



# Federal Facility Five-Year Reviews

JULY 11, 2024

FEDERAL FACILITIES RESTORATION AND REUSE OFFICE

OFFICE OF SUPERFUND REMEDIATION AND TECHNOLOGY INNOVATION

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## Group Poll

What experiences  
have you had  
with FYRs at  
Federal Facility  
Superfund sites?



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# Agenda

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- Five Year Review (FYR) Purpose and Regulatory Context
- How to Review a FYR
- Community Involvement for FYRs
- Protectiveness Statements
- Case Study
- Independent Findings
- Addressing Emerging Contaminants

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# Regulatory Context

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## FYRs under CERCLA and NCP

- ❑ CERCLA §121(c) states: "If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented."
- ❑ National Contingency Plan (NCP), 40 CFR Part 300.430(f)(4)(ii) states: "If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less than every five years after the initiation of the selected remedial action."

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## Purpose of a FYR

- ❑ A five-year review should determine whether the remedy at a site is or upon completion will be protective of human health and the environment.
- ❑ Follow up actions should be identified for any recommendations to ensure protectiveness.
- ❑ Five-year Review address the following technical questions:
  - Is the remedy functioning as intended by the decision documents?
  - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy still valid?
  - Has any other information come to light that could call into question the protectiveness of the remedy?

# PROTECTIVENESS

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## Federal Facility Five-Year Reviews

- ❑ Consistent with EO 12580, other Federal Agencies are responsible for ensuring that FYRs are conducted at sites where required or appropriate.
- ❑ For Federal Facility sites, the Lead Agency conducts the review, prepares the reports, and submits the report to EPA and the state for review and comment.
  - EPA will either concur with the protectiveness determination or provide independent findings.
- ❑ The Lead Agency is responsible for ensuring that the recommendations and follow-up actions in the report are completed.

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### 2011 EPA Program Priority Memo Guidance for EPA RPMs

#### Determine Concurrence

- Concur or not on protectiveness determination(s) by the statutory due date

#### Write Letter

- Write a concurrence/non-concurrence letter to the other federal agency

#### Track Issues

- Track and update issues and recommendations affecting protectiveness

#### Specify Due Date

- Specify next FYR due date based on statutory review timeframe
- Late signature on a FYR does not delay future due dates

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# How to Review a FF FYR

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## Federal Facilities FYR Process

- ❑ The Federal Agency writes the reports
- ❑ EPA's role is to either agree or issue independent finding of protectiveness by meeting the statutory deadline date
- ❑ Track recommendations that affect current and future protectiveness
- ❑ Report is completed once information is entered into SEMS, five days after signature
- ❑ Report to Congress on the protectiveness determination and whether EPA made an independent finding and the reason why

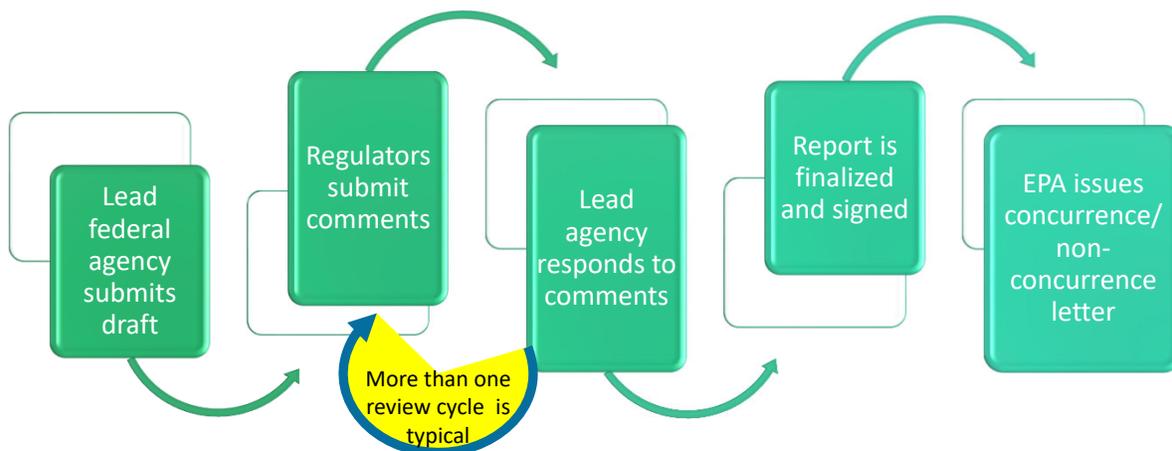
Visit the Superfund and FFRRO FYR web pages to stay up to date on new FYR supplements, tools and resources

- <https://www.epa.gov/fedfac/fiv-e-year-review-federal-facility-cleanups>
- <https://www.epa.gov/superfund/superfund-five-year-reviews>

Check with your agency for agency-specific FYR tools and guidance documents

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## EPA Review and Submission Process



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## Preparing for a FYR

- ❑ FYR team members should work together early and often to get real-time input while conducting the review and writing the report
- ❑ Site teams (regulatory and lead cleanup agency) should develop a schedule to meet the statutory deadlines (12-18 months ahead of due date)
- ❑ Ensure FYRs are completed for the required OUs (those OUs where a remedy has been selected)
  - OUs without a remedy or other activities that are included in the report do not need a protectiveness statement
  - OUs with a remedy but which have not initiated the remedial action do not need to be included

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### OU Evaluation Triggers

Trigger	Y/N	Evaluate?	Review
Is there a ROD (interim or final) for this OU?	N	N	Remedy has not been selected and an evaluation is not required
	Y	Y	Statutory review no later than five years after RA start
		Y	Policy review no later than five years after sitewide construction completion
Is there an Action Memo?	Y	Depends	Evaluate at NPL sites where no RA will occur
Does the OU meet UU/UE?	Y	N	Exceptions: <ul style="list-style-type: none"> <li>- UU/UE for the first time, after statutory or policy triggers met</li> <li>- Where toxicity value changes indicate UU/UE site may no longer be UU/UE</li> </ul>

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### Common EPA Comments on Federal Facility FYRs



One protectiveness statement per OU not issued



Protectiveness statements issued for OUs that do not need them



Protectiveness statements not issued for OUs that need them, particularly for sites under construction



The wrong protectiveness statement was chosen



A sitewide protectiveness statement was not issued where appropriate, or vice versa

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## Common EPA Comments on Federal Facility FYRs

- Reports are long and not focused on supporting the protectiveness statement(s)
- Report provides insufficient support for the protectiveness statement
- Technical evaluations in the reports do not link to existing RAOs or the risk basis of the ROD
- Not enough information is provided to identify the status of issues being tracked from the last FYR
- Reports include issues that do not affect current or future protectiveness of the remedy, such as O&M issues

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## HQ Role and Responsibility

- May 3, 2007, Memorandum on Program Priorities
  - Improve the quality and consistency of reports by continuing to review 75% of draft reports
  - Continue training on five-year reviews during the Federal Facility RPM training and FF Academy
  - Follow-up with Regions on the implementation of the issues and recommendations identified in the report
- May 2018 memorandum and support for the annual Report to Congress
  - Identify sites where EPA made an independent assessment of the protectiveness
  - Regions send draft concurrence letters to HQ for review
  - Report the protectiveness of each site
  - Follow-up with the Regions where a site has a “not protective” determination

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## HQ FFRRO Review Process

- ❑ FFRRO tracks and reviews all FF 5YRs for sites on the NPL
- ❑ Review Timelines
  - FFRRO strives to complete internal review of draft documents in **30 calendar days**
- ❑ Multiple FFRRO SMEs may help with review
- ❑ FFRRO Comments to RPM
  - Discuss and resolve concerns before RPM sends their comments to the OFA



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## Promoting National Consistency in 5YRs

- ❑ Goal to develop recommendations that are rooted in guidance, are feasible to implement and represent best practices.
- ❑ Systematic approach to reviews
- ❑ FFRRO uses a Standard Operating Procedure (SOP) and review template for HQ review
- ❑ Long Term Effort to analyze results of review to identify trends, gaps and refine best practices and finalize recommendations.

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## State Role and Responsibilities

- ❑ The State role and responsibilities are described in the “State Involvement in Five-Year Reviews at Federal Facilities, Final Report,” dated July 2018
- ❑ Resolution of State concerns:
  - NPL facilities – states should work through EPA under the FFA to resolve issues and concerns
  - Non-NPL facilities – States should first seek informal resolution; however, if that fails, States may seek dispute resolution through the Defense State Memorandum of Agreement (DSMOA)

## Getting to Know the FYR: A Guide for Communities Near Federal Facilities



# Community Involvement in FF FYRs

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## FYR Community Involvement

- ❑ EPA 2001 FYR Guidance recommends, at a minimum:
  - BEFORE: Inform the community and other potentially interested parties that a FYR will be conducted
  - AFTER: Inform the community and other potentially interested parties that a FYR was conducted
- ❑ EPA Community Involvement Handbook
  - Chapter 3, Section 10 covers FYRs
- ❑ 2018 Community Involvement Toolkit – Five-Year Reviews



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# FYR Community Involvement



## Consider working with the site community involvement team on a communication strategy

Community members may be interviewed for input on remedy effectiveness.

## After the FYR is complete, you may:

- Prepare a brief summary of the results using a fact sheet
- Inform the community that the five-year review report is complete and available for review,
- Post the report on a site webpage, and
- Make the report and the summary available to the public in the information repository.

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**Defense Depot Memphis, Tennessee**  
 Mr. Gordon Jones  
[gordon.jones@eosa23.cer.mil](mailto:gordon.jones@eosa23.cer.mil)  
 755 SAC-000  
 January 2013

**Defense Depot Memphis  
Third Five-Year Review Fact Sheet**

**What is a Five-year Review?**

The purpose of a five-year review is to determine if remedies at a site are remain protective of human health and the environment. If any issues that affect current and future protectiveness are found during the five-year review, recommendations are made to address them. The report addresses three major questions:

- Is the remedy functioning as intended?
- Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?
- Has any other information surfaced that could affect the protectiveness of the remedy?

**Site History**

The Depot is located in Memphis, Tennessee approximately 5 miles east of the Mississippi River and just northeast of Interstate 240. The property is approximately 632 acres and includes two components: Dunn Field and the Main Installation (MI). The site is located in an area of mixed residential, commercial and industrial land use.

The Depot served as a hub for the distribution of a variety of materials to the U.S. military from 1942 until the facility was closed in 1997. Hazardous substances were also stored and disposed of on site, resulting in soil and groundwater contamination by potentially hazardous wastes, including metals, hydrocarbons, and chlorinated volatile organic compounds.

**Site Chronology**

- **1981 - Initial Assessment Study:** Identified site hazards at exposure routes.
- **1992 - National Priorities List (NPL) Listing:** Site placed on NPL and identified as needing a long-term cleanup plan.
- **1997 - Facility Closed:** Depot received closure permits for its air, underground storage tank, stormwater discharge, and Nuclear Regulatory facilities.
- **1998 - Initiation of Interim Remedial Action:** Groundwater recovery system installed at Dunn Field, this action was the trigger for the first five-year review.
- **2003 - First Five-Year Review**
- **2008 - Second Five-Year Review**
- **2012 - Site-wide Construction Complete:** Construction of remedies completed and NPL status updated to Construction Complete.

**Site Map**

**Major Developments since Last Five-Year Review**

- **Operable Unit (OU) 1/Dunn Field:** Thermal soil vapor extraction was completed in December 2008 and removed 12,500 pounds of volatile organic compounds (VOCs). From July 2007-April 2012 fluvial soil vapor extraction removed 4,045 pounds of VOCs and was shutdown in July 2012. Soil samples met the remedy goals for both systems. From November 2009-June 2012 air sparge/soil vapor extraction removed 77 pounds of VOCs. Long term monitoring of 87 wells is being conducted on a semiannual basis.
- **OUs 2-4/Main Installation:** Long-term monitoring of 112 wells is being conducted on a semiannual basis and additional wells have been installed in the fluvial, intermediate and Memphis aquifers.
- **Site-wide:** Physical construction of all soil and groundwater extraction systems was completed in May 2010 and NPL site status was revised to Construction Complete.

**Issues, Follow-up Actions, and Schedule Dates**

These issues do not affect current protectiveness because there is no current exposure to chemicals of concern in groundwater. They don't affect future protectiveness because the remedies have been effective in controlling groundwater contaminants.

- **Groundwater contaminants at OU 1/Dunn Field:** There is potential for rebound in groundwater concentrations of chlorinated volatile organics (CVOCs) at OU 1/Dunn Field following shut down of the fluvial soil vapor extraction system in July 2012. The air sparge/soil vapor extraction system will operate through December 2014 and long-term monitoring will continue through 2020.
- **Groundwater contaminants at OUs 2-4:** There was a rebound in groundwater CVOOC concentrations above the level considered safe for consumption at the intermediate aquifer. Water from this aquifer is not used as a source of drinking water, but migration could impact the primary drinking water source for the City of Memphis. Department of the Army will restart enhanced bioremediation treatment in November 2012 and long-term monitoring will continue through 2016.

**Protectiveness Summary**

OU's 1-4	• Protective
Site-wide	• Protective
Next Five-Year Review	• January 2018

**Contact Information**

All publicly available documentation including the complete five year review is located at:

<http://www.eosa.gov/region4/superfund/sbts/factsheet/index.cfm>

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# Protectiveness Statements

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## Critical Information Path

Determining protectiveness starts with considering the RAOs identified in the decision document

**Remedial Action Objectives (RAOs)**



**Technical Assessment**



**Protectiveness Statement**

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## Remedial Action Objectives (RAO) Components

**1.** Risk Drivers: media, COCs, pathways, receptors

**2.** Current and future land use

**3.** Purpose of action: prevent, minimize, eliminate, restore

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## Technical Evaluation

Think about the RAOs as you answer each question

**A**

Is the remedy working?

**B**

Are exposure assumptions still valid?

**C**

Is there anything else to consider?

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Protectiveness Determinations in Five-Year Reviews

-  Protective
-  Will be protective once the remedy is completed
-  Protective in the short-term; however, in order for the remedy to be protective in the long-term, follow-up actions need to be taken
-  Protectiveness deferred and cannot be determined until further information is obtained (should identify a timeframe to obtain necessary information)
-  Not protective (should identify what actions are necessary to achieve protectiveness and a timeframe for completion)

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## Group Poll

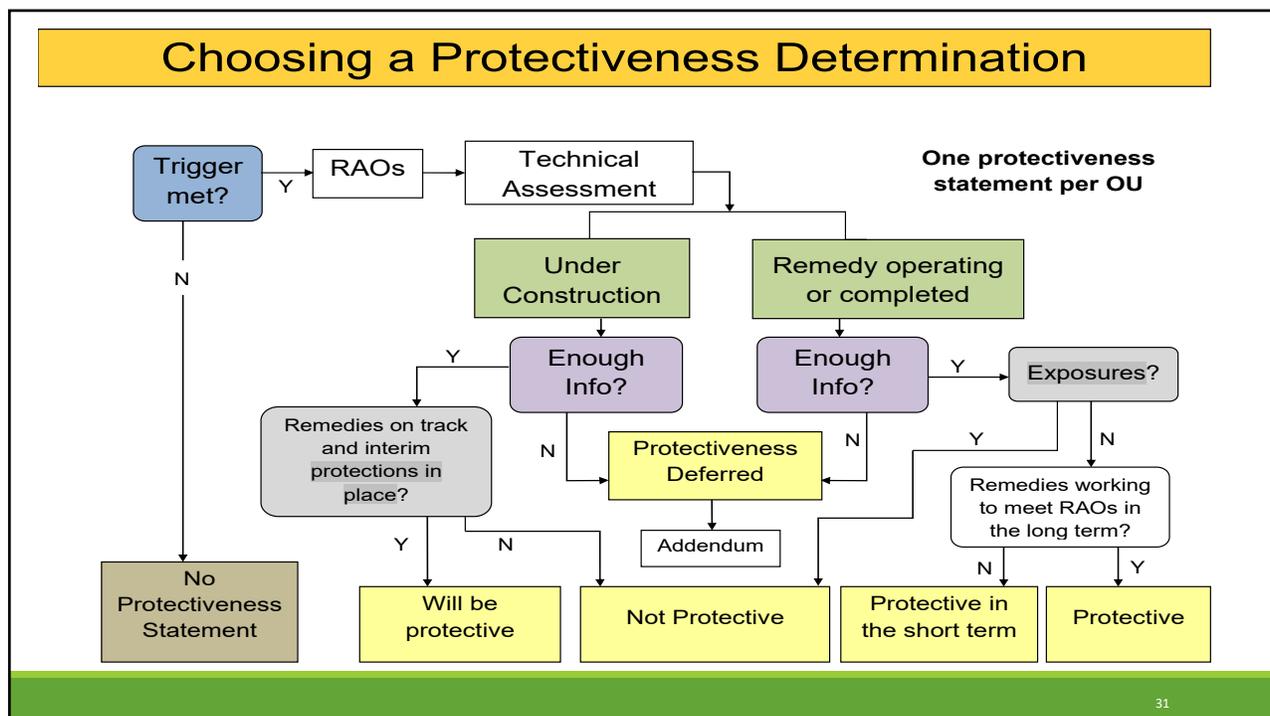
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Have you worked on a FF FYR where the determination was protectiveness deferred? What was the cause for making that determination?

- A. Sampling needed to confirm exposure pathways
- B. New contaminant cleanup levels were issued and need to be evaluation
- C. Emerging contaminants need to be investigated
- D. Other

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## Apply Your Understanding

What protectiveness determination should EPA assign this OU?

- A. Protective
- B. Protective in the short term
- C. Protectiveness deferred
- D. Not protective

OU 1 is preparing for its second 5YR. The ROD was issued in 2015.

The cleanup level for the primary contaminant of concern (COC) became more stringent in 2022. Based on the existing data, COC concentrations in soil may exceed the new cleanup level.

After the RAOs were met, sampling and institutional controls were no longer required for this specific remedy. It is unknown if the groundwater is being used. The other federal agency concludes that the remedy is still protective.

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What are items a reviewer should look for in a Protectiveness Statement?

- ✓ One protectiveness statement per OU
- ✓ Adequate support in technical evaluation
- ✓ Progress toward RAOs
- ✓ Correct protectiveness determination
- ✓ Consistency with issues and recommendations tables
- ✓ Standard format followed for protectiveness statements
- ✓ If a sitewide protectiveness statement is needed

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## Anatomy of a Protectiveness Statement

Identify OU and protectiveness determination



*"The remedy at OU-Y currently protects human health and the environment*

Identify what activities justify the protectiveness statement



*because land use controls to prevent groundwater use are in place, and groundwater treatment will continue until concentrations throughout the plume are below the standard/MCL.*

If not protective, Identify what activities are needed for the remedy to be fully protective



*To be protective in the long term, the IC boundary should be expanded."*

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## Remedies Considered Not Protective

- ❑ An immediate threat is present (e.g., exposure pathways that could result in unacceptable risks are not being controlled);
- ❑ Migration of contaminants is uncontrolled and poses an unacceptable risk to human health or the environment;
- ❑ Potential or actual exposure is clearly present or there is evidence of exposure (e.g., institutional controls are not in place or not enforced and exposure is occurring); or
- ❑ The remedy cannot meet a new cleanup level and the previous cleanup level is outside of the risk range (Depends on site-specific considerations)

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## Follow Up Actions Based on FYR

- ❑ If the remedy is not protective, short-term protective, or protectiveness deferred, then recommendations to address protectiveness should be identified
  
- ❑ If the 5YR determines the remedy is not performing as designed, changes to the selected remedy may be needed through an ESD or ROD Amendment

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## Following up on Recommendations between FYRs

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Five possible status statements in SEMS for updating each recommendation between FYRs

Under discussion

Ongoing

Considered & not Implemented

Completed

Addressed in the next FYR

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## Independent Findings

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## Concurrence Letter or EPA's Independent Assessment of Protectiveness

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- EPA concurs on the federal agency 's protectiveness determination per OU
- EPA issues an independent finding of protectiveness per OU
- Identify issues and recommendations and what action is being taken
- Request a response from the federal agency and the due date for the implementation of the action
- Protectiveness statement reported to Congress
- Due date for the next review

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## Causes for Independent Findings

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- No report
- Draft report submitted late or not at all for EPA review
- Draft report not finalized by statutory date
- EPA does not agree with the protectiveness determination
  - Emerging contaminants not addressed in the report
  - New exposure pathway
  - Land use controls not evaluated

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## Trend on Issuing an Independent Finding on Protectiveness



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## Group Poll

Have you worked on a FF FYR where EPA and the other federal agency disagreed on the protectiveness statement? How was this resolved?

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## Apply Your Understanding

Scenario 1: As an EPA RPM, you received and reviewed a draft FYR report. After reviewing the document and providing the document for HQ-FFRRO review, you are able to concur with the protectiveness statements in the draft report. **However, the report will not be final by the statutory due date. What are the follow up actions for the EPA RPM?**

- A. Write a concurrence letter agreeing with the federal agency protectiveness determination
- B. Identify issues, recommendations, and actions that will be tracked in SEMS
- C. Submit Letter and draft report to SEMS
- D. Nothing. EPA cannot proceed until the report is finalized.

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## Apply Your Understanding

Scenario 2: As an EPA RPM, you received and reviewed a draft FYR report. After reviewing the document and providing the document for HQ-FFRRO review, you are able to conclude that EPA **DOES NOT** agree with the protectiveness statements in the draft report. Also, the report will not be final by the statutory due date. **What are the follow up actions for the EPA RPM?**

- A. Make an independent finding of the protectiveness by the statutory due date (letter to the federal agency)
- B. Share the draft letter with the federal agency for approval
- C. Submit Letter and draft report to SEMS
- D. Send the draft letter to FFRRO for review before signature

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## Apply Your Understanding

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Scenario 3: As an EPA RPM, you received a draft 5YR report from the federal agency, **but don't have sufficient time to conduct a review** . The report will not be final by the statutory due date. **What are the follow up actions for the EPA RPM?**

- A. Make an independent finding deferring a protectiveness determination by the statutory due date (letter to the federal agency)
- B. Share the draft letter with the federal agency for approval
- C. Submit Letter and draft report to SEMS
- D. Send the draft letter to FFRRO for review

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## Apply Your Understanding

7/9/2024

Scenario 4: The FYR report has been finalized by the statutory due date. In later discussions, the Federal agency expresses it is not willing to implement the recommendations in the FYR report. **What are the potential follow up actions for the EPA RPM?**

- A. There is nothing EPA can do
- B. Send a letter to Federal Agency outlining the issues and recommendations, seeks plan of action and schedule from Federal Agency
- C. If progress is not made in a reasonable time, consider sending a letter requiring the actions as "additional work" under the Federal Facilities Agreement, subject to dispute resolution
- D. EPA will do the actions themselves

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# Addressing Emerging Contaminants

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## Addressing Emerging Contaminants in FYRs

1. Question B: Are there new contaminants or new contaminated sources that have been identified?

- Provides broad overview of how the emerging contaminant is being considered in FYRs.

2. Were the emerging contaminant captured under Question B?

- Existing guidance suggests this is most appropriate question as it addresses exposure assumptions and detection of new chemical(s).

3. Was it captured under Issues and Recommendations?

- If there is any follow-on sampling included, then it needs to be captured here.

4. Does the emerging contaminant affect Protectiveness?

- Unresolved issues could mean short-term protective or insufficient information.

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### FFRRO Regional Coordinators – Here to Help!



R1/R9 Jon Tso



R2 John Burchette



R3/R9 Mary T. Cooke



R4/ R5 Emily Royal



R6 Cal Baier-Anderson



R7 Jyl Lapachin



R8 Jill Branby



R10 Monica McEaddy  
FYR Coordinator

## EPA Five Year Review Contacts

- ❖ Monica McEaddy
- ❖ Federal Facilities Restoration and Reuse Office
- ❖ [Mceaddy.Monica@epa.gov](mailto:Mceaddy.Monica@epa.gov)
- ❖ Jennifer Edwards
- ❖ Office of Superfund Remediation and Technology innovation
- ❖ [Edwards.Jennifer@epa.gov](mailto:Edwards.Jennifer@epa.gov)

# Questions

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