SAMPLE DOCUMENTATION

CONTENTS

* These sections affected by Revision 0.0.

SUPERCEDES: SOP #2002; Revision 2.0; 05/17/93; U.S. EPA Contract 68-03-3482.

1.0 OBJECTIVE

The objective of this Standard Operating Procedure (SOP) is to define the procedures for preparing and maintaining documentation which provides the details of field sampling activities. The sample documentation discussed in this procedure includes: site and personal logbooks, Field Data Sheets and labels, and Chain of Custody records and Custody seals.

2.0 APPLICABILITY

This SOP is applicable to all REAC field activities which involve the generation of environmental measurements.

3.0 DESCRIPTION

3.1 General

Accurate sample documentation is essential for proper site evaluation. A clear traceable paper trail must follow each sample from its point of origin to the Final Report (or other appropriate report). It is important that specific procedures be adopted so that the desired degree of accuracy is achieved.

All sample documents must be completed legibly and in ink. Any corrections or revisions must be made by lining through the incorrect entry and initialing the error.

3.2 Site Logbook

The site logbook is used to record data and observations so that an accurate account of field operations can be reconstructed in the writer's absence. There is the potential, especially on Superfund sites, for site logs to be used as legal evidence sometime in the future. The site logbook is essentially a descriptive notebook detailing site activities and observations. All entries should be dated and signed by the individual(s) making the entries. Site logbooks should contain at a minimum, the following information:

- Site name and location on inside cover
- Date and location of field work
- Times (military times preferred, or reference a.m. or p.m.)
- Names and addresses of field contacts
- Site sketches and photographic references
- Weather conditions (Optional if provided on Field Data Sheets. See Section 3.1.)
- Sample descriptions, locations, times taken, identification numbers (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Chain of Custody information, shipping paper identification number, recipient address, and phone number, etc.
- Field observations and discussion (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Field measurements (i.e., pH, temperature, surface water flow rates, etc.) (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Instructions issued by the Work Assignment Manager
- Field activities by all REAC personnel on site

Entries may be made in site logbooks by any ERT or REAC personnel on site and should detail the activities of all personnel involved in the field operations. Each entry should be signed by the person making the entry and should relate to previous entries or have sufficient background detail. The sequence of site activities should be clear to a reader who was not at the site.

When a site logbook is completed, no longer needed for site documentation, or after a project is finished, the site logbook must be transmitted to the appropriate Work Assignment folder of the Central File. If the site logbook is transmitted to the ERT, documentation of the transmittal must be prepared and maintained in the Central File.

3.3 Personal Logbooks

When involved in field operations, all REAC personnel will maintain a personal logbook. The personal logbook will be a chronological compilation of the individual's daily field activities. Personal logbooks are to be maintained, even if a REAC member is entering information in a site log. The personal logbook may reference the site logbook, but must also identify what, if any, work was performed when not on site. In the absence of a dedicated site logbook, the personal logbook must detail all site related activities that would typically be entered in a site logbook.

If personal logbooks are used for site-related information in lieu of a dedicated site logbook, the REAC Task Leader must obtain copies of the site notes from each individual field member and transmit the notes under a standard cover memo (Figure 1, Appendix A) to the Central File. This must be done within 10 working days of completion of field activities.

Personal logbooks may be maintained for the individual's daily office activities at the discretion of the individual. When a REAC member is in the office, the personal logbook should contain, at a minimum, meetings attended and meeting notes, telephone conversations, and detail of any work performed that relates to a particular site. Any task related entries should include the Work Assignment number. Entries should include, but are not limited to, the following:

- Field and project-related activities performed
- Directives from Work Assignment Manager
- Verbal instructions from U.S. EPA personnel
- Personal injuries or potential exposures
- Phone conversations relevant to Work Assignments

When a personal logbook is completed or the person to whom it is assigned leaves REAC, the personal logbook shall be returned to the Quality Assurance (QA) Office. People who must access information in a personal logbook may obtain photocopies from the person to whom the logbook is assigned.

3.4 Field Data Sheets and Sample Labels

Field Data Sheets and corresponding sample labels are used to identify samples and document field sampling conditions and activities. There are several different Field Data Sheets and sample labels used within the REAC project.

Field Data Sheets will be maintained by the Task Leader or designee. Task Leaders are responsible for conveying original Field Data Sheets to the corresponding Central File folder upon completion of the Trip or Final Report. Field Data Sheets may be transmitted to the Central File as an attachment to these reports or as a stand alone document.

3.4.1 Field Data Sheets and Sample Labels

Prenumbered Field Data Sheets and corresponding, prenumbered sample labels (Figures 2 and 3, Appendix A) are used for all types of samples except soil gas and air samples (see Sections 3.4.2 and 3.4.3).

Upon sample collection at a particular sampling location, Field Data Sheet(s) shall be completed with the following information:

1. Site name, sampling location, date and time of sampling, name(s) of sampler(s), Chain of Custody record number, REAC Task Leader's name, U.S. EPA Work Assignment Manager's name, and the Work Assignment number.

2. Site description and, as applicable, soil type, surface water, stream, and bottom information.

3. Sample type, sampling device, sample information (e.g., color, odor, temperature, pH, etc.) and weather parameters.

4. Analyses to be performed and sample preparation information.

Also upon sample collection, the corresponding prenumbered sample labels must be completed and securely affixed to the sample container(s).

Because samples are often collected from the same location in more than one container (for more than one analysis), the sample label consists of several parts (Figure 3, Appendix A). The largest part of the sample label consists of the project name and U.S. EPA contract number, the unique sample identification number consisting of the prefix "A" followed by a five-digit number (A01001), and spaces for inserting the following information: site name, work order number, date and time of collection, the analysis requested, and the preservative. Other parts of the sample label include additional sample labels numbered with the same sample identification number and consecutive letter prefixes (B01001 to L01001).

When a sample is collected in only one container, the largest part of the sample label is completed and affixed to the sample container. When the sample is collected in multiple containers, the largest part of the sample label is completed and affixed to one of the sample containers, and the additional labels, beginning with letter prefix "B," are affixed to the additional containers in a consecutive order. If more than 12 containers are included in a sample set, then the sampler may use blank labels and insert the sample identification number beginning with letter prefix "M" (M01001).

If duplicates or blanks are collected at a sampling location, the sample sets must be treated as being unique from the original sample and labeled with different sample identification numbers. When collecting samples for parameters which require extra

volume for matrix spike/matrix spike duplicate (MS/MSD) analysis, the original sample container(s) and the MS/MSD containers are labeled with the same sample identification number and consecutive letter prefixes. For example, a water sample for BNA analysis that also requires MS/MSD analysis would be collected in four sample containers which would be labeled A01003 through D01003. Required volumes for MS/MSD analysis for typical parameters are specified in ERT/REAC SOP #4005, Chain of Custody.

3.4.2 Soil Gas Sampling Data Sheets and Sample Labels

Soil Gas Sampling Data Sheets and prenumbered sample labels (Figure 4 and 5, Appendix A) are used for all soil gas sampling activities.

The heading of the data sheets shall be completed with the following information: site name, samplers, date, REAC Task Leader, U.S. EPA Work Assignment Manager, the project number, and the weather parameters.

After the soil gas well is screened with field instrument(s), the location identification, pertinent remarks, time, depth, and the instrument reading(s) are recorded in the first available column on the Soil Gas Sampling Data Sheet. A total of five (5) columns are available to record data from five sampling points on each Data Sheet.

If a soil gas sample was collected at that particular location, "Y" is circled to indicate this. The soil gas sample label is completed with the site name, sample location, date, time, remarks, and instrument readings; then the label is affixed to the sample container. A corresponding sample label (with sample identification number only) is inserted on the sample number line in the appropriate column on the soil gas sampling data sheet. If a soil gas sample was not collected at that particular location, "N" is circled to indicate this.

If necessary, the additional sample label (with the sample identification number only) can be inserted in the logbook used for documenting sampling activities, or it can be used for additional sample containers if the sample is collected in multiple containers. Blank sample labels are also provided so that sample numbers can be written in, when needed. Trip standards, field blanks, and samples containing spikes must be assigned unique sample identification numbers. Soil Gas Sampling Data Sheets and sample labels will be prepared and maintained for these types of samples in the same manner as other sample matrices.

3.4.3 Air Sampling Work Sheets and Sample Labels

Air Sampling Work Sheets and prenumbered sample labels (Figures 6 and 7, Appendix A, respectively) are used for all air sampling activities.

The heading of the Air Sampling Worksheet is completed with the following information: site name, samplers, date, Work Assignment number, the name of the U.S. EPA Work Assignment Manager, and the REAC Task Leader.

When air sampling is initiated, the following information is recorded in the first available column on the Air Sampling Worksheet: sample number, location, pump number media, analysis/method and time/counter start. At the end of the sampling period the following information is recorded: time/counter stop, total time, pumpfault (indicate by using "Y"

or "N"), flow rate start, flow rate stop, flow rate average, and volume, are recorded. A total of five columns are available to record data from five sampling locations on each air sampling worksheet.

The total sampling time is calculated by subtracting the start time/counter value from the stop time/counter value. The flow rate average is calculated from the start and stop flow rates. The volume sampled is calculated by multiplying the total sampling time by the average flow rate. All calculated values, along with the analysis requested, are recorded in the appropriate location on the air sampling worksheets.

If real-time air monitoring instruments are used at a particular sample location, the instrument readings are recorded on an Air Monitoring Work Sheet (Figure 8, Appendix A). If air samples are collected outdoors, then the appropriate weather parameters are also recorded on the Air Monitoring Work Sheet.

The prenumbered air sample label (Figure 7, Appendix A) consists of several parts. The largest part includes the project name, the contract number, the sample identification number, and space for the following information: the site name, volume of air, date, time, requested analysis, and remarks. Other parts include two additional sample labels with only the sample identification number.

When a sample is collected, the largest part of the sample label is completed and affixed to the sample container in the manner described by the appropriate ERT/REAC air sampling SOP. If samples are collected from a single sampling location in more than one sample media, separate sample numbers are used for each different sample medium used. The blank space at the end of the sample identification number is used to indicate the media. The small sample labels are affixed to the additional sample containers. If available, the small sample labels may be inserted in the sample number space in the appropriate column on the Air Sampling Work Sheet. Blank sample labels are provided for use as necessary.

Alternatively, at the Task Leader's discretion, separate sample numbers may be used for each media in which samples are collected at a single sampling location. In this case, the largest part of the sample label will be completed and affixed to the sample container in the manner described by the appropriate ERT/REAC air sampling SOP. The small sample labels (with sample identification number only) will be affixed to the Air Sampling Worksheet and the logbook.

Quality Control (QC) samples must be assigned unique sample identification numbers. Air Sampling Work Sheets and prenumbered sample labels will be prepared and maintained in the same manner as for other sample matrices.

3.4.4 Specialized Field Data Sheets

Task Leaders, with the approval of the Group Leader, the Work Assignment Manager, and the QA Officer, may develop specialized Field Data Sheets if none of the three types described above meet the specific needs of the project. At a minimum, the Field Data Sheet must include space for recording the name(s) of the sampler(s), the sample number(s), the location of the sample, the date and time that the sample was taken, and any pertinent field conditions. The following information will be included in the header

of the data sheet: (Matrix) Data Sheet, Roy F. Weston, Inc., REAC, Edison, NJ, U.S. EPA Contract: 68-C4-0022.

3.5 Chain of Custody

A Chain of Custody record (Figure 9, Appendix A) must be maintained from the time a sample is collected to its final deposition. The Chain of Custody record shall contain, at a minimum, the following information: project name, project number, the REAC contact, and the contact telephone number. For each sample collected, the Chain of Custody record shall include the sample number, sampling location, sample matrix, date collected, number of bottles, container/preservative, the analysis requested, and special instructions, if any are applicable.

Chain of Custody records must be completed legibly, with all required information, so that miscommunication with, or misunderstanding by, the receiving laboratory is prevented.

If samples collected during a sampling event are being forwarded to more than one laboratory, then a separate Chain of Custody record, indicating which samples are being sent to that particular laboratory, must be completed.

The Chain of Custody provides a means by which the entire path and life of a sample can be traced. Every transfer of custody must be noted and signed for on the Chain of Custody record. If a sample or group of samples is not under direct control or observation of the individual responsible for the samples, then they must be stored in a locked container that has been sealed with a Custody Seal (Section 3.6). A copy of the Chain of Custody record should be kept by each individual who has signed it. The final copy should be included with the Analytical Report.

3.6 Custody Seals

Custody Seals (Figure 10, Appendix A) demonstrate that a sample container has not been opened or tampered with during transport or storage. Two seals should be affixed in such a manner that the shipping container cannot be opened without breaking the seal. The person in direct possession of the samples shall sign and date the seal. The name of the individual signing the seal and a description of the packaging shall be noted in the site logbook.

4.0 RESPONSIBILITIES

4.1 Task Leaders and Field Staff

Task Leaders and field staff are responsible for preparing and maintaining sample documentation in accordance with this SOP.

4.2 Group Leaders and Section Leaders

Group Leaders and Section Leaders are responsible for ensuring implementation of the procedures outlined in this SOP.

4.3 QA Office

The QA Office is responsible for ensuring compliance with this SOP by auditing reports prepared by REAC personnel.

APPENDIX A
Figures
SOP #2002
September 1994

FIGURE 1. Cover Memo - Transmittal of Site Notes

DATE:

TO: Central File #

FROM: _____; Task Leader

SUBJECT: LOGBOOK NOTES
SITE NAME, DATE(s)

Attached please find copies of field-related personal logbook records for activities performed at the above-referenced site. Individuals involved included:

NAME	LOGBOOK NUMBER

w/Attachments

FIGURE 2. Field Data Sheet

FIELD DATA SHEET

26880

Roy F. Weston, Inc.
REAC, Edison, N.J.
EPA Contract 68-C4-0022

Chain of Custody No. _____

Samplers: _____ REAC Task Leader: _____

Date: _____ Site Name: _____ EPA WAM _____

Time: _____ Sample Location: _____ Work Assignment No.: _____

SITE DESCRIPTION			SOIL TYPE		SURFACE WATER	STREAM	BOTTOM	
landfill	old field	upland palustrine	rock	clay	color _____	width _____	rock	silt
industrial	wooded	lowland riverine	gravel	muck	odor _____	depth _____	rubble	clay
commercial	farmland	lacustrine	sand	loam	flow _____	velocity _____ cm/s	gravel	organic
residential	gully		silt	peat	direction _____	pools _____ %	shell	other _____
hedgegrows	floodplain		color _____			riffles _____ %	sand	

SAMPLE TYPE		DEVICE		SAMPLE INFORMATION		WEATHER PARAMETERS
surface water	effluent	kemmerer	ponar	color_____	pH _____	ambient temp _____
groundwater	sludge	trowel	other _____	odor _____	ORP _____	barometric pressure _____
potable water	leachate	bucket		temp _____	salinity _____	relative humidity _____
sediment	waste	auger		DO _____	sample depth _____	weather conditions _____
soil	other _____	ekman		cond _____	tide stage _____	_____

ANALYSES TO BE PERFORMED

ORGANICS
- A. halogenated & aromatic volatiles
- B. volatiles
- C. trihalomethanes
- D. pesticides/PCB
- E. PCB
- F. base neutral/acid extractables
- G. pesticides, drinking water
- H. herbicides, drinking water
- I. other _____

INORGANICS
- A. metals, priority pollutant
- B. metals, TAL
- C. metals scan (ICP)
- D. metals, other _____

RCRA
- A. TCLP
- B. Ignitability
- C. corrosivity _____ pH _____
- D. reactivity
- E. other _____

ORGANICS
- A. total cyanide
- B. total phenol
- C. petroleum hydrocarbons
- D. pH
- E. alkalinity
- F. hardness
- G. total dissolved solids
- H. total suspended solids
- I. sulfate
- J. TOC
- K. grain size
- L. other _____
- M. other _____

SAMPLE PREPARATION

CONTAINER	PRESERVATIVES
glass jar	HNO_3
plastic jar	NaOH
acetate core	Zn Acetate
plastic bag	HCl
plastic bucket	Na_2SO_4
other _____	other _____

STORAGE
- wet ice
- dry ice
- ambient

COMMENTS:

FIGURE 3. Sample Labels

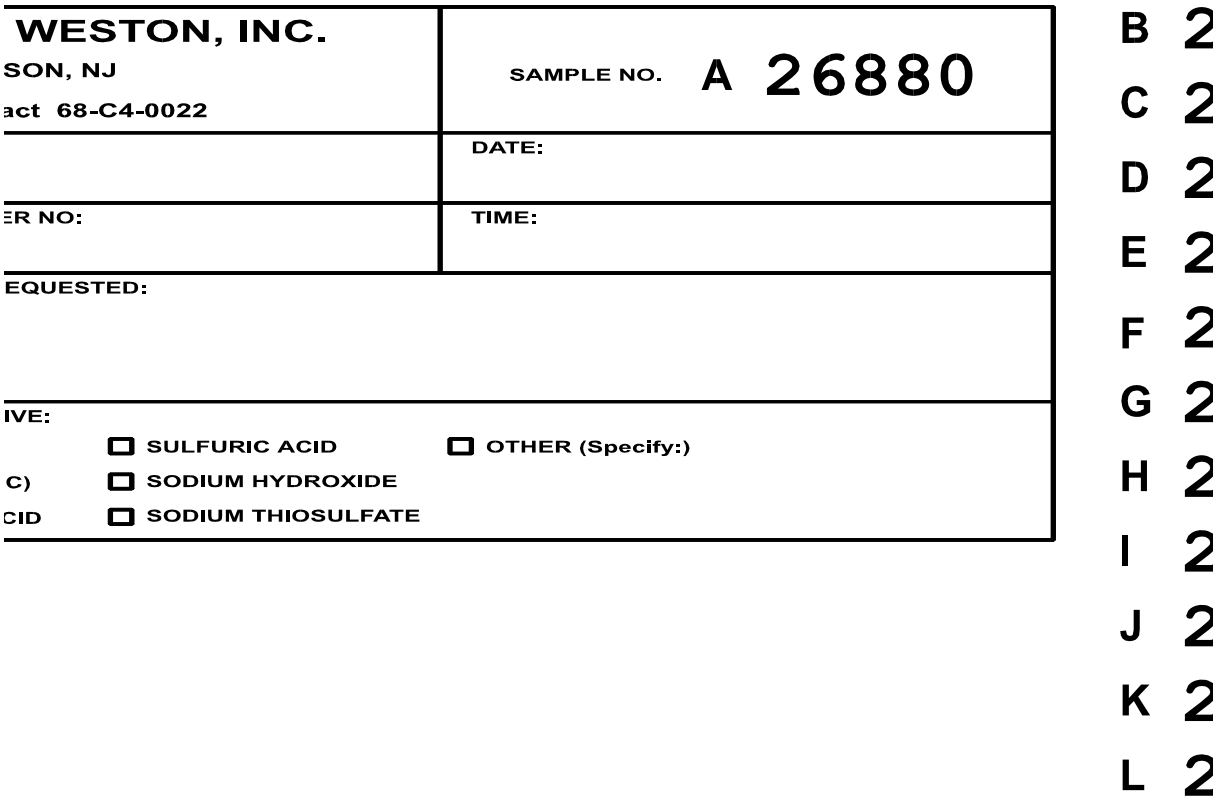

FIGURE 4. Soil Gas Sampling Data Sheet

SOIL GAS SAMPLING SHEET

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site Name: _____ REAC Task Leader: _____

Samplers: _____ EPA Work Assignment Manager: _____

Date: _____ Work Assignment No.: _____

Weather Parameters: ambient temp. _____ relative humidity _____
barometric pressure _____ weather conditions _____

Sample No.:					
Location ID.:					
Remarks:					
Time:					
Sample Depth:					
Sample Taken:	Y/N	Y/N	Y/N	Y/N	Y/N
Instrument Readings:					
HNU					
OVA					
LEL					
% O_2					
Soil Temp.					

FIGURE 5. Soil Gas Sample Labels

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02951
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02952
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02953
EPA CONTRACT 68-C4-0022
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02954
EPA CONTRACT 68-C4-0022
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02955
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02956
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02957
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02958
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02959
EPA CONTRACT 68-C4- 22

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02960
EPA CONTRACT 68-C4- 22

FIGURE 6. Air Sampling Work Sheet

ENVIRONMENTAL RESPONSE TEAM
AIR SAMPLING WORK SHEET

Page ____ of

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site: _____ WA#: _____

Samplers: _____ EPA/ERT WAM: _____

Date: _____ REAC Task Leader:: _____

Sample #					
Location					
Pump #					
Media					
Analysis/Method					
Time/Counter (Start)					
Time/Counter (Stop)					
Total Time					
Pump Fault	Y / N	Y / N	Y / N	Y / N	Y / N
Flow Rate (Start)					
Flow Rate (Stop)					
Flow Rate (Average)					
Volume					

MET Station On-site? Y / N

General Comments:

FIGURE 7. Air Sample Labels

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07091_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 1
0 7 0 9 1
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07092_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 2
0 7 0 9 2
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07093_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 3
0 7 0 9 3
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07094_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 4
0 7 0 9 4
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07095_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 5
0 7 0 9 5
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07096_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 6
0 7 0 9 6
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07097_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 7
0 7 0 9 7
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07098_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 8
0 7 0 9 8
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07099_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 0 9 9
0 7 0 9 9
0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. 07100_
EPA CONTRACT 68-C4- 22

SITE NAME:	DATE:
VOL. OF AIR:	TIME:
ANALYSIS REQUEST:	REMARKS:

0 7 1 0 0
0 7 1 0 0
0

FIGURE 8. Air Monitoring Work Sheet

FIGURE 9. Chain of Custody Record/Lab Work Request

ENVIRONMENTAL RESPONSE TEAM
AIR SAMPLING WORK SHEET

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site: _____ WA#: _____

Prepared By: _____ EPA/ERT WAM: _____

Date: _____ REAC Task Leader:: _____

Instrument	EPA #	Location/Description	Reading	

General Comments:

FIGURE 10. Custody Seals

n, Ir
n, N
: 68-

No.

PW
GW
SW
SL

Date

Signature

CUSTODY SEAL

Dat

Sig