



SITE SELECTION MEMORANDUM GUIDANCE

Environmental Restoration Projects

November 2017

OVERVIEW

This document provides general guidance for preparing Site Selection Memorandums for projects that receive funding under the Environmental Security Technology Certification Program (ESTCP) Environmental Restoration program area. The guidance provided in this document will help ensure that sites selected for ESTCP Environmental Restoration demonstrations provide optimal conditions for demonstration of the selected technology.

A Site Selection Memorandum is required for some ESTCP-funded Environmental Restoration projects. **Demonstrators should submit a Site Selection Memorandum at least two months prior to submittal of the Demonstration Plan to allow for review and discussion. Several portions of the site selection memorandum can be used for the Demonstration Plan.**

Format

The following general formatting parameters are recommended for Site Selection Memorandums:

Font	Times New Roman proportional font
Cover Main Title	26 pt, bold, flush right
Cover Title	18 pt, bold, flush right
Section headings	14 pt, bold, flush left
Subsection headings	12 pt, bold, flush left
Text	12 pt
Margins	1" top, left, right, bottom
Page Numbering	Bottom center Cover page: none Front matter: i, ii, iii, iv... Body of document: 1, 2, 3, 4...
Word processing software	Use either Microsoft Word or provide a PDF document
Figures, tables, and photographs	Insert in the document on the same or first page following the first reference. Liberal use is highly recommended.

How to Submit a Site Selection Memorandum

A Site Selection Memorandum must be submitted to the ESTCP Support Office using *one of the methods* indicated below:

- For files that are 100MB or less: Submit the report in SEMS 2.0 (<https://sems2.serdp-estcp.org>). Follow the instructions below for uploading your document:
 - From the project dashboard, click “Overview & Plan” in the left-hand panel, then click “Project Plan”.

- Scroll down to the document milestone and click “Upload” in the milestone box.
- Select the file you would like to upload and click the “Upload” button.
- Click “Submit” in the bottom right corner of the milestone box.
- For files larger than 100MB: Contact serdp-estcp.documents@noblis.org to receive an email with the web link that will allow access to the system to upload your file(s). Please make sure you include the project number and the title(s) of the document(s) to allow identification of your files.

Please do not submit documents directly to the ESTCP Program Manager.

SECTION-BY-SECTION SITE SELECTION MEMORANDUM GUIDANCE FOR ENVIRONMENTAL RESTORATION TECHNOLOGIES

Project Title

ESTCP Project Number

Date Submitted

1.0 OBJECTIVES OF THE DEMONSTRATION

Describe the overarching objective(s) of the demonstration, such as to validate the technology in the field at the appropriate scale of operation (pilot, prototype or full-scale), or to transfer the technology to an end user.

2.0 TECHNOLOGY DESCRIPTION

Provide a brief description of the technology to be demonstrated.

3.0 SITE SELECTION CRITERIA

Provide a table that lists the site selection criteria and the corresponding data from potential demonstration sites. Please see Table 1 as an example.

SAMPLE

Table 1. Site Selection Criteria

Parameter	Preferred Value(s)	Relative Importance (1-5, with 1 being highest)	Site 1	Site 2
COC concentration	50–100 ppb	1	95 ppb	5 ppb
Depth to groundwater	20–50 ft	1	10 ft	35 ft
Utility access	Electrical access available	3	Yes	Yes

Please note that these parameters and associated values are examples List any parameters of consideration, including specific site characteristics as well as logistical issues. Please provide the site name(s) and include all sites that were evaluated.

4.0 PERFORMANCE OBJECTIVES

A Performance Objective table is required in the Demonstration Plan. Please provide a draft of this table in the Site Selection Memorandum to allow more thorough evaluation of the selected site. This completed table can be used in the Demonstration Plan.

The performance objectives are a critical component of the Demonstration Plan. They provide the basis for evaluating the performance and costs of the technology. Performance objectives are the primary criteria established by the investigator for evaluating the innovative technology. Meeting these performance objectives is essential for successful demonstration and validation of the technology.

Performance objectives may be related to qualitative or quantitative parameters (i.e., reduction in mass flux, reduction in point source contaminant concentrations, etc.) These should include, but are not limited to, such things as end-point criteria, remediation time, and analytical sensitivity.

Performance objectives may be presented in two ways, *qualitative and quantitative*, and should be summarized in Table 2 (sample provided).

Table 2. Performance Objectives
[SAMPLE ONLY–Performance objectives must be specific to the technology being demonstrated.]

Performance Objective	Data Requirements	Success Criteria	Results
Quantitative Performance Objectives			
Determine remediation effectiveness	Pre- and post-treatment contaminant concentrations in soil and groundwater	<ul style="list-style-type: none"> • >90% reduction considered successful • Student t-test or ANOVA for statistical analysis 	
Analytical field sensitivity	Matrix-specific field samples	Concentrations between 2x-5x reporting limit are detected	
Qualitative Performance Objectives			
Ease of use	Feedback from field technician on usability of technology and time required	A single field technician able to effectively take measurements	

The following information should be included in the detailed description of each performance objective:

- A description to fully explain the objective
- A statement as to what data are required to evaluate the performance objectives
- A statement as to how the data will be interpreted and a measure of what signifies success.

SAMPLE

3.1 PERFORMANCE OBJECTIVE: DETERMINE REMEDIATION EFFECTIVENESS

The effectiveness of the technology for soil and groundwater remediation is a function of the degree to which the target contaminants are removed. The success in remediating the test area depends on the residual contamination after application of the process.

3.1.1 Data Requirements

The technology remedial effectiveness will be evaluated on the basis of contaminant concentration reductions in soil and groundwater within the zone of treatment. Data required for the remedial effectiveness assessment include pre- and post-treatment contaminant concentrations in the treated media. Soil and groundwater samples for contaminant concentration characterization will be collected and analyzed both before and after the process implementation.

Post-treatment soil and groundwater sampling results will indicate the residual contamination remaining within the treatment zone. These concentrations will be compared with initial concentrations to determine if significant removal has occurred.

3.1.2 Success Criteria

The objective will be considered to be met if >90% reduction in contaminant mass is achieved. A standard student t-test will be used to evaluate the statistical significance of the data. Other statistical tests such as ANOVA or other nonparametric tests may be applied as appropriate to test the significance of the data.

Please note that equivalent subsections should be provided for each quantitative performance objective. It is recognized that related performance objectives may have similar data acquisition needs, and as such, reference can be made to earlier sections rather than repeating information.

5.0 SITE SELECTION

Identify the preferred site for the technology demonstration and discuss the rationale for its selection. Discuss any impediments to utilizing this site. Include a discussion of any present operations that may impact the technology demonstration. Provide an estimated start date for technology installation.