



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

April 20, 2018

Mr. Brian T. Hennessey
SRS Remedial Project Manager
Infrastructure and Area Completion Division
U.S. Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802



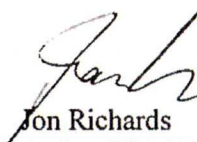
EPA Comments for the Fifth Five-Year Remedy Review Report for SRS Operable Units with Operating Equipment (U), [SRNS-RP-2017-00567], REV 0, DECEMBER 2017, Savannah River Site, Aiken, South Carolina

Dear Mr. Hennessey,

The U.S. Environmental Protection Agency, Region 4 (EPA), has reviewed the R0 Fifth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment. EPA comments are attached.

If you have any questions or require additional information, please contact me at (404) 562-8648.

Sincerely,


Jon Richards
Acting FFA RPM
Superfund Division

cc: C.L. Bergren, SRNS-ACP
Susan Fulmer, SCDHEC

I. GENERAL COMMENT

1. In Section VIII., Issues, Page 14 of 24 the text identifies the following issues associated with altering or shutting down the remedial activities:

- The passive system at A-Area Miscellaneous Rubble Pile (AMRP) OU has been successful in treating VOC contamination. Remedial goals (RGs) have likely been achieved and operation of the passive soil vapor extraction (SVE) system may no longer be needed.
- The D-Area Operable Unit (DAOU) Bubble Tower MicroBlower™ SVE has been successful in treating VOC contamination. Contaminant removal from the MicroBlower™ SVE system has greatly diminished or ceased since 2012.

However, consistent with USEPA Five Year Review guidance, issues that currently prevent the response action from being protective, or may do so in the future should be identified in this section. As such, the text in this section should clearly indicate the uncertainty regarding future protectiveness if the SVE remedial action(s) is shutdown for each OU. As noted in the recommendations/follow-up actions section additional characterization will be conducted to determine if RGs have been achieved for trichloroethylene (TCE) and tetrachloroethylene (PCE) in accordance with the *Sampling and Analysis Plan for the A-Area Miscellaneous Rubble Pile (731-6A) Operable Unit (U)* (SRNS 2015b). *Revise the of the Fifth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment (U), SRNS-RP-2017-00567, Revision 0; dated December 2017 (Fifth Five-Year Remedy Review Report) as well as the relevant sections of Appendix E and Appendix G.*

2. OUs captured in our CERCLA database indicate OU#30 is the A-Area Misc. Rubble Pile. However, Table 1 indicates OU# 30 should be the A/M Area Groundwater OU. It looks like Table 1 in the SYR is incorrect, see below:

- A-Area Miscellaneous Rubble Pile – SRS Index Number: 48; CERCLIS Number: 30
- M-Area Hazardous Waste Management Facility: A/M Area Groundwater Portion – SRS Index Number: 23; CERCLIS Number: 36

3. Going forward, EPA encourages DOE to use the 2016 FYR Template (MS Word Format is attached as *final_five_year_review_recommended_template_1.20.2016.doc*) when preparing the FYR report (especially for the 'Progress Since the Last Five-Year Review' Section). The 2016 FYR Template does not reduce the requirements of the FYR process, but it does streamline the FYR report format and improves the overall consistency for reports completed across all Regions. You may find additional information regarding the FYR Guidance Documents at the following website: <https://www.epa.gov/superfund/writing-five-year-reviews-superfund-sites>. You may find additional information regarding the tools for writing the FYR (including the 2016 FYR Template) at the following website: <https://www.epa.gov/superfund/writing-five-year-reviews-superfund-sites>. The Tables contained in the 2016 FYR Template contained required information that is needed for data entry into our CERCLA data base [SEMS]. [see attachment]

4. For some OUs, the description of required LUCs and discussion of how LUCs are being implemented and met is too sparse. For example, Page C-15 simply states that: "The Land Use Control Implementation Plan for the ABRP/MCB/MBP OU governs LUC

implementation, maintenance, monitoring, reporting, and enforcement of LUCs (WSRC2008). All LUC objectives are being met.”

- a. For all OUs w/ LUCs as a component of the selected remedy, please describe in the relevant Appendix evaluating the particular OU what the LUC objectives are (e.g., no disturbance of cap, prohibition of groundwater use, physical access controls, prohibition on residential use, etc.), how the LUC objectives are being implemented (e.g., pursuant to an OU-specific LUCIP), whether the LUC implementation document is in place, and whether the LUC objectives are being met (e.g., as observed during site inspection).
- b. See for e.g., EPA “*Comprehensive Five-Year Review Guidance*,” OSWER No. 9355.7-03B-P, June 2001, Sample Report, page F-25, which contains the following sample response to Question A: Is the remedy functioning as intended by the decision document. Sample Response, discussion pertaining to ICs: “*The institutional controls that are in place include prohibitions on the use or disturbance of groundwater until cleanup levels are achieved, and prohibitions on excavation activities, disturbance of the cap, and any other activities or actions that might interfere with the implemented remedy. No activities were observed that would have violated the institutional controls. The cap and the surrounding area were undisturbed, and no new uses of groundwater were observed. The fence around the site is intact and in good repair.*”

II. SPECIFIC COMMENTS

1. Section VI, Five-Year Remedy Review Process, Page 11 of 24:

Section VI states, “Published an announcement on September 14, 2017 that the USDOE is conducting the Fifth Five-Year Remedy Review in phases” as one of the actions already taken place as part of the Fifth Five-Year Remedy Review. However, Section VI does not state where the announcement was published. Revise Section VI to include the publication in which the announcement was published and provide a copy of the announcement as an appendix. Additionally, Section VI states, “After the USEPA and SCDHEC approve the report and USDOE, USEPA, and SCDHEC sign this report, a notice of its availability will be published in newspapers in Aiken, Columbia, Barnwell, and Allendale, South Carolina, and in Augusta, Georgia.” As such, *ensure the final draft of the Fifth Five-Year Remedy Review Report also includes the names of the newspapers in Aiken, Columbia, Barnwell, and Allendale, South Carolina, and Augusta, Georgia, in which the announcements will be published.*

2. Section IV, Remedial Actions, MCB/MBP Surface and Vadose Zone Soils, Page C-7 of C-48:

The second paragraph of subsection MCB/MBP Surface and Vadose Zone Soils states, “Figures C-4 through C-9 show the ABRP/MBP/MBP OU subunits during operations, prior to and after the final action.” However, the dates of the photographs are not provided on the Figures. *Revise Figures C-4 through C-9 to include the dates of when the photographs were taken. Additionally, for completeness ensure the photographs presented for other OUs includes the relative date the photograph was taken.*

1. Page ES-1, Executive Summary, third paragraph currently states that all “eleven remedies have been determined to be protective of human health and the environment.” Please revise to state that “ten remedies” have been determined “protective,” while one, specifically the A/M-Area Groundwater OU, has been determined to be “short-term protective.” As stated in the table on Page ES-4, “for the remedy to be protective in the long-term, optimization of the M-1 recovery system and/or other remediation technologies must be implemented to treat the high concentration part of the plume located outside of the recovery well zone of capture.”
2. Page 11, third bullet. Please indicate where the announcement of this FYR was published, i.e., in what newspaper, etc.
3. Page 11, last bullet. Currently the text reads: “Reviewed changes in standards and to-be-considered guidance that would call into question whether the prescribed remedy was meeting the newer standards or guidance.” Please revise to indicate that federal and state promulgated standards, i.e., chemical-specific ARARs were reviewed.
4. Page 12, last bullet. Please indicate to whom DOE “submitted an initial Fact Sheet for review.”
5. Page 12, First paragraph. Update text to include the date that EPA and SCDHEC participated in site inspections.
6. Page 13, Response to Question B. Currently the text reads: “An evaluation of changes in chemical and radiological standards that were in place when the last five-year remedy review was initiated in 2012 to the standards applicable in 2017 was conducted to determine if there were any changes that would affect the protectiveness of the selected remedies.” Please revise to indicate that federal and state promulgated standards, i.e., chemical-specific ARARs were reviewed.
7. Page 15, Section IX. The text currently reads: “SRS recommends shutdown of the AMRP passive SVE system if **RGs** for trichloroethylene and tetrachloroethylene have been achieved. Additional characterization of the ash layer and vadose zone soils will be conducted to verify that the **remedial goals** have been met. SRS recommends shutdown of the DAOU Bubble Tower MicroBlower™ SVE system due to the minimal removal of contaminants for the last four years. Confirmation soil samples will be collected to determine whether the PCE soil **RGs** have been met.” In the first sentence, please indicate whether you are referring to soil remedial goals. Also note that document sometimes uses “RG” and other times spells out “remedial goal” – please use one or the other consistently.
8. Page 15, Section X. The third paragraph currently reads: “LUCs are part of all final remedial actions where hazardous substances, pollutants, or contaminants remain on-site above levels that allow for unlimited use and unrestricted exposure. For the OUs evaluated in this report, pathways for contaminants to reach human and ecological receptors have been successfully broken by the selected remedies.” There is not sufficient information in this section to assess how LUCs have been implemented to prevent or limit human exposure. Please summarize what types of LUCs are in place and whether

LUCIPs have been prepared for each of the OUs being evaluated in this FYR. If the necessary LUCs are not in place for each of the OUs being evaluated, the protectiveness statement for the affected OU should be revised to “short-term protective.”

9. Page 22, Table 1. Remove empty row in table.
10. Table A-5, page A-19. The A-Area Misc Rubble Pile (AMRP) OU CERCLIS number is listed in Table A-5 as “30”; however, on page 21, Table 1, the AMRP OU CERCLIS number is listed as “36.” Please verify CERCLIS number and check FYR report to correct any inconsistent CERCLIS numbers throughout the document.
11. Appendix H, page H-4 states that “The remedial action objectives (RAOs) of the interim remedial action are to address the *potential ecological impacts at the seep lines* along Fourmile Branch and to address the ambient water quality standards in Fourmile Branch by remediating this OU (WSRC 1995).” The phased measures to reach the RAOs included: Phase 2B-1: Reduce the discharge from the F-Area plume of all Appendix IVB-A (SCDHEC 2017) constituents in the surface water at the seep line to concentrations less than the GWPS (except tritium and iodine-129); and • Phase 2B-2: Reduce the discharge from the F-Area plume of iodine-129 in the surface water at the seep line to a concentration less than the GWPS as measured at Wetland Seep line Surface Water Sampling Locations FAS-91, FAS-92, FAS-93, FAS-96, and FAS-103. It is not clear from the technical assessment what “phase” of remediation is underway. Also, the conclusion is that the remedy is “protective;” however, the technical assessment, e.g., table H-5 indicates many constituents sampled at the seep line are at levels well above the RCRA Corrective Action GWPS or MCLs. In addition, the text states, e.g., that mercury presents an identified ecological risk and is currently detected above cleanup standards. LUCs cannot prevent ecological exposure. *Thus, the protectiveness statement should be revised to “expected to be protective” upon implementation of additional actions and identify the necessary actions that are anticipated to achieve cleanup levels.*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 20 2016

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE
OLEM -9200.0-89

MEMORANDUM

SUBJECT: Transmittal of the Five-Year Review Recommended Template

FROM: James E. Woolford, Director 
Office of Superfund Remediation and Technology Innovation

TO: Superfund National Policy Managers, Regions 1 – 10

PURPOSE

The purpose of this memorandum is to transmit the Five-Year Review Recommended Template. The Five-Year Review Recommended Template amends Appendix E of the “*Comprehensive Five-Year Review Guidance*,” OSWER 9355.7-03B-P, June 2001.

The purpose of this guidance for the recommended template is to provide an approach for preparing Five-Year Review (FYR) reports in a manner that is intended to promote national consistency, to reduce non-essential information and to decrease repetitiveness in the report. With such an approach, the Office of Superfund Remediation and Technology Innovation (OSRTI) intends for the template to reduce the time and cost associated with both writing and reviewing FYR reports. Also, OSRTI expects the template’s application will increase the efficiency and consistency of FYR data entry into the Superfund Enterprise Management System (SEMS).

As stated in EPA’s *Comprehensive Five-Year Review Guidance* (OSWER Directive 9355.7-03B-P, June 2001) on page 1-1, “[t]he purpose of a five-year review is to evaluate the implementation and performance of a remedy in order to determine if the remedy is or will be protective of human health and the environment.” The 2001 guidance addresses the recommended process for conducting FYRs.

BACKGROUND

OSRTI began working on pilot projects with the Regional programs in 2011 to streamline the FYR report. The Superfund Remedial Program Review Action Plan from November 2013 reemphasized the need to “...provide a ‘streamlined’ FYR template for national use” to increase efficiency in site cleanup approaches. The goal of the FYR report streamlining pilots was to explore changes that can be made to the report to reduce non-essential information and repetitiveness, while remaining focused on the information and conclusions necessary to evaluate whether the remedy is or will be protective of human health and the environment. The results and conclusions of these pilots informed the development of the Five-Year Review Recommended Template.



IMPLEMENTATION

Beginning in fiscal year 2017, the Five-Year Review Recommended Template should be used for all FYRs in the Remedial Program. The Federal Facilities Restoration and Reuse Office is reviewing the template for potential application at Federal facility sites subject to EPA oversight. For FYRs in the Remedial Program completed during fiscal year 2016, the use of this template is optional at fund or private party sites and at the discretion of the region.

The Five-Year Review Recommended Template can be found in PDF and Microsoft Word format on the FYR webpage: <http://www.epa.gov/superfund/writing-five-year-reviews-superfund-sites>.

CONCLUSION

If you have any questions, please contact me or have your staff contact Jennifer Edwards of my staff at edwards.jennifer@epa.gov or (703) 603-8762.

Attachment

cc: OSRTI Managers
National Regional FYR Coordinators
Charlotte Bertrand, FFRRO
John Michaud, OGC
Kristin Giacalone, Superfund Lead Region Coordinator, US EPA Region 2
NARPM Co-Chairs
Jennifer Edwards, OSRTI
Cyndy Mackey, OSRE

FIVE-YEAR REVIEW RECOMMENDED TEMPLATE OLEM 9200.0-89

PURPOSE OF THIS RECOMMENDED TEMPLATE

The purpose of this guidance for the recommended template is to provide an approach for preparing Five-Year Review (FYR) reports in a manner that is intended to reduce non-essential information and repetitiveness in the report. This recommended approach is designed to:

- Reduce time & cost in writing the Five-Year Review
- Reduce time & cost in reviewing the Five-Year Review
- Increase efficiency and consistency of Five-Year Review data entry into the Superfund Enterprise Management System (SEMS)

As stated in EPA's *Comprehensive Five-Year Review Guidance* (OSWER Directive 9355.7-03B-P, June 2001) on page 1-1, "[t]he purpose of a five-year review is to evaluate the implementation and performance of a remedy in order to determine if the remedy is or will be protective of human health and the environment." The 2001 guidance addresses the recommended process for conducting FYRs.

RECOMMENDATIONS FOR USING THIS RECOMMENDED TEMPLATE

- Regions should consider this recommended template when carrying out Five-Year Reviews.
- Some sites subject to FYRs involve complex remedies and include multiple operable units (OUs). Suggestions have been made in this recommended template for when to consider organizing information by OU in order to simplify the documentation of the FYR. In addition, although an executive summary is not included in this recommended template, complex remedies and multiple OU sites may benefit from the inclusion of an executive summary to summarize site actions and orient the reader.
- This recommended template is meant to serve as a suggestion for the information necessary to document the results of the FYR. Additional information, including more detailed appendices may be included, as appropriate. The instructions throughout the document indicate where additional information may be warranted depending on site complexity.
- Please refer to the EPA Communications Stylebook, EPA Correspondence manual, or other EPA style guide (as appropriate) as you are writing this five-year review for information on grammar, punctuation, spelling, vocabulary, syntax, usage and more.
- Text that is highlighted *yellow and italicized* in this recommended template provides general instructions for the user to follow when filling out that particular section. This highlighted text (and box that contains the highlighted text if applicable) should also be **deleted** after following the instructions and should not be included in the final FYR report.

- Text that is highlighted blue in this recommended template should be **replaced** directly with the relevant site-specific information provided (e.g., name of local newspaper asks the FYR author to insert the name of the local newspaper for the town/county in which the site is located).
- Normal text (i.e. not highlighted or italicized) generally should be retained as language that is typically appropriate for the FYR report.
- For fields that look like this, [Click here to enter a date.](#), please select a date by clicking the field and then clicking the down arrow to open up a calendar.
- For fields that look like this, [Choose an item.](#), select an item from the drop down list.
 - *Note: The information included in the drop-down menus matches information that is used in the FYR module in SEMS; this drop-down menu is meant to ease data entry and help ensure consistency.*
- Please refer to & consider EPA's existing Five-Year Review Guidance, as well as specific supplemental guidance as listed below:
 - "Comprehensive Five-Year Review Guidance" (June 2001)
 - "Assessing Protectiveness at Sites for Vapor Intrusion: Supplement to the 'Comprehensive Five-Year Review Guidance'" (November 2012)
 - "Clarifying the Use of Protectiveness Determinations for CERCLA Five-Year Reviews" (September 2012)
 - "Recommended Evaluation of Institutional Controls: Supplement to the 'Comprehensive Five-Year Review Guidance'" (September 2011)
 - "Assessing Protectiveness for Asbestos Sites: Supplemental Guidance to the Comprehensive Five-Year Review Guidance" (December 2009)
 - "Five-Year Reviews, Frequently Asked Questions (FAQs) and Answers" (September 2009)
 - "Five-Year Review Addendum Sample" (December 2008)

**[INSERT NUMBER OF FYR "FIRST" "SECOND" "ETC..."] FIVE-YEAR REVIEW REPORT FOR
[SITE NAME] SUPERFUND SITE
[SITE COUNTY], [SITE STATE]**



Prepared by

**U.S. Environmental Protection Agency
Region [INSERT REGION #]
[REGION CITY], [REGION STATE]**

First and Last Name, Division Director

Date

[Page intentionally left blank.]

The following Table of Contents shows typical major divisions and subheadings for Five-Year Review reports. Subheadings may be included as needed.

- **Note:** If you choose to work from this document & keep the headings the same, the table of contents & page numbers have already been formatted. As a result, you may simply click on the Table of Contents & then click "Update Table" to update the page numbers in the Table of Contents for your FYR.
- If you decide to include optional appendices, please make sure to incorporate them in this Table of Contents as well.

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LIST OF ABBREVIATIONS & ACRONYMS

For readability, this list normally should include only the most important abbreviations & acronyms that are addressed in this five-year review.

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
FYR	Five-Year Review
ICs	Institutional Controls
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PRP	Potentially Responsible Party
RAO	Remedial Action Objectives
ROD	Record of Decision
RPM	Remedial Project Manager
TBC	To be considered

Insert any other acronyms/abbreviations used in the document

I. INTRODUCTION

This recommended template does not include an executive summary because an introduction in a complete, concise five-year review typically should provide a complete overview of the site. However, for more complex sites with multiple operable units (OUs), it may be appropriate to include an executive summary.

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the **number** FYR for the **Site name** Superfund Site. The triggering action for this **statutory or policy or discretionary** or list the type of review by OU if different triggering actions apply review is the on-site construction start date of the OU # remedial action *OR* signature date of the Preliminary Close-Out Report *OR* completion date of the previous FYR *OR* other. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

If there are more than five (5) OUs that will be covered in this FYR, consider using a table to list them.

The Site consists of # of all OUs at the site, and # of OUs reviewed in this FYR will be addressed in this FYR. OUX addresses what OUX addresses (e.g. "the groundwater remedy"). List what other OUs address in this FYR, if applicable. *[Include the following sentence if there are OUs not addressed in this FYR.]* The X OUs that are not addressed in this FYR are list OUs and reasons that these OUs are not included in this FYR (such as "X OU doesn't have a ROD").

The Site name Superfund Site Five-Year Review was led by lead author & affiliation. Participants included list all participant affiliations & areas of expertise and/or names (as appropriate) such as the hydrologist, community involvement coordinator, state agency representative, contract/IA support, etc... *Include the following sentence for enforcement lead sites:* [The relevant entities such as the PRP were/was notified of the initiation of the five-year review.] The review began on [Click here to enter a date.](#)

Site Background

- *Normally, 2 paragraphs of background information about the site should provide an adequate description for most sites*
 - *This information may be taken directly from decision documents*
- *Below is a list of suggested background topics to include:*
 - *Location of site (i.e. populated or unpopulated areas) and brief physical description*
 - *Former, current, and reasonably anticipated future land use of site and of areas surrounding the site (including historical practices resulting in contamination)*
- *If more background information is appropriate, either include an optional appendix with more detailed information, reference a document (and include the document in Appendix A – Reference List) and/or list a website in this section where that information is available.*
 - *Note: Website links can change, sometimes resulting in a broken link. As a result, if a website is listed also try to provide a document title that cites background information & reference this document in Appendix A – Reference List.*

SAMPLE FIVE-YEAR REVIEW SUMMARY FORM

Note: The "Review period" referenced below is meant to correspond to the start and end dates associated with the preparation of this FYR report.

SITE IDENTIFICATION		
Site Name:		
EPA ID:		
Region: Choose a Region #	State: Enter state abbreviation	City/County: Enter City/County
SITE STATUS		
NPL Status: Choose an item		
Multiple OUs? Choose an item	Has the site achieved construction completion? Choose an item	
REVIEW STATUS		
Lead agency: Choose an item <i>[If "Other Federal Agency", enter Agency name]:</i>		
Author name (Federal or State Project Manager):		
Author affiliation:		
Review period: Click here to enter a date - Click here to enter a date		
Date of site inspection: Click here to enter a date		
Type of review: Choose an item		
Review number: Choose an item		
Triggering action date: Click here to enter a date		
Due date (five years after triggering action date): Click here to enter a date		

II. RESPONSE ACTION SUMMARY

This recommended template includes headings for the Response Action Summary section, however a narrative format for this section (without headings) can also be used.

Basis for Taking Action

- List out the contaminants and/or contaminants of concern (COCs) by media type.
- Discuss resources/receptors that have been or could potentially be affected, as well as primary human and/or ecological health threat and exposure pathways.

Response Actions

- Briefly summarize pre-ROD activities such as CERCLA removal actions, non-CERCLA removals/responses, and any related documents (such as enforcement orders or agreements) and parties involved in these activities; check with the enforcement program to ensure appropriate language.
- A bulleted list to briefly address the following items generally may be sufficient. You are encouraged to pull this information directly from site decision documents to maintain consistency. The items included may be broken down by decision document or OU as appropriate:
 - **RAOs for the remedy selected in the ROD or amended ROD¹**
 - **Remedy components selected in the ROD or amended ROD²**
 - Include engineering controls, access controls, ICs, and required monitoring, broken down by each OU or decision document.
 - **Remedy components that have been modified in an ESD³**
 - Include engineering controls, access controls, ICs, and required monitoring, broken down by each OU or decision document.
 - Include a table of cleanup levels selected in the ROD or amended ROD.

Status of Implementation

- The following information can be presented either chronologically or by OU:
 - Briefly discuss the status of any response action or remedial action including whether remedial actions are complete or ongoing.
 - If ICs are part of the selected remedy consider including a subheading for ICs as well as using the table below to represent implementation status.
- A 'big picture' status of the implementation normally should be included (e.g., 'A berm was installed to improve surface drainage on January 4, 2014').
- A step by step report of the implementation normally is not necessary (e.g., 'We installed monitoring well #1 on March 5, 2012').

IC Summary Table *(Optional – Include if ICs have been selected in a ROD or amended ROD, or modified in an ESD⁴)*

Table X: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Media (e.g., groundwater, soils, sediments)	Choose an item	Choose an item	Parcel # or other identifying information	Use restriction or notice provided by the IC (e.g. restrict installation of ground water wells and ground water use).	Instrument title (e.g. Declaration of Restrictive Covenants, June 2003)

¹ Please refer to "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents." USEPA. July 1999.

² Please refer to "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents." USEPA. July 1999.

³ Please refer to "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents." USEPA. July 1999.

⁴ Please refer to "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents." USEPA. July 1999. Also please refer to "Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites (PIME)." USEPA. December 2012; and "Recommended Evaluation of Institutional Controls: Supplement to the 'Comprehensive Five-Year Review Guidance'" USEPA (September 2011).

Systems Operations/Operation & Maintenance (Optional – Include if Appropriate)

- This information may be presented either chronologically or by OU, and should include:
 - A brief description of any modifications to the O&M plan requirements since the last FYR, including changes related to the party conducting the activities
 - A summary of any completed or ongoing O&M activities since the last FYR
 - Problems in the implementation of system operations/O&M, if applicable

III. PROGRESS SINCE THE LAST REVIEW

- The EXACT protectiveness statement and issues/recommendations from the last FYR normally should be used by copying & pasting from the last FYR or going into SEMS

This section includes the protectiveness determinations and statements from the **last** five-year review as well as the recommendations from the **last** five-year review and the current status of those recommendations.

Table X: Protectiveness Determinations/Statements from the 20xx FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Choose an item	
2	Choose an item	
Sitewide	Choose an item	

If there were no issues & recommendations in the last FYR, please state that here; in this case, the table below should be deleted and not used in this report.

Table X: Status of Recommendations from the 20xx FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description*	Completion Date (if applicable)
			Choose an item		Click here to enter a date
			Choose an item		Click here to enter a date

*If further explanation is needed than can be reasonably formatted in the above table, please write the current implementation status below for the applicable recommendation.

Recommendation # (Optional – Include if Appropriate)

- Discuss the implementation status of the first recommendation listed in the “Status of Recommendations from the 20XX FYR” table above

Recommendation # (Optional – Include if Appropriate)

- Discuss the implementation status of the second recommendation listed in the “Status of Recommendations from the 20XX FYR” table above

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

- *At the discretion of the RPM & CIC or other lead site contacts, the Community Involvement Plan (CIP) should be used to help tailor the need for and type of community involvement activities at a site for the FYR process, including notification and interviews*
 - **Note for Interviews:** *The Five-Year Review Guidance discusses potential involvement of interested parties in FYR interviews, which may include the site manager; site personnel; Federal, State, and Tribal regulatory authorities; local officials; community action groups or associations; residents and businesses located near the site; and other pertinent organizations or individuals.*

A public notice was made available by state how the public notice was made available (e.g. by a newspaper posting, press release, flyers door-to-door, e-mail notifications, telephone calls, mailing notices to homes, etc...) and the title of the published notice **if applicable** (e.g., local newspaper name, press release form, etc), on [Click here to enter a date](#), stating that there was a five-year review and inviting the public to submit any comments to the U.S. EPA. The results of the review and the report will be made available at the Site information repository located at [name of repository](#), [physical or electronic address of repository](#).

The Text in this Box is Optional –

- *If interviews **were** conducted – the following section may be included*
- *If interviews **were not** conducted – the following section may not need to be included. If it is not included, consider providing information as to why interviews were not conducted (the CIP may be used to support the decision to not conduct interviews).*
- **Reminder:** *Delete box when yellow highlighted text is deleted.*

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The results of these interviews are summarized below.

Include a brief summary (roughly two paragraphs) of the interview results here. Please keep in mind the following:

- *Unless you have received permission from interviewees that it is OK to include their name and any other information in the five-year review, you should not include this information.*
- *Information that may be relevant to the protectiveness determination(s) generally includes:*
 - *Successes/problems in the implementation of access and ICs*
 - *Successes/problems with the construction of the remedy and/or O&M*
 - *Unusual situations or problems at the site*

Data Review

- *All of the data collected and statistical analyses of these data normally should not be included*
- *The focus normally should be on the last five years of data (except where additional historical data may be needed to evaluate trends)*
- *It can be useful to separate data by media and sub-media (e.g., soil, groundwater, sediment, surface water, fish tissue, or soil gas/indoor air)*
 - *For sites with multiple OUs, separation by OU may be considered as well.*
- *Normally, it is useful to include data relevant to remedy performance and progress towards meeting RAOs*

- Generally, sufficient data to answer the technical assessment questions should be included
- Normally it is useful to include a concise summary of:
 - Relevant data trends over the last five years, noting actual levels (e.g., measurements in specific well locations for a ground water cleanup), to evaluate whether RAOs and associated cleanup levels established in the ROD are likely to be achieved and/or have been achieved
 - Data relevant to support engineering performance, such as data related to assessing plume capture
 - For ground water cleanup, a brief discussion of data related to the site-specific groundwater remedy completion strategy
- Tables, maps or graphs may be used to help explain the text or may be included in an Appendix
- If a document that includes data is referenced, a citation to the document should be included and the reader should be directed to Appendix A – Reference List.

Site Inspection

The inspection of the Site was conducted on [Click here to enter a date](#). In attendance were [RPM name](#), [Lead agency](#), [Support agency representative \(if applicable\)](#) of the [Support agency name](#), and [any additional members and their respective organizations](#). The purpose of the inspection was to assess the protectiveness of the remedy.

Briefly describe results of the site inspection, particularly if issues impacting current and/or future protectiveness were observed

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

- Include a concise, overall summary response to Question A here. This answer should summarize information obtained in carrying out the five year review process.
- Information gathered using the factors addressed in the three subheadings below can help support the answer.
- The answer should be complete and concise; normally a 'yes' or 'no' answer is not appropriate.

Remedial Action Performance (Optional – Include if Appropriate)

- Whether the remedial action continues to operate and function as designed
- Whether cleanup levels are being achieved or are on a path to be achieved in a reasonable time frame
- Whether containment is effective, if applicable
- Whether opportunities exist to improve the performance and/or reduce costs of monitoring, sampling, and treatment systems

System Operations/O&M (Optional – Include if Appropriate)

- Whether operating procedures, as implemented, are working in a manner that will continue to maintain the effectiveness of the remedy
- Whether frequent equipment breakdowns or changes indicate a potential issue affecting protectiveness
- Whether large variances in O&M costs could indicate a potential remedy problem

Implementation of Institutional Controls and Other Measures (Optional – Include if Appropriate)

- Whether ICs are in place and are proving to be effective in preventing exposure
- Whether access controls (e.g., fencing and warning signs) are in place and are proving to be effective in preventing exposure
- Whether other actions (e.g., removals) necessary to ensure that immediate threats have been addressed are complete

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:

- Include a concise, overall summary response to Question B here. This answer should summarize information obtained in carrying out the five year review process.
- Information gathered using the factors addressed in the five subheadings below can help support the answer.
- The answer should be complete and concise; normally a 'yes' or 'no' answer is not appropriate.
- Summary tables may be added to this section as appropriate (e.g. to summarize ARAR information)

Changes in Standards and TBCs (Optional – Include if Appropriate)

- Whether standards identified as ARARs, newly promulgated standards, and/or changes in TBCs could call into question the protectiveness of the remedy
- Include additional information about existing ARARs, newly promulgated standards, and/or changes in TBCs that do not affect protectiveness here as appropriate or include in an optional Appendix

Changes in Toxicity and Other Contaminant Characteristics (Optional – Include if Appropriate)

- Whether toxicity factors for contaminants of concern at the site have changed in a way that could affect the protectiveness of the remedy
- Whether other contaminant characteristics have changed in a way that could affect the protectiveness of the remedy

Changes in Risk Assessment Methods (Optional – Include if Appropriate)

- Whether EPA's standardized risk assessment methodologies or guidance have changed in a way that could affect the protectiveness of the remedy

Changes in Exposure Pathways (Optional – Include if Appropriate)

- Whether current or reasonably anticipated future land use on or near the site has changed or may change in the near future (including redevelopment or changed resource use)
- Whether human health or ecological routes of exposure or receptors have been newly identified or changed in a way that could affect the protectiveness of the remedy
- Whether there are newly identified contaminants or contaminant sources leading to a potential/actual pathway not previously addressed by the remedy
- Whether there are unanticipated toxic byproducts or daughter products of the remedy not previously addressed by the decision documents
- Whether physical site conditions or the understanding of these conditions have changed in a way that could affect the protectiveness of the remedy

Expected Progress Towards Meeting RAOs (Optional – Include if Appropriate)

- Whether the remedy is progressing as expected towards meeting RAOs
- Whether new site conditions (e.g., discovery of new contaminants) impact RAOs and remedy protectiveness

QUESTION C: Has any **other** information come to light that could call into question the protectiveness of the remedy?

- **Important Note:** To avoid unnecessary duplication and redundancies, the information included in Question C normally should be different from information which has already been covered in Questions A & B.
- This question normally covers whether there are impacts from natural disasters
- This question may address site changes or vulnerabilities that may be related to climate change impacts not apparent during remedy selection, remedy implementation or O&M (e.g., sea level rise, changes in precipitation, increasing risk of floods, changes in temperature, increasing intensity of hurricanes and increasing wildfires, melting permafrost in northern regions, etc.).

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
List OU's with no issues/recommendations here, or state 'none'

- Normally, issues/recommendations should not be added into the table(s) below if they don't affect either current and/or future protectiveness. Items included in the table(s) will be tracked in SEMS.
- Items may be included in the 'OTHER FINDINGS' section below the table (see below) if you wish to discuss additional information in the report.
- To add additional issues/recommendations here, copy and paste the below table as many times as necessary to document other issues/recommendations identified in the FYR report.

Issues and Recommendations Identified in the Five-Year Review:
--

OU(s):	Issue Category: Choose an item <i>Note: If 'other' is chosen, please provide an explanation in this box.</i>			
	Issue:			
	Recommendation:			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
Choose an item	Choose an item	Choose an item	Choose an item	Click here to enter a date

OTHER FINDINGS

- *If there are items that you wish to include in the FYR report but should not be tracked as formal issues and recommendations affecting current and/or future protectiveness, please utilize the text below.*

In addition, the following are recommendations that were identified during the FYR and (may improve performance of the remedy, reduce costs, improve management of O&M, accelerate site close out, conserve energy, promote sustainability, etc.), but do not affect current and/or future protectiveness:

- *List items*

VII. PROTECTIVENESS STATEMENT

- *Each individual OU protectiveness determination and statement should be included here.*
- *Guidance on wording for the protectiveness statement can be found in the memo titled "Clarifying the Use of Protectiveness Determinations for Comprehensive Environmental Response, Compensation, and Liability Act Five-Year Reviews" (September 13, 2012)*
- *If you need to add more protectiveness determinations and statements for additional OUs, copy and paste the table below as many times as necessary to complete for each OU evaluated in the FYR report.*
- *Per the 2001 FYR Guidance (p. 4-14), the planned addendum completion date field normally should be entered if there is a "deferred protectiveness" determination for at least one OU. Otherwise, it may be deleted.*

Protectiveness Statement(s)		
<i>Operable Unit:</i>	<i>Protectiveness Determination:</i> Choose an item	<i>Planned Addendum Completion Date:</i> Click here to enter a date
<i>Protectiveness Statement:</i>		

- *For sites that have achieved Construction Completion, a sitewide protectiveness determination and statement normally should be entered in the table below.*
- *If the site has not met the Construction Completion milestone, then generally the table below should be deleted.*
- *Per the 2001 FYR Guidance (p. 4-14), the planned addendum completion date field normally should be entered if there is a "deferred protectiveness" determination for at least one OU (or if the Region is planning to conduct a FYR addendum for some particular reason). Otherwise it may be deleted.*

Sitewide Protectiveness Statement	
<i>Protectiveness Determination:</i> Choose an item	<i>Planned Addendum Completion Date:</i> Click here to enter a date
<i>Protectiveness Statement:</i>	

VIII. NEXT REVIEW

- *Generally one of the two options below should be included in the report (and the one that is not chosen should be deleted).*

The next five-year review report for the **Site name** Superfund Site is required five years from the completion date of this review.

OR

No further five-year reviews are planned for the **Site name** Superfund Site because all site-impacted media have reached UU/UE.

APPENDIX A – REFERENCE LIST

- All relevant documents which were reviewed for this FYR, such as O&M records and monitoring data, should be included here.
- Relevant document location information, such as website addresses, should be included for referenced documents.

OTHER APPENDICES

- Other optional appendices may include information such as:
 - Site Background
 - Site Chronology
 - Site Inspection Checklist
 - Site Maps
 - Photos (only include photos that help inform the remedy protectiveness evaluation, such as a photo of a breach in a retaining wall)
 - Review of ARARs
 - Additional data or statistical analyses
 - Interview results/notes
 - **Note:** Unless you have received permission from interviewees that it is OK to include their name and any other information in the five-year review, do not include this information.
 - Conceptual site model(s)