SDMS DocID 57876

Versar inc.

Superfund Records Center
SITE New Bedford
BREAK 3.2
OTHER 57876

February 8, 1982
717.8-E-231

Mr. Jim Okun
U.S. Environmental Protection Agency
Enforcement Division
John F. Kennedy Building
Boston, Massachusetts 02203

Reference: Contract No. 68-01-6291, Task 1V2-81-02-06

Subject: Submittal of PCB Analytical Report

Dear Jim:

Enclosed is one (1) copy of a PCB Analytical Report for twenty-seven (27) samples received by Versar from Region I on November 17, 1981. As the report shows, three samples were found to be free of PCBs at the 1 ppm detection limit. Of the remaining 24 samples, six were below 50 ppm, two between 50 ppm and 500 ppm, and the last 16 samples were above 500 ppm.

Please contact Susan Nohr or Jon Byroade at (703) 750-3000 if you have any questions regarding this report. The analyses of these 27 samples completes this task, therefore, no more work efforts are anticipated.

Sincerely yours,

James J. Kenyon
Compliance Assistance Operation

JJK:ysb

Enclosure

cc: Ms. Rose Burgess (EN-342)
U.S. Environmental Protection Agency
Compliance Monitoring Branch/PTSED
401 M. Street, S.W.
Washington, D.C. 20460

RECEIVED
FEB 10 1982

P.O. BOX 1549 6621 ELECTRONIC DRIVE, SPRINGFIELD, VIRGINIA 22151 TELEPHONE: (703) 750-3000

EPA COMPLIANCE MONITORING PROGRAM

Submitted to:

US EPA Region I
John F. Kennedy Building
Boston, Massachusetts 02203

EPA No. 68-01-6251
Versar No. 717.8

Submitted by:

Versar Inc.
6621 Electronic Drive
Springfield, Virginia 22151

February 3, 1982

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74190

LABORATORY # 7382

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time	Signature
Remove from Sample Stor	12-3-81	David Herman
Return to Storage	12-3-81	David Herman

Versar inc.

INTRODUCTION

Versar received 27 samples from US EPA, Region I, on November 17, 1981, for PCB analysis. All samples were collected by Region I personnel and sent to Versar via Delta Airlines. All analytical work was performed in accordance with the written work plan for Task IV2-81-02-06.

The methodology for the analysis is outlined below. The Standard Versar Quality Control Program (SVQCP) was followed, and the results discussed in the Quality Control Summary Section. A description of the SVQCP is enclosed for your convenience. Appendix I contains copies of field and laboratory Chain-of Custody forms.

RESULTS

The results for the analysis of 27 soil and sludge samples are tabulated in Table 1. Three samples were found to be free of PCBs at the 1 ppm detection limit. Out of the remaining samples, 6 were quantitated between 1 ppm and 50 ppm, 2 between 50 ppm and 500 ppm, and the last 16 substantially higher than 500 ppm.

METHODOLOGY

Soil:[1]

Ten grams of soil were extracted with three 50 ml portions 1:1 acetone/hexane. The extracts were passed through a Na_2SO_4 column and collected in a 250 ml Kuderna-Danish. After the extract was concentrated to below 50 ml, it was transferred to a 100 ml volumetric flask and diluted to the mark with hexane.

At this point 5 ml of extract were pipetted on top of a 20 gram packed florisil column. The aliquot was eluted with 200 ml petroleum ether and concentrated to 5 ml. One ml was vialed for injection (2 µl) into a gas chromatograph equipped with an electron capture detector.

[1]Method for Organochlorine and Organophosphorous Pesticide in Soil, EPA/Pesticide Monitoring Laboratory (PML), Building 1105, NSTL/NASA, Bay St. Louis, Mississippi.

Versar inc.

PCB ANALYTICAL REPORT

PREPARED FOR: US EPA Region I

REF. # 717.8

TABLE 1

SAMPLE NO.	LAB NO.	CONCENTRATION PARTS/MILLION	AROCLOR	COMMENTS
74172	7364	<1	—	Sludge
74173	7365	<1	—	Soil
74174	7366	2	1254	Sludge
74175	7367	4	1254	Sludge
74176	7368	2	1254	Soil
74177	7369	3	1254	Sludge
74178	7370	<1	—	Sludge
74179	7371	20,000	Mix	Sludge
74180	7372	21,000	Mix	Sludge
74181	7373	4900	1242	Sludge
74182	7374	370	1242	Sludge
74183	7375	3200	1242	Sludge
74184	7376	3200	Mix	Sludge
74185	7377	5000	Mix	Sludge
74186	7378	5800	Mix	Sludge
74187	7379	2400	Mix	Sludge
74188	7380	6500	Mix	Sludge
74189	7381	3400	Mix	Sludge
74190	7382	6000	Mix	Sludge

DATE: February 3, 1982

Mark T. Carkhuff

MARK T. CARKHUFF, CHEMIST
APPLIED CHEMISTRY DIVISION

6621 ELECTRONIC DRIVE, SPRINGFIELD, VIRGINIA 22151 TELEPHONE: (703) 750-3000

Versar inc.

PCB ANALYTICAL REPORT

PREPARED FOR: US EPA Region I

REF. # 717.8

TABLE 1
Page 2

SAMPLE No.	LAB No.	CONCENTRATION PARTS/MILLION	AROCLOR	COMMENTS
74191	7383	13,000	Mix	Sludge
74192	7384	220	Mix	Sludge
74193	7385	10,000	Mix	Sludge
74194	7386	190,000	Mix	Sludge
74195	7387	6500	Mix	Sludge
74196	7388	16,000	Mix	Sludge
74197	7389	15	Mix	Sludge
74198	7390	20	1242	Sludge

DATE: February 3, 1982

Mark T. Carkhuff

MARK T. CARKHUFF, CHEMIST
APPLIED CHEMISTRY DIVISION

6621 ELECTRONIC DRIVE, SPRINGFIELD, VIRGINIA 22151 TELEPHONE: (703) 750-3000

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QUALITY CONTROL SUMMARY

The full Standard Versar Quality Control Program was run with the sample batch. Precision data is not available because of the absence of PCBs in the sample used. Recovery data was obtained and indicates that the method used is sufficient for PCB analysis. The Quality Control data is presented in Table 2 and summarized on the Quality Control summary sheet.

Versar inc.

TABLE 2

Quality Control Data

Matrix	Audit	Amount Found (µg/g)	Amount Spiked (µg/g)
Soil	Reagent Blank	<1	*N.A.
	Method Standard	51	50
	7365X (sample)	<1	N.A.
	7365Y (duplicate)	<1	N.A.
	7365Z (spiked sample)	55.5	50

*Not Applicable

QUALITY CONTROL SUMMARY

DATE: November 23, 1981 MATRIX: Soil

SPIKE: 1 ml Aroclor 1254 500 ppm

Precision		Duplicate Sample	*N.A.	
Recovery Accuracy		Spiked Sample	111%	
		Method Standard	110%	

*N.A. - Not Available

DATE: MATRIX:

SPIKE:

Precision		Duplicate Sample		
Recovery Accuracy		Spiked Sample		
		Method Standard		

Versar inc.

STANDARD VERSAR
QUALITY CONTROL PROGRAM

The Standard Versar Quality Control Program is included with each batch of samples. A batch is a suitable number of samples to be analyzed at one time. The program consists of four QC audits which are treated with the same conditions as the samples. The QC audits represent from 20-400% of the total number analyzed, depending on the number of samples per batch. The audits are:

(1) Duplicate
(2) Spiked Matrix
(3) Method Standard
(4) Method Blank

A sample is chosen randomly from the batch and split three ways, labelled x, y and z. The x and y aliquots are analyzed as duplicates (QC Audit 1). The z aliquot and a blank sample (QC audits 2 and 3) are spiked with the parameter of interest at the concentration of interest. The fourth QC audit is simply a blank treated as a sample.

Versar calculates its laboratory precision and recovery as follows:

Precision - calculated from the duplicate sample and presented as the relative percent difference

$$\frac{a - b}{(a + b)/2} \times 100$$

Recovery - calculated from the spiked sample and the method standard and presented as the percent recovered

$$\frac{c}{d} \times 100$$

Where: a - first value from sample "x"
b - second value from sample "y"
c - amount calculated
d - amount spiked

Method blanks are calculated from the values obtained from instrument background and method interferences detected during analysis. A value reported does not mean the parameter of interest was detected but it does reflect the lower limits of detection.

Versar inc.

APPENDIX I

Field and Laboratory Chain-of-Custody

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 1
JFK Federal Building, Rm. 2203
Boston, Massachusetts 02203

CHAIN OF CUSTODY RECORD

PROJ. NO.:

PROJECT NAME: AEROVOX

SAMPLERS: (Signature) Daniel S. Gray B. CLEAVER

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	REMARKS
FAIR01	11/12/81	1100		X	# 74172 FAIRHAVEN WTP	1	
PLAY01	11/12/81	1155		X	# 74173 PLAYGROUND	1	
PLAY02	11/12/81	1157		X	# 74174 "	1	
PLAY03	11/12/81	1159		X	# 74175 "	1	
PLAY04	11/12/81	1145		X	# 74176 "	1	
PLAY05	11/12/81	1207		X	# 74177 "	1	
PLAY06	11/12/81	1207		X	# 74178 "	1	
AER001	11/12/81	1345		X	# 74179 AEROVOX SEDIMENT	1	
AER01B	11/12/81	1350		X	# 74180 "	1	
AER002	11/12/81	1355		X	# 74181 "	1	
AER02B	11/12/81	1400		X	# 74182 "	1	
AER003	11/12/81	1405		X	# 74183 "	1	
AER03B	11/12/81	1410		X	# 74184 "	1	
AER004	11/12/81	1415		X	# 74185 "	1	
AER04B	11/12/81	1420		X	# 74186 "	1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Daniel S. Gray	11/16/81 1000 AM	DELTA AIRLINES	DELTA AIRLINES		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) VERSAR INC Beverly Hatch	Date / Time 11/17/81 3:00	Remarks No CNA data	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 1
JFK Federal Building, Rm. 2203
Boston, Massachusetts 02203

CHAIN OF CUSTODY RECORD

PROJ. NO.:

PROJECT NAME: AEROVOX

SAMPLERS: (Signature) Daniel S. Drany B. CLEAUER

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	REMARKS
AER005	11/12/81	1425		X	# 74187 AEROVOX SEDIMENT	1	
AER05B	11/12/81	1430		X	# 74188 "	1	
AER006	11/12/81	1435		X	# 74189 "	1	
AER06B	11/12/81	1440		X	# 74190 "	1	
AER007	11/12/81	1510		X	# 74191 "	1	
AER07B	11/12/81	1515		X	# 74192 "	1	
AER008	11/12/81	1520		X	# 74193 "	1	
AER08B	11/12/81	1530		X	# 74194 "	1	
AER009	11/12/81	1540		X	# 74195 "	1	
AER09B	11/12/81	1545		X	# 74196 "	1	
AER010	11/12/81	1555		X	# 74197 "	1	
SLUD01	11/12/81	1630		X	# 74198 NEW BEDFORD WATER SLUDGE	1	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Daniel S. Drany	11/16/81 1000 AM	DELTA AIRLINES	DELTA AIRLINES		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) VERSAR INC Beverly Stutelan	Date / Time 11/17/81 3:00	Remarks No EPA seals	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74172

LABORATORY # 73164

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig. for sample prep.	11/23/81	9:00	[illegible]
Return to refrig.	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 741 73 BH

LABORATORY # 73 C5

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX ~~sludge~~ Soil

Operation	Day/Time		Signature
removed from refrig for sample prep.	11/23/81	9:00	[illegible]
returned to refrig	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74174

LABORATORY # 7366

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig for sample prep.	11/23/81	9:00	[illegible]
Return to refrig	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74175

LABORATORY # 7367

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) [signature] (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig for sample prep	11/23/81	9:00	[signature]
Return to refrig	11/23/81	11:00	[signature]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74176

LABORATORY # 7368

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-TASK # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX ~~sludge~~ BH Soil

Operation	Day/Time		Signature
Removed from refrig for sample prep	11/23/81	9:00	US Gulf
Return to refrig.	11/23/81	11:00	US Gulf

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74177

LABORATORY # 7369

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig for sample prep.	11/23/81	9:00	[illegible]
Return to refrig	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74178

LABORATORY # 7370

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig for sample prep	11/23/81	9:20	[illegible]
Return to refrig	11/23/81	11:20	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74179

LABORATORY # 7371

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) [signature] (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig. for sample prep.	11/23/81	9:00	[illegible]
Return to refrig.	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74180

LABORATORY # 7372

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
removed from refrig for sample disp.	11/23/81	9:00	[illegible]
return to refrig	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74181

LABORATORY # 7373

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from Afrig for sample prep.	11/23/81	9:00	[illegible]
Return to Afrig	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74182

LABORATORY # 7374

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig for sample prep	11/23/81	9:00	[illegible]
return to refrig	11/23/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 741 8-3

LABORATORY # 7375

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
Removed from refrig for sample prep.	11/28/81	9:00	[illegible]
return to refrig	11/29/81	11:00	[illegible]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74184

LABORATORY # 7376

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) [signature] (signature)

PROJECT-BATCH # 717.8-3 STATE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time		Signature
removed from refrig for sample prep	11/23/81	9:00	[signature]
return to refrig.	11/23/81	11:00	[signature]

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74185

LABORATORY # 7377

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) B H (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time	Signature
Remove from Sample Storage	12-3-81	David Herman
Return to Storage	12-3-81	David Herman

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74186

LABORATORY # 7378

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time	Signature
Remove from sample storage		
Return from Sample Stage	12-3-81	David Herman

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74187

LABORATORY # 7379

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) B H (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time	Signature
Remove from Sample Storage	12-3-81	David Herman
Return to Storage	12-3-81	David Herman

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74188

LABORATORY # 7380

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time	Signature
Remove from Stor. Return from Sample Store	12-3-81	David L. Herman

VERSAR Inc.

ANALYTICAL CHEMISTRY DIVISION

CHAIN OF CUSTODY RECORD

SAMPLE # 74189

LABORATORY # 7381

RECEIVED 11/17/81 (date) 3:00 (hours) (minutes)

RECEIVED BY Beverly Hutchins (print) BH (signature)

PROJECT-BATCH # 717.8-3 SITE EPA region I

PARAMETER PCB MATRIX sludge

Operation	Day/Time	Signature
Remove from Sample Stor.	12-3-81	David Herman
Return to Stor.	12-3-81	David Herman