amount will be determined by the participant and approved by MDE as necessary to secure and stabilize the property if the RAP is not completed.

necessary. That obligation exists until a COC is issued or, if the participant withdraws, until 16 months after the date of withdrawal. Please see Attachment 8 for the approved template for the performance bond.

Securing and stabilizing the property includes activities necessary to:

- Post appropriate warnings and notices about conditions on the property;
- Restrict access to contaminated portions of the property;
- Prevent exposure to contaminated soil, water or contaminants prior to continuing implementation of a RAP;
- Prevent dust or other movement of contaminated soil or contaminants off the property prior to continuing implementation of a RAP;
- Where applicable, abandon monitoring wells, dismantle and dispose of treatment systems, and backfill open excavations;
- Prevent and abate any other dangerous conditions prior to continuing implementation of a RAP; and
- Maintain the above-referenced measures in effective working order.

Before taking action to secure and stabilize the property, MDE will notify the participant at the participant's last known address on file with MDE that:

- Upon the participant's withdrawal, the site was not secured and stabilized to a level determined by MDE to be protective of public health and the environment, and state requirements for securing and stabilizing the property; or
- MDE has deemed the participant withdrawn, the reasons for that decision, and setting forth the requirements for securing and stabilizing the property; and if activities to secure and stabilize the property are not completed within ten days, the bond or other security will be forfeited to MDE to perform the necessary activities.

If the recipient anticipates being unable to file the performance bond or other security within ten days of approval of the RAP, a request for an extension must be filed with MDE. The performance bond or other security must be filed with MDE prior to the performance of any work under the approved RAP at the property.

Templates for the administrative requirements, including the written agreement, zoning certification, or performance bond, are also available online at <http://www.mde.state.md.us/> or by contacting the project manager at 410-537-3493.

6.6.4 Health & Safety Plan

A detailed Health and Safety Plan must be available prior to the implementation of an approved RAP. At a minimum, the plan should reference key regulations that may apply to project activities (i.e. applicable sections of the OSHA regulations, 29 CFR 1910 (General Industry – Hazardous Waste Site Operations, Excavations, Personal Protective Equipment, Respiratory Protection) and 29 CFR 1926 (Construction)). The Health and Safety Plan should include, but not limited to, the following:

- Appropriate PPE and monitoring devices that must be utilized by workers to ensure that all worker protection requirements are met, and the rationale for the PPE selected;
- Site control measures that will be maintained during RAP implementation to restrict access (e.g. security guards, warning fences);
- Dust abatement or suppression methods; and
- Compliance by all on-site workers with OSHA guidelines for managing contaminated material regardless of their characterization as hazardous or non-hazardous. The remedial contractor must possess the necessary certification for the transportation of any controlled hazardous substance.

6.7 RESPONSE ACTION PLAN REVIEW AND APPROVAL

At or before the end of the 75-day review period, and after public notice requirements have been satisfied and any public comments received for the property have been considered, MDE will notify the participant in writing whether the RAP has been approved or rejected.

If RAP modifications are necessary, the participant may resubmit the plan within 120 days after receipt of notification by MDE. If the participant fails to resubmit the plan within 120 days, MDE shall consider the application withdrawn in accordance with Section 7-512 of the Environment Article.

Within 30 days following receipt of a resubmitted plan, MDE will notify the participant whether the plan is approved. Upon approval, MDE will notify the participant in writing that no further action will be required to accomplish the objectives set forth in the approved plan other than those actions described in the plan.