

Attachment H

"EPA Region I Performance Evaluation Program Guidance",
July 1996, Revision

EPA REGION I
PERFORMANCE EVALUATION PROGRAM GUIDANCE

July 1996

PREFACE

This document, the EPA Region I Performance Evaluation Program Guidance, July 1996, has been created to replace in its entirety, the U.S. EPA Region I Performance Evaluation Program Guidance, February 1995, Update. All documents that reference and/or utilize EPA Region I Performance Evaluation Program requirements must be revised to reflect these new procedures.

The use of single and/or double blind PE samples helps to ensure that environmental data collection activities result in the delivery of analytical data of known and documented quality, suitable for its intended use.

**EPA REGION I
PERFORMANCE EVALUATION PROGRAM GUIDANCE**

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1.0 CONTEXT FOR THE PERFORMANCE EVALUATION (PE) PROGRAM

This guidance provides the details on how to implement the EPA Region I PE Program requirements supporting the data quality system described in the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part I, dated July 1996 or most recent revision. The use of single and/or double blind PE samples helps to ensure that environmental data collection activities result in the delivery of analytical data of known and documented quality, suitable for its intended use.

2.0 PURPOSE OF THE PE PROGRAM

The EPA Region I PE Program serves three major functions:

1. To identify a community of technically capable laboratories during laboratory pre-award evaluations,
2. To evaluate the performance of analytical laboratories over a period of time,
3. To provide information on a laboratory's ability to accurately identify and quantitate analytes of interest during the period of sample preparation and analysis.

In the third function, the EPA Region I PE Program works in conjunction with the tiered data validation approach that is described in the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.

3.0 USE OF PE SAMPLES

3.1 Superfund Program

The EPA Region I PE Program applies to all Superfund fixed laboratory, field laboratory (full protocol analytical methods performed in a mobile or transportable field laboratory), and field screening analyses; regardless of the mechanism used to obtain analytical services, the funding source for the project, or the project lead (EPA or non-EPA entity) for the site work.

3.1.1 EPA Fund-lead and PRP/Federal Facility Oversight Projects

For EPA Fund-lead and PRP/Federal Facility Oversight Superfund projects, the EPA Region I PE Program applies to all analytical services obtained through Contract Laboratory Program (CLP) and non-CLP vehicles. Non-CLP vehicles include fixed laboratory, field laboratory and field screening analytical services provided directly by EPA or by EPA prime contractors and/or subcontractors under the Delivery of Analytical Services (DAS) mechanism. EPA-provided PE samples, which meet project Data Quality Objectives (DQOs), should be utilized when available as described in Section 4.0 of this guidance document. If appropriate PE samples meeting project DQOs are not available from EPA, then they should be obtained from commercial vendors.

3.1.2 Fund-lead Projects Performed by States or other Federal Agencies

For Fund-lead projects performed by States (under Cooperative Agreements) or other Federal Agencies (under Interagency Agreements) that utilize the CLP to obtain analytical services, EPA-provided PE samples should be utilized. When non-CLP vehicles are utilized to provide fixed laboratory, field laboratory, or field screening analytical services for these Superfund projects, then PE samples should be obtained from commercial vendors.

3.1.3 Non Fund-lead Projects

For Non Fund-lead Superfund projects undertaken by Potentially Responsible Parties (PRPs) or other Federal Agencies, the EPA Region I PE Program applies to all fixed laboratory, field laboratory, and field screening analytical services utilized for these projects. Appropriate PE samples meeting project DQOs must be utilized whenever environmental samples are collected. These PE samples are not generally available from EPA and should be obtained from commercial vendors.

3.1.4 EPA Region I PE Program Requirements for Superfund Projects

The following EPA Region I PE Program requirements apply to all Superfund projects:

- ! One single or double blind PE sample should be used for each sample matrix, analysis parameter, and concentration level for each Sample Delivery Group (SDG) that is sent to a laboratory. An SDG is defined as a group of 20 or fewer field samples within a project, received over a period of up to 14 calendar days. The PE samples should be counted as field samples in the 20 sample SDG total.
- ! PE samples are required for all analytical testing when they are available from EPA or commercial vendors in the appropriate matrix and at the proper concentration level. Additionally, PE samples should contain as many target analytes as possible, but they must contain at least one of the target analytes, preferably a contaminant of concern at the site.
- ! For soil/sediment/solid sampling events, it is not necessary to include an aqueous PE sample when the only aqueous samples are equipment and/or trip blanks **and** when a PE sample exists (from either EPA or a commercial vendor) for the soil/sediment/solid samples. However, an aqueous PE sample should be included with soil/sediment/solid samples when a soil/sediment/solid PE sample (from either EPA or a commercial vendor) does not exist for that analysis parameter.

The EPA-NE Data Validation (DV) Chemist should be contacted (as per Section 6.1.2) to obtain advice on identifying available commercial vendors of PE samples and choosing a proper PE sample.

3.2 Non-Superfund Programs

The EPA Region I QA Unit recommends that Non-Superfund programs utilize PE samples whenever environmental samples are collected. These PE samples are not available from EPA and should be obtained from commercial vendors. This recommendation applies to environmental sampling performed by EPA (OEME, OEP, etc.) and non-EPA entities (facilities, manufacturers, generators, States, other Federal Agencies, etc.) in support of Non-Superfund federal regulations such as RCRA, UST, CWA, NPDES, CAA, TSCA, FIFRA, etc.

The following PE Program requirements apply to all Non-Superfund projects:

- ! One single or double blind PE sample should be used for each sample matrix, analysis parameter, and concentration level for each Sample Delivery Group (SDG) that is sent to a laboratory. An SDG is defined as a group of 20 or fewer field samples within a project, received over a period of up to 14 calendar days. The PE samples should be counted

as field samples in the 20 sample SDG total.

- ! PE samples are required for all analytical testing when they are available from commercial vendors in the appropriate matrix and at the proper concentration level. Additionally, PE samples should contain as many target analytes as possible, but they must contain at least one of the target analytes, preferably a contaminant of concern
- ! For soil/sediment/solid sampling events, it is not necessary to include an aqueous PE sample when the only aqueous samples are equipment and/or trip blanks **and** when a PE sample exists from a commercial vendor for the soil/sediment/solid samples. However, an aqueous PE sample should be included with soil/sediment/solid samples when a soil/sediment/solid PE sample does not exist for that analysis parameter.

The EPA-NE DV Chemist should be contacted (as per Section 6.1.2) to obtain advice on identifying available commercial vendors of PE samples and choosing a proper PE sample.

4.0 APPLICATION OF PE SAMPLES

Attachment 1 provides a list of EPA-provided PE samples that are currently available through the Region I QA Unit for Fund-lead and PRP/Federal Facility Oversight Superfund work. Included for each PE material on the list is an example of an analytical application. Use of the PE samples is **NOT** limited to the example application. For instance, #90-001 or #95-001, Low/Medium Volatiles in Water, could be used for analysis by the CLPOLM03.1 Statement of Work, SW-846 method 8260, 40 CFR method 624, etc. Note that several catalogue numbers may exist for a particular method description and matrix. Generally, different catalogue numbers for a specific method description and matrix contain different analyte mixes and/or concentrations.

Note also that #90-005, metals in soil PE samples, now contain mercury plus the other metals. However, one bottle does not contain enough soil to carry out both mercury and metals preparation and analysis. If both analyses are to be performed on the soil, then two bottles of #90-005 must be requested when ordering.

If an aqueous PE sample is needed for mercury analysis, then #95-004 must be ordered since the aqueous #90-004 PE samples contain metals but do **not** contain mercury.

A list of PE samples that are available from commercial vendors is provided in Attachment 2 for use in Fund-lead Superfund projects, for Non Fund-lead Superfund projects, as well as for Non-Superfund projects. Tables I and II list the parameters and matrices for which various vendors can supply PE samples and Standard Reference Materials (SRMs), respectively. SRMs can be utilized as PE samples. Table III provides vendor telephone and telefax numbers. Individual vendors should be contacted directly to obtain current catalogue information. Current catalogue information must be consulted to ensure that particular PE samples will meet project DQOs for specific compounds/parameters, matrices and concentration levels. The list provided in Attachment 2 is not inclusive of all potential PE/SRM vendors and does not constitute an endorsement by EPA of any particular vendor or any specific PE sample. It is provided solely for reference in identifying potential commercial PE sample sources.

5.0 PLANNING FOR PE SAMPLE USE

The use of PE samples should be stipulated as an analytical Quality Control measure during the planning stage of each project. The utilization of PE samples in accordance with this guidance document, the [EPA Region I Performance Evaluation Program Guidance](#), dated July 1996 or most recent revision, should be stipulated in every **DQO Summary Form, Quality Assurance Project Plan (QAPjP)** and/or **Sampling and Analysis Plan (SAP)** along with the frequency, analysis parameters, matrices, and concentration levels for which a PE sample will be used. The origin of the PE sample (EPA-provided or commercial vendor) should also be documented in the QAPjP and/or SAP.

Additionally, preparation and analysis of PE samples must be written into laboratory Technical Specifications as a QC requirement when obtaining analytical services from fixed and/or field laboratories.

PE samples are to be included in the sample count per SDG for CLP and DAS analyses, as well as any other analytical services mechanism. For example, 20 field samples and one equipment blank (for a specified concentration level, matrix, and analysis parameter) would require two SDGs and therefore two PE samples for a total of 23 samples.

6.0 RESPONSIBILITIES IN THE PE PROGRAM

6.1 Superfund Program

Figure 1 contains a flow chart that outlines the process, roles/responsibilities, and time frames for planning, obtaining, analyzing, scoring, and evaluating results for EPA-provided and commercial PE samples used in Superfund projects.

6.1.1 EPA-NE Performance Evaluation Chemist

The Performance Evaluation (PE) Chemist of the Region I Quality Assurance Unit (telephone # 617/860-4630, telefax # 617/860-4397) is responsible for the following activities:

- ! Providing a current list of EPA PE samples upon request,
- ! Supplying EPA PE samples to EPA Field Sampling Contractor Lead Chemists and EPA Field Sampling Personnel,
- ! Scoring analytical results for the EPA PE samples,
- ! Providing EPA PE sample score results to EPA Field Sampling Contractor Lead Chemists and EPA Field Sampling Personnel.

6.1.2 EPA-NE Data Validation Chemist

The EPA-NE Data Validation (DV) Chemist of the Region I Quality Assurance Unit (telephone # 617/860-4634) is responsible for the following activities:

- ! Tracking EPA PE samples and their analytical results,
- ! Notifying EPA Field Sampling Contractor Lead Chemists and EPA Field Sampling Personnel when EPA PE sample score results indicate laboratory performance problems,
- ! Trending laboratory performance based upon EPA PE sample score results,
- ! Providing advice on identifying commercial vendors of PE samples, choosing a proper PE sample, and evaluating resultant data quality.

6.1.3 EPA Field Sampling Contractor Lead Chemists and EPA Field Sampling Personnel

EPA Field Sampling Contractor Lead Chemists and EPA Field Sampling Personnel are responsible for the following activities (when CLP and/or non-CLP vehicles are used to obtain analytical services for EPA Fund-lead and PRP/Federal Facility Oversight projects):

- ! Determining PE sample needs during the project planning phase (scoping meetings, DQO Summary Forms, Quality Assurance Project Plans and/or Sampling and Analysis Plans),
- ! Identifying PE sample sources (EPA and commercial),
- ! Procuring commercial PE samples if necessary,
- ! Obtaining EPA PE samples from the EPA-NE PE Chemist according to the procedures outlined in Section 7.0 of this guidance document,
- ! Ensuring that every laboratory which is analyzing project samples receives and analyzes appropriate PE samples according to the frequency requirements described in Section 3.0 of this guidance document,
- ! Obtaining score results for EPA and/or commercial PE samples,
- ! Evaluating PE sample score results in accordance with the most recent revision of the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, and including a discussion of the PE sample score results in Tier I Validation Cover Letters and Tier II/III Data Validation Reports,
- ! Notifying the EPA-NE DV Chemist if EPA PE sample performance causes reduced payment or rejection of any CLP data.

6.1.4 States and Other Federal Agencies

6.1.4.1 Fund-lead CLP Projects

For Fund-lead projects performed by States or other Federal Agencies that utilize the CLP to obtain analytical services, the States and other Federal Agencies are responsible for performing the activities described in Section 6.1.3 of this guidance document.

6.1.4.2 Fund-lead Non-CLP Projects

When non-CLP vehicles are utilized for these projects (and, therefore, commercial PE samples must be used), then States or other Federal Agencies are responsible for the following activities:

- ! Determining PE sample needs during the project planning phase (scoping meetings, DQO Summary Forms, Quality Assurance Project Plans and/or Sampling and Analysis Plans),
- ! Identifying commercial PE sample sources,
- ! Procuring commercial PE samples,
- ! Ensuring that every laboratory which is analyzing project samples receives and analyzes appropriate commercial PE samples according to the frequency requirements described in Section 3.0 of this guidance document,
- ! Obtaining score results for commercial PE samples,

- ! Evaluating commercial PE sample score results in accordance with the most recent revision of the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, and including a discussion of the PE sample score results in Tier I Validation Cover Letters and Tier II/III Data Validation Reports.

6.1.5 Non Fund-lead Projects

For Non Fund-lead Superfund projects undertaken by PRPs or other Federal Agencies, the PRP or other Federal Agency is responsible for the following activities:

- ! Determining PE sample needs during the project planning phase (scoping meetings, DQO Summary Forms, Quality Assurance Project Plans and/or Sampling and Analysis Plans),
- ! Identifying commercial PE sample sources,
- ! Procuring commercial PE samples,
- ! Ensuring that every laboratory which is analyzing project samples receives and analyzes appropriate commercial PE samples according to the frequency requirements described in Section 3.0 of this guidance document,
- ! Obtaining score results for commercial PE samples,
- ! Evaluating commercial PE sample score results in accordance with the most recent revision of the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, and including a discussion of the PE sample score results in Tier I Validation Cover Letters and Tier II/III Data Validation Reports.

6.2 Non-Superfund Programs

EPA Site Managers and EPA Project Officers are responsible for ensuring that the EPA Region I PE Program requirements contained in Sections 3.0 through 5.0 of this guidance document are applied to environmental sampling performed by EPA (OEME, OEP, etc.) and non-EPA entities (facilities, manufacturers, generators, States, other Federal Agencies, etc.) in support of Non-Superfund federal regulations within EPA Region I.

The EPA or non-EPA entity performing sampling is responsible for:

- ! Determining PE sample needs during the project planning phase (scoping meetings, DQO Summary Forms, Quality Assurance Project Plans and/or Sampling and Analysis Plans),
- ! Identifying commercial PE sample sources,
- ! Procuring commercial PE samples,
- ! Ensuring that every laboratory which is analyzing project samples receives and analyzes appropriate commercial PE samples according to the frequency requirements described in Section 3.0 of this guidance document,
- ! Obtaining score results for commercial PE samples,

- ! Evaluating commercial PE sample score results in accordance with the most recent revision of the Region I EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, and including a discussion of the PE sample score results in Tier I Validation Cover Letters and Tier II/III Data Validation Reports.

The EPA-NE DV Chemist should be contacted (as per Section 6.1.2) to obtain advice on identifying available commercial vendors of PE samples, choosing a proper PE sample, or evaluating resultant analytical data quality.

7.0 DETAILED PROCEDURES FOR THE PE PROGRAM

7.1 Superfund Program

Specific procedures for obtaining and utilizing EPA-provided PE samples for the EPA Region I Performance Evaluation Program are provided below. These procedures must be followed by EPA Field Sampling Contractor Lead Chemists and EPA Field Sampling Personnel (whenever CLP and/or non-CLP vehicles are used to obtain analytical services for EPA Fund-lead and PRP/Federal Facility Oversight projects) and by States or other Federal Agencies that utilize the CLP to obtain analytical services for Fund-lead projects.

1. The Lead Chemist (LC) from the EPA Field Sampling Contractor (ARCS, START, RACS, etc.), State, or other Federal Agency (ACOE, etc.), or the EPA Field Sampling Personnel (EFSP) telefaxes the EPA Region I PE Sample Request Forms to the EPA-NE PE Chemist at least one week prior to sampling. In an emergency, PE samples can be picked up within 24 hours of ordering, but this service cannot be guaranteed. The Lead Chemist should confirm by phone that the telefaxed request was received by the EPA-NE PE Chemist.

The EPA Region I PE Sample Request Form must specify the catalogue numbers for requested PE samples, number of PE samples ordered, method description and applicable matrix, exact reference title/# for the analytical method which will be used to prepare and analyze the PE and field samples, and the requested date and time for pick-up. Any specific analytes or special concentrations needed for the project must be clearly indicated on the EPA Region I PE Sample Request Form in the "Required Analyte Concentration" field. If a specific analyte or special concentration, as requested by the Lead Chemist or EPA Field Sampling Personnel in the "Required Analyte Concentration" field, cannot be provided by an existing EPA PE sample, then the EPA-NE PE Chemist will notify the LC/EFSP by telephone. The LC/EFSP will then determine, based upon project DQOs, whether an EPA PE sample that does not contain that specific analyte or special concentration will be sufficient to meet project DQOs or whether a commercial PE sample will be utilized. Copies of blank and completed EPA Region I PE Sample Request Forms are provided in Attachment 3.

2. EPA PE samples with preparation instructions are received, verified, and logged out from the EPA-NE PE Chemist by the Lead Chemist or EPA Field Sampling Personnel at the pre-arranged date and time. The Lead Chemist or EPA Field Sampling Personnel ensures that PE samples are handled and stored properly until laboratory receipt.
3. EPA sample numbers are assigned to the EPA PE samples during the sampling episode by the Lead Chemist (or sampling designee) or EPA Field Sampling Personnel. The EPA PE ampule numbers must be documented on the Traffic Report/Chain of Custody Forms to cross-reference EPA sample numbers and EPA PE ampule numbers.
4. The Lead Chemist (or sampling designee) or EPA Field Sampling Personnel then submits the EPA PE samples, along with the preparation instructions and field samples, to the laboratories performing the analytical work.

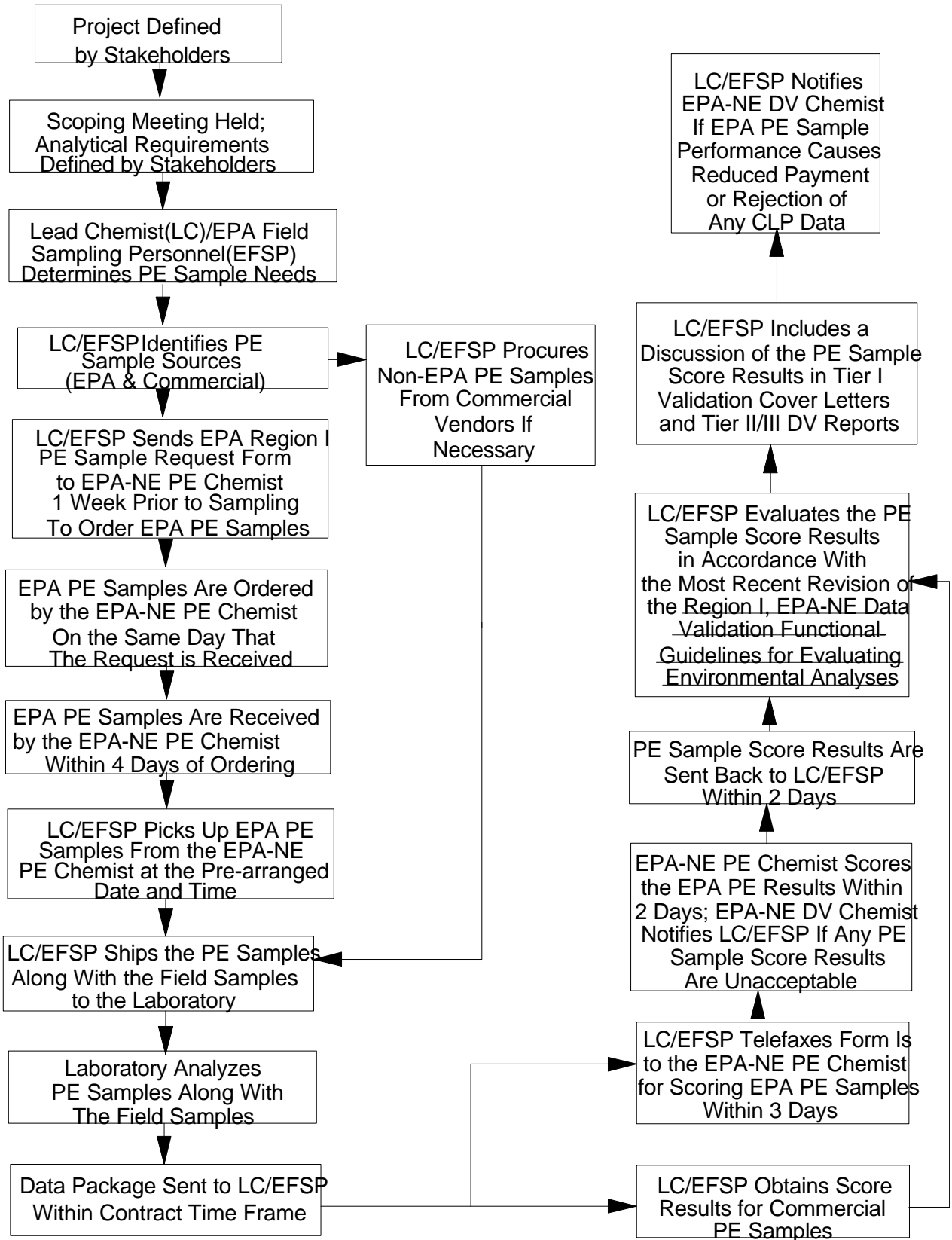
5. The laboratories analyze the EPA PE samples along with their respective SDGs of field samples according to the specified methods. For CLP, the laboratories provide the resultant data packages to the RSCC. For non-CLP, the laboratories provide the resultant data packages to the Lead Chemist.
6. When the RSCC submits the CLP data packages to the Lead Chemist or EPA Field Sampling Personnel, or when the Lead Chemist or EPA Field Sampling Personnel receives the non-CLP data package from the laboratory, then the Lead Chemist or EPA Field Sampling Personnel immediately (within 3 business days) telefaxes the EPA PE sample data (Form Is) to the EPA-NE PE Chemist. The corresponding EPA PE ampule number (ID#) must be written on the Form Is by the Lead Chemist or EPA Field Sampling Personnel. The complete analytical method reference (full method name, number, revision date, etc.) must also be written on the Form Is by the Lead Chemist or EPA Field Sampling Personnel.
7. The EPA PE Chemist scores the EPA PE data and telefaxes the results back to the Lead Chemist or EPA Field Sampling Personnel, usually within 2 business days.
8. The EPA PE sample score results are evaluated by the Lead Chemist or EPA Field Sampling Personnel, and the EPA PE sample score results are incorporated into the data validation process in accordance with the most recent revision of the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part I, Sections 8.5.3 and 8.5.4. A discussion of the PE sample score results must be provided in Tier I Validation Cover Letters and Tier II/III Data Validation Reports.
9. If poor performance on the EPA PE sample causes reduced payment or rejection of any CLP data, the Lead Chemist or EPA Field Sampling Personnel contacts the EPA-NE DV Chemist to initiate the reduced payment/data rejection process in accordance with the most recent revision of the Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part I. For non-CLP data, the Lead Chemist does not contact the EPA-NE DV Chemist to initiate the reduced payment/data rejection process. For situations when resampling is recommended, the Lead Chemist or EPA Field Sampling Personnel (whichever performed the field sampling) must also contact the EPA Site Manager by telephone or electronic mail to alert them to the situation.

Similar procedures should be employed for obtaining and utilizing commercial PE samples for Fund-lead projects performed by States or other Federal Agencies that utilize non-CLP vehicles to obtain analytical services and for Non Fund-lead Superfund projects undertaken by PRPs or other Federal Agencies.

7.2 Non-Superfund Programs

EPA Site Managers and EPA Project Officers should establish SOPs for implementing use of PE samples in their Non-Superfund projects, containing similar activities and roles/responsibilities as described above for the Superfund Program. SOPs serve to augment the project's Quality Assurance documentation and to document project-specific procedures. SOPs are critical to producing environmental data that are consistent, comparable, credible and defensible.

FIGURE 1 - SUPERFUND PE PROGRAM PROCESS



ATTACHMENT 1

**EPA REGION I PERFORMANCE EVALUATION SAMPLES
(7/96 Update)**

PARAMETER	CATALOGUE NUMBER	METHOD DESCRIPTION & MATRIX	APPLICATION	
ANIONS	91-006	Low Concentration Anions in Water	ILC01 & Rev.	
METALS	91-004	Low Concentration Metals in Water	ILC01 & Rev.	
	90-004	Low/Medium Metals in Water (No Mercury) (Use 95-004 for Mercury)	ILM04 & Rev.	
	95-017	ICP/Graphite Furnace Metals (Low/Medium Metals in Water - No Mercury)	ILM04 & Rev.	
	95-004	Low/Medium Mercury in Water	ILM04 & Rev.	
	90-005	Low/Medium Metals in Soil (With Mercury) (Send two bottles when Metals and Mercury are required)	ILM04 & Rev.	
	91-007	High Concentration Metals in Soil	HCIN	
	91-008	High Concentration Metals in Soil/Oil	HCIN	
	91-009	High Concentration Metals in Oil	HCIN	
	91-010	High Concentration Metals in Oil/Water	HCIN	
	94-020	ICC Industry Category Metals in Soil - Chemical and Allied Products (Various Levels Available)	ILM04 & Rev.	
	94-021	ICC Industry Category Metals in Soil - Primary Metals Industries (Various Levels Available)	ILM04 & Rev.	
	94-022	ICC Industry Category Metals in Soil - Mining (Various Levels Available)	ILM04 & Rev.	
	94-023	ICC Industry Category Metals in Soil - Recyclers (Various Levels Available)	ILM04 & Rev.	
	94-024	ICC Industry Category Metals in Soil- Other Waste Facilities (Various Levels Available)	ILM04 & Rev.	
	95-009	ICC Industry Category Metals in Soil - Municipal Landfill (Various Levels Available)	ILM04 & Rev.	
	CYANIDE	91-005	Low Concentration Cyanide in Water	ILC01 & Rev.
		90-006	Low/Medium Cyanide in Water	ILM04 & Rev.
ASBESTOS	1 through 20	Asbestos Materials	EMSL-RTP Method	

**EPA REGION I PERFORMANCE EVALUATION SAMPLES
(7/96 Update)**

PARAMETER	CATALOGUE NUMBER	METHOD DESCRIPTION & MATRIX	APPLICATION
VOLATILES	91-001	Low Concentration Volatiles in Water	OLC01, Method 524.2
	90-001	Low/Medium Volatiles in Water	OLM03 & Rev.
	95-001	Low/Medium Volatiles in Water	OLM03 & Rev.
	Requests to OEME	Volatiles in Air	TO-14, EMSL-RTP
SEMIVOLATILES	91-002	Low Concentration Semivolatiles in Water	OLC01 & Rev.
	90-002	Low/Medium Semivolatiles in Water	OLM03 & Rev.
	95-002	Low/Medium Semivolatiles in Water	OLM03 & Rev.
	95-010	ICC Industry Category Organics - General Manufacturing in Soil (High PPM Range)	OLM03 & Rev.
PESTICIDES/PCBs	91-003	Low Concentration Pesticides/PCBs in Water	OLC01 & Rev.
	90-003	Low/Medium Pesticides/PCBs in Water	OLM03 & Rev.
	95-003	Low/Medium Pesticides/PCBs in Water	OLM03 & Rev.
	91-011	Aroclor 1260 in Soil	OLM03 & Rev.
	91-012	Aroclor 1254 in Soil	OLM03 & Rev.
	91-013	Aroclor 1248 in Soil	OLM03 & Rev.

**EPA REGION I PERFORMANCE EVALUATION SAMPLES
(7/96 Update)**

PARAMETER	CATALOGUE NUMBER	METHOD DESCRIPTION & MATRIX	APPLICATION
DIOXINS/FURANS*	90-007	2,3,7,8-TCDD in soil (0.1-20 PPB)	GC/LRMS
	90-009	PCDD/PCDF in Soils (PPB Range PCDDs/PCDFs For Low Resolution MS)	GC/LRMS, DFLM01 & Rev.
	92-016	PCDD/PCDF With Interferences in Soil (PPB Range PCDDs/PCDFs and Interferences For Low Resolution MS)	GC/LRMS, DFLM01 & Rev.
	91-014	Interference Fortified Blank Soil (PPB Range Interferences For Low Resolution MS PCDD/PCDF Analyses)	GC/LRMS, DFLM01 & Rev.
	91-015	Blank Soil (For Low Resolution MS PCDD/PCDF Analyses)	GC/LRMS, DFLM01 & Rev.
	95-011	PCDD/PCDF in Soils (PPT Range PCDDs/PCDFs For High Resolution MS)	GC/HRMS, Method 1613B
	95-012	PCDD/PCDF With Interferences in Soil (PPT Range PCDDs/PCDFs with PPB Range Interferences For High Resolution MS) (Use with 95-013 as Blank)	GC/HRMS, Method 1613B
	95-013	Interference Fortified Blank Soil (PPB Range Interferences For High Resolution MS PCDD/PCDF Analyses) (Use with 95-012 as Spike)	GC/HRMS, Method 1613B
	95-014	Blank Soil (No PCDDs/PCDFs or Interferences >HRMS QL; For High Resolution MS PCDD/PCDF Analyses)	GC/HRMS, Method 1613B
	95-015	PCDD/PCDF in Incinerator Fly Ash (Various Levels Available)	Method 1613B & DFLM01 & Rev.
	95-016	PCDD/PCDF in "Environmental" Soil (Various Levels Available)	Method 1613B & DFLM01 & Rev.

*Dioxin/Furan Analyses require one Blank (or Interference Fortified Blank), and one Spike (or Interference Fortified Spike) at the appropriate concentration for the method. Note that blank and spike samples should be chosen so that the blank and spike pair either contains interferences or does not contain interferences, i.e., a spike containing interferences should not be paired with a blank that does not contain interferences and vice versa.

ATTACHMENT 2

EPA REGION I

PERFORMANCE EVALUATION

AND

STANDARD REFERENCE MATERIALS

VENDOR'S LIST

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1.0 INTRODUCTION

The purpose of this report is to compile information concerning commercial vendors supplying Performance Evaluation (PE) Samples and Standard Reference Materials (SRM) for environmental analysis. The format of the report provides quick access to information regarding availability and source of the PE/SRM samples.

2.0 PERFORMANCE EVALUATION SAMPLES AND STANDARD REFERENCE MATERIALS VENDOR'S LIST

The information regarding commercial vendors who supply Performance Evaluation (PE) samples and Standard Reference Materials (SRM) was compiled into table format. To provide easy access to information, the data were classified by major analytical parameters and matrix with the particular vendor's name who supplies the described samples/materials. The above information is included in Tables I and II. Table III contains a list of PE/SRM vendors with their full name, telephone and telefax numbers.

The PE and SRM data were compiled based on the most current available catalogs (refer to Section 4.0 for details).

3.0 CONCLUSION

Upon review of available PE catalogues, it appears that some parameters/matrices do not have corresponding PE materials. Only the water matrix (including drinking water) is fully represented by the PE samples. Generally, the following matrices or parameters do not have PE samples (for specifics refer to Table I):

- ! Tissue - all parameters except dioxin
- ! Ash - all parameters
- ! Sediment - all parameters
- ! Pesticides in soil
- ! Herbicides in soil

4.0 REFERENCES

1. Analytical Products Group, Inc.: Performance Evaluation and Quality Control Drinking Water Standards, 1995
2. Analytical Products Group, Inc.: The Quality Assurance Challenge, 1995
3. Cambridge Isotope Laboratories: Environmental Contaminant Standards, 1994-1995
4. Chemyclopedia, 1994
5. ChemService, 1995
6. Environmental Resource Associates (ERA): Environmental Quality Control Standards, 1995
7. Inorganic Ventures, Inc., 1995
8. National Institute of Standards and Technology (NIST): Standard Reference Materials, January 1994
9. Resource Technology Corporation (RTC): Standard Environmental Reference Materials, 1994
10. Scott Specialty Gases Catalog (Date unknown)
11. SPEX Industries, Inc.: Standards and Products for Inorganic Spectroscopy, 1995
12. ULTRA Scientific: Quality Control Standards, 1994

TABLE I
PERFORMANCE EVALUATION SAMPLE VENDOR'S LIST

PARAMETER	MATRIX	NAME OF VENDOR ¹
DEMAND (BOD, COD, TOC)	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
NUTRIENTS	Drinking Water	APG, Inorganic Ventures Inc., ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
HARDNESS	Drinking Water	Inorganic Ventures Inc., ULTRA Scientific
	Water	ERA, Inorganic Ventures Inc., ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
SOLIDS (TSS, TDS)	Drinking Water	APG, Inorganic Ventures Inc., ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
OIL & GREASE	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
MINERALS	Drinking Water	APG, Inorganic Ventures Inc., ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
ANIONS	Water	ERA, SPEX
CATIONS	Water	ERA, Inorganic Ventures Inc., ULTRA Scientific
pH	Drinking Water	APG, ERA, Inorganic Ventures Inc.
	Water	APG, ERA, Inorganic Ventures Inc., SPEX
	Wastewater	Inorganic Ventures Inc.
TRACE METALS	Drinking Water	APG, ERA
	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
	Transformer Oil	ULTRA Scientific
METALS	Drinking Water	Inorganic Ventures Inc., ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Soil	ERA
	Sewage Sludge	ERA

TABLE I
PERFORMANCE EVALUATION SAMPLE VENDOR'S LIST

PARAMETER	MATRIX	NAME OF VENDOR ¹
INORGANICS BLANK	Sand	ERA
	Soil	ERA
TOTAL PHENOLICS	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
CYANIDE	Drinking Water	APG, SPEX, ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
	Soil	ERA
	Transformer Oil	ULTRA Scientific
RESIDUAL CHLORINE	Drinking Water	APG, Inorganic Ventures Inc., ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Wastewater	Inorganic Ventures Inc., ULTRA Scientific
CORROSIVITY/SODIUM	Water	SPEX
TURBIDITY	Drinking Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., SPEX, ULTRA Scientific
ALUMINUM - High Level	Water	APG
ASBESTOS	Water	ERA
FLUORIDE	Water	APG, SPEX
TOTAL ORGANIC HALIDES	Water	APG, SPEX
HEXAVALENT CHROMIUM	Water	APG
URANIUM	Water	APG

TABLE I
PERFORMANCE EVALUATION SAMPLE VENDOR'S LIST

PARAMETER	MATRIX	NAME OF VENDOR ¹
TRICHALOMETHANES	Drinking Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Water	ERA, Inorganic Ventures Inc., ULTRA Scientific
EDB/DBCP	Drinking Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Water	ERA, Inorganic Ventures Inc., ULTRA Scientific
VOLATILES	Drinking Water	APG, ERA, ChemService, Ultra Scientific
	Water	APG, ERA, ChemService, Inorganic Ventures Inc., ULTRA Scientific
	Wastewater	ULTRA Scientific
	Soil	ERA
	Transformer Oil	ULTRA Scientific
VOLATILES BLANK	Sand	ERA
	Soil	ERA
ACID EXTRACTABLES	Drinking Water	Inorganic Ventures Inc.
	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
BASE/NEUTRAL EXTRACTABLES	Water	APG, ERA, ULTRA Scientific
	Wastewater	ULTRA Scientific
SEMIVOLATILES	Drinking Water	APG, ERA, Inorganic Ventures Inc., ChemService, ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., ChemService, ULTRA Scientific
	Soil	ERA
	Transformer Oil	ULTRA Scientific
SEMIVOLATILES BLANK	Soil	ERA
PESTICIDES	Drinking Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Wastewater	ULTRA Scientific
CHLORDANE	Drinking Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Water	ERA, Inorganic Ventures Inc.
	Wastewater	ULTRA Scientific
HERBICIDES	Drinking Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Water	ERA, Inorganic Ventures Inc., ULTRA Scientific

TABLE I
PERFORMANCE EVALUATION SAMPLE VENDOR'S LIST

PARAMETER	MATRIX	NAME OF VENDOR ¹
CARBAMATE PESTICIDES	Drinking Water	APG, ERA, ChemService, Inorganic Ventures inc., ULTRA Scientific
	Water	ERA, ChemService, Inorganic Ventures Inc., ULTRA Scientific
TOXAPHENE	Drinking Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Water	ERA, Inorganic Ventures Inc., ULTRA Scientific
	Wastewater	ULTRA Scientific
PCBs	Drinking Water	APG, ERA, Inorganic Ventures Inc.
	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Wastewater	ULTRA Scientific
	Oil	ERA, ULTRA Scientific
	Soil	ERA, Cambridge Isotope Laboratories
	Fish	Cambridge Isotope Laboratories
PCB SCREENING (For Method 508A)	Drinking Water	ULTRA Scientific
	Wastewater	ULTRA Scientific
PCB AS DECACHLOROBIPHENYL	Drinking Water	ERA, APG, ERA
PAH	Water	APG, ERA
DIOXINS	Water	Cambridge Isotope Laboratories
	Soil	Cambridge Isotope Laboratories
	Fish	Cambridge Isotope Laboratories
BTEX	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Soil	ERA, Inorganic Ventures Inc.
GASOLINE	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Soil	ERA
DIESEL FUEL	Water	APG, ERA, Inorganic Ventures Inc., ULTRA Scientific
	Soil	ERA
TOTAL PETROLEUM HYDROCARBON	Water	APG, ERA, ULTRA Scientific
	Soil	ERA
CUSTOM MIXTURES	Air	Matheson Gas Products, Scott Specialty Gases

1 - Refer to Table III to obtain vendor's full name, telephone and telefax numbers.

TABLE II
STANDARD REFERENCE MATERIAL VENDOR'S LIST

INORGANICS		
STANDARD REFERENCE MATERIAL DESCRIPTION		NAME OF VENDOR ¹
Parameter	Matrix	
LEAD	Fuel	NIST
	Soil	NIST
	Paint Sludge	RTC
	Paint Waste	RTC
	Dust	RTC
MERCURY	Water	NIST
	Sediment	NIST
VANADIUM	Crude Oil	NIST
VANADIUM & NICKEL	Fuel Oil	NIST
TRACE ELEMENTS	Water	NIST
	Coal Fired Industrial Plant Ash	Inorganic Ventures Inc.
	Industrial Incinerator Ash	Inorganic Ventures Inc.
	Municipal Incinerator Ash	Inorganic Ventures Inc.
	Dry Soil	Inorganic Ventures Inc.
	Diatomaceous Earth Cake	Inorganic Ventures Inc.
	Sewage Sludge Amended Soil	Inorganic Ventures Inc.
	Paint Sludge	Inorganic Ventures Inc.
	Plating Sludge	Inorganic Ventures Inc.
	Contaminated Water Filter Media	Inorganic Ventures Inc.
	Paint Chips	Inorganic Ventures Inc.
	Dust	Inorganic Ventures Inc.
METALS	Ashes	RTC
	Soils	RTC
	Sludges	RTC
	Urban Particulates & Water Filtration Wastes	RTC

TABLE II
STANDARD REFERENCE MATERIAL VENDOR'S LIST

INORGANICS		
STANDARD REFERENCE MATERIAL DESCRIPTION		NAME OF VENDOR ¹
Parameter	Matrix	
TCLP METALS	Municipal Incinerator Ash	Inorganic Ventures Inc., RTC
	Superfund Site Soil	Inorganic Ventures Inc., RTC
GENERAL	Estuarine Sediment	NIST
	Urban Particulate Matter	NIST
	Used Pellet Autocatalyst	NIST
	Used Monolith Autocatalyst	NIST
	Simulated Rainwater	NIST
	Buffalo River Sediment	NIST
	San Joaquin Soil	NIST
	Montana Soil	NIST
	Sediments Lake	RTC
	Sediments Marine	RTC
	Sediments, Stream	RTC
	Soils	RTC
	Soil, Loam	RTC
	Soil, Sandy	RTC
	Sewage Sludge	RTC
	Fish Tissue	RTC
	Tuna Homogenate	RTC
	Cod Muscle	RTC
	Dogfish Liver	RTC
	Fish Tissue, Lyophilized	RTC
Plankton	RTC	
Sargasso	RTC	

TABLE II
STANDARD REFERENCE MATERIAL VENDOR'S LIST

ORGANICS		
STANDARD REFERENCE MATERIAL DESCRIPTION		NAME OF VENDOR ¹
Parameter	Matrix	
PHENOLS IN METHANOL	---	NIST
AROMATIC HYDROCARBONS/HEXANE, TOLUENE	---	NIST
HALOCARBONS FOR H ₂ O	---	NIST
PAHs	Separator Sludge	Inorganic Ventures Inc., RTC
	Contaminated Soil	Inorganic Ventures Inc., RTC
	Contaminated Soil/Sediment	Inorganic Ventures Inc., RTC
	Coal Tar	NIST
PRIORITY POLLUTANTS PAHs	---	NIST
NITRATED PAH IN METHANOL	---	NIST
NITROPYRENES IN CH ₂ CL ₂	---	NIST
CHLORINATED PESTICIDES/HEXANE	---	NIST
CHLORINATED PESTICIDES/ISOOCTANE	---	NIST
PESTICIDE, LINDANE	---	NIST
PESTICIDE, 4,4'-DDE	---	NIST
PESTICIDE, 4,4'-DDT	---	NIST
PCBs/ISOOCTANE	---	NIST
PCBs	Oil	NIST
	Transformer Oil	Inorganic Ventures Inc., RTC
	Soil	Inorganic Ventures Inc., RTC
	Soil/Sediment	Inorganic Ventures Inc.
	Human Serum	NIST
	River Sediment	NIST
CHLORINATED BIPHENYLS	---	NIST
ISOTOPE LABEL POLLUTANTS	---	NIST
DIOXIN	---	NIST

TABLE II
STANDARD REFERENCE MATERIAL VENDOR'S LIST

ORGANICS		
STANDARD REFERENCE MATERIAL DESCRIPTION		NAME OF VENDOR ¹
Parameter	Matrix	
GENERAL	Urban Dust	NIST
	Diesel Particulate Matter	NIST
	Mussel	NIST
	Oyster Tissue	NIST
	Shale Oil	NIST
	Petroleum Crude Oil	NIST
	Copepoda, Dried/PCBs & Pest	RTC
	Fish Tissue, Lyophilized/PCBs & Pest	RTC
	Sediment "Hot Spot"/PCBs & Pest	RTC
	Tuna Homogenate	RTC
	Marine Sediment	NIST
	Cod Liver Oil	NIST

TABLE II
STANDARD REFERENCE MATERIAL VENDOR'S LIST

ANALYZED GASES	
STANDARD REFERENCE MATERIAL DESCRIPTION	VENDOR'S NAME ¹
SO, Permeation Tube	NIST
NO, Permeation Device	NIST
Methane/Air	NIST
Methane + Propane/Air	NIST
SO ₂ /N ₂	NIST
Propane/Air	NIST
CO ₂ /Air	NIST
CO ₂ /N ₂	NIST
NO/N ₂	NIST
CO ₂ , O ₂ /N ₂	NIST
Organic Compounds/Nitrogen	NIST
Volatile Toxic Organics	NIST
Benzene/Nitrogen	NIST
Benzene, Toluene, Chlorobenzene, & Bromobenzene/Nitrogen	NIST
Carbon Tetrachloride, Chloroform, Tetrachloroethylene & Vinyl Chloride/N ₂	NIST
CO ₂ /N ₂ /O ₂ /Air	NIST
CO/Air	NIST
CO ₂ /N ₂	NIST
NO/N ₂	NIST
C ₃ H ₈ /N ₂	NIST
Oxides of Nitrogen/Air	NIST
O ₂ /N ₂	NIST
CO/N ₂	NIST
IM Gases, 3 Components	NIST

1 - Refer to Table III to obtain vendor's full name, telephone and telefax numbers.

TABLE III
LIST OF PE/SRM VENDORS

NAME OF VENDOR	SUPPLIES (PE or SRM)	TELEPHONENUMBER	TELEFAX NUMBER
1. Analytical Products Group, Inc. (APG)	PE	800-272-4442	614-423-5588
2. Cambridge Isotope Laboratories	PE	800-322-1174 508-749-8000	508-749-2768
3. ChemService	PE	800-452-9994 610-692-3026	610-692-8729
4. Environmental Resource Associates (ERA)	PE	800-372-0122 303-431-8454	303-431-0159
5. Inorganic Ventures, Inc.	PE & SRM	800-669-6799 908-901-1900	908-901-1903
6. Matheson Gas Products	PE	201-867-4100	201-867-4572
7. National Institute of Standards and Technology (NIST)	SRM	301-975-6776	301-948-3730
8. Resource Technology Corporation (RTC)	PE	307-742-5452	307-745-7936
9. Scott Specialty Gases	PE	617-245-8707	617-246-5452
10. SPEX Industries, Inc.	PE	800-522-7739 908-549-7144	908-603-9647
11. ULTRA Scientific	PE	800-338-1754	401-295-2330

ATTACHMENT 3

**EPA REGION I
PERFORMANCE EVALUATION (PE) SAMPLE REQUEST FORM**

Date of Request: _____
 Requestor's Name: _____
 Corporate Name: _____
 Contract Name (if applicable): _____
 Contract Number (if applicable): _____
 Telephone Number: _____
 Telefax Number: _____

Site Name and OU#: _____
 Site ID # (CERCLIS, etc.): _____
 Site Location: _____
 Sampling Date(s): _____
 Requested Pick-up Date and Time: _____

PE SAMPLES REQUIRED

CATALOGUE NUMBER	REQUIRED ANALYTE CONCENTRATION	NUMBER OF PE SAMPLES ORDERED	METHOD DESCRIPTION & MATRIX	ANALYTICAL METHOD

Example:

**EPA REGION I
PERFORMANCE EVALUATION (PE) SAMPLE REQUEST FORM**

Date of Request: 6/24/96
 Requestor's Name: Ed Howard
 Corporate Name: 3 X
 Contract Name (if applicable): ARCS
 Contract Number (if applicable): 68-W8-0000
 Telephone Number: 000-222-1111
 Telefax Number: 000-222-2222

Site Name and OU#: Mac's Marsh, OU 2
 Site ID # (CERCLIS, etc.): MAD000000000
 Site Location: Debsville, MA
 Sampling Date(s): 7/3/96 and 7/10/96
 Requested Pick-up Date and Time: 6/30/96, 1:30 PM

PE SAMPLES REQUIRED

CATALOGUE NUMBER	REQUIRED ANALYTE CONCENTRATION	NUMBER OF PE SAMPLES ORDERED	METHOD DESCRIPTION & MATRIX	ANALYTICAL METHOD
90-001 or 95-001		3	L/M VOA in H ₂ O	OLM03 & Rev.
90-002 or 95-002		3	L/M SV in H ₂ O	OLM03 & Rev.
90-003 or 95-003		3	L/M P/P in H ₂ O	OLM03 & Rev.
90-005	Arsenic > 10 ppm	6	L/M Metals in Soil	ILM04 & Rev.