US Army Corps of Engineers®

# Community Fact Sheet

Former Fort Devens Army Installation May 2022

U.S. ARMY

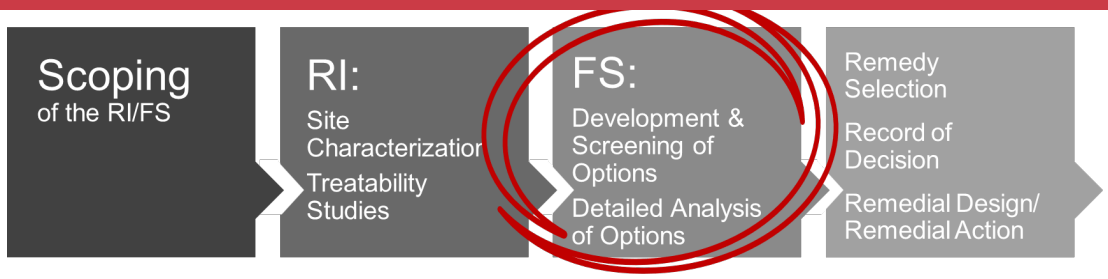
# What is a Feasibility Study?

A feasibility study (FS) is completed for sites being addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and is the mechanism to develop, screen, and evaluate potential remedial actions for a site as they relate the remedial goals.

## Overview of the RI/FS Process

The remedial investigation (RI) process collects data to characterize site conditions, determine the nature of the waste, assess risk to human health and the environment, and conduct treatability testing to evaluate the potential performance and cost of the treatment technologies being considered. The FS is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. The RI and FS are conducted concurrently; data collected in the RI influence the development of remedial alternatives in the FS, which in turn affect the data needs and scope of treatability studies and additional field investigations. This phased approach encourages the continual scoping of the site characterization effort, which minimizes the collection of unnecessary data and maximizes data quality. The major steps of the RI/FS process are depicted in the graphic below (U.S. Environmental Protection Agency [USEPA], Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, 1998).

### Primary Steps of the RI/FS




The goal of the FS is to establish the basis to select a final remedy for the site. This is accomplished by establishing the cleanup goals for the site, developing potential remedial alternatives following a process set by the USEPA, and then comparing the potential effectiveness of those alternatives at meeting the cleanup goals according to standard criteria established under CERCLA.

The four major elements of the FS process are more fully described here in this fact sheet.

- FS Element 1: Establish Remedial Action Objectives
- FS Element 2: Technology Screening
- FS Element 3: Detailed Analysis of Cleanup Options
- FS Element 4: FS Report

### FS Element 1: Establish Remedial Action Objectives

The preliminary remedial action objectives (RAOs) identified during scoping are refined to develop medium-specific goals for protecting human health and the environment. The RAOs answer these questions:

- What are the contaminants of concern (COCs) that need to be addressed?
- Where are the COCs found (media of concern)?
- Who/what could be exposed to those COCs (receptors)?
- What are the potential ways in which exposure to the COCs can occur (exposure routes)?
- What are the applicable regulatory criteria (Applicable or Relevant and Appropriate Requirements, or ARARs)?

Applicability to Former Fort Devens: At Fort Devens, per- and polyfluoroalkyl substances (PFAS) are COCs that are present in groundwater. Humans are a potential receptor for PFAS. One of the potential routes by which humans could be exposed to PFAS in groundwater is through ingestion of groundwater used as drinking water. The ARARs for this exposure route include the USEPA lifetime Health Advisory Level (HAL) and the Massachusetts Department of Environmental Protection (MassDEP) Maximum Contaminant Limit (MCL).

## FS Element 2: Technology Screening

This second element includes reviewing remedial technologies and process options that may be appropriate for the site. This is accomplished by:

- Identifying general ways in which cleanup goals could be achieved for each media of concern (General Response Actions, or GRAs);
- Developing a list of potential technologies and process options that could be implemented for each GRA; and
- Screening the technologies based on their applicability to the site.

The GRAs can include active methods to remove or destroy contaminants, engineered methods to prevent contact with/ movement of COCs, monitoring of the contaminant extent, and/or the establishment of administrative rules (known as Institutional Controls [ICs] or Land Use Controls [LUCs]) that prevent exposure to a certain media where the contamination is present.

In addition, the testing of potential remedial technologies (known as treatability studies) may be conducted during this element to see if there is a need to further evaluate the applicability of the technology or process option.

Applicability to Former Fort Devens: For example, a potential GRA for PFAS in groundwater at Fort Devens is treatment of groundwater that is used as drinking water. A potential technology that can treat PFAS in groundwater is granular activated carbon (GAC). A potential process option for the use of GAC for groundwater treatment is to add it to an existing groundwater supply distribution system, such that the PFAS is removed before entering the system.

## FS Element 3: Detailed Analysis of Cleanup Options

Once the technology screening is complete, the applicable GRAs, technologies, and process options are combined into remedial alternatives that are evaluated against criteria from CERCLA/USEPA, against each other, and against a required No Action alternative. First, each option (including No Action) is evaluated against two threshold criteria. Then, they are considered and compared against five balancing criteria. Finally, two modifying criteria are used to evaluate all the options. These criteria are listed in the graphic to the right.

Applicability to Former Fort Devens: Using the previous example of PFAS in groundwater at Fort Devens, a potential remedial alternative would be the treatment of groundwater supplies using GAC, accompanied by an Institutional Control prohibiting the development of additional groundwater supply wells at Fort Devens, and a long-term groundwater monitoring program to ensure that the extent of PFAS in groundwater remains consistent with the assumptions upon which the alternative is based.

## FS Element 4: FS Report

The final step in the process is developing an FS report, which can be presented with the RI report in an overall RI/FS report or as a stand-alone report. The FS report is presented to the regulating agencies in a draft version, a revised draft-final version, and a final version, with each version incorporating comments and revisions from the previous submittal. The results of the FS are then used to prepare a Proposed Plan and Record of Decision (ROD).

**Threshold Criteria**

- ❑ Overall, is the option protective of human health and the environment?
- ❑ Does the option comply with applicable regulations and requirements?

**Balancing Criteria**

- ❑ Over the long term, would the option be effective and be able to perform?
- ❑ In the short term, would the option be effective and be able to perform?
- ❑ Would the option reduce the toxicity, mobility, or volume of the chemical mass or hazardous waste?
- ❑ Is implementation of the option administratively and technically feasible?
- ❑ What is the cost of the option?

**Modifying Criteria**

- ❑ Would the state accept the option?
- ❑ Would the surrounding community accept the option?

**For more information**

The former Fort Devens Environmental Cleanup Project website has more info:
https://www.nae.usace.army.mil/missions/projects-topics/former-fort-devens-environmental-cleanup/

If you want to get involved, get on our mailing list, or have questions, send an email to:
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