Sampling and Analysis Plan (SAP) Template Tool for Addressing Environmental Contamination by Pathogens

Technical Lead:

Prepared By:

Date:

Sampling and Analysis Plan Approvals

SAP Title:			
Project Numbers:	**Project Number:**	**Task Number:**	**Research Effort:**
Other Tracking IDs:			

If Intramural or Extramural, EPA Approvals	
Name and Title:	**Signature/Date:**
Name and Title:	**Signature/Date:**
Name and Title:	**Signature/Date:**

If Extramural, Contractor Approvals	
Name and Title:	**Signature/Date:**
Name and Title:	**Signature/Date:**
Name and Title:	**Signature/Date:**

Distribution List

Name:	Email:	Organization:

Revision History

Status:	Revision #:	Date:	Point of Contact:	Revision:

Acronym List

Acronym:	Meaning:

Table of Contents

For instructions on using this Sampling and Analysis Plan Template Tool, please refer to the User Guide.

1 Background

1.1 General Data Collection Activity Description

1.2 Sampling Phase and Pathogen

Table 1.1 Pathogen Characterization

Pathogen:	Pathogen Type:	CDC Select Agent?:	Fate and Transport:
Select an item. *Select an item.*	Select an item.	◯ Yes ◯ No	
		Potential Exposure Pathway:	**Persistence/Stability:**
		Select an item.	

Pathogen:	Pathogen Type:	CDC Select Agent?:	Fate and Transport:
Select an item. *Select an item.*	Select an item.	◯ Yes ◯ No	
		Potential Exposure Pathway:	**Persistence/Stability:**
		Select an item.	

1.3 Goal

Table 1.2 Defining Intended Use, Outcomes, and Determination Statements

Intended Use of the Data:	Principal Questions:	Decision Statement(s) or Estimation Statement(s):
Select an item.		
Select an item.		
Select an item.		
Select an item.		

1.4 Site Information and History

1.4.1 Site Condition

Please attach additional documents here and list the corresponding file names below: Attach File

1.4.2 Prior Actions Taken on the Site

1.4.3 Lines of Evidence

Please attach additional documents here and list the corresponding file names below: Attach File

2 Agency Coordination and Key Personnel

2.1 Roles and Responsibilities of Key Agencies, Advisory Groups, and Laboratories

2.1.1 Federal Bureau of Investigation (FBI)

2.1.2 Centers for Disease Control and Prevention (CDC)

2.1.3 State and Local Public Health

2.1.4 Other Federal, State or Local Agencies

2.1.5 Laboratory Response Network (LRN)

2.1.6 Environmental Response Laboratory Network (ERLN)

2.1.7 Other Laboratories

2.2 Key Personnel

Insert organizational chart, table or other documentation showing lines of reporting and communication here:

If an image is not available, please attach the file here and type the corresponding file name below:

Attach File

2.2.1 List of Key Personnel Involved in Planning Activities

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

Name:		**Role:**	
Organization/Affiliation:		**Phone:**	
Email:			

2.2.2 List of Key Personnel Responsible for Data Collection and Management

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	

2.2.3 Available Technical Expertise Teams

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	
Referred By:			

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	
Referred By:			

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	
Referred By:			

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	
Referred By:			

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	
Referred By:			

Name:		**Role:**	
Organization/Affiliation:		**Expertise:**	
Email:		**Phone:**	
Referred By:			

Table 2.1 Available Laboratory Resources

Laboratory 1 Name:	Laboratory Address/Phone:	Shipping Address/Phone:	Laboratory Contacts:	Contract on File?:
				◯ Yes ◯ No
	Sample Type Capability:	**Analysis Capability:**	**ERLN or LRN Member Lab?:**	**Biosafety Level:**
	Select an item.		Select an item.	Select an item.

Laboratory 2 Name:	Laboratory Address/Phone:	Shipping Address/Phone:	Laboratory Contacts:	Contract on File?:
				◯ Yes ◯ No
	Sample Type Capability:	**Analysis Capability:**	**ERLN or LRN Member Lab?:**	**Biosafety Level:**
	Select an item.		Select an item.	Select an item.

Laboratory 3 Name:	Laboratory Address/Phone:	Shipping Address/Phone:	Laboratory Contacts:	Contract on File?:
				◯ Yes ◯ No
	Sample Type Capability:	**Analysis Capability:**	**ERLN or LRN Member Lab?:**	**Biosafety Level:**
	Select an item.		Select an item.	Select an item.

Laboratory 4 Name:	Laboratory Address/Phone:	Shipping Address/Phone:	Laboratory Contacts:	Contract on File?:
				◯ Yes ◯ No
	Sample Type Capability:	**Analysis Capability:**	**ERLN or LRN Member Lab?:**	**Biosafety Level:**
	Select an item.		Select an item.	Select an item.

3 Boundaries of the Data Collection Activities

3.1 Operation Schedule and Relevant Deadlines

Operation Schedule Item:	Deadline:

Please attach additional documents here and list the corresponding file names below: **Attach File**

3.2 Regulatory/Jurisdictional Requirements

3.3 Hazard Characteristics

3.4 Practical Constraints

3.5 Location: Spatial and Contextual

3.5.1 Priority and Exclusion Zones

Please attach additional documents here and list the corresponding file names below: Attach File

3.5.2 Conceptual Model

Please attach additional documents here and list the corresponding file names below: Attach File

3.6 Scale for the Decision or Estimate

Please attach additional documents here and list the corresponding file names below: Attach File

3.7 Budget Constraints

3.8 Other General Resources

3.9 Waste Facility Capacity and Considerations

4 Documentation and Forms

4.1 Sample Documentation

Please attach additional documents here and list the corresponding file names below: Attach File

4.1.1 Sample Labels

Please attach additional documents here and list the corresponding file names below: Attach File

4.1.2 Chain-of-Custody Forms

Please attach additional documents here and list the corresponding file names below: Attach File

4.2 Photographic and Video Documentation

Please attach additional documents here and list the corresponding file names below: Attach File

4.3 Evidence Documentation

Please attach additional documents here and list the corresponding file names below: Attach File

5 Sample Collection

5.1 General Description of Sample Collection Activities to be Conducted

Table 5.1 Sample Collection Planning Form

Please attach your Sample Planning Form(s) and/or enter your Sample Planning Form(s) information below. Attach File

Sample Type:	Sample Matrix:	Sample Collection Protocol to be Used:	Wetting Solution Used:
Select an item.	Select an item. / Select an item. Select an item. / Select an item. Select an item. / Select an item.		Select an item.
	Specific Location(s):	**Location ID Numbers (individual or range of numbers):**	
	Preservation Required:	**Collection Containers (number, size, type):**	**Samples Accepted by Laboratory?:**
	Select an item.		◯ Yes ◯ No

Sample Type:	Sample Matrix:	Sample Collection Protocol to be Used:	Wetting Solution Used:
Select an item.	Select an item. / Select an item. Select an item. / Select an item. Select an item. / Select an item.		Select an item.
	Specific Location(s):	**Location ID Numbers (individual or range of numbers):**	
	Preservation Required:	**Collection Containers (number, size, type):**	**Samples Accepted by Laboratory?:**
	Select an item.		◯ Yes ◯ No

Sample Type:	Sample Matrix:		Sample Collection Protocol to be Used:	Wetting Solution Used:
Select an item.	Select an item.	Select an item.		Select an item.
	Select an item.	Select an item.		
	Select an item.	Select an item.		
	Specific Location(s):		**Location ID Numbers (individual or range of numbers):**	
	Preservation Required:		**Collection Containers (number, size, type):**	**Samples Accepted by Laboratory?**
	Select an item.			◯ Yes ◯ No

Sample Type:	Sample Matrix:		Sample Collection Protocol to be Used:	Wetting Solution Used:
Select an item.	Select an item.	Select an item.		Select an item.
	Select an item.	Select an item.		
	Select an item.	Select an item.		
	Specific Location(s):		**Location ID Numbers (individual or range of numbers):**	
	Preservation Required:		**Collection Containers (number, size, type):**	**Samples Accepted by Laboratory?:**
	Select an item.			◯ Yes ◯ No

Sample Type:	Sample Matrix:	Sample Collection Protocol to be Used:	Wetting Solution Used:
Select an item.	Select an item. / Select an item. Select an item. / Select an item. Select an item. / Select an item.		Select an item.
	Specific Location(s):	**Location ID Numbers (individual or range of numbers):**	
	Preservation Required:	**Collection Containers (number, size, type):**	**Samples Accepted by Laboratory?:**
	Select an item.		◯ Yes ◯ No

Sample Type:	Sample Matrix:	Sample Collection Protocol to be Used:	Wetting Solution Used:
Select an item.	Select an item. / Select an item. Select an item. / Select an item. Select an item. / Select an item.		Select an item.
	Specific Location(s):	**Location ID Numbers (individual or range of numbers):**	
	Preservation Required:	**Collection Containers (number, size, type):**	**Samples Accepted by Laboratory?:**
	Select an item.		◯ Yes ◯ No

5.2 Sampling Supplies and Equipment

Please attach additional documents here and list the corresponding file names below: Attach File

5.3 Sampling Approach

Please attach additional documents here and list the corresponding file names below: Attach File

5.4 Sampling Locations

Please attach additional documents here and list the corresponding file names below: Attach File

5.5 Plan for Obtaining Data

5.5.1 Sample Documentation Information

Please attach additional documents here and list the corresponding file names below: Attach File

5.5.2 Sampling Diagrams

Insert Sampling Diagram image here:

Please attach additional documents here and list the corresponding file names below:

Attach File

5.6 Sample Container and Equipment Decontamination

5.7 Sampling Team Configuration

Please attach additional documents here and list the corresponding file names below: Attach File

5.8 Other Sample Collection Considerations

6 Quality Control Activities

6.1 Data Quality Indicators

Table 6.1 Data Quality Indicators

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	**Corrective Action:**	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	Corrective Action:	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	Corrective Action:	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	Corrective Action:	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	Corrective Action:	

Parameter:	Measurement Method:	QA/QC Check:	Frequency:
	Acceptance Criteria:	Corrective Action:	

Table 6.2 Instrument Calibration

Equipment:	Calibration/Certification:	Tolerance:	Frequency of Calibration:

6.2 Field Quality Controls

6.3 Other QC Activities

7 Sample Transportation and Storage

7.1 Information on Sample Packaging and Shipping

Table 7.1 Sample Shipment Considerations

Sample Type:	Shipping Temperature:	Sample Packaging:	Transport Container Labels:	Mode of Sample Transport:
Select an item.	Select an item.			
Select an item.	Select an item.			
Select an item.	Select an item.			
Select an item.	Select an item.			
Select an item.	Select an item.			
Select an item.	Select an item.			

8 Processing and Analysis Protocols

8.1 Laboratory Reporting Requirements

Please attach additional documents here and list the corresponding file names below: Attach File

Table 8.1 Analytical Protocols to Be Used

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	**Quantification and/or Detection Limit:**	**Reporting Units:**
		Select an item.		

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	**Quantification and/or Detection Limit:**	**Reporting Units:**
		Select an item.		

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	**Quantification and/or Detection Limit:**	**Reporting Units:**
		Select an item.		

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	**Quantification and/or Detection Limit:**	**Reporting Units:**
		Select an item.		

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	Quantification and/or Detection Limit:	Reporting Units:
		Select an item.		

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	Quantification and/or Detection Limit:	Reporting Units:
		Select an item.		

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	Quantification and/or Detection Limit:	Reporting Units:
		Select an item.		

Sample Type:	Laboratory Selected for Analysis:	Sample Processing Procedure:	Analytical Procedure:	
Select an item.				
		Maximum Holding Time and Storage Temperature:	Quantification and/or Detection Limit:	Reporting Units:
		Select an item.		

9 Data Reduction, Statistical Analysis, and Visualization

9.1 Data Review and Reduction

9.2 Data Assessment and Summary Statistics

9.3 Application of Results

Table 9.1 Defining Alternative Actions

Principal Questions / Decision or Estimation Statement(s):	Results of Data Collection	Alternative Actions

10 Supplemental Plans

10.1 Quality Assurance Project Plan

Please attach additional documents here and list the corresponding file names below: Attach File

10.2 Data Management Plan

Please attach additional documents here and list the corresponding file names below: Attach File

10.3 Waste Management Plan

Please attach additional documents here and list the corresponding file names below: Attach File

10.4 Health and Safety Plan

Please attach additional documents here and list the corresponding file names below: Attach File

11 References

Appendix: Data Quality Objective Summary

Data Quality Objective Summary Table	
STEP 1. State the Problem	
General Data Collection Activity Description	*1.1 General Data Collection Activity Description*
Sampling Phase and Pathogen	*1.2 Sampling Phase and Pathogen*
Site Information and History	*1.4 Site Information and History*
STEP 2. Identify the Goal of the Sampling and Analysis Activities (estimation statement)	
Goals	*1.3 Goal* *Table 9.1 Defining Alternative Actions*
STEP 3. Identify the Information Inputs	
Sample Collection	*Table 5.1 Sample Collection Planning Form*
Plan for Obtaining Data	*5.5 Plan for Obtaining Data*
Analytical Protocols	*Table 8.1 Analytical Protocols to be Used*
STEP 4. Define the Boundaries of the Sampling and Analysis Activities	
Regulatory and Jurisdictional Requirements	*3.2 Regulatory/Jurisdictional Requirements*
Practical Constraints	*3.4 Practical Constraints*
Location: Spatial and Contextual	*3.5 Location: Spatial and Contextual* *3.5.1 Priority and Exclusion Zones* *3.5.2 Conceptual Model*
Scale of the Decision or Estimate	*3.6 Scale for the Decision or Estimate*
STEP 5. Develop the Analytical Approach	
Data Review and Reduction	*9.1 Data Review and Reduction*
Data Assessment and Summary Statistics	*9.2 Data Assessment and Summary Statistics*
Application of Results	*9.3 Application of Results*
STEP 6. Specify the Performance and Acceptance Criteria	
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Field Quality Controls	*6.2 Field Quality Controls*
STEP 7. Optimize the Design	
Sampling Approach	*5.3 Sampling Approach*
Sample Documentation Information	*5.5.1 Sample Documentation Information*
Sample Collection Planning Form	*Table 5.1 Sample Collection Planning Form*