

**REMEDIAL ACTION [REMOVAL ACTION]  
REPORT  
ANNOTATED OUTLINE  
CONTENTS**

ACRONYMS ..... 12-2

EXECUTIVE SUMMARY ..... 12-3

1. INTRODUCTION..... 12-3

2. SITE DESCRIPTION..... 12-3

3. PROJECT DESCRIPTION ..... 12-4

4. REMEDIATION ACTIVITIES ..... 12-4

5. WASTE MANAGEMENT AND TRANSPORTATION ACTIVITIES ..... 12-5

6. PROJECT ORGANIZATION, COST, AND SCHEDULE ..... 12-5

7. OPERATION AND MAINTENANCE PLANS (AS REQUIRED)..... 12-6

8. MONITORING PLANS (AS REQUIRED)..... 12-6

9. LAND USE CONTROLS (AS REQUIRED) ..... 12-7

10. REFERENCES ..... 12-7

## ACRONYMS

AM	Action Memorandum
ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Differences
LUC	land use control
LUCIP	Land Use Control Implementation Plan
O&M	operation and maintenance
PCCR	Phased Construction Completion Report
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan
RmAR	Removal Action Report
RmAWP	Removal Action Work Plan
ROD	Record of Decision
TDEC	Tennessee Department of Environment and Conservation

This annotated outline serves a guide for preparation of Remedial Action Reports (RARs) for the U.S. Department of Energy (DOE)–Oak Ridge Operations Environmental Management Program. It should be noted that, where only a single project is generated by a Record of Decision (ROD), a description of the activities in the project will be provided in an RAR. However, where multiple projects are generated by a ROD, a PCCR will be prepared for each such project up to the last project, which will be documented in an RAR.

This outline has not been approved by the U.S. Environmental Protection Agency (EPA) or the Tennessee Department of Environment and Conservation (TDEC) and may be modified to meet their needs.

The annotated outline also may be used as a guide in preparation of Removal Action Reports (RmARs), as indicated by notes in brackets [ ].

## **EXECUTIVE SUMMARY**

Include an executive summary in all RARs [RmARs]. The executive summary, written as a “stand-alone” element of the report, appears on a separate page in the front matter of the report, and should be printed on blue paper.

The executive summary should provide a complete yet concise synopsis of the report contents, including the total project cost, the project duration with the start and completion dates, and a brief description of relevant portions of the ROD [Action Memorandum (AM)] and approved work plans that guided the activities performed as part of the project.. Summarize any major deviations (e.g., technical field changes, cost variances, revised assumptions) from the ROD [AM] or approved work plans made during the project. Particular mention should be made of any additional benefits provided, cost savings, or risks abated during implementation. [For a removal action, specify the process for final remedy selection (i.e., final ROD).]

## **1. INTRODUCTION**

State the purpose, scope, and content of the RAR [RmAR]. Major purposes of this document are to describe the activities completed at the site, document the post-remediation conditions at the site, and summarize the results of field construction testing, monitoring, sampling, or other measurements. It is also appropriate in this chapter to provide a brief (one to two paragraph) introduction to the project, but any detailed discussion of scope and related issues for the project should be deferred to Chapter 3. The introduction should reference or cite the ROD [AM] and other pertinent documents.

## **2. SITE DESCRIPTION**

Summarize the operational history of the site and the releases of pollutants of concern. Include a summary of previous investigations, remedial actions, construction phases, or removal actions at the site. Provide one or more figures presenting the location of the site and the attributes of the remedy.

This chapter presents a brief description of the physical conditions of the site, including contaminants of concern being remediated under this action. Although brief, the site description is comprehensive enough that a reader unfamiliar with the action is able to understand the project setting

and the rationale for the project. The site description or introduction sections of the ROD [AM] contain brief summaries of the site information that may be adequate for this purpose.

### **3. PROJECT DESCRIPTION**

Provide a concise discussion of the project goals, performance objectives, and other requirements as delineated in the ROD [AM]. Additional major project goals, if any, listed in regulator-approved project design reports and work plans, should also be mentioned, but differentiated from those listed in the decision documents. Ideally, the project is defined by a measurable set of goals, and the achievement of these goals can be demonstrated by the description and summary of the work completed in Chapter 4, Remediation Activities, and Chapter 5, Waste Management and Transportation Activities.

Compliance with applicable or relevant and appropriate requirements (ARARs) (e.g., waste segregation, characterization, and management; protection of on-site wetlands; and prevention or regulation of releases to air or surface water) should be identified as a project goal. Reference a previous document where the project ARARs are listed. If an ARAR was not met, describe the circumstances and rationale for failure to comply, and whether a waiver was obtained/requested. In addition, if a project deviation resulted in field changes that obviated an ARAR, provide an explanation.

Summarize the project scope, and describe any alterations made to the scope as defined in the ROD [AM] or other post-ROD documents approved by the regulators. Specifically, identify any changes made to the design during implementation, and explain the rationale for these changes, including the risk abated (if any), the long-term environmental benefits realized, and the time or level of effort saved.

Note: Post-ROD changes to the selected remedy must be appropriately categorized by DOE and documented. For example, if a change is categorized as “significant” by DOE, a formal “Explanation of Significant Differences” (ESD) must be prepared to affirm that the revised remedy complies with the statutory requirements of CERCLA. The ESD is made available to the public and is placed in the Administrative Record file.

### **4. REMEDIATION ACTIVITIES**

In this chapter, briefly describe the following:

- what was encountered at the site (e.g., the appearance and condition of the site, the piping, structures, debris, and water levels present);
- remediation efforts, work activities, and start-up activities completed for the project;
- any unexpected findings during construction, monitoring, or sampling, and any deviations made from the work plan or scope of work prepared for the project;
- the post-construction or “as-built” appearance, status, and condition of the site;
- how the work completed actually achieved the particular goal or expectation;

- that the completion of the cleanup meets all the requirements on DOE Order 5400.5 and that the verification of cleanup/approval of this completion report will allow removal of posting under 5400.5
- results of verification/confirmation testing, including results of quality control or quality assurance, testing, calibration logs, monitoring data, and other supporting information generated during the project; and
- results of the final inspection and certification that the remedy is operational and functional.

As-built drawings including surveys of engineered controls should be appended to the report. Project information used to support critical decisions involving DOE and the regulators should also be appended.

At project completion, supporting project information (e.g., photographs, logbooks, field change orders, and disposal certificates) is routinely placed in a project file at the Document Management Center. In addition to the project file, DOE maintains a separate “post-decision document file” in conjunction with their Administrative Record that is accessible to the public. The supporting project information may also be submitted to the post-decision file as appropriate and referenced in the RAR [RmAR]. However, some of this information, such as waste disposal certificates may already be incorporated into other project files including post decision document files and need not be duplicated. The Oak Ridge Environmental Information System (OREIS) serves as the electronic data (e.g., verification data, surveys of engineered controls, etc.) repository for the post decision document file.

## **5. WASTE MANAGEMENT AND TRANSPORTATION ACTIVITIES**

In this chapter, present a summary of waste materials that were recovered, generated, stored, treated, or disposed of during the performance of the project. Describe waste characterization and segregation activities. For example, include description of types and amounts of wastes or contaminated media generated (e.g., Resource Conservation and Recovery Act, polychlorinated biphenyl, low-level waste, or media containing any waste types). Include a statement that waste management activities were conducted in accordance with ARARs and/or the waste management plan. Describe transportation activities that occurred during the project, including the quantities and disposition of materials removed from the site and transported elsewhere on the Oak Ridge Reservation or off-site, as well as the dates, method of shipment, and the storage and disposal locations. Include copies of supporting information, required for permanent retention in the post-decision file, as an appendix.

## **6. PROJECT ORGANIZATION, COST, AND SCHEDULE**

As appropriate, include a brief description (or organization chart) of the key organizations involved in the project.

Provide the final project cost. The final cost may be broken down into cost elements representing major schedule phases or project components (e.g., design, construction, and startup) if the cost elements are readily available from the cost reports. Present the cost variance between the final project cost and the corresponding cost estimate in the ROD [AM], if available. If the variance is significant (Feasibility Study cost estimates are expected to provide an accuracy of +50 percent to -30 percent), explain any major reasons for the variance.

Provide the final project schedule in a chart or table with the schedule broken down into major phases or components. Identify any important milestone completion dates established per the Federal Facility Agreement Appendix E. Identify and explain any significant deviations from the original schedule proposed in the project work plans.

## **7. OPERATION AND MAINTENANCE PLANS (AS REQUIRED)**

Generally, long-term operation and maintenance (O&M) plans for a project, if needed, are presented in the remedial action work plan (RAWP) [removal action work plan (RmAWP)]. However, the O&M plan often needs to be updated based on engineering and cost analysis of the “as-built” components and operating system, and lessons learned during startup. If significant updates are needed, or if development of the O&M plan was delayed until construction or startup was completed, then the project O&M plan should be presented in this report. This report then serves as the defining document for the long-term O&M for the project. The plan can be inserted into this chapter, or, if O&M requirements are extensive, it can be appended to the report. If the O&M plan was presented in the RAWP [RmAWP], but modifications to the plan are minor, identify the modifications to the plan in this chapter.

Include both a description of the cause of the updates or modifications and a brief discussion of any impacts on effectiveness or operating reliability of the system. If O&M protocols were established in the ROD [AM] compare these protocols against the O&M plan and either verify their consistency or explain any discrepancies.

## **8. MONITORING PLANS (AS REQUIRED)**

Generally, long-term monitoring plans for a project, if needed, are presented in the RAWP [RmAWP]. If, however, development of the monitoring plan was delayed until construction or startup was completed, and if development of the monitoring was not delegated to a separate umbrella (e.g., watershed) monitoring plan, then the project monitoring plan should be presented in this report. This report then serves as the defining document for the long-term monitoring for the project. The plan can be inserted into this chapter, or, if monitoring requirements are extensive, it can be appended to the report. The plan should provide information and recommendations to satisfy the 5-year (or less than 5-year) CERCLA monitoring and review requirements.

If the monitoring development was delegated to a separate umbrella monitoring plan, reference the umbrella plan in this chapter. If the monitoring plan was presented in the RAWP [RmAWP], but modifications to the plan are needed, identify the modifications to the plan and the cause of the modifications in this chapter. Summarize the impacts to monitoring of any unexpected occurrences or transients observed during startup or early operations (e.g., the recovery of free or nonaqueous phase product during groundwater recovery where none was expected). If monitoring protocols were established in the ROD [AM], compare these protocols against the monitoring plan and either verify their consistency or explain any discrepancies.

## **9. LAND USE CONTROLS (AS REQUIRED)**

Additional information is required for any site covered under an approved Land Use Control Implementation Plan (LUCIP). The LUCIP states that as individual remediation projects are undertaken, project-specific land use controls (LUCs), if any, will be identified in the PCCRs/RAR. Thus, the PCCRs/RAR for a site with an approved LUCIP must specifically contain a chapter that addresses LUCs for the project. If no project-specific LUCs are being proposed, then the text in this chapter should indicate that no additional LUCs, beyond those already established in the LUCIP, are being proposed for the project.

Note: This chapter may be combined with the previous monitoring chapter, if desired, and entitled “Land Use Controls and Monitoring Expectations”.

## **10. REFERENCES**

Include a list of references used to develop the RAR [RmAR] in the format shown here:

42 U.S.C. § 7401 et seq., Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986.

40 *CFR* Pt. 300, National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

U.S. Environmental Protection Agency (EPA) 1995. *Remedial Design/Remedial Action Handbook*, Publication 9355.0-4B, Washington, D.C.