ALUMINUM COMPANY OF AMERICA
MASSENA, NEW YORK

REMEDIATION PROJECTS ORGANIZATION

CLEANUP VERIFICATION SAMPLING AND ANALYSIS REPORT

FOR THE

OILY WASTE LANDFILL

December 1, 1995

Prepared by

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Massena, New York 13662

CERTIFICATION WITH SUBMITTAL OF CLEANUP VERIFICATION SAMPLING AND ANALYSIS REPORT FOR THE OILY WASTE LANDFILL

All information contained in this document is to the best of our knowledge, factual and represents CDM's total understanding of the conditions and circumstances at the Alcoa facility and impacted area. The conclusions and recommendations contained in this document represent CDM's best professional engineering judgement on remediation that meets those applicable or relevant and appropriate requirements and represents sound engineering practices and principles to protect public health and the environment.

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Contents

Contents

List of Figures

List of Tables

1 Section One

Section 1
Introduction

1.1 Intent of Document

Camp Dresser and McKee (CDM) prepared this *Cleanup Verification Sampling and Analysis Report for the Oily Waste Landfill* for the Aluminum Company of America (Alcoa) in Massena, New York to document the remedial excavation activities performed at the Oily Waste Landfill (OWL) site. This report presents the results of the cleanup verification testing to assess cleanup standard attainment. This work was performed in substantial compliance with the approved remedial design document *Cleanup Verification Work Plan for the Oily Waste Landfill* (CDM, September 1994).

The OWL remediation work involved establishing survey controls, excavation of visible waste and waste contaminated soils, disposal of excavated materials in Cells 1 and 2 of the onsite Secure Landfill (SLF) and cleanup verification testing.

1.2 Site Description

The OWL (New York State Department of Environmental Conservation [NYSDEC] Site No. 645016) was a 1-acre, formerly operated disposal area located on the Alcoa aluminum production facility in Massena, New York. Figure 1-1 shows the location of the OWL site.

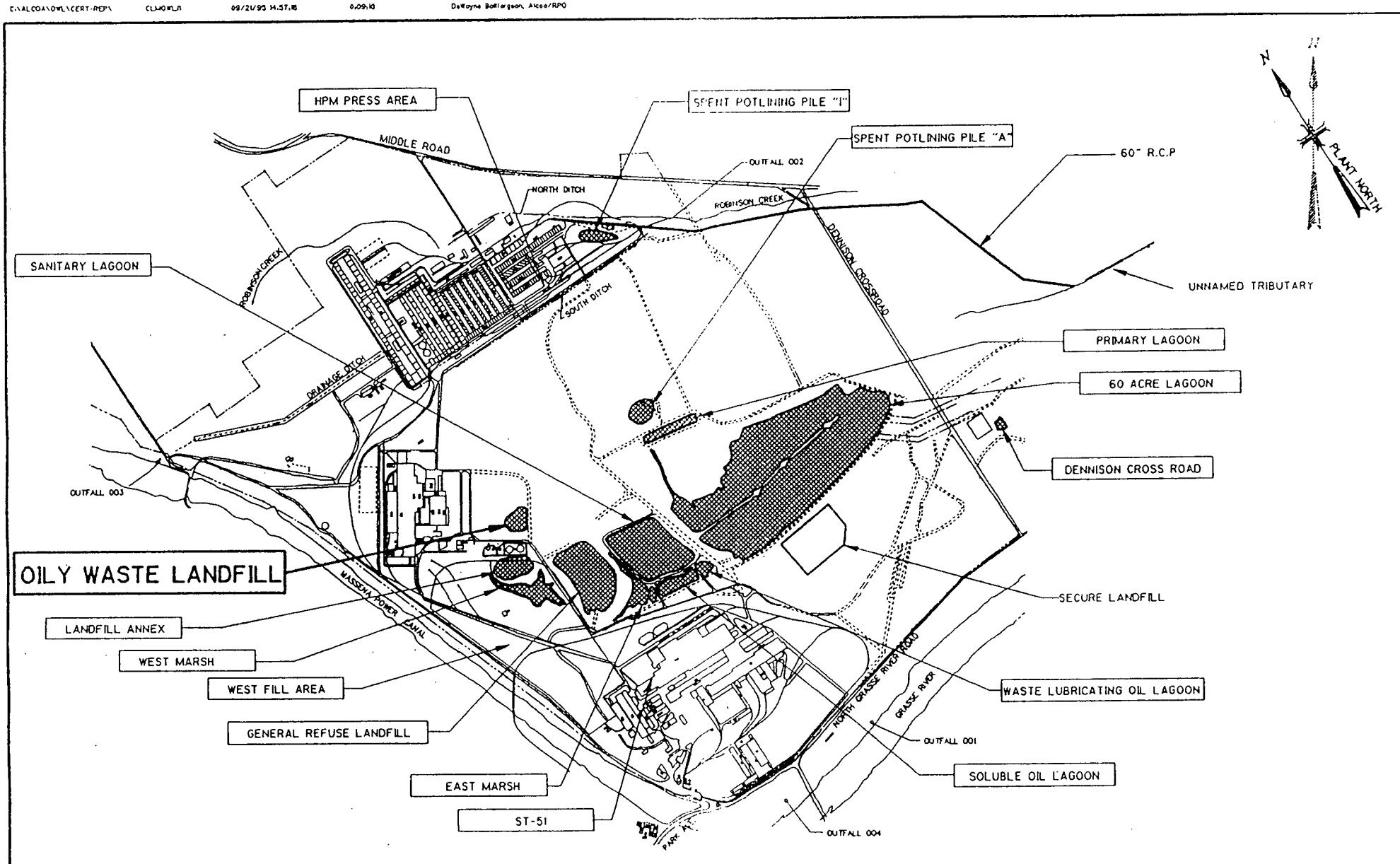
The OWL site is located at the crest of the central ridge and lies near the center of the Alcoa property. This site is approximately 750 feet northwest of the General Refuse Landfill (GRL).

OWL was a hemispherically shaped mound, extending to a height of approximately 8 to 10 feet above the surrounding grade. The pile consisted of oily rags, sludges and "speedi dry" wastes that were placed on top of native subgrade and covered with approximately 18 to 24 inches of clay and 6 to 24 inches of topsoil as an intermediate cap and vegetative cover.

1.3 Objectives

The objective of this report is to:

- document the sampling work performed as required by the *Cleanup Verification Work Plan for the Oily Waste Landfill* (CDM, September 1994);



SCALE IN FEET

2000 0 2000 4000

ALCOA - MASSENA, NEW YORK

SITE LOCATION PLAN OILY WASTE LANDFILL

FIGURE 1-1

- present the analytical results of the field screening and laboratory testing performed on each of the cleanup verification samples collected; and

- present the statistical analysis performed to demonstrate that the cleanup goals were attained during the OWL remediation.

1.4 Report Organization

The remainder of this report is organized into five sections. Section 2 provides a summary of the approved cleanup verification work plan and any deviations during execution of the work. Section 3 documents the cleanup verification sampling that was performed and the results of the field screening and laboratory testing. Section 4 presents a summary of the results and the statistical analysis to demonstrate that the remediation was successful in meeting the cleanup goals. Section 5 provides a summary and conclusions. Section 6 provides a list of references.

2 Section Two

Section 2
Oily Waste Landfill
Cleanup Verification Program

2.1 Introduction

The *Cleanup Verification Work Plan for the Oily Waste Landfill* (CDM, September 1994) outlined the sampling design and activities necessary to verify that the post-excavation soil concentrations achieved soil cleanup goals during the OWL remediation. The work plan specified that nine samples would be collected and analyzed to assess cleanup standard attainment. The required cleanup verification sampling locations for the OWL site are shown in Figure 2-1.

The OWL samples were collected at the center of nine grid blocks as specified in the work plan. All samples were field screened for 1 mg/kg polychlorinated biphenyls (PCBs) and 5 ppm total organic vapors with the use of immunoassay and jar headspace techniques. Since the sample size was small, laboratory analysis was performed on all samples for PCBs, volatile organic compounds (VOCs), and polyaromatic hydrocarbons (PAHs).

2.2 Cleanup Goals

The contaminants of concern in OWL soils are PCBs, PAHs and VOCs. The cleanup goals established in the March 1991, Record of Decision (RODs) for the remediated OWL site are:

- Total PCBs - 1 mg/kg
- Phenanthrene - 2.2 mg/kg
- Pyrene - 6.6 mg/kg
- Other PAHs - 0.3 mg/kg
- 1,1,1 Trichloroethane - 0.76 mg/kg
- Benzene - 0.04 mg/kg
- Tetrachloroethene - 0.02 mg/kg
- Trichloroethene - 0.13 mg/kg
- Toluene - 0.15 mg/kg
- Total Xylene - 0.12 mg/kg

The objective of post-excavation sampling was to demonstrate that the total PCB, PAH and VOC concentrations in the residual soils is below the ROD specified cleanup goals for a confidence limit of 80 percent.

GENERAL NOTES:

1. TOPOGRAPHY IS BASED ON THE SURVEY PREPARED BY EASTERN MAPPING COMPANY, DATED APRIL 20, 1987.
2. HORIZONTAL COORDINATES ARE BASED ON "ALCOA PLANT REFERENCE DATUM". VERTICAL DATUM IS BASED ON USLS.

N 4351 E -700 | N 4351 E -635
N 4286 E -765 | N 4286 E -570
N 4221 E -765 | N 4221 E -570
N 4156 E -765 | N 4156 E -570
N 4091 E -765 | N 4091 E -635
N 4026 E -700 | N 4026 E -635
N 4250 | N 4000 | E -765 | E -635

1 OWL-VER-01
2 OWL-VER-02
3 OWL-VER-03
4 OWL-VER-04
5 OWL-VER-05
6 OWL-VER-06
7 OWL-VER-07
8 OWL-VER-08
9 OWL-VER-09
OWL-VER-10
OWL-VER-11
OWL-VER-12

LEGEND

▲ OWL-VER-11 SAMPLING LOCATION

SAMPLING POINTS

GRID	ID POINT	NORTHING	EASTING
1	OWL VER-01	4318.3	-667.2
2	OWL VER-02	4253.3	-732.2
3	OWL VER-03	4253.3	-667.2
4	OWL VER-04	4253.3	-602.2
5	OWL VER-05	4188.3	-667.2
6	OWL VER-06	4188.3	-602.2
7	OWL VER-07	4123.3	-732.2
8	OWL VER-08	4123.3	-667.2
9	OWL VER-09	4058.3	-667.2
10	OWL VER-10	4298.7	-600.3
-	OWL VER-11	4095.1	-639.7
-	OWL VER-12	4141.9	-639.8

40 0 40 80

SCALE IN FEET
1" = 40'

ALCOA - MASSENA, NEW YORK

OILY WASTE LANDFILL SAMPLING LOCATION PLAN

FIGURE 2-1

2.3 Conformance with the Work Plan

Field activities were completed in general accordance with the approved work plan. The following paragraphs discuss any variations.

According to the work plan, all samples would be collected from a depth of approximately 6 to 12 inches below the undisturbed post-excavation surface. Following the request of the onsite NYSDEC representative, samples were collected at 3 to 12 inches below the post-excavation surface.

If the field screening result for a sample exceeded 1 mg/kg total PCBs, or 5 ppm total organic vapors, a second sample would be collected 6 inches deeper than the original sample. Additional excavation would be performed until the field screening results were below their specified trigger levels. A laboratory sample would then be collected from this post-excavation surface and sent for PCB, PAH and VOC analysis. In this case, one sample exceeded 1 mg/kg PCBs and four samples exceeded 5 ppm total organic vapors. Due to the proximity of the field screening results to the cleanup goal, all samples were sent to the laboratory for analysis. No additional sampling or excavation was performed.

All sampling was performed according to the proposed sampling procedures at the locations given in the work plan. Any modifications to the sampling depths and analytical protocol were discussed and agreed upon with the onsite NYSDEC representative.

3 Section Three

Section 3
Sampling Results

Cleanup verification samples were collected and analyzed as construction progressed. Soil samples were collected from all nine sampling grids for field screening and laboratory analysis. After soil samples were taken, the contractor took measures to ensure recontamination did not occur.

The immunoassay and jar headspace analysis of soil samples for PCBs and VOCs were performed onsite by CDM personnel. The purpose of the field screening was to provide immediate data for assessing whether the cleanup goal had been achieved. If the field screening results exceeded 1 mg/kg PCBs or 5 ppm total organic vapors then additional excavation would be performed and a second sample would be collected and analyzed. Additional excavation would occur until the cleanup goals had been achieved. In this instance, one sample (OWL-VER-02) contained greater than 1 mg/kg PCBs and four samples (OWL-VER-05, OWL-VER-06, OWL-VER-11 and OWL-VER-12) contained greater than 5 ppm total organic vapors. Due to the proximity of the field screen results to the cleanup goal, all samples were analyzed by the laboratory. No additional excavation or sampling was performed.

The following terminology will be used throughout the remainder of this report. The term "Cleanup Verification" refers to a sample which was field screened and then analyzed by the laboratory to determine if the remediated area achieved cleanup standards. "Contingency Sample" refers to a sample which was field and laboratory analyzed in addition to the samples required as part of the plan. "Field Duplicate" refers to a duplicate sample that was analyzed by the laboratory. "Rinsate Blank" is a sample of deionized water that has been rinsed over the field decontaminated sampling equipment to detect any cross-contamination between samples. "Water Field Blank" is a deionized water sample that is transferred from one container to another in the field to detect any environmental contamination that may occur during the sample collection process. "Trip Blank" is a deionized water sample that is shipped with the samples to detect any VOC contamination that may occur in shipment.

3.1 Sample Collection Procedures

Prior to excavation, a survey control was established by Morrison Knudsen Environmental (MKE) to lay out the excavation limits and the center of the sampling grids.

Typically, the following standard sequence of events were followed. First, the contractor would excavate to grade. The Construction Quality Assurance Inspector (CQAI) would then verify that the excavation grade had been reached and inform Field Engineering (FE) that the grid was ready for cleanup verification sampling. FE would then collect the cleanup verification samples using a hand auger in the 3-to 12-inch interval below the excavated surface. Once collected, the

samples were field screened by immunoassay and jar headspace procedures and then sent to the offsite laboratory for analysis.

All sampling equipment was decontaminated by CDM personnel in the designated decon area using a detergent wash, tap water rinse, methanol rinse, followed by a deionized water rinse. To ensure the decontamination procedure was effective, rinsate blanks were taken from the sampling equipment used to collect the laboratory cleanup verification samples. Decontamination water and solvents were drummed, labeled and properly disposed of by Alcoa following their standard site procedures.

3.2 Analytical Protocols

The analytical protocols outlined in Section 3.2.3 in the *Cleanup Verification Work Plan for the Oily Waste Landfill* (CDM, September 1994) were followed. All samples were analyzed for PCBs using a Millipore EnviroGard PCB immunoassay test kit (Method 4020). A field screen for total organic vapors using a photoionization detector (PID) with a 11.8 ev ionization lamp was performed in accordance with the *Quality Assurance Project Plan* (QAPP)(CDM, 1994). Appendix A presents a summary of the field screening performed on the cleanup verification soil samples.

All cleanup verification samples were analyzed using Superfund Contract Laboratory Procedures (CLP) for VOCs, PCBs and PAHs by New York State CLP methods 91-1, 91-2 and 91-3 respectively, in complete compliance with the 1991 NYSDEC Analytical Services Protocol (ASP) CLP technical requirements and deliverables. RECRA Environmental, Inc., a certified New York State Department of Health (NYSDOH) Environmental Laboratory Approved Program (ELAP) CLP laboratory, was employed for analysis of the cleanup verification soil samples. Appendix B presents three RECRA CLP reports with SDG numbers OWLVE, VERO2A and VERO2B dated August 11, 1995, September 25, 1995, and September 25, 1995 respectively. The laboratory data for the OWL cleanup verification samples, were validated by Gradient Corporation. The validation report is included in Appendix C.

Copies of the Chain of Custody (COC) forms, showing that the laboratory received the samples within two days of sampling, are included in the CLP reports. The validation report contains a table that reports the Verified Time of Sample Receipt (VTSR), extraction start and completion dates, and analysis date for each sample.

3.3 Field Screening and Laboratory Results

The OWL site was excavated in portions, beginning with the north excavation and then moving to the solidification pit excavation. Because the excavation was done in portions, the cleanup

verification samples were collected on two different days. All samples required by the work plan were collected on July 5, 1995 and August 25, 1995.

Three contingency samples were collected. One (OWL-VER-10) in July and two (OWL-VER-11 and OWL-VER-12) in August, as requested by the onsite NYSDEC representative.

Table 3-1 provides a summary of the sampling and field screening that was completed as part of the cleanup verification sampling. The laboratory results of the cleanup verification samples are summarized in Table 3-2.

3.3.1 Sampling Day July 5, 1995

The excavation of the OWL began in the north and all visibly contaminated soil was removed and excavation was performed to grade. Only one grid was located in the north, which was collected along with a contingency sample requested by the onsite NYSDEC representative.

The following samples were collected:

Grid Number	Sample Number	Remarks
1	OWL-VER-01	Cleanup Verification
	MW-536-16	Rinsate Blank
	OWL-VER-10	Contingency Sample
	MW-536-17	Trip Blank

The field screening results are shown in Table 3-1. All samples were field screened for PCBs and total organic vapors.

The laboratory results are shown in Table 3-2. All cleanup verification samples were sent to the laboratory along with a rinsate blank and a trip blank to be analyzed for PCBs, PAHs and VOCs.

PCBs

Both samples contained less than 1 mg/kg total PCBs according to the PCB immunoassay test procedure.

PCBs were detected in sample OWL-VER-01 at an estimated concentration of 0.055 mg/kg and OWL-VER-10 at an estimated concentration of 0.019 mg/kg. All concentrations were below the cleanup goal of 1.0 mg/kg for total PCBs.

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OILY WASTE LANDFILL
CLEANUP VERIFICATION SAMPLING AND ANALYSIS REPORT

Table 3-1

Summary of Cleanup Verification Samples

Sample Number [1]	Grid Number	Date Sampled	Sample Media	PCB Immunoassay Result [2]	VOC Jar Headspace Result [3]	Sample Analysis[4]	Comments
OWL-VER-01	1	7/5/95	Soil	< 1 mg/kg	2.5 ppm	PCB, PAH, VOC	Cleanup Verification
OWL-VER-02	2	8/25/95	Soil	> 1 mg/kg	ND	PCB, PAH, VOC	Cleanup Verification
OWL-VER-03	3	8/25/95	Soil	< 1 mg/kg	ND	PCB, PAH, VOC	Cleanup Verification
OWL-VER-04	4	8/25/95	Soil	< 1 mg/kg	2.7 ppm	PCB, PAH, VOC	Cleanup Verification
OWL-VER-05	5	8/25/95	Soil	< 1 mg/kg	9.6 ppm	PCB, PAH, VOC	Cleanup Verification
OWL-VER-06	6	8/25/95	Soil	< 1 mg/kg	6 ppm	PCB, PAH, VOC	Cleanup Verification
OWL-VER-07	7	8/25/95	Soil	< 1 mg/kg	ND	PCB, PAH, VOC	Cleanup Verification
OWL-VER-08	8	8/25/95	Soil	< 1 mg/kg	ND	PCB, PAH, VOC	Cleanup Verification
OWL-VER-09	9	8/25/95	Soil	< 1 mg/kg	ND	PCB, PAH, VOC	Cleanup Verification
OWL-VER-10	---	7/5/95	Soil	< 1 mg/kg	ND	PCB, PAH, VOC	Contingency Sample
OWL-VER-11	---	8/25/95	Soil	< 1 mg/kg	15 ppm	PCB, PAH, VOC	Contingency Sample
OWL-VER-12	---	8/25/95	Soil	< 1 mg/kg	66 ppm	PCB, PAH, VOC	Contingency Sample
OWL-VER-200	9	8/25/95	Soil	< 1 mg/kg	ND	PCB, PAH, VOC	Field Duplicate of OWL-VER-09
MW-536-16	1	7/5/95	Water	---	---	PCB, PAH, VOC	Rinsate Blank for OWL-VER-01
MW-536-17	---	7/5/95	Water	---	---	VOC	Trip Blank
MW-536-18	2	8/25/95	Water	---	---	PCB, PAH, VOC	Rinsate Blank of OWL-VER-02
MW-536-19	---	8/25/95	Water	---	---	PCB, PAH, VOC	Water Field Blank
MW-536-20	---	8/25/95	Water	---	---	VOC	Trip Blank

Notes:

[1] See Figure 2-1 for sample locations.

[2] The immunoassay test kit used for the PCB analysis was the Millipore EnviroGard PCB Test Kit.

[3] The VOC jar headspace analysis was performed with a 11.8 eV lamp PID in accordance with the QAPP.

[4] Samples were sent for offsite laboratory analysis for the parameters indicated. See Table 3-2 for laboratory results.

ND - Non-detect

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CLEANUP VERIFICATION SAMPLING AND ANALYSIS REPORT

Table 3-2

Cleanup Verification Sampling Results [1] [2]

Sample Number	Total PCBs (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	Other PAHs (mg/kg)	1,1,1 Trichloro-ethane (mg/kg)	Benzene (mg/kg)	Trichloro-ethene (mg/kg)	Tetrachloro-ethene (mg/kg)	Toluene (mg/kg)	Total Xylene (mg/kg)
OWL-VER-01	0.055 BJP	0.300 U	0.300 U	0.300 U	0.010 U	0.010 U	0.001 J	0.001 J	0.002 J	0.010 U
OWL-VER-02	1.170	0.036 J	0.058 J	0.059 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
OWL-VER-03	0.006 JP	0.300 U	0.300 U	0.300 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
OWL-VER-04	0.121 P	0.011 J	0.067 J	0.051 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
OWL-VER-05	0.019 JP	0.300 U	0.300 U	0.300 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
OWL-VER-06	0.043 JP	0.011 J	0.038 J	0.028 J	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
OWL-VER-07	0.016 JP	0.300 U	0.012 J	0.300 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
OWL-VER-08	0.035 U	0.300 U	0.300 U	0.300 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
OWL-VER-09	0.074 J	0.015 J	0.015 J	0.020 J	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
OWL-VER-10	0.019 JP	0.072 J	0.060 J	0.035 J	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
OWL-VER-11	0.038 U	0.300 U	0.300 U	0.300 U	0.010 U	0.010 U	0.007 J	0.010 U	0.010 U	0.010 U
OWL-VER-12	0.032 J	0.300 U	0.300 U	0.300 U	0.010 U	0.010 U	0.006 J	0.010 U	0.010 U	0.010 U
OWL-VER-200 [3]	0.092 J	0.300 U	0.300 U	0.300 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U

Note:

[1] The laboratory analysis was performed by RECRA Environmental Inc.

[2] The samples were analyzed by NYSDEC Methods 91-1 (VOC), 91-2 (PAH), and 91-3 (PCB). See Appendix B for a complete lab report.

[3] Field duplicate of OWL-VER-09.

U - Analyte was not detected. Value is the highest sample detection limit.

J - Indicates an estimated value.

B - The parameter was also present in the associated blank.

P- The percent difference for detected concentrations between two GC columns were greater than 25%.

PAHs

Phenanthrene was detected in sample OWL-VER-10 with an estimated concentration of 0.072 mg/kg. The remaining sample was non-detect for phenanthrene at a detection limit of 0.300 mg/kg. All concentrations were below the cleanup goal of 2.2 mg/kg for phenanthrene.

Pyrene was detected in sample OWL-VER-10 with an estimated concentration of 0.060 mg/kg. The remaining sample was non-detect for pyrene at a detection limit of 0.300 mg/kg. All concentrations were below the cleanup goal of
6.6 mg/kg for pyrene.

Other PAHs were detected in sample OWL-VER-10 with a maximum estimated concentration of 0.035 mg/kg. The remaining sample was non-detect for other PAHs at a detection limit of 0.300 mg/kg. All concentrations were below the cleanup goal of 0.300 mg/kg for other PAHs.

VOCs

Both samples contained less than 5 ppm total organic vapors according to the jar headspace analysis.

1,1,1 trichloroethane, benzene, and total xylene were not detected in both samples at a detection limit of 0.010 mg/kg. All concentrations were below the cleanup goal of 0.760 mg/kg for 1,1,1 trichloroethane, 0.040 mg/kg for benzene, and 0.120 mg/kg for total xylene.

Trichloroethene was detected in sample OWL-VER-01 with an estimated concentration of 0.001 mg/kg. The remaining sample was non-detect for trichloroethene at a detection limit of 0.010 mg/kg. All concentrations were below the cleanup goal of 0.130 mg/kg for trichloroethene.

Tetrachloroethene was detected in sample OWL-VER-01 with an estimated concentration of 0.001 mg/kg. The remaining sample was non-detect for tetrachloroethene at a detection limit of 0.010 mg/kg. All concentrations were below the cleanup goal of 0.020 mg/kg for tetrachloroethene.

Toluene was detected in sample OWL-VER-01 with an estimated concentration of 0.002 mg/kg. The remaining sample was non-detect for toluene at a detection limit of 0.010 mg/kg. All concentrations were below the cleanup goal of 0.150 mg/kg for toluene.

3.3.2 Sampling Day August 25, 1995

After removal of the waste at the OWL, the contaminated soil below the waste soil boundary was removed. Once this removal was completed, the remaining samples were collected. Two

contingency samples were collected from the sand lens at the request of the onsite NYSDEC representative.

The following samples were collected:

Grid Number	Sample Number	Remarks
02	OWL-VER-02	Cleanup Verification
	MW-536-18	Rinsate Blank
03	OWL-VER-03	Cleanup Verification
04	OWL-VER-04	Cleanup Verification
05	OWL-VER-05	Cleanup Verification
06	OWL-VER-06	Cleanup Verification
07	OWL-VER-07	Cleanup Verification
08	OWL-VER-08	Cleanup Verification
09	OWL-VER-09	Cleanup Verification
	OWL-VER-200	Field Duplicate
	OWL-VER-11	Contingency Sample
	OWL-VER-12	Contingency Sample
	MW-536-19	Water Field Blank
	MW-536-20	Trip Blank

The field screening results are shown in Table 3-1. All samples were field screened for PCBs and total organic vapors.

The laboratory results are given in Table 3-2. All cleanup verification samples were sent to the laboratory along with a field duplicate, a water field blank, a trip blank and a rinsate blank to be analyzed for PCBs, PAHs, and VOCs.

PCBs

One of the ten samples (OWL-VER-02) contained greater than 1 mg/kg total PCBs according to the PCB immunoassay test procedure. All samples were analyzed by the laboratory to confirm the field screen results.

PCBs were detected in eight of the ten samples (OWL-VER-02, 03, 04, 05, 06, 07, 09 and 12) at concentrations ranging from an estimated 0.006 mg/kg to 1.17 mg/kg. The remaining samples were non-detect for total PCBs at a detection limit range of 0.035 mg/kg to 0.038 mg/kg. All concentrations except 1.17 mg/kg (OWL-VER-02) were below the cleanup goal of 1.0 mg/kg for total PCBs.

PAHs

Phenanthrene was detected in four of the ten samples (OWL-VER-02, 04, 06 and 09) at concentrations ranging from an estimated 0.011 mg/kg to 0.036 mg/kg. The remaining samples were non-detect for phenanthrene at a detection limit of 0.300 mg/kg. All concentrations were below the cleanup goal of 2.2 mg/kg for phenanthrene.

Pyrene was detected in five of the ten samples (OWL-VER-02, 04, 06, 07 and 09) at concentrations ranging from an estimated 0.012 mg/kg to 0.067 mg/kg. The remaining samples were non-detect for pyrene at a detection limit of 0.300 mg/kg. All concentrations were below the cleanup goal of 6.6 mg/kg for pyrene.

Other PAHs were detected in four of the ten samples (OWL-VER-02, 04, 06 and 09) at concentrations ranging from an estimated 0.004 mg/kg to 0.059 mg/kg. The remaining samples were non-detect for other PAHs at a detection limit of 0.300 mg/kg. All concentrations were below the cleanup goal of 0.300 mg/kg for other PAHs.

VOCs

Four out of the ten samples (OWL-VER-05, 06, 11 and 12) contained greater than 5 ppm total organic vapors according to the jar headspace analysis. All samples were analyzed by the laboratory to confirm the field screen results.

1,1,1 trichloroethane, benzene, tetrachloroethene, toluene, and total xylene were not detected in all samples at a detection limit range of 0.010 mg/kg to 0.011 mg/kg. All concentrations were below the cleanup goal of 0.760 mg/kg for 1,1,1 trichloroethane, 0.040 mg/kg for benzene, 0.02 mg/kg for tetrachloroethene, 0.150 mg/kg for toluene, and 0.120 mg/kg for total xylene.

Trichloroethene was detected in samples OWL-VER-11 and OWL-VER-12 with an estimated concentration of 0.007 mg/kg and 0.006 mg/kg. The remaining samples were non-detect for trichloroethene at a detection limit range of 0.010 mg/kg to 0.011 mg/kg. All concentrations were below the cleanup goal of 0.130 mg/kg for trichloroethene.

3.4 Quality Control

Quality control analytical data associated with the *Cleanup Verification Sampling and Analysis Report for the Oily Waste Landfill* is summarized in this section. All samples were analyzed by

RECRA Environmental Inc., located in Amherst, New York. New York ASP CLP was used for all analyses, where applicable. The following quality control data was reviewed:

- Laboratory Method Blanks
- Matrix Spike/Matrix Spike Duplicate
- Blank Spike/Blank Spike Duplicate
- Laboratory Duplicates
- Sample Holding Time Data

Project-generated quality control data was also reviewed. This data included:

- Field Duplicate Samples
- Rinsate Blank Samples
- Field Blank Samples
- Trip Blank Samples

All applicable quality control data were evaluated on a per analysis basis and are summarized below by analytical parameter. Holding times, field duplicate, field blank, rinsate blank and trip blank data are summarized in the lab reports in Appendix B.

PCBs

All laboratory calibration and preparation blank data were reviewed. PCBs were not detected in any of these blank samples except in the original samples for OWL-VER-01 and OWL-VER-10 which were reported as qualified due to a potential high bias from the blank contamination. All positive and nondetect soil and aqueous sample results were qualified as estimated due to instrument variability as indicated by exceeded continuing calibration RPD criterion for Aroclor 1016 and Aroclor 1242. Aroclor 1260 results in samples OWL-VER-05 and 07 and the Aroclor 1248 results in sample OWL-VER-03 were rejected for dual column precisions greater than 90 percent.

Samples OWL-VER-02 and 07 did not meet the lower recovery limit for either TCX or DCB on either of the two columns. Samples OWL-VER-03, 04, 05, 08, 11 and 12 did not meet TCX recovery on either column but met DCB recovery on both columns. All positive and nondetect PCB results in samples OWL-VER-02, 03, 04, 05, 07, 08, 11 and 12 were qualified as estimated.

The PCB matrix and blank spikes were reviewed. All matrix and blank spike data was acceptable. Laboratory duplicate data and control sample data were also reviewed and considered acceptable.

The data validator found that all laboratory samples were received within the VTSR and none exceeded the laboratory holding time of 5 days from VTSR for extraction and 40 days for PCB analysis.

The field duplicate pair was OWL-VER-09 and OWL-VER-200. The typical procedure is that the laboratory QA/QC data would be evaluated in detail if the Relative Percent Difference (RPD) was greater than 50 percent. The field duplicate data was reviewed and considered acceptable.

PCBs were not detected in the rinsate blank samples with the exception of MW-536-16 which was reported with a PCB concentration of 1.2 µg/l. The aqueous sample result is estimated due to instrument variability but it is recommended to note the possibility of low level PCB cross contamination for the soil samples.

PCBs were not detected in any of the water field blank samples. The field blank data was considered acceptable.

The data validator found the PCB results for OWL-VER-06 and 09 to be useable and acceptable without qualifications. Samples OWL-VER-03 for Aroclor 1248 and OWL-VER-05 and 07 for Aroclor 1260 to be rejected due to poor dual column precision. Since the magnitude of the effect Gradient is commenting on is questionable and the results are all considerably less than the cleanup goal for PCBs, this data will be considered estimated. The remaining sample data were considered estimated due to low surrogate recovery and instrument variability.

PAHs

All laboratory calibration and preparation blank data was reviewed. PAHs were not detected in any of these blank samples. Initial and continuing calibration data was also reviewed. The nondetect results for naphthalene in sample MW-536-19 and dibenzo(a,h)anthracene in samples MW-536-16, OWL-VER-01 and OWL-VER-10 were estimated due to variable instrument response.

All surrogate spike recovery criteria were met for the PAH samples.

The PAH matrix and blank spikes were reviewed. All matrix and blank spike data was acceptable. Laboratory duplicate data and control sample data were also reviewed and considered acceptable.

Benzo(a)anthracene and chrysene in sample OWL-VER-10; benzo(k)fluoranthene and 2-methyl naphthalene in sample OWL-VER-02; benzo(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, and phenanthrene results in sample OWL-VER-04; benzo(a)anthracene, chrysene, fluoranthene, and phenanthrene results in OWL-VER-07 and anthracene, benzo(a)anthracene, chrysene, fluoranthene, phenanthrene and pyrene in sample OWL-VER-09; were considered to be nondetects due to the uncertainty in the laboratory's ability to detect the compounds at this level.

The data validator found that all laboratory samples were received within the VTSR and none exceeded the laboratory holding time of 5 days from VTSR for extraction and 40 days for PAH analysis.

The field duplicate pair was OWL-VER-09 and OWL-VER-200. The typical procedure is that the laboratory QA/QC data would be evaluated in detail if the RPD was greater than 50 percent. The field duplicate data was reviewed and considered acceptable.

MW-536-16 was considered estimated for dibenzo(a,h)anthracene due to inconsistencies in compound detection limits.

PAHs were not detected in any of the water field blank samples. The naphthalene results of sample MW-536-19 is estimated, not nondetect, due to the poor compound quantification. It is recommended to consider the possibilities of low level cross contamination.

The data validator found all the cleanup verification PAH results to be useable for the cleanup goal parameters.

VOCs

All laboratory calibration and preparation blank data was reviewed. VOCs were not detected in any of these blank samples. Initial and continuing calibration data was also reviewed. There were no quality control related issues.

All surrogate spike recovery criteria were met for the VOC samples. Trichloroethene and tetrachloroethene in sample OWL-VER-01 were considered estimated due to the uncertainty in the laboratory's ability to detect the compounds at the detection level.

The VOC matrix and blank spikes were reviewed. All matrix and blank spike data was acceptable. Laboratory duplicate data and control sample data were also reviewed and considered acceptable.

The data validator found that all laboratory samples were received within the VTSR and none exceeded the laboratory holding time of 7 days from VTSR for VOC analysis.

The field duplicate pair was OWL-VER-09 and OWL-VER-200. The typical procedure is that the laboratory QA/QC data would be evaluated in detail if the RPD was greater than 50 percent. The field duplicate data was reviewed and considered acceptable.

VOCs were not detected in any of the rinsate blank samples. No cross contamination occurred.

VOCs were not detected in any of the water field or trip blanks. The field and trip blank data is considered acceptable.

The data validator found all the cleanup verification VOC results to be useable and acceptable without qualifications for the cleanup goal parameters.

4 Section Four

Section 4
Statistical Analysis

The cleanup verification work at the OWL site resulted in the generation of two data sets. The first data set includes the immunoassay and jar headspace results. The second data set includes the cleanup verification laboratory results.

4.1 Field Screening Summary

Immunoassay testing was performed on nine cleanup verification samples (OWL-VER-01 through OWL-VER-09) and one duplicate (OWL-VER-200) as required by the work plan. Three contingency samples (OWL-VER-10 through OWL-VER-12) were analyzed at the NYSDEC's request. All samples except OWL-VER-02 contained less than 1 mg/kg total PCBs according to the immunoassay test procedure. The immunoassay results are given in Table 3-1. Appendix A provides a summary of the field screen results.

Jar headspace testing was performed on nine cleanup verification samples (OWL-VER-01 through OWL-VER-09) and one duplicate (OWL-VER-200) as required by the work plan. Three contingency samples (OWL-VER-10 through OWL-VER-12) were analyzed at the NYSDEC's request. All samples except OWL-VER-05, 06, 11, and 12 contained less than 5 ppm total organic vapors. The jar headspace results are given in Table 3-1. Appendix A provides a summary of the field screen results.

The field screen tests were performed in a timely manner so that field decisions could be made with regard to proceeding with construction.

4.2 Laboratory Summary

There were 9 cleanup verification samples (OWL-VER-01 through OWL-VER-09) and 3 contingency samples (OWL-VER-10 through OWL-VER-12) collected from the OWL site. All samples were laboratory analyzed for PCBs, PAHs and VOCs. All samples contained either non-detect concentrations or concentrations below cleanup standards for these three analytes except OWL-VER-02 which contained 1.17 mg/kg total PCBs. Table 3-2 reports the concentrations for all cleanup goal parameters. Appendix B provides copies of the laboratory reports.

4.3 Statistical Analysis of Cleanup Verification Data

The statistical method to be used when evaluating the laboratory results from the OWL cleanup verification sampling, with respect to the soil cleanup goals, was given in the *Cleanup*

Verification Work Plan for the Oily Waste Landfill (CDM, September 1994). The data was to be fit to a normal distribution or log transformed and then fit to a normal distribution. Based on this fit, the upper 80 percent confidence interval on the mean could be calculated and compared to the soil cleanup goals for PCBs, PAHs, and VOCs. It may not be possible to fit the data set to a normal or log-normal distribution particularly if there are too few samples or the data set is censored (a majority of the data is non-detect). In that case, the *Soil Remediation Verification Guide* (CDM, April 1993) states that a non-parametric statistical method must be utilized to determine if the upper 80 percent confidence interval on the median, not the mean, is below the soil cleanup goals.

In this instance, the number of samples was moderate in size (nine). All concentrations of the VOCs, 1,1,1 trichloroethane, benzene and total xylene and the PAHs, acenaphthlene, acenaphthylene, benzo(G, H, I)perylene, dibenzo(A, H)anthracene, fluorene, indeno(1, 2, 3 - CD)pyrene and naphthalene were non-detect for all nine samples. Hence, no statistical analysis is necessary.

A majority of the PCB results were detectable concentrations and appear to fit a normal distribution. Hence, a parametric statistical method must be used for the PCB analysis. Appendix D of this report presents the statistical analysis calculations.

The PCB data was evaluated to determine if its data or log transformed data could be fit to a normal distribution. This evaluation found that the log transformed data could be fit to the normal distribution and the upper 80 percent confidence interval was found to be 0.071 mg/kg for total PCBs. This value was compared to the cleanup goal of 1 mg/kg for total PCBs.

A majority of the pyrene results were detectable concentrations and appear to fit a normal distribution. Hence, a parametric statistical method must be used for the pyrene analysis. Appendix D of this report presents the statistical analysis calculations.

The pyrene data was evaluated to determine if its data or log transformed data could be fit to a normal distribution. This evaluation found that both the log transformed and untransformed data could be fit to the normal distribution and the upper 80 percent confidence intervals were found to be 0.083 mg/kg and 0.106 mg/kg for pyrene. These values were compared to the cleanup goal of 6.6 mg/kg for pyrene.

Phenanthrene and the remaining PAHs and VOCs were mostly non-detect concentrations. These data were ranked from lowest to highest concentration. The upper 80 percent confidence limit on the median were used to find the sample rank that should have a PAH and VOC concentration less than the cleanup standards. This was performed to show that the remediated area was statistically below cleanup goals for PAHs and VOCs.

The results of the non-parametric statistical analyses indicated that the sixth ranking sample must have a concentration less than the PAH and VOC cleanup goals. Based on the laboratory results, the sixth ranking sample was found to contain 0.150 mg/kg phenanthrene and other PAHs and 0.006 mg/kg tetrachloroethene, trichloroethene, and toluene which were below the cleanup goals of 2.2 mg/kg for phenanthrene, 0.300 mg/kg for other PAHs, 0.020 mg/kg for tetrachloroethene, 0.130 mg/kg for trichloroethene and 0.150 mg/kg for toluene.

The results of the analysis proved that the PCB, PAH and VOC data sets from the remediated OWL site were statistically below cleanup goals.

5 Section Five

Section 5
Conclusions

The cleanup verification sampling was performed in accordance with the approved cleanup verification work plan with exceptions as noted in Section 2. A total of 12 immunoassay (not including duplicates), 12 jar headspace (not including duplicates), and 12 cleanup verification laboratory samples (not including duplicates) were collected and analyzed during remediation of the OWL site.

One of the 12 immunoassay samples showed a result of greater than 1 mg/kg total PCBs. Subsequent laboratory analysis showed that this sample (OWL-VER-02) had 1.17 mg/kg total PCBs. No additional excavation was performed since the PCB residual concentrations were statistically below cleanup goals.

Four of the 12 jar headspace samples showed a result of greater than 5 ppm total organic vapors. No additional excavation was performed since all samples contained concentrations below cleanup goals for VOCs.

For the OWL, 9 cleanup verification samples and 3 contingency samples were collected and analyzed for PCBs, PAHs, and VOCs. The VOCs, 1,1,1 trichloroethane, benzene and total xylene and the PAHs, acenaphthlene, acenaphthylene, benzo(G, H, I)perylene, dibenzo(A, H)anthracene, fluorene, indeno(1, 2, 3 - CD)pyrene and naphthalene concentrations were all non-detect. Hence, no statistical analysis was necessary.

A majority of the PCB and pyrene concentrations were detectable so the data sets were fit to a normal distribution and the upper 80 percent confidence limits were found to contain 0.071 mg/kg for total PCBs and 0.083 mg/kg for pyrene. These results were compared to the cleanup goals of 1 mg/kg for total PCBs and 6.6 mg/kg for pyrene to determine if the remediated area was statistically below cleanup goals.

The remaining PAH and VOC parameters were non-detect, so a non-parametric statistical analyses was performed. The upper 80 percent confidence intervals of the cleanup verification samples were found to be 0.150 mg/kg for phenanthrene and other PAHs and 0.006 mg/kg for tetrachloroethene, trichloroethene, and toluene. These results were compared to the cleanup goals of 2.2 mg/kg for phenanthrene, 0.300 for other PAHs, 0.020 mg/kg for tetrachloroethene, 0.130 for trichloroethene and 0.150 mg/kg for toluene.

Based on this statistical evaluation, the remediation of the OWL site shows that the residual soils are statistically below the ROD cleanup goal for PCBs, PAHs and VOCs.

6 Section Six

Section 6
References

CDM. 1993. Soil Remediation Verification Guide

CDM. 1994. Cleanup Verification Work Plan for the Oily Waste Landfill

CDM. 1994. Quality Assurance Project Plan

Conover, W.J. 1980. Practical Non-Parametric Statistics. 2nd Edition

A

Appendix A

Appendix A

Summary of Field Screening Results

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CLEANUP VERIFICATION SAMPLING AND ANALYSIS REPORT

Table A-1

Field Screening Results of Cleanup Verification Testing [1]

Sample Number	Date Sampled	Sampled By	Sample Location	Date Tested	Tested By	PCB Immunoassay Result [2]	VOC Jar Headspace Result [3]
OWL-VER-01	7/5/95	Christina Osvoldik	Grid 1	7/5/95	Christina Osvoldik	< 1 ppm	2.5 ppm
OWL-VER-02	8/25/95	Julie Schreiber	Grid 2	8/25/95	Julie Schreiber	> 1 ppm	ND
OWL-VER-03	8/25/95	Julie Schreiber	Grid 3	8/25/95	Julie Schreiber	< 1 ppm	ND
OWL-VER-04	8/25/95	Julie Schreiber	Grid 4	8/25/95	Julie Schreiber	< 1 ppm	2.7 ppm
OWL-VER-05	8/25/95	Julie Schreiber	Grid 5	8/25/95	Julie Schreiber	< 1 ppm	9.6 ppm
OWL-VER-06	8/25/95	Julie Schreiber	Grid 6	8/25/95	Julie Schreiber	< 1 ppm	6.0 ppm
OWL-VER-07	8/25/95	Julie Schreiber	Grid 7	8/25/95	Julie Schreiber	< 1 ppm	ND
OWL-VER-08	8/25/95	Julie Schreiber	Grid 8	8/25/95	Julie Schreiber	< 1 ppm	ND
OWL-VER-09	8/25/95	Julie Schreiber	Grid 9	8/25/95	Julie Schreiber	< 1 ppm	ND
OWL-VER-200 [4]	8/25/95	Julie Schreiber	Grid 9	8/25/95	Julie Schreiber	< 1 ppm	ND
OWL-VER-10	7/5/95	Christina Osvoldik	Contingency	7/5/95	Christina Osvoldik	< 1 ppm	ND
OWL-VER-11	8/25/95	Julie Schreiber	Contingency	8/25/95	Julie Schreiber	< 1 ppm	15 ppm
OWL-VER-12	8/25/95	Julie Schreiber	Contingency	8/25/95	Julie Schreiber	< 1 ppm	66 ppm

Notes:

[1] The samples are initially field screened by immunoassay (PCB) and jar headspace (VOC) procedures. Samples that contain < 1 ppm PCBs and < 5 ppm VOCs according to the field screening procedure, will be sent to the laboratory for analysis.

[2] The immunoassay test kit used for the PCB analysis is the Millipore EnbiroGard PCB Test Kit.

[3] The VOC jar headspace analysis is performed in accordance with the QAPP.

[4] Field Duplicate of OWL-VER-09.

ND - Nondetect

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OILY WASTE LANDFILL
CLEANUP VERIFICATION SAMPLING AND ANALYSIS REPORT

Table A-2

Field Screening Results of Cleanup Verification Testing [1]

Sample Number	Date Sampled	Sampled By	Sample Area	Date Tested	Tested By	Absorbance [2]	>1 ppm
NC				7/5/95	CO	1.3	
1 ppm				7/5/95	CO	0.91	
OWL-VER-01	7/5/95	CO	Grid 1	7/5/95	CO	1.21	No
OWL-VER-10	7/5/95	CO	Contingency	7/5/95	CO	1.09	No

Jar Headspace Analysis Results [3]

Sample Number	Date Sampled	Sampled By	Sample Area	Date Tested	Tested By	PID Reading	>5 ppm
OWL-VER-01	7/5/95	CO	Grid 1	7/5/95	CO	2.5 ppm	No
OWL-VER-10	7/5/95	CO	Contingency	7/5/95	CO	0 ppm	No

Notes:

(1) The immunoassay test kit used for analysis is the Millipore EnviroGard PCB Test Kit.

(2) If the absorbance of the sample is less than the absorbance of the 1 ppm calibrator, then the sample contains greater than 1 ppm PCBs.

(3) The jar headspace analysis is performed in accordance with the QAPP.

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OILY WASTE LANDFILL
CLEANUP VERIFICATION SAMPLING AND ANALYSIS REPORT

Table A-3

Immunoassay Testing Results [1]

Sample Number	Date Sampled	Sampled By	Sample Area	Date Tested	Tested By	Absorbance [2]	>1 ppm
NC	- - -	- - -	- - -	8/25/95	JS	1.16	- - -
1 ppm	- - -	- - -	- - -	8/25/95	JS	0.59	- - -
OWL-VER-02	8/25/95	JS, BT	Grid 2	8/25/95	JS	0.49	Yes
OWL-VER-03	8/25/95	JS, BT	Grid 3	8/25/95	JS	1.13	No
OWL-VER-04	8/25/95	JS, BT	Grid 4	8/25/95	JS	1.05	No
OWL-VER-05	8/25/95	JS, BT	Grid 5	8/25/95	JS	0.83	No
OWL-VER-06	8/25/95	JS, BT	Grid 6	8/25/95	JS	1.03	No
OWL-VER-07	8/25/95	JS, BT	Grid 7	8/25/95	JS	1.09	No
OWL-VER-08	8/25/95	JS, BT	Grid 8	8/25/95	JS	1.05	No
OWL-VER-09	8/25/95	JS, BT	Grid 9	8/25/95	JS	0.99	No
OWL-VER-200 [3]	8/25/95	JS, BT	Grid 9	8/25/95	JS	1.02	No
OWL-VER-11	8/25/95	JS, BT	Contingency	8/25/95	JS	1.01	No
OWL-VER-12	8/25/95	JS, BT	Contingency	8/25/95	JS	1.07	No
OWL-VER-12D [4]	8/25/95	JS, BT	Contingency	8/25/95	JS	0.75	No

Jar Headspace Analysis Results [5]

Sample Number	Date Sampled	Sampled By	Sample Area	Date Tested	Tested By	PID Reading	>5 ppm
OWL-VER-02	8/25/95	JS, BT	Grid 2	8/25/95	JS, BT	0 ppm	No
OWL-VER-03	8/25/95	JS, BT	Grid 3	8/25/95	JS, BT	0 ppm	No
OWL-VER-04	8/25/95	JS, BT	Grid 4	8/25/95	JS, BT	2.7 ppm	No
OWL-VER-05	8/25/95	JS, BT	Grid 5	8/25/95	JS, BT	9.6 ppm	Yes
OWL-VER-06	8/25/95	JS, BT	Grid 6	8/25/95	JS, BT	6.0 ppm	Yes
OWL-VER-07	8/25/95	JS, BT	Grid 7	8/25/95	JS, BT	0 ppm	No
OWL-VER-08	8/25/95	JS, BT	Grid 8	8/25/95	JS, BT	0 ppm	No
OWL-VER-09	8/25/95	JS, BT	Grid 9	8/25/95	JS, BT	0 ppm	No
OWL-VER-200 [3]	8/25/95	JS, BT	Grid 9	8/25/95	JS, BT	0 ppm	No
OWL-VER-11	8/25/95	JS, BT	Contingency	8/25/95	JS, BT	15 ppm	Yes
OWL-VER-12	8/25/95	JS, BT	Contingency	8/25/95	JS, BT	66 ppm	Yes
OWL-VER-12D [4]	8/25/95	JS, BT	Contingency	8/25/95	JS, BT	60 ppm	Yes

Notes:

(1) The immunoassay test kit used for analysis is the Millipore EnviroGard PCB Test Kit.

(2) If the absorbance of the sample is less than the absorbance of the 1 ppm calibrator, then the sample contains greater than 1 ppm PCBs.

(3) Field duplicate of OWL-VER-09.

(4) Test duplicate of OWL-VER-12.

(5) The jar headspace analysis is performed in accordance with the QAPP.

B

Appendix B

Appendix B

Analytical Data
Performed by RECRA Environmental Inc.

Lab Reports Dated:

August 1, 1995
September 25, 1995
September 25, 1995

Sample ID Nos.:

Lab Report Dated:

August 1, 1995

OWL-VER-01
OWL-VER-10
MW-536-16
MW-536-17

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Analysis Services

August 1, 1995

Mr. Joseph Mihm
Camp, Dresser and McKee / Alcoa
Park Avenue East, Building 65
Massena, NY 13665

RE: **Analytical Results**

Dear Mr. Mihm:

Please find enclosed the data package concerning the analyses of samples recently submitted by your firm. The pertinent information regarding these analyses is listed below:

Quote No.:	NY94-606
REI:	28
SDG #:	OWLVE
Matrix:	Soil & Water
Sample Receipt Date:	07/06/95
Sample Date:	07/05/95

If you have any questions concerning these data, please contact Ms. Deborah A. Carella, Program Manager, at (800) 52R-ECRA and refer to the I.D. number listed below.

Sincerely,

RECRA ENVIRONMENTAL, INC.

Kenneth E. Kasperek
Laboratory Manager

DAC/KEK/dms
Enclosure
cc: Frances Gero (cover letter only)
Camp, Dresser and McKee
Mr. Bernard Kunkle (cover letter only)
Aluminum Company of America
Park Avenue East, BLDG. 65
Massena, NY 13665

Reviewed and approved by/date:

Deborah A. Carella, Program Manager

ID #A95-3610
#NY5A53243

Mihm
Schultz
Schreiber
Occhialini

SAMPLE DATA SUMMARY PACKAGE

RECRA
ENVIRONMENTAL
INC.

CASE NARRATIVE:

Laboratory: Recra Environmental, Inc.

Laboratory Code: RECNY

Contract No.: NY94-606

SDG No.: OWLVE

Sample Identifications: MW-536-16
MW-536-17
OWL-VER-01
OWL-VER-10

METHODOLOGY

Analyses were performed in accordance with 1991 New York State Analytical Services protocol. (Revised 1993)

COMMENTS

Results are reported using standard qualifiers (Q) as defined on the Organic Data Comment Page.

Preliminary results were sent on July 10 and 28, 1995 via facsimile to Ms. Julie Schreiber of Camp, Dresser and McKee by Ms. Deborah Carella of Recra Environmental.

Quality Control analysis was performed on a batch basis. All results were within acceptable limits.

VOLATILE DATA

Volatile sample and standard areas are listed on the corresponding data system printouts.

Volatile data was processed utilizing Finnigan DataPro Autoquantitation and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions. False positive compounds are crossed out, initialed and dated in this data package.

Ortho-Xylene and meta & para-Xylene elute separately on a capillary column. They are reported in this data package as Total Xylenes. The concentration is calculated by adding the areas of ortho-Xylene and meta & para-Xylene and using only the response factor form ortho-Xylene to calculate the nanogram amount.

The water samples in this SDG exhibit a pH of approximately 7.

SEMIVOLATILE DATA

Semivolatile sample and standard areas are listed on the corresponding data system printouts.

Semivolatile data was processed utilizing Teknivant Datasystem and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions.

PESTICIDE DATA

Samples OWLVER01 and OWLVER10 required re-extraction due to a contaminated PCB Blank. The re-extractions of samples OWLVER01RE and OWLVER10RE were performed outside the required holding time, therefore, both sets of data are included in this data package as per the request of Mr. Jim Occholini of Camp, Dresser and McKee.

PBLK11 contains Aroclors 1248 and 1260 at concentrations below the CRDL; Aroclor 1260 was quantitated from two peaks on the DB1701 column. PBLK12 contains Aroclors 1254 and 1260 at concentrations below the CRDL; Aroclors 1254 and 1260 were quantitated from one peak on the DB1701 column.

Aroclor 1260 was quantitated from two peaks on the DB1701 column in sample MW53616.

The surrogate recoveries of Tetrachloro-m-xylene fell outside the QC limit on the DB1701 column in samples PBLK10 and PBLK12. The surrogate recoveries of Decachlorobiphenyl fell outside the QC limit on the DB608 and DB1701 columns in samples MSB10, MSBD10; and on the DB1701 column in sample MW53616.

The retention times of various aroclor peaks fell outside the established retention time windows on the DB608 and DB1701 columns in the re-extracted soil samples.

The relative percent difference of Aldrin fell outside the QC limit on the DB608 column in INDBM05 analyzed 06/27/95 at 07:01; alpha-BHC, gamma-BHC, Heptachlor, Tetrachloro-m-xylene in INDAM09 analyzed 07/22/95 at 04:21; and Aldrin, Tetrachloro-m-xylene in INDBM09 analyzed 07/22/95 at 05:04.

The relative percent difference of 4,4'-DDT fell outside the QC limit on the DB1701 column in PEM11 analyzed 07/11/95 at 20:01.

The retention time of beta-BHC fell outside the established retention time window on the DB608 column in INDBM06 analyzed 07/01/95 at 05:27; beta-BHC, gamma-BHC in PEM11 analyzed 07/21/95 at 22:32; alpha-BHC, gamma-BHC, Heptachlor in INDAM09 analyzed 07/22/95 at 04:21; and beta-BHC, delta-BHC, Aldrin in INDBM09 analyzed 07/22/95 at 05:04. The retention times of the second and third peaks of aroclor 1248 fell outside the established retention time windows on the DB608 column analyzed 07/21/95 at 19:37.

The retention time of Endrin ketone fell outside the established retention time window on the DB1701 column in PEM03 analyzed 06/20/95 at 14:05; beta-BHC, delta-BHC in INDBM05 analyzed 06/27/95 at 07:01; alpha-BHC, gamma-BHC in INDAM06 analyzed 07/01/95 at 04:44; beta-BHC, delta-BHC, Aldrin, Endrin ketone in INDBM06 analyzed 07/01/95 at 05:27; alpha-BHC, beta-BHC, gamma-BHC, 4,4'-DDT, Methoxychlor, Endrin ketone in PEM11 analyzed 07/21/95 at 22:32; and all compounds in INDAM09 analyzed 07/22/95 at 04:21 and INDBM09 analyzed 07/22/95 at 05:04. The retention times of the first and second peaks of Aroclor 1248 fell outside the established retention time windows on the DB1701 column analyzed 07/21/95 at 19:37; the first peak of Aroclor 1254 analyzed 07/21/95 at 20:21; and the second and third peaks of Aroclor 1260 analyzed 07/21/95 at 21:04.

The retention times of surrogates Tetrachloro-m-xylene and Decachlorobiphenyl fell outside the established retention time windows on the DB608 column in INDAM09; and Tetrachloro-m-xylene in samples AR124208, AR124808, AR125408, AR16608, PIBLK19, PEM12, PBLK12, MSB12, MSBD12, OWLVER01RE, OWLVER10RE, PIBLK20 and INDBM09. The retention times of surrogates Tetrachloro-m-xylene and Decachlorobiphenyl fell outside the established retention time windows on the DB1701 column in samples AR124208, AR124808, AR125408, AR16608, PEM12, PBLK12, MSB12, MSBD12, PIBLK20, INDAM09, INDBM09; and Tetrachloro-m-xylene in samples PIBLK19, OWLVER01RE, and OWLVER10RE.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Michelle M. Pitkin for KEK

Kenneth E. Kasperek
Laboratory Director

08/01/95
Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: RECRA ENVIRONMENTAL, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS					
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	OTHER
MW-536-16	A5361002	ASP91	ASP91	-	ASP91	-	-
MW-536-17	A5361003	ASP91	-	-	-	-	-
OWL-VER-01	A5361001	ASP91	ASP91	-	ASP91	-	-
OWL-VER-10	A5361004	ASP91	ASP91	-	ASP91	-	-

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-16	WATER	07/05/95	07/06/95	-	07/07/95
MW-536-17	WATER	07/05/95	07/06/95	-	07/07/95
OWL-VER-01	SOIL	07/05/95	07/06/95	-	07/06/95
OWL-VER-10	SOIL	07/05/95	07/06/95	-	07/06/95

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
BIN-A ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-16	WATER	07/05/95	07/06/95	07/07/95	07/11/95
OWL-VER-01	SOIL	07/05/95	07/06/95	07/07/95	07/11/95
OWL-VER-10	SOIL	07/05/95	07/06/95	07/07/95	07/11/95

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PCB ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-16	WATER	07/05/95	07/06/95	07/08/95	07/11/95
OWL-VER-01	SOIL	07/05/95	07/06/95	07/07/95	07/12/95
OWL-VER-10	SOIL	07/05/95	07/06/95	07/07/95	07/12/95

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
MW-536-16	WATER	ASP91	CONT.SEPF	AS REQUIRED	AS REQUIRED
MW-536-17	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-01	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-10	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED

ORGANIC DATA COMMENT PAGE

Laboratory Name RECRA ENVIRONMENTAL, INC.

USEPA Defined Organic Data Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimate value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - The TCLP Matrix Spike recovery was greater than the upper limit of the analytical method.

L - The TCLP Matrix Spike recovery was lower than the lower limit of the analytical method.

T - This flag is used when the analyte is found in the associated TCLP extraction as well as in the sample.

N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".

A - This flag indicates that a TIC is a suspected aldol-condensation product.

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000012

Client No.

MW-536-17

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) WATER Lab Sample ID: A5361003

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: K8775.MSQ

Level: (low/med) LOW Date Samp/Recv: 07/05/95 07/06/95

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 07/07/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
-64-1	ACETONE	10	U
15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
00-42-5	STYRENE	10	U
330-20-7	XYLENE (TOTAL)	10	U

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000013

Client No.

OWL-VER-01

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) SOIL Lab Sample ID: A5361001

Sample wt/vol: 5.13 (g/mL) G Lab File ID: G3076.MSQ

Level: (low/med) LOW Date Samp/Recv: 07/05/95 07/06/95

Moisture: not dec. 7.0 Heated Purge: Y Date Analyzed: 07/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	2	J
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	0.7	J
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	0.9	J
127-18-4	TETRACHLOROETHENE	2	J
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
1330-20-7	XYLENE (TOTAL)	10	U

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000014
Client No.

CWL-VER-10

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: CWLVE

Matrix: (soil/water) SOIL Lab Sample ID: A5361004

Sample wt/vol: 5.07 (g/mL) G Lab File ID: G3077.MSQ

Level: (low/med) LOW Date Samp/Recv: 07/05/95 07/06/95

% Moisture: not dec. 5.6 Heated Purge: Y Date Analyzed: 07/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	2	J
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
0-20-7	XYLENE(TOTAL)	10	U

ALUMINUM CO OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000015

Client No.

MW-836-16

Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) WATER Lab Sample ID: A5361002

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: Z23693.RR

Level: (low/med) LOW Date Samp/Recv: 07/05/95 07/06/95

% Moisture: _____ decanted: (Y/N) N Date Extracted: 07/07/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/11/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
83-32-9	ACENAPHTHENE	10	U
208-96-8	ACENAPHTHYLENE	10	U
120-12-7	ANTHRACENE	10	U
56-55-3	BENZO(A)ANTHRACENE	10	U
205-99-2	BENZO(B)FLUORANTHENE	10	U
207-08-9	BENZO(K)FLUORANTHENE	10	U
191-24-2	BENZO(G,H,I)PERYLENE	10	U
50-32-8	BENZO(A)PYRENE	10	U
218-01-9	CHRYSENE	10	U
53-70-3	DIBENZO(A,H)ANTHRACENE	10	U
206-44-0	FLUORANTHENE	10	U
86-73-7	FLUORENE	10	U
193-39-5	INDENO(1,2,3-CD)PYRENE	10	U
91-57-6	2-METHYLNAPHTHALENE	10	U
91-20-3	NAPHTHALENE	10	U
85-01-8	PHENANTHRENE	10	U
129-00-0	PYRENE	10	U

ALUMINUM CO OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000016
Client No.

OWL-VER-01

e: Recra Environmental Contract: _____

Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

trix: soil/water) SOIL Lab Sample ID: A5361001

mple wt/vol: 40.34 (g/mL) G Lab File ID: Z23701.RR

vel: (low/med) LOW Date Samp/Recv: 07/05/95 07/06/95

Moisture: 5.5 decanted: (Y/N) N Date Extracted: 07/07/95

ncentrated Extract Volume: 500 (uL) Date Analyzed: 07/11/95

jection Volume: 2.00 (uL) Dilution Factor: 1.00

PC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

ALUMINUM CO OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000017
Client No.

OWL-VER-10

Lab: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) SOIL Lab Sample ID: A5361004

Sample wt/vol: 40.14 (g/mL) G Lab File ID: Z23702.RR

Level: (low/med) LOW Date Samp/Recv: 07/05/95 07/06/95

% Moisture: 5.8 decanted: (Y/N) N Date Extracted: 07/07/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/11/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	35	J
56-55-3	BENZO(A)ANTHRACENE	11	J
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	23	J
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	72	J
85-01-8	PHENANTHRENE	60	J
129-00-0	PYRENE		

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: MW53616

ab ne: RECRA ENVIRON Contract: NY94-606

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

atrix: (soil/water) WATER Lab Sample ID: A5361002

ample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Moisture: _____ decanted: (Y/N) ___ Date Received: 07/06/95

xtraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/08/95

oncentrated Extract Volume: 10000 (uL) Date Analyzed: 07/11/95

njection Volume: 1.00 (uL) Dilution Factor: 1.00

PC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	0.12	J

EPA SAMPLE NO. 000019

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

OWLVER01

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) SOIL Lab Sample ID: A5361001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 07/06/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/07/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/12/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	43	B
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	30	BJ

1D

EPA 000020.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

OWLVER01RE

La ame: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) SOIL Lab Sample ID: A5361001RE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 07/06/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/18/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/22/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	35	P
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	20	BJP

000021

EPA SAMPLE NO.

OWLVER10

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) SOIL Lab Sample ID: A5361004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 07/06/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/07/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/12/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	25	BJP
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

000022

EPA SAMPLE NO.

OWLVER10RE

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ab ne: RECRA ENVIRON Contract: NY94-606

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

atrix: (soil/water) SOIL Lab Sample ID: A5361004RE

ample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Moisture: 5 decanted: (Y/N) N Date Received: 07/06/95

xtraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/18/95

oncentrated Extract Volume: 5000 (uL) Date Analyzed: 07/22/95

njection Volume: 1.00 (uL) Dilution Factor: 1.00

PC Cleanup: (Y/N) Y pH: 7.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	19	JP
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
WATER SURROGATE RECOVERY

Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: JWLVE

	Client Sample ID	BFB %REC	#	DCE %REC	#	TOL %REC	#						TOT OUT
	==========	=======		=======		=======		=======	=======	=======	=======	=======	===
													0
1	Matrix Spike Blank	97		91		98							0
2	Matrix Spike Blk Dup	96		96		97							0
3	MW-536-16	99		94		101							0
4	MW-536-17	100		92		102							0
5	VBLK85	100		91		100							0

QC LIMITS

(86-115)
(76-114)
(88-110)

BFB = p-Bromofluorobenzene
DCE = 1,2-Dichloroethane-D4
TOL = Toluene-D8

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
SOIL SURROGATE RECOVERY

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Level (low/med): LOW

Client Sample ID	BFB %REC	#	DCE %REC	#	TOL %REC	#						TOT OUT
Matrix Spike Blank	94		99		97							0
OWL-VER-01	85		102		100							0
OWL-VER-10	90		101		97							0
VBLK41	93		102		95							0

QC LIMITS

BFB = p-Bromofluorobenzene (59-113)
DCE = 1,2-Dichloroethane-D4 (70-121)
TOL = Toluene-D8 (84-138)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

ALUMINUM CO OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
WATER SURROGATE RECOVERY

Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Client Sample ID	2CP %REC #	DCB %REC #	FBP %REC #	NBZ %REC #	PHL %REC #	TBP %REC #	TPH %REC #		TOT OUT
Matrix Spike Blank	64	71	86	42	68	86	111		0
Matrix Spike Blk Dup	56	53	89	43	56	72	107		0
MW-536-16	53	52	71	50	45	62	96		0
SBLK78	73	77	84	61	69	71	91		0

			QC LIMITS
2CP	=	2-Chlorophenol-d4	(33-110)
DCB	=	1,2-Dichlorobenzene-d4	(16-110)
FBP	=	2-Fluorobiphenyl	(43-116)
NBZ	=	Nitrobenzene-D5	(35-114)
PHL	=	Phenol-D5	(10-110)
TBP	=	2,4,6-Tribromophenol	(10-123)
TPH	=	Terphenyl-D14	(33-141)

olumn to be used to flag recovery values
/alues outside of contract required QC limits
L Surrogates diluted out

ALUMINUM CO OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
SOIL SURROGATE RECOVERY

000026

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Level (low/med): LOW

	Client Sample ID	2CP %REC	#	2FP %REC	#	DCB %REC	#	FBP %REC	#	NBZ %REC	#	PHL %REC	#	TBP %REC	#	TPH %REC	#	TOT OUT
1	Matrix Spike Blank1	100		92		66		91		84		90		110		151	*	1
2	Matrix Spike BlkDup1	86		88		87		116	*	64		85		115		120		1
3	OWL-VER-01	78		76		72		95		64		63		92		107		0
4	OWL-VER-10	89		92		74		107		85		88		99		135		0
5	SBLK80	60		67		58		98		60		57		81		80		0

			QC LIMITS
2CP	=	2-Chlorophenol-d4	(20-130)
2FP	=	2-Fluorophenol	(25-121)
DCB	=	1,2-Dichlorobenzene-d4	(20-130)
FBP	=	2-Fluorobiphenyl	(30-115)
NBZ	=	Nitrobenzene-D5	(23-120)
PHL	=	Phenol-D5	(24-113)
TBP	=	2,4,6-Tribromophenol	(19-122)
	=	Terphenyl-D14	(18-137)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: RECRA ENVIRON Contract: NY94-606

La Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: QWLVE

GC Column(1): DB608 ID: 0.53(mm) GC Column(2): DB1701 ID: 0.53(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK10	64	56*	97	81			1
02	MSB10	72	64	45*	37*			2
03	MSBD10	73	63	57*	46*			2
04	MW53616	70	64	66	56*			1

ADVISORY QC LIMITS

TCX = Tetrachloro-m-xylene (60-150)
DCB = Decachlorobiphenyl (60-150)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2F

SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: QWLVE

GC Column(1): DB608 ID: 0.53(mm) GC Column(2): DB1701 ID: 0.53(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK11	90	76	113	100			0
02	PBLK12	64	52*	75	62			1
03	MSB11	96	82	114	101			0
04	MSB12	96	79	104	91			0
05	MSBD11	94	77	114	100			0
06	MSBD12	106	86	115	100			0
07	OWLVER01	89	80	98	88			0
08	OWLVER01RE	79	70	88	78			0
09	OWLVER10	82	73	104	86			0
10	OWLVER10RE	90	80	103	91			0
	ADVISORY QC LIMITS							
	TCX = Tetrachloro-m-xylene				(60-150)			
	DCB = Decachlorobiphenyl				(60-150)			

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
SOIL MATRIX SPIKE BLANK RECOVERY

000029

Name: Recra Environmental, Inc. Contract: _____ Lab Samp ID: AS361006

Co. RECNY Case No.: 5324 SAS No.: _____ SDG No.: DWLVE

Matrix Spike - Client Sample No.: ~~VBLK41~~ MSBLANK dmc 5/1/95 Level: (Low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	MSB CONCENTRATION UG/KG	MSB % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	41	82	59 - 172
Trichloroethene	50	36	72	62 - 137
Benzene	50	43	86	66 - 142
Toluene	50	42	84	59 - 139
Chlorobenzene	50	42	84	60 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike recovery: 0 out of 5 outside limits

Comments: _____

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
WATER MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

Na: Pecora Environmental, Inc. Contract: _____ Lab Samp ID: ASB0441803

Co.: PECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

rix Spike - Client Sample No.: ~~VBLK05~~ MSB/MSBD dmo 8/1/95

MPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.
1-Dichloroethene	50	51	102	61 - 145
richloroethene	50	53	106	71 - 120
enzene	50	46	92	76 - 127
oluene	50	49	98	76 - 125
hlorobenzene	50	51	102	75 - 130

OMPOUND	SPIKE ADDED UG/L	MSBD CONCENTRATION UG/L	MSBD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1-Dichloroethene	50	52	104	2	14	61 - 145
richloroethene	50	52	104	2	14	71 - 120
enzene	50	47	94	2	11	76 - 127
oluene	50	48	96	2	13	76 - 125
hlorobenzene	50	52	104	2	13	75 - 130

Co. n to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

PD: 0 out of 5 outside limits
pike recovery: 0 out of 10 outside limits

omments: _____

ALUMINUM CO OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
WATER MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

000

Lab Name: Recra Environmental, Inc. Contract: _____ Lab Samp ID: ASB0442

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix Spike - Client Sample No.: ~~SBLK28~~ MSB/MSBD 8/1/95 [illegible]

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC	#	QC LIMITS REC.
Acenaphthene	50	41	82		46 - 118
Pyrene	50	56	112		26 - 127

COMPOUND	SPIKE ADDED UG/L	MSBD CONCENTRATION UG/L	MSBD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	50	38	76		8		31	46 - 11
Pyrene	50	53	106		6		31	26 - 12

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike recovery: 0 out of 4 outside limits

Comments: _____

ALUMINUM CO OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
SOIL MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

Lab Samp ID: ASB0442203

Name: Pecora Environmental, Inc. Contract: _____

Co... PECNY Case No.: 5324 SAS No.: _____ SDG No.: JWLVE

rix Spike - Client Sample No.: ~~SBLK80~~ MSB1/MSBD1 Level: (low/med) LOW
81, KS ainc

MPOUND	SPIKE ADDED UG/KG	MSB CONCENTRATION UG/KG	MSB % REC #	QC LIMITS REC.
enaphthene	1200	1200	100	31 - 137
rene	1200	1300	108	35 - 142

MPOUND	SPIKE ADDED UG/KG	MSBD CONCENTRATION UG/KG	MSBD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
cenaphthene	1200	1200	100	0	19	31 - 137
yrene	1200	1400	117	8	36	35 - 142

olumn to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

PD: 0 out of 2 outside limits
pike recovery: 0 out of 4 outside limits

omments: _____

3M
WATER PCB MSB & MSBD RECOVERY

Lab Name: RECRA ENVIRONMENTAL, INC. Contract No.: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: ____ SDG No.: OWLVE

Matrix Blank Spike ID: MSB10

COMPOUND	SPIKE ADDED (UG/L)	MSB CONCENTRATION (UG/L)	MSB % REC #
Aroclor 1242	10.0	6.9	69

Matrix Blank Spike Dup ID: MSBD10

COMPOUND	SPIKE ADDED (UG/L)	MSBD CONCENTRATION (UG/L)	MSBD % REC #	% RPD
Aroclor 1242	10.0	6.7	67	3

* Values outside of QC limits

COMMENTS: _____

_____

IN
SOIL PCB MSB & MSBD RECOVERY

Lab Name: RECRA ENVIRONMENTAL, INC. Contract No.: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: ____ SDG No.: OWLVE

Matrix Blank Spike ID: MSB11

COMPOUND	SPIKE ADDED (UG/KG)	MSB CONCENTRATION (UG/KG)	MSB % REC #
Aroclor 1242	330	270	82

Matrix Blank Spike Dup ID: MSBD11

COMPOUND	SPIKE ADDED (UG/KG)	MSBD CONCENTRATION (UG/KG)	MSBD % REC #	% RPD
Aroclor 1242	330	270	82	0

* Values outside of QC limits

COMMENTS: _____

_____

IN
SOIL PCB MSB & MSBD RECOVERY

Lab Name: RECRA ENVIRONMENTAL, INC. Contract No.: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: ____ SDG No.: OWLVE

Matrix Blank Spike ID: MSB12

COMPOUND	SPIKE ADDED (UG/KG)	MSB CONCENTRATION (UG/KG)	MSB % REC #
Aroclor 1242	330	250	76

Matrix Blank Spike Dup ID: MSBD12

COMPOUND	SPIKE ADDED (UG/KG)	MSBD CONCENTRATION (UG/KG)	MSBD % REC #	% RPD
Aroclor 1242	330	270	82	7.9

* Values outside of QC limits

COMMENTS: _____

_____

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
METHOD BLANK SUMMARY

000036
Client No.

VBLK41

e: Recra Environmental Contract: _____

Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

File ID: G3073.MSQ Lab Sample ID: A5361006

te Analyzed: 07/06/95 Time Analyzed: 12:42

Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

strument ID: I50G

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	Matrix Spike Blank	A5361007	G3071.MSQ	10:37
2	OWL-VER-01	A5361001	G3076.MSQ	19:17
3	OWL-VER-10	A5361004	G3077.MSQ	19:54

omments: _____

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000037

Client No.

VBLK41

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) SOIL Lab Sample ID: A5361006

Sample wt/vol: 5.00 (g/mL) G Lab File ID: G3073.MSO

Level: (low/med) LOW Date Samp/Recv: _____ _____

Moisture: not dec. _____ Heated Purge: Y Date Analyzed: 07/06/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
1330-20-7	XYLENE(TOTAL)	10	U

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
METHOD BLANK SUMMARY

VBLK85

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: CWLVE

Lab File ID: K8772.MSQ Lab Sample ID: A5B0441803

Date Analyzed: 07/07/95 Time Analyzed: 13:18

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: I50K

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	Matrix Spike Blank	A5B0441801	K8769.MSQ	11:32
2	Matrix Spike Blk Dup	A5B0441802	K8770.MSQ	12:09
3	MW-536-16	A5361002	K8774.MSQ	14:28
4	MW-536-17	A5361003	K8775.MSQ	15:03

Comments: _____

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

Client No.

VBLK65

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) WATER Lab Sample ID: A5B0441803

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: K8772.MSQ

Level: (low/med) LOW Date Samp/Recv: _____ _____

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 07/07/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
1330-20-7	XYLENE (TOTAL)	10	U

ALUMINUM CO OF AMERICA
ASP91-- POLYNUCLEAR AROMATIC HYDROCARBONS
METHOD BLANK SUMMARY

SBLK78

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Lab File ID: Z23690.RR Lab Sample ID: ASB0442503

Instrument ID: I50Z-A Date Extracted: 07/07/95

Matrix: (soil/water) WATER Date Analyzed: 07/11/95

Level: (low/med) LOW Time Analyzed: 10:16

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	Matrix Spike Blank	ASB0442501	Z23691.RR	07/11/95
2	Matrix Spike Blk Dup	ASB0442502	Z23692.RR	07/11/95
3	MW-536-16	A5361002	Z23693.RR	07/11/95

Comments: _____

ALUMINUM CO OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

Client No.

SBLK79

Lab Name: Pecra Environmental Contract: _____

Lab Code: PECNY Case No.: 6324 SAS No.: _____ SDG No.: DWLVE

Matrix: (soil/water) WATER Lab Sample ID: ASB0442503

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: B23690.RR

Level: (low/med) LOW Date Samp/Recv: _____ _____

% Moisture: _____ decanted: Y/N N Date Extracted: 07/07/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/11/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
83-32-9	ACENAPHTHENE	10	U
208-96-8	ACENAPHTHYLENE	10	U
120-12-7	ANTHRACENE	10	U
56-55-3	BENZO(A)ANTHRACENE	10	U
205-99-2	BENZO(B)FLUORANTHENE	10	U
207-08-9	BENZO(K)FLUORANTHENE	10	U
191-24-2	BENZO(G,H,I)PERYLENE	10	U
50-32-8	BENZO(A)PYRENE	10	U
218-01-9	CHRYSENE	10	U
53-70-3	DIBENZO(A,H)ANTHRACENE	10	U
206-44-0	FLUORANTHENE	10	U
86-73-7	FLUORENE	10	U
193-39-5	INDENO(1,2,3-CD)PYRENE	10	U
91-57-6	2-METHYLNAPHTHALENE	10	U
91-20-3	NAPHTHALENE	10	U
85-01-8	PHENANTHRENE	10	U
129-00-0	PYRENE	10	U

ALUMINUM CO OF AMERICA
ASP91-8 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
METHOD BLANK SUMMARY

000042

SBLK80

N Pecra Environmental Contract: _____

Code: PECNY Case No.: 5324 SAS No.: _____ SDG No.: TWLVE

File ID: Z23706.RR Lab Sample ID: ASB0442203

rument ID: I50Z-A Date Extracted: 07/07/95

rix: (soil/water) SOIL Date Analyzed: 07/11/95

el: (low/med) LOW Time Analyzed: 18:19

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	Matrix Spike Blank1	ASB0442201	Z23699.RR	07/11/95
2	Matrix Spike BlkDup1	ASB0442202	Z23700.RR	07/11/95
3	OWL-VER-01	A5361001	Z23701.RR	07/11/95
4	OWL-VER-10	A5361004	Z23702.RR	07/11/95

omments: _____

ALUMINUM CO OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000043

Client No.

SBLA80

b Name: Zecra Environmental Contract: _____

b Code: ZECNV Case No.: 8324 SAS No.: _____ SDG No.: DWLVE

trix: soil/water) SOIL Lab Sample ID: ASB0442203

mple wt/vol: 40.00 (g/mL) G Lab File ID: B23706.RR

vel: low/med) LOW Date Samp/Recv: _____ _____

Moisture: _____ decanted: (Y/N) N Date Extracted: 07/07/95

ncentrated Extract Volume: 500 (uL) Date Analyzed: 07/11/95

njection Volume: 2.00 (uL) Dilution Factor: 1.00

PC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

000044

EPA SAMPLE NO.

PBLK10

GC

PESTICIDE METHOD BLANK SUMMARY

Lab: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: SDG No.: 2WLVE

Lab Sample ID: A5B0443703 Lab File ID:

Matrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) Y Date Extracted: 07/08/95

Date Analyzed (1): 07/11/95 Date Analyzed (2): 07/11/95

Time Analyzed (1): 2051 Time Analyzed (2): 2051

Instrument ID (1): 5890A9 Instrument ID (2): 5890B9

GC Column (1): DB608 ID: 0.53 (mm) GC Column (2): DB1701 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	MSB10	A5B0443701	07/11/95	07/11/95
02	MSBD10	A5B0443702	07/11/95	07/11/95
03	MW53616	A5361002	07/11/95	07/11/95

COMMENTS:

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK10

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: SDG No.: QWLVE

Matrix: (soil/water) WATER Lab Sample ID: ASB0443703

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received:

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 07/08/95

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/11/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

EPA SAMPLE NO.

PBLK11

4C

PESTICIDE METHOD BLANK SUMMARY

?: RECRA ENVIRON Contract: NY94-606

Code: RECNY Case No.: 5324 SAS No.: SDG No.: OWLVE

Sample ID: A5B0442003 Lab File ID:

trix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

lfur Cleanup: (Y/N) N Date Extracted: 07/07/95

te Analyzed (1): 07/11/95 Date Analyzed (2): 07/11/95

me Analyzed (1): 2346 Time Analyzed (2): 2346

strument ID (1): 5890A9 Instrument ID (2): 5890B9

Column (1): DB608 ID: 0.53 (mm) GC Column (2): DB1701 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	MSB11	A5B0442001	07/12/95	07/12/95
02	MSBD11	A5B0442002	07/12/95	07/12/95
03	OWLVER01	A5361001	07/12/95	07/12/95
04	OWLVER10	A5361004	07/12/95	07/12/95

COMMENTS:

000047

EPA SAMPLE NO.

PBLK11

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: QWLVE

Matrix: (soil/water) SOIL Lab Sample ID: ASB0442003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/07/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/11/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	32	JP
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	3.7	JP

EPA SAMPLE NO.

4C

PESTICIDE METHOD BLANK SUMMARY

PBLK12

Lab Name: RECRA ENVIRON Contract: NY94-605

Lab Code: RECNY Case No.: 5324 SAS No.: SDG No.: OWLVE

Matrix Sample ID: A5B0464103 Lab File ID:

Matrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N Date Extracted: 07/18/95

Date Analyzed (1): 07/21/95 Date Analyzed (2): 07/21/95

Time Analyzed (1): 2316 Time Analyzed (2): 2316

Instrument ID (1): 5890A9 Instrument ID (2): 5890B9

GC Column (1): DB608 ID: 0.53 (mm) GC Column (2): DB1701 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	MSB12	A5B0464101	07/21/95	07/21/95
02	MSBD12	A5B0464102	07/22/95	07/22/95
03	OWLVER01RE	A5361001RE	07/22/95	07/22/95
04	OWLVER10RE	A5361004RE	07/22/95	07/22/95

COMMENTS:

EPA SAMPLE NO.

PBLK12

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: QWLVE

Matrix: soil/water) SOIL Lab Sample ID: A5B0464103

Sample wt/vol: 30.0 g/mL) G Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 07/18/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/21/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	6.1	J
11097-69-1	Aroclor-1254	2.7	JP
11096-82-5	Aroclor-1260		

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

000050

Name: Recra Environmental Contract: _____ Labsampid: ASC0000757

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Lab File ID Standard): G3070.MSQ Date Analyzed: 07/06/95

Instrument ID: 150G Time Analyzed: 09:37

GC Column(1): DB-624 ID: 0.530(mm) Heated Purge: (Y/N) Y

	IS1 (BCM) AREA	#	RT	#	IS2 (CBZ) AREA	#	RT	#	IS3 (DFB) AREA	#	RT	#
12 HOUR STD	32223		11.33		93139		17.97		97091		13.27	
UPPER LIMIT	64446		11.83		186278		18.47		194182		13.77	
LOWER LIMIT	16112		10.83		46570		17.47		48546		12.77	
CLIENT SAMPLE												
1 Matrix Spike Blank	33039		11.32		92074		17.92		101962		13.23	
2 OWL-VER-01	34022		11.32		107540		17.88		121076		13.17	
3 OWL-VER-10	37334		11.23		102288		17.92		112921		13.18	
4 VBLK41	35594		11.33		101333		17.97		109922		13.27	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (BCM) = BROMOCHLOROMETHANE	(50-200)	-0.50 / +0.50 min
IS2 (CBZ) = Chlorobenzene-D5	(50-200)	-0.50 / +0.50 min
IS3 (DFB) = 1,4-Difluorobenzene	(50-200)	-0.50 / +0.50 min

Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMCHEM CO OF AMERICA
ASP91-1 - VOLATILES
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Recra Environmental Contract: _____ Labsample: ASC000760

Lab Code: RECRA Case No.: 5324 SAS No.: _____ SDG No.: GWLVE

Lab File ID (Standard): H8768.MSQ Date Analyzed: 07/07/95

Instrument ID: 150K Time Analyzed: 10:52

GC Column(1): DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) N

	IS1 (BCM) AREA	#	RT	#	IS2 (CBZ) AREA	#	RT	#	IS3 (DFB) AREA	#	RT	#
12 HOUR STD	47688		11.10		209131		18.08		192882		13.20	
UPPER LIMIT	95376		11.60		418262		18.58		385764		13.70	
LOWER LIMIT	23844		10.60		104566		17.58		96441		12.70	
CLIENT SAMPLE												
1 Matrix Spike Blank	46876		11.07		201567		18.07		191424		13.18	
2 Matrix Spike Blk Dup	45153		11.08		202123		18.08		196288		13.20	
3 MW-536-16	46344		11.10		198896		18.10		194583		13.22	
4 MW-536-17	47496		11.10		200445		18.08		195102		13.20	
5 VBLK85	45634		11.07		194519		18.07		190998		13.18	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (BCM) = BROMOCHLOROMETHANE	(50-200)	-0.50 / +0.50 min
IS2 (CBZ) = Chlorobenzene-D5	(50-200)	-0.50 / +0.50 min
IS3 (DFB) = 1,4-Difluorobenzene	(50-200)	-0.50 / +0.50 min

Column to be used to flag recovery values
* Values outside of contract required QC limits

QUANTUM GC OF AMERICA
ASP91-2 - PSL POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Name: Recra Environmental Contract: _____ Labsample: ASC0000782

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Lab File ID Standard): C23687.RR Date Analyzed: 07/11/95

Instrument ID: ISQZ-A Time Analyzed: 08:36

	IS1 (ANT) AREA	#	RT	#	IS2 (CRY) AREA	#	RT	#	IS3 (DCB) AREA	#	RT	#
12 HOUR STD	679859		7.02		934041		14.52		344395		3.88	
UPPER LIMIT	1359718		7.52		1868082		15.02		688790		4.38	
LOWER LIMIT	339930		6.52		467021		14.02		172198		3.38	
CLIENT SAMPLE												
Matrix Spike Blank1	638805		7.02		722757		14.48		333960		3.88	
Matrix Spike BlkDup1	642192		7.02		770132		14.50		343416		3.90	
OWL-VER-01	635574		7.00		822086		14.50		321952		3.88	
OWL-VER-10	677961		7.03		819807		14.52		321608		3.88	
SBLK80	783939		7.00		1190151		14.50		450704		3.88	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (ANT) = Acenaphthene-D10	(50-200)	-0.50 / +0.50 min
IS2 (CRY) = Chrysene-D12	(50-200)	-0.50 / +0.50 min
IS3 (DCB) = 1,4-Dichlorobenzene-D4	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM CO OF AMERICA
ASP91-2 - PSL POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Name: Recra Environmental Contract: _____ Labsampid: ASC0000782

Lab Code: RECTY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Lab File ID Standard): I23687.FR Date Analyzed: 07/11/95

Instrument ID: 150Z-A Time Analyzed: 08:36

	IS4 (NPT) AREA	#	RT	#	IS5 (PHN) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
12 HOUR STD	1230395		4.97		944570		9.47		613591		17.08	
UPPER LIMIT	2460790		5.47		1889140		9.97		1227182		17.58	
LOWER LIMIT	615198		4.47		472285		8.97		306796		16.58	
CLIENT SAMPLE												
Matrix Spike Blank1	1431991		4.97		891657		9.47		557299		17.07	
Matrix Spike BlkDup1	1328991		4.98		908104		9.47		591963		17.08	
OWL-VER-01	1185125		4.97		856441		9.47		532650		17.08	
OWL-VER-10	1317414		4.97		895280		9.52		512108		17.08	
SBLK80	1652286		4.95		1246466		9.45		791308		17.08	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS4 (NPT) = Naphthalene-D8	(50-200)	-0.50 / +0.50 min
IS5 (PHN) = Phenanthrene-D10	(50-200)	-0.50 / +0.50 min
IS6 (PRY) = Perylene-D12	(50-200)	-0.50 / +0.50 min

Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM CO OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Name: Recra Environmental Contract: _____ Labsample: ASC0000782

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: CWLVE

Lab File ID Standard): C23687.FR Date Analyzed: 07/11/95

Instrument ID: I50Z-A Time Analyzed: 08:36

	IS1 (ANT) AREA	#	RT	#	IS2 (CRY) AREA	#	RT	#	IS3 (DCB) AREA	#	RT	#
12 HOUR STD	679859		7.02		934041		14.52		344395		3.88	
UPPER LIMIT	1359718		7.52		1868082		15.02		688790		4.38	
LOWER LIMIT	339930		6.52		467021		14.02		172198		3.38	
CLIENT SAMPLE												
Matrix Spike Blank	599270		7.02		625447		14.48		310892		3.88	
Matrix Spike Blk Dup	583059		7.02		664604		14.48		320251		3.88	
MW-536-16	602128		7.00		731645		14.48		303815		3.87	
SBLK78	600774		7.00		800514		14.48		306868		3.88	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (ANT) = Acenaphthene-D10	(50-200)	-0.50 / +0.50 min
IS2 (CRY) = Chrysene-D12	(50-200)	-0.50 / +0.50 min
IS3 (DCB) = 1,4-Dichlorobenzene-D4	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM CO OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
SEMI-VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Recra Environmental Contract: _____ Labsample: ASC0000782

Lab Code: RECNY Case No.: 9324 SAS No.: _____ SDG No.: OWLVE

Lab File ID (Standard): B3687.RR Date Analyzed: 07/11/95

Instrument ID: I50Z-A Time Analyzed: 08:36

	IS4 (NPT) AREA	#	RT	#	IS5 (PHN) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
12 HOUR STD	1230395		4.97		944570		9.47		613591		17.08	
UPPER LIMIT	2460790		5.47		1889140		9.97		1227182		17.58	
LOWER LIMIT	615198		4.47		472285		8.97		306796		16.58	
CLIENT SAMPLE												
1 Matrix Spike Blank	1431014		4.97		822126		9.47		479559		17.07	
2 Matrix Spike Blk Dup	1385047		4.97		835667		9.45		498482		17.07	
3 MW-536-16	1426926		4.97		830554		9.45		561908		17.07	
4 SBLK78	1351868		4.97		932917		9.45		595975		17.07	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS4 (NPT) = Naphthalene-D8	(50-200)	-0.50 / +0.50 min
IS5 (PHN) = Phenanthrene-D10	(50-200)	-0.50 / +0.50 min
IS6 (PRY) = Perylene-D12	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

Sample ID Nos.:

Lab Report Dated:

September 25, 1995

OWL-VER-02
OWL-VER-03
OWL-VER-04
OWL-VER-05
OWL-VER-06
OWL-VER-07
OWL-VER-08
OWL-VER-09
OWL-VER-11
OWL-VER-12
OWL-VER-200
MW-536-18
MW-536-19

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Analysis Services

September 25, 1995

Mr. Joseph Mihm
Camp, Dresser and McKee / Alcoa
Park Avenue East, Building 65
Massena, NY 13665

RE: **Analytical Results**

Dear Mr. Mihm:

Please find enclosed the data package concerning the analyses of samples recently submitted by your firm. The pertinent information regarding these analyses is listed below:

Quote No.: NY94-606
REI: 28
SDG #: VER02B
Matrix: Soil & Water
Sample Receipt Date: 08/26/95
Sample Date: 08/25/95

If you have any questions concerning these data, please contact Ms. Deborah A. Carella, Program Manager, at (800) 52R-ECRA and refer to the I.D. number listed below.

Sincerely,

RECRA ENVIRONMENTAL, INC.

Kenneth E. Kasperek
Laboratory Manager

DAC/KEK/dms
Enclosure
cc: Frances Gero (cover letter only)
Aluminum Company of America
Mr. Bernard Kunkle (cover letter only)
Aluminum Company of America
Park Avenue East, BLDG. 65
Massena, NY 13665

Reviewed and approved by/date: 9/25/95

Deborah A. Carella, Program Manager

ID #A95-4568
#NY5A5324

SAMPLE DATA SUMMARY PACKAGE

RECRA
ENVIRONMENTAL
INC.

SDG NARRATIVE:

Laboratory: Recra Environmental, Inc.

Laboratory Code: RECNY

Contract No.: NY94-606

SDG No.: VER02B

Sample Identifications:

MW-536-18
MW-536-19
OWL-VER-02
OWL-VER-02 MATRIX SPIKE
OWL-VER-02 MATRIX SPIKE DUPLICATE
OWL-VER-03
OWL-VER-04
OWL-VER-05
OWL-VER-06
OWL-VER-07
OWL-VER-08
OWL-VER-09
OWL-VER-11
OWL-VER-12
OWL-VER-200

METHODOLOGY

Analyses were performed in accordance with 1991 New York State Analytical Services protocol. (Revised 1993)

COMMENTS

Results are reported using standard qualifiers (Q) as defined on the Organic Data Comment Page.

Preliminary results were sent on September 7, 1995 via facsimile to Ms. Julie Schreiber of Camp, Dresser and McKee by Ms. Deborah Carella of Recra Environmental.

Quality Control analysis was performed on a batch basis for water samples.

The Chain of Custody stated that full analysis should be performed on sample MW-536-20, however, this sample was a Trip Blank and volume for Volatile analysis only was received.

Due to character limitations of the software the SDG number was abbreviated on the Pesticide forms.

SEMIVOLATILE DATA

Semivolatile sample and standard areas are listed on the corresponding data system printouts.

Semivolatile data was processed utilizing Teknivant Datasystem and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions. False positive compounds are crossed out, initialed and dated in this data package.

Samples OWL-VER-02MS and OWL-VER-02MSD exhibit the relative percent difference of Acenaphthene as above QC limits.

PCB DATA

The surrogate recovery of Decachlorobiphenyl fell outside QC limits in samples PBLK12, MW538618 and MW53618 on the DB1701 column.

The surrogate recovery of Tetrachloro-m-xylene fell outside QC limits in samples PBLK13, MSB13, OWLVER02, OWLVER02MS, OWLVER02MSD, OWLVER03, OWLVER04, OWLVER05, OWLVER07, OWLVER08, OWLVER11 and OWLVER12 on the DB608 and DB1701 columns. The surrogate recovery of Decachlorobiphenyl fell outside QC limits in samples OWLVER02 and OWLVER07 on the DB608 and DB1701 columns.

The Endrin percent breakdown and combined percent breakdown are above QC limits on the DB608 column in: PEM10 analyzed on 8/31/95 at 02:15; PEM11 analyzed on 9/6/95 at 14:08; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PEM14 analyzed on 9/9/95 at 01:37; PEM15 analyzed on 9/10/95 at 01:36; PEM16 analyzed on 9/10/95 at 23:23.

The relative percent difference of Methoxychlor fell outside QC limits on the DB1701 column in: PEM10 analyzed on 8/31/95 at 02:15; PEM11 analyzed on 9/6/95 at 14:08; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PEM14 analyzed on 9/9/95 at 01:37; PEM15 analyzed on 9/10/95 at 01:36; PEM16 analyzed on 9/10/95 at 23:23.

The relative percent difference of Methoxychlor fell outside QC limits on the DB608 column in: INDAM02 analyzed on 7/28/95 at 16:49; INDAM03 analyzed on 7/29/95 at 12:25.

The relative percent difference of 4,4'-DDT and Methoxychlor fell outside QC limits on the DB1701 column in: INDAM12 analyzed on 9/10/95 at 12:28. The retention time of gamma-BHC is outside QC limits. INDAM12 exhibits the following outside retention time windows: beta-BHC, delta-BHC, Endosulfan sulfate, Endrin ketone and Endrin aldehyde. INDAM13 analyzed on 9/11/95 at 11:01 exhibits the relative percent difference of Endrin, 4,4'-DDT and Methoxychlor as outside QC limits.

PIBLK23 analyzed on 9/7/95 at 16:11 and PIBLK25 analyzed on 9/8/95 at 13:59 both exhibit the retention time of surrogate Tetrachloro-m-xylene outside QC limits on the DB608 column.

PIBLK16 analyzed on 8/17/95 at 15:43 exhibits the retention time of surrogates Tetrachloro-m-xylene and Decachlorobiphenyl outside QC limits on the DB1701 column.

PIBLK22 analyzed on 9/7/95 at 03:57, PEM12 analyzed on 9/7/95 at 04:40, PEM13 analyzed on 9/8/95 at 03:49; PIBLK29 analyzed on 9/10/95 at 22:40 and PEM16 analyzed on 9/10/95 at 23:23 all exhibit the retention time of Decachlorobiphenyl outside QC limits on the DB1701 column.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Michelle M. Pickett for KEK

Kenneth E. Kasperek
Laboratory Director

09/25/95

Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: RECRA ENVIRONMENTAL, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS					
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	OTHER
MW-536-18	A5456812	-	ASP91	-	ASP91	-	-
MW-536-19	A5456813	-	ASP91	-	ASP91	-	-
OWL-VER-02	A5456801	-	ASP91	-	ASP91	-	-
OWL-VER-03	A5456802	-	ASP91	-	ASP91	-	-
OWL-VER-04	A5456803	-	ASP91	-	ASP91	-	-
OWL-VER-05	A5456804	-	ASP91	-	ASP91	-	-
OWL-VER-06	A5456805	-	ASP91	-	ASP91	-	-
OWL-VER-07	A5456806	-	ASP91	-	ASP91	-	-
OWL-VER-08	A5456807	-	ASP91	-	ASP91	-	-
OWL-VER-09	A5456808	-	ASP91	-	ASP91	-	-
OWL-VER-11	A5456810	-	ASP91	-	ASP91	-	-
OWL-VER-12	A5456811	-	ASP91	-	ASP91	-	-
OWL-VER-200	A5456809	-	ASP91	-	ASP91	-	-

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
BIN-A ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-18	WATER	08/25/95	08/26/95	08/29/95	08/31/95
MW-536-19	WATER	08/25/95	08/26/95	08/29/95	09/01/95
OWL-VER-02	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-03	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-04	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-05	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL VER-06	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-07	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-08	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-09	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-11	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-12	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-200	SOIL	08/25/95	08/26/95	08/29/95	08/31/95

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-18	WATER	08/25/95	08/26/95	08/29/95	08/31/95
MW-536-19	WATER	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-02	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-03	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-04	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-05	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-06	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-07	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-08	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-09	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-11	SOIL	08/25/95	08/26/95	08/29/95	09/07/95
OWL-VER-12	SOIL	08/25/95	08/26/95	08/29/95	09/07/95
OWL-VER-200	SOIL	08/25/95	08/26/95	08/29/95	09/06/95

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
MW-536-18	WATER	ASP91	CONT. SEPF	AS REQUIRED	AS REQUIRED
MW-536-19	WATER	ASP91	CONT. SEPF	AS REQUIRED	AS REQUIRED
OWL-VER-02	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-03	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-04	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-05	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-06	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-07	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-08	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-09	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-11	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-12	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-200	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED

ORGANIC DATA COMMENT PAGE

Laboratory Name RECRA ENVIRONMENTAL, INC

USEPA Defined Organic Data Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimate value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - The TCLP Matrix Spike recovery was greater than the upper limit of the analytical method.

L - The TCLP Matrix Spike recovery was lower than the lower limit of the analytical method.

T - This flag is used when the analyte is found in the associated TCLP extraction as well as in the sample.

N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".

A - This flag indicates that a TIC is a suspected aldol-condensation product.

ALUMINUM COMPANY OF AMERICA
ASP91-3 - POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000010
Client No.

MW-536-18

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) WATER Lab Sample ID: A5456812

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: Z24146.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: _____ decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/31/95

Injection Volume: 2.00(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
83-32-9	ACENAPHTHENE	10	U
208-96-8	ACENAPHTHYLENE	10	U
120-12-7	ANTHRACENE	10	U
56-55-3	BENZO(A)ANTHRACENE	10	U
205-99-2	BENZO(B)FLUORANTHENE	10	U
207-08-9	BENZO(K)FLUORANTHENE	10	U
191-24-2	BENZO(G,H,I)PERYLENE	10	U
50-32-8	BENZO(A)PYRENE	10	U
218-01-9	CHRYSENE	10	U
53-70-3	DIBENZO(A,H)ANTHRACENE	10	U
206-44-0	FLUORANTHENE	10	U
86-73-7	FLUORENE	10	U
193-39-5	INDENO(1,2,3-CD)PYRENE	10	U
91-57-6	2-METHYLNAPHTHALENE	10	U
91-20-3	NAPHTHALENE	10	U
85-01-8	PHENANTHRENE	10	U
129-00-0	PYRENE	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000011

Client No.

MW-536-19

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) WATER Lab Sample ID: A5456813

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: Z24149.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: _____ decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/01/95

Injection Volume: 2.00(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
83-32-9	ACENAPHTHENE	10	U
208-96-8	ACENAPHTHYLENE	10	U
120-12-7	ANTHRACENE	10	U
56-55-3	BENZO(A)ANTHRACENE	10	U
205-99-2	BENZO(B)FLUORANTHENE	10	U
207-08-9	BENZO(K)FLUORANTHENE	10	U
191-24-2	BENZO(G,H,I)PERYLENE	10	U
50-32-8	BENZO(A)PYRENE	10	U
218-01-9	CHRYSENE	10	U
53-70-3	DIBENZO(A,H)ANTHRACENE	10	U
206-44-0	FLUORANTHENE	10	U
86-73-7	FLUORENE	10	U
193-39-5	INDENO(1,2,3-CD)PYRENE	10	U
91-57-6	2-METHYLNAPHTHALENE	10	U
91-20-3	NAPHTHALENE	10	U
85-01-8	PHENANTHRENE	10	U
129-00-0	PYRENE	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

C00012

Client No.

CWL-WER-IC

Lab Name: Recra Environmental, Contract: MO7732SMC

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: WER02B

Matrix: (soil/water) SOIL Lab Sample ID: A5456801

Sample wt/vol: 30.48 (g/mL) G Lab File ID: G24132.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 8.9 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	34	J
205-99-2	BENZO(B)FLUORANTHENE	59	J
207-08-9	BENZO(K)FLUORANTHENE	18	J
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	32	J
218-01-9	CHRYSENE	47	J
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	51	J
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	22	J
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	36	J
129-00-0	PYRENE	58	J

ALUMINUM COMPANY OF AMERICA
ASP91-1 - BSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000013
Client No.

DWL-VER-03

Lab Name: Recra Environmental Contract: MO7[illegible]MO

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) SOIL

Lab Sample ID: AS456802

Sample wt/vol: 30.43 (g/mL) G

Lab File ID: Z24135.RR

Level: (low/med) LOW

Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 7.1 decanted: (Y/N) N

Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000014

Client No.

DWL-VER-04

Lab Name: Recra Environmental Contract: MOTT88MC

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) SOIL Lab Sample ID: AS456803

Sample wt/vol: 30.42 (g/mL) G Lab File ID: G24136.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 5.9 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.6

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-3	BENZO(A)ANTHRACENE	17	J
-99-2	BENZO(B)FLUORANTHENE	36	J
207-08-9	BENZO(K)FLUORANTHENE	22	J
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	21	J
218-01-9	CHRYSENE	32	J
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	51	J
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	11	J
129-00-0	PYRENE	67	J

ALUMINUM COMPANY OF AMERICA
ASP91-1 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000015

Client No.

SWL-MER-18

Name: Recra Environmental, Contract: MOTT3738MC

Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: MER02B

Matrix: (soil/water) SOIL Lab Sample ID: AS456804

Sample wt/vol: 30.03 (g/mL) G Lab File ID: G24137.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 7.4 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

Sample ID Nos.:

Lab Report Dated:

September 25, 1995

OWL-VER-02
OWL-VER-03
OWL-VER-04
OWL-VER-05
OWL-VER-06
OWL-VER-07
OWL-VER-08
OWL-VER-09
OWL-VER-11
OWL-VER-12
OWL-VER-200
MW-536-18
MW-536-19
MW-536-20

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Analysis Services

September 25, 1995

Mr. Joseph Mihm
Camp, Dresser and McKee / Alcoa
Park Avenue East, Building 65
Massena, NY 13665

RE: **Analytical Results**

Dear Mr. Mihm:

Please find enclosed the data package concerning the analyses of samples recently submitted by your firm. The pertinent information regarding these analyses is listed below:

Quote No.:	NY94-606
REI:	28
SDG #:	VER02A
Matrix:	Soil & Water
Sample Receipt Date:	08/26/95
Sample Date:	08/25/95

If you have any questions concerning these data, please contact Ms. Deborah A. Carella, Program Manager, at (800) 52R-ECRA and refer to the I.D. number listed below.

Sincerely,

RECRA ENVIRONMENTAL, INC.

KE Kasperek

Kenneth E. Kasperek
Laboratory Manager

DAC/KEK/dms
Enclosure
cc: Frances Gero (cover letter only)
Aluminum Company of America
Mr. Bernard Kunkle (cover letter only)
Aluminum Company of America
Park Avenue East, BLDG. 65
Massena, NY 13665

Reviewed and approved by/date: 9/25/95

D. Carella

Deborah A. Carella, Program Manager KEK for

ID #A95-4567
#NY5A5324

Mihm } LTR
Schultz

Schreiber } Sum
Occhiatini

SAMPLE DATA SUMMARY PACKAGE

RECRA
ENVIRONMENTAL
INC.

SDG NARRATIVE:

Laboratory: Recra Environmental, Inc.

Laboratory Code: RECNY

Contract No.: NY94-606

SDG No.: VER02A

Sample Identifications:

MW-536-18
MW-536-19
MW-536-20
OWL-VER-02
OWL-VER-02 MATRIX SPIKE
OWL-VER-02 MATRIX SPIKE DUPLICATE
OWL-VER-03
OWL-VER-04
OWL-VER-05
OWL-VER-06
OWL-VER-07
OWL-VER-08
OWL-VER-09
OWL-VER-11
OWL-VER-12
OWL-VER-200

METHODOLOGY

Analyses were performed in accordance with 1991 New York State Analytical Services protocol. (Revised 1993)

COMMENTS

Results are reported using standard qualifiers (Q) as defined on the Organic Data Comment Page.

Preliminary results were sent on August 30, 1995 via facsimile to Ms. Julie Schreiber of Camp, Dresser and McKee by Ms. Deborah Carella of Recra Environmental.

Quality Control analysis was performed on a batch basis for water samples. All results were within acceptable limits.

VOLATILE DATA

Volatile sample and standard areas are listed on the corresponding data system printouts.

Volatile data was processed utilizing Finnigan DataPro Autoquantitation and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions. False positive compounds are crossed out, initialed and dated in this data package.

Ortho-Xylene and meta & para-Xylene elute separately on a capillary column. They are reported in this data package as Total Xylenes. The concentration is calculated by adding the areas of ortho-Xylene and meta & para-Xylene and using only the response factor form ortho-Xylene to calculate the nanogram amount.

Sample OWL-VER-05 required a dilution of five (5) due to the high concentration of Acetone.

The water samples in this SDG exhibit a pH of approximately 6-8.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Kenneth E. Kasperek
Laboratory Director

9/25/95
Date

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: RECRA ENVIRONMENTAL, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS					
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	OTHER
MW-536-18	A5456712	ASP91	-	-	-	-	-
MW-536-19	A5456713	ASP91	-	-	-	-	-
MW-536-20	A5456714	ASP91	-	-	-	-	-
OWL-VER-02	A5456701	ASP91	-	-	-	-	-
OWL-VER-03	A5456702	ASP91	-	-	-	-	-
OWL-VER-04	A5456703	ASP91	-	-	-	-	-
OWL-VER-05	A5456704	ASP91	-	-	-	-	-
OWL-VER-06	A5456705	ASP91	-	-	-	-	-
OWL-VER-07	A5456706	ASP91	-	-	-	-	-
OWL-VER-08	A5456707	ASP91	-	-	-	-	-
OWL-VER-09	A5456708	ASP91	-	-	-	-	-
OWL-VER-11	A5456710	ASP91	-	-	-	-	-
OWL-VER-12	A5456711	ASP91	-	-	-	-	-
OWL-VER-200	A5456709	ASP91	-	-	-	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-18	WATER	08/25/95	08/26/95	-	08/28/95
MW-536-19	WATER	08/25/95	08/26/95	-	08/28/95
MW-536-20	WATER	08/25/95	08/26/95	-	08/28/95
OWL-VER-02	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-03	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-04	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-05	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-06	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-07	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-08	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-09	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-11	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-12	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-200	SOIL	08/25/95	08/26/95	-	08/28/95

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
MW-536-18	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
MW-536-19	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
MW-536-20	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-02	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-03	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-04	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-05	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-06	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-07	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-08	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-09	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-11	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-12	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-200	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED

ORGANIC DATA COMMENT PAGE

Laboratory Name RECRA ENVIRONMENTAL, INC.

USEPA Defined Organic Data Qualifiers:

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimate value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - The TCLP Matrix Spike recovery was greater than the upper limit of the analytical method.

L - The TCLP Matrix Spike recovery was lower than the lower limit of the analytical method.

T - This flag is used when the analyte is found in the associated TCLP extraction as well as in the sample.

N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".

A - This flag indicates that a TIC is a suspected aldol-condensation product.

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000008
Client No.

MW-536-18

Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) WATER Lab Sample ID: A5456712

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: K9362.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
[illegible]-15-0	CARBON DISULFIDE	10	U
35-4	1,1-DICHLOROETHENE	10	U
[illegible]-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
[illegible]0-20-7	XYLENE(TOTAL)	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 VOLATILES
ANALYSIS DATA SHEET

000009
Client No

MW-536-19

Name: Recra Environmental Contract: MQ770732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) WATER Lab Sample ID: A5456713

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: K9363.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
[illegible]-15-0	CARBON DISULFIDE	10	U
[illegible]-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
[illegible]0-20-7	XYLENE(TOTAL)	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000010

Client No

MW-536-20

Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) WATER Lab Sample ID: A5456714

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: K9364.MSO

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/9

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
330-20-7	XYLENE(TOTAL)	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000011 Client No

OWL-VER-02

Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456701

Sample wt/vol: 5.03 (g/mL) G Lab File ID: G3278.MSO

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/9

% Moisture: not dec. 8.9 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
67-64-1	ACETONE	11	U
[illegible]-15-0	CARBON DISULFIDE	11	U
[illegible]-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	11	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	11	U
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	11	U
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	11	U
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	11	U
108-10-1	4-METHYL-2-PENTANONE	11	U
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
100-41-4	ETHYLBENZENE	11	U
100-42-5	STYRENE	11	U
30-20-7	XYLENE(TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000012
Client No

OWL-VER-03

L Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456702

Sample wt/vol: 5.04 (g/mL) G Lab File ID: G3268.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/9

% Moisture: not dec. 6.8 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
[illegible]-64-1	ACETONE	11	U
[illegible]-15-0	CARBON DISULFIDE	11	U
[illegible]-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	11	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	11	U
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	11	U
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	11	U
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	11	U
108-10-1	4-METHYL-2-PENTANONE	11	U
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
[illegible]00-41-4	ETHYLBENZENE	11	U
[illegible]0-42-5	STYRENE	11	U
[illegible]330-20-7	XYLENE(TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 VOLATILES
ANALYSIS DATA SHEET

000013
Client No.

SWL-VER-04

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456703

Sample wt/vol: 5.10 (g/mL) G Lab File ID: G3269.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 7.6 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
67-64-1	ACETONE	11	U
-15-0	CARBON DISULFIDE	11	U
-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	11	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	11	U
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	11	U
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	11	U
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	11	U
108-10-1	4-METHYL-2-PENTANONE	11	U
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
100-41-4	ETHYLBENZENE	11	U
00-42-5	STYRENE	11	U
330-20-7	XYLENE (TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000014

Client No.

OWL-VER-05

La. ame: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456704

Sample wt/vol: 5.07 (g/mL) G Lab File ID: G3270.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 8.7 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
67-64-1	ACETONE	320	E
15-0	CARBON DISULFIDE	11	U
-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	11	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	2	J
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	110	
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	11	U
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	120	
108-10-1	4-METHYL-2-PENTANONE	11	U
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
100-41-4	ETHYLBENZENE	11	U
00-42-5	STYRENE	11	U
330-20-7	XYLENE(TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000015
Client No.

OWL-VER-05 DL

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456704DL

Sample wt/vol: 1.14 (g/mL) G Lab File ID: G3282.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 8.7 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	48	U
74-83-9	BROMOMETHANE	48	U
75-01-4	VINYL CHLORIDE	48	U
75-00-3	CHLOROETHANE	48	U
75-09-2	METHYLENE CHLORIDE	48	U
67-64-1	ACETONE	790	D
75-15-0	CARBON DISULFIDE	48	U
75-35-4	1,1-DICHLOROETHENE	48	U
75-34-3	1,1-DICHLOROETHANE	48	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	48	U
67-66-3	CHLOROFORM	48	U
107-06-2	1,2-DICHLOROETHANE	48	U
78-93-3	2-BUTANONE	230	D
71-55-6	1,1,1-TRICHLOROETHANE	48	U
56-23-5	CARBON TETRACHLORIDE	48	U
75-27-4	BROMODICHLOROMETHANE	48	U
78-87-5	1,2-DICHLOROPROPANE	48	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	48	U
79-01-6	TRICHLOROETHENE	48	U
124-48-1	DIBROMOCHLOROMETHANE	48	U
79-00-5	1,1,2-TRICHLOROETHANE	48	U
71-43-2	BENZENE	48	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	48	U
75-25-2	BROMOFORM	270	D
108-10-1	4-METHYL-2-PENTANONE	48	U
591-78-6	2-HEXANONE	48	U
127-18-4	TETRACHLOROETHENE	48	U
108-88-3	TOLUENE	48	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	48	U
108-90-7	CHLOROBENZENE	48	U
100-41-4	ETHYLBENZENE	48	U
100-42-5	STYRENE	48	U
1330-20-7	XYLENE (TOTAL)	48	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 VOLATILES
ANALYSIS DATA SHEET

Client No: CWL-VER-06

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456705

Sample wt/vol: 5.07 (g/mL) G Lab File ID: G3271.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/9

% Moisture: not dec. 6.9 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	5	J
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
1330-20-7	XYLENE(TOTAL)	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000017

Client No.

CWL-VER-07

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456706

Sample wt/vol: 5.03 (g/mL) G Lab File ID: G3272.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 6.2 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
1 -20-7	XYLENE(TOTAL)	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000018

Client No

CWL-VER-08

Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456707

Sample wt/vol: 5.00 (g/mL) G Lab File ID: G3273.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/9

% Moisture: not dec. 7.6 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
67-64-1	ACETONE	140	
75-15-0	CARBON DISULFIDE	11	U
75-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	11	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	11	U
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	11	U
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	11	U
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	11	U
108-10-1	4-METHYL-2-PENTANONE	9	J
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
100-41-4	ETHYLBENZENE	11	U
100-42-5	STYRENE	11	U
1330-20-7	XYLENE (TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000019

Client No.

OWL-VER-09

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456708

Sample wt/vol: 5.04 (g/mL) G Lab File ID: G3274.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 7.5 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
74-87-3	CHLOROMETHANE	11		U
74-83-9	BROMOMETHANE	11		U
75-01-4	VINYL CHLORIDE	11		U
75-00-3	CHLOROETHANE	11		U
75-09-2	METHYLENE CHLORIDE	11		U
67-64-1	ACETONE	11		U
75-15-0	CARBON DISULFIDE	11		U
75-35-4	1,1-DICHLOROETHENE	11		U
75-34-3	1,1-DICHLOROETHANE	11		U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	11		U
67-66-3	CHLOROFORM	11		U
107-06-2	1,2-DICHLOROETHANE	11		U
78-93-3	2-BUTANONE	11		U
71-55-6	1,1,1-TRICHLOROETHANE	11		U
56-23-5	CARBON TETRACHLORIDE	11		U
75-27-4	BROMODICHLOROMETHANE	11		U
78-87-5	1,2-DICHLOROPROPANE	11		U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11		U
79-01-6	TRICHLOROETHENE	11		U
124-48-1	DIBROMOCHLOROMETHANE	11		U
79-00-5	1,1,2-TRICHLOROETHANE	11		U
71-43-2	BENZENE	11		U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11		U
75-25-2	BROMOFORM	11		U
108-10-1	4-METHYL-2-PENTANONE	11		U
591-78-6	2-HEXANONE	11		U
127-18-4	TETRACHLOROETHENE	11		U
108-88-3	TOLUENE	11		U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11		U
108-90-7	CHLOROBENZENE	11		U
100-41-4	ETHYLBENZENE	11		U
100-42-5	STYRENE	11		U
1330-20-7	XYLENE (TOTAL)	11		U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000020
Client No.

CWL-VER-11

Lab Name: Recra Environmental Contract: MO77[illegible]MO

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456710

Sample wt/vol: 5.09 (g/mL) G Lab File ID: G3276.MSO

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 9.2 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
67-64-1	ACETONE	11	U
-15-0	CARBON DISULFIDE	11	U
-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	11	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	J
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	11	U
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	7	J
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	11	U
108-10-1	4-METHYL-2-PENTANONE	11	U
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
100-41-4	ETHYLBENZENE	11	U
0-42-5	STYRENE	11	U
330-20-7	XYLENE(TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 VOLATILES
ANALYSIS DATA SHEET

000021

Client No.

SWL-VER-12

Lab Name: Recra Environmental Contract: MQ778732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456711

Sample wt/vol: 5.10 (g/mL) G Lab File ID: G3277.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 12.9 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
67-64-1	ACETONE	51	
75-15-0	CARBON DISULFIDE	11	U
75-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	3	J
540-59-0	1,2-DICHLOROETHENE(TOTAL)	31	
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	11	U
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	6	J
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	11	U
108-10-1	4-METHYL-2-PENTANONE	6	J
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
100-41-4	ETHYLBENZENE	11	U
100-42-5	STYRENE	11	U
1330-20-7	XYLENE(TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000022

Client No.

OWL-VER-200

Lab Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5456709

Sample wt/vol: 5.07 (g/mL) G Lab File ID: G3275.MSQ

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: not dec. 8.0 Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	11	U
74-83-9	BROMOMETHANE	11	U
75-01-4	VINYL CHLORIDE	11	U
75-00-3	CHLOROETHANE	11	U
75-09-2	METHYLENE CHLORIDE	11	U
67-64-1	ACETONE	11	U
15-0	CARBON DISULFIDE	11	U
-35-4	1,1-DICHLOROETHENE	11	U
75-34-3	1,1-DICHLOROETHANE	11	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	11	U
67-66-3	CHLOROFORM	11	U
107-06-2	1,2-DICHLOROETHANE	11	U
78-93-3	2-BUTANONE	11	U
71-55-6	1,1,1-TRICHLOROETHANE	11	U
56-23-5	CARBON TETRACHLORIDE	11	U
75-27-4	BROMODICHLOROMETHANE	11	U
78-87-5	1,2-DICHLOROPROPANE	11	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	11	U
79-01-6	TRICHLOROETHENE	11	U
124-48-1	DIBROMOCHLOROMETHANE	11	U
79-00-5	1,1,2-TRICHLOROETHANE	11	U
71-43-2	BENZENE	11	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	11	U
75-25-2	BROMOFORM	11	U
108-10-1	4-METHYL-2-PENTANONE	11	U
591-78-6	2-HEXANONE	11	U
127-18-4	TETRACHLOROETHENE	11	U
108-88-3	TOLUENE	11	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	11	U
108-90-7	CHLOROBENZENE	11	U
100-41-4	ETHYLBENZENE	11	U
)-42-5	STYRENE	11	U
30-20-7	XYLENE(TOTAL)	11	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
WATER SURROGATE RECOVERY

000023

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

	Client Sample ID	BFB %REC	#	DCE %REC	#	TOL %REC	#						TOT OUT
1	Matrix Spike Blank	96		97		98							0
2	MW-536-18	99		87		102							0
3	MW-536-19	97		89		101							0
4	MW-536-20	97		87		102							0
5	VBLK15	101		86		103							0

QC LIMITS

BFB = p-Bromofluorobenzene (86-115)
DCE = 1,2-Dichloroethane-D4 (76-114)
TOL = Toluene-D8 (88-110)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
SOIL SURROGATE RECOVERY

000024

Lab Name: Recra Environmental Contract: MO77873NC

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Level (low/med): LOW

	Client Sample ID	BFB %REC	#	DCE %REC	#	TOL %REC	#							TOT OUT
1	Matrix Spike Blank	100		101		94								0
2	OWL-VER-02	94		102		89								0
3	OWL-VER-02 MS	92		103		94								0
4	OWL-VER-02 MSD	93		104		92								0
5	OWL-VER-03	97		97		93								0
6	OWL-VER-04	100		98		91								0
7	OWL-VER-05	99		100		96								0
8	OWL-VER-05 DL	98		101		95								0
9	OWL-VER-06	99		104		90								0
10	OWL-VER-07	101		100		84								0
11	OWL-VER-08	98		105		92								0
12	OWL-VER-09	99		104		90								0
13	OWL-VER-11	96		100		92								0
14	OWL-VER-12	98		101		91								0
15	OWL-VER-200	97		102		87								0
16	VBLK57	96		118		109								0

QC LIMITS

BFB = p-Bromofluorobenzene (59-113)
DCE = 1,2-Dichloroethane-D4 (70-121)
TOL = Toluene-D8 (84-138)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
WATER MATRIX SPIKE BLANK RECOVERY

000025

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ Lab Samp ID: A5B0569903

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix Spike - Client Sample No.: ~~VBLK15~~ MS Blank

MTm 9/21/95

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	66	132	61 - 145
Trichloroethene	50	57	114	71 - 120
Benzene	50	50	100	76 - 127
Toluene	50	53	106	76 - 125
Chlorobenzene	50	57	114	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike recovery: 0 out of 5 outside limits

Comments: _____

_____

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
SOIL MATRIX SPIKE BLANK RECOVERY

Lab Name: Recra Environmental, Inc. Contract: MQ7707T32MQ Lab Samp ID: ASB0569801

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix Spike - Client Sample No.: ~~VBLK07~~ msblank Level: (low/med) LOW

mta 4/21/95

COMPOUND	SPIKE ADDED UG/KG	MSB CONCENTRATION UG/KG	MSB % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	46	92	59 - 172
Trichloroethene	50	39	78	62 - 137
Benzene	50	47	94	66 - 142
Toluene	50	43	84	59 - 139
Chlorobenzene	50	49	98	60 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike recovery: 0 out of 5 outside limits

Comments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

000027

Lab Name: Recra Environmental, Inc. Contract: MD772732MC Lab Samp ID: A5456701

La Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix Spike - Client Sample No.: CWL-VER-02 Level: (low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	SAMPLE CONCENTRATION UG/KG	MS CONCENTRATION UG/KG	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	54	0	50	92	59 - 172
Trichloroethene	54	0	42	78	62 - 137
Benzene	54	0	48	89	66 - 142
Toluene	54	0	48	89	59 - 139
Chlorobenzene	54	0	54	100	60 - 133

COMPOUND	SPIKE ADDED UG/KG	MSD CONCENTRATION UG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	54	47	87	6	22	59 - 172
Trichloroethene	54	41	76	2	24	62 - 137
Benzene	54	47	87	2	21	66 - 142
Toluene	54	46	85	4	21	59 - 139
Chlorobenzene	54	53	98	2	21	60 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike recovery: 0 out of 10 outside limits

Comments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
METHOD BLANK SUMMARY

000028
Client No.

VBLK15

Lab Name: Recra Environmental, Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Lab File ID: K9355.MSQ Lab Sample ID: A5B0569903

Date Analyzed: 08/28/95 Time Analyzed: 12:04

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: I50K

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	Matrix Spike Blank	A5B0569901	K9352.MSQ	10:26
2	MW-536-18	A5456712	K9362.MSQ	15:51
3	MW-536-19	A5456713	K9363.MSQ	16:23
4	MW-536-20	A5456714	K9364.MSQ	16:56

Comments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-1 VOLATILES
ANALYSIS DATA SHEET

000029
Client No

VBLK15

Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) WATER Lab Sample ID: A5B0569903

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: K9355.MSQ

Level: (low/med) LOW Date Samp/Recv: _____ _____

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
[illegible]-15-0	CARBON DISULFIDE	10	U
[illegible]5-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
[illegible]0-42-5	STYRENE	10	U
[illegible]30-20-7	XYLENE(TOTAL)	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
METHOD BLANK SUMMARY

000030

VBLK57

Name: Recra Environmental Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Lab File ID: G3267.MSQ Lab Sample ID: A5B0569801

Date Analyzed: 08/28/95 Time Analyzed: 15:33

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: I50G

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	Matrix Spike Blank	A5456716	G3266.MSQ	14:30
2	OWL-VER-02	A5456701	G3278.MSQ	21:32
3	OWL-VER-02 MS	A5456701MS	G3279.MSQ	22:06
4	OWL-VER-02 MSD	A5456701SD	G3280.MSQ	22:38
5	OWL-VER-03	A5456702	G3268.MSQ	16:06
6	OWL-VER-04	A5456703	G3269.MSQ	16:38
7	OWL-VER-05	A5456704	G3270.MSQ	17:12
8	OWL-VER-05 DL	A5456704DL	G3282.MSQ	23:48
9	OWL-VER-06	A5456705	G3271.MSQ	17:44
10	OWL-VER-07	A5456706	G3272.MSQ	18:17
11	OWL-VER-08	A5456707	G3273.MSQ	18:49
12	OWL-VER-09	A5456708	G3274.MSQ	19:23
13	OWL-VER-11	A5456710	G3276.MSQ	20:27
14	OWL-VER-12	A5456711	G3277.MSQ	21:00
15	OWL-VER-200	A5456709	G3275.MSQ	19:55

Comments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000

VBLK57

Lab Name: Recra Environmental Contract: MQ7727J3CMQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Matrix: (soil/water) SOIL Lab Sample ID: A5B0569801

Sample wt/vol: 5.00 (g/mL) G Lab File ID: G3267.MSQ

Level: (low/med) LOW Date Samp/Recv: _____ ___

% Moisture: not dec. _____ Heated Purge: Y Date Analyzed: 08/28/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
67-64-1	ACETONE	10	U
75-15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	10	U
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE(TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	10	U
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	10	U
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	10	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	10	U
100-41-4	ETHYLBENZENE	10	U
100-42-5	STYRENE	10	U
1330-20-7	XYLENE(TOTAL)	10	U

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

000032

Name: Recra Environmental Contract: MQ772732MQ Labsampid: ASB0569803

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Lab File ID (Standard): G3265.MSQ Date Analyzed: 08/28/95

Instrument ID: I50G Time Analyzed: 13:40

GC Column(1): DB-624 ID: 0.530 (mm) Heated Purge: (Y/N) Y

		IS1 (BCM) AREA	#	RT	#	IS2 (CBZ) AREA	#	RT	#	IS3 (DFB) AREA	#	RT	#
	12 HOUR STD	34278		11.15		95330		18.13		103781		13.23	
	UPPER LIMIT	68556		11.65		190660		18.63		207562		13.73	
	LOWER LIMIT	17139		10.65		47665		17.63		51891		12.73	
	CLIENT SAMPLE												
1	Matrix Spike Blank	35185		11.17		93130		18.15		105891		13.25	
2	OWL-VER-02	24261		11.22		56856		18.13		72172		13.27	
3	OWL-VER-02 MS	23619		11.22		59907		18.15		72719		13.28	
4	OWL-VER-02 MSD	23617		11.22		60853		18.13		72594		13.27	
5	OWL-VER-03	34468		11.20		87698		18.15		98301		13.27	
6	L-VER-04	33793		11.18		83312		18.17		96472		13.27	
7	L-VER-05	34775		11.17		96128		18.15		103166		13.25	
8	OWL-VER-05 DL	29432		11.20		83464		18.13		90906		13.27	
9	OWL-VER-06	32994		11.18		89672		18.17		100137		13.27	
10	OWL-VER-07	31103		11.22		80631		18.15		91587		13.28	
11	OWL-VER-08	33298		11.25		93948		18.17		103724		13.30	
12	OWL-VER-09	31038		11.20		84590		18.15		95750		13.27	
13	OWL-VER-11	32704		11.23		88823		18.13		100538		13.28	
14	OWL-VER-12	30172		11.25		80347		18.17		91394		13.30	
15	OWL-VER-200	29485		11.22		77688		18.17		90281		13.28	
16	VBLK57	32259		11.22		85118		18.17		93387		13.27	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (BCM) = BROMOCHLOROMETHANE	(50-200)	-0.50 / +0.50 min
IS2 (CBZ) = Chlorobenzene-D5	(50-200)	-0.50 / +0.50 min
IS3 (DFB) = 1,4-Difluorobenzene	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM COMPANY OF AMERICA
ASP91-1 - VOLATILES
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

000033

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ Labsampid: A5C0001124

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Lab File ID (Standard): K9351.MSQ Date Analyzed: 08/28/95

Instrument ID: I50K Time Analyzed: 09:28

GC Column(1): DB-624 ID: 0.530(mm) Heated Purge: (Y/N) N

	IS1 (BCM) AREA	#	RT	#	IS2 (CBZ) AREA	#	RT	#	IS3 (DFB) AREA	#	RT	#
12 HOUR STD	27148		11.05		124019		18.07		105520		13.18	
UPPER LIMIT	54296		11.55		248038		18.57		211040		13.68	
LOWER LIMIT	13574		10.55		62010		17.57		52760		12.68	
CLIENT SAMPLE												
1 Matrix Spike Blank	23176		11.07		103187		18.07		94549		13.18	
2 MW-536-18	22232		11.05		86995		18.05		85924		13.18	
3 MW-536-19	21433		11.03		88894		18.05		85424		13.18	
4 MW-536-20	22716		11.08		87576		18.08		86696		13.20	
5 VBLK15	23494		11.02		91132		18.03		87672		13.15	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (BCM) = BROMOCHLOROMETHANE	(50-200)	-0.50 / +0.50 min
IS2 (CBZ) = Chlorobenzene-D5	(50-200)	-0.50 / +0.50 min
IS3 (DFB) = 1,4-Difluorobenzene	(50-200)	-0.50 / +0.50 min

Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000016

Client No.

CWL-VER-06

Name: Recra Environmental, Contract: MQ77B733MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) SOIL Lab Sample ID: A5456805

Sample wt/vol: 30.20 (g/mL) G Lab File ID: Z24138.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 4.8 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	11	J
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	19	J
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	28	J
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	11	J
129-00-0	PYRENE	38	J

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

Client No.

CWL-VER-07

al me: Recra Environmental Contract: MQ772732MQ

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

atrix: (soil/water) SOIL Lab Sample ID: A5456806

ample wt/vol: 30.30 (g/mL) G Lab File ID: Z24139.RR

evel: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

Moisture: 7.0 decanted: (Y/N) N Date Extracted: 08/29/95

oncentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

njection Volume: 2.00 (uL) Dilution Factor: 1.00

PC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
2 99-2	BENZO(B)FLUORANTHENE	300	U
2 08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	12	J
129-00-0	PYRENE		

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000018

Client No.

OWL-VER-08

Lab Name: Recra Environmental, Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) SOIL Lab Sample ID: A5456807

Sample wt/vol: 30.13 (g/mL) G Lab File ID: Z24140.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 7.3 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000019
Client No.

OWL-VER-09

Lab Name: Recra Environmental, Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) SOIL Lab Sample ID: A5456808

Sample wt/vol: 30.02 (g/mL) G Lab File ID: Z24141.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 7.2 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	17	J
56-55-3	BENZO(A)ANTHRACENE	4	J
-99-2	BENZO(B)FLUORANTHENE	300	U
-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	20	J
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	9	J
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	15	J
129-00-0	PYRENE	15	J

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000020
Client No.

OWL-VER-11

ab .me: Recra Environmental. Contract: MQ772732MQ

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

atrix: (soil/water) SOIL Lab Sample ID: A5456810

ample wt/vol: 30.46 (g/mL) G Lab File ID: Z24143.RR

evel: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

Moisture: 13.6 decanted: (Y/N) N Date Extracted: 08/29/95

:oncentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

:njection Volume: 2.00 (uL) Dilution Factor: 1.00

3PC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
5 55-3	BENZO(A)ANTHRACENE	300	U
.99-2	BENZO(B)FLUORANTHENE	300	U
2.,-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE		

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

Client No.

OWL-VER-12

Lab Name: Recra Environmental, Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) SOIL Lab Sample ID: A5456811

Sample wt/vol: 30.37 (g/mL) G Lab File ID: Z24144.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 11.5 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

Client No.: OWL-VER-200

Lab Name: Recra Environmental, Contract: MO772732MO

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix: (soil/water) SOIL Lab Sample ID: A5456809

Sample wt/vol: 30.37 (g/mL) G Lab File ID: Z24142.RR

Level: (low/med) LOW Date Samp/Recv: 08/25/95 08/26/95

% Moisture: 8.1 decanted: (Y/N) N Date Extracted: 08/29/95

Concentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
205-99-2	BENZO(B)FLUORANTHENE	300	U
207-08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW53618

La ame: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) WATER Lab Sample ID: A5456812

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/29/95

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/31/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000024
EPA SAMPLE NO.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW53619

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) WATER Lab Sample ID: A5456813

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/29/95

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/31/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000025

EPA SAMPLE NO.

OWLVER02

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

al me: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456801

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 9 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	73	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	690	
11097-69-1	Aroclor-1254	480	
11096-82-5	Aroclor-1260	36	U

EPA SAMPLE NO. 000086

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

OWLVER03

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456802

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 7 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	6.4	JP
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OWLVER04

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456803

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 6 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	48	
11097-69-1	Aroclor-1254	73	P
11096-82-5	Aroclor-1260	35	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OWLVER05

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456804

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 7 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.6 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	14	J
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	4.8	JP

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA S[illegible]

OWLVER06

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456805

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 5 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	70	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	36	
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	6.9	JP

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OWLVER07

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456806

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 7 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	11	J
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	5.0	JP

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OWLVER08

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456807

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 7 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

EPA SAMPLE NO. 000032

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

OWLVER09

Name: RECRA ENVIRON Contract: NY94-606

Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456808

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 7 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	53	
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	21	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: OWLVER11

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456810

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 14 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/07/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

000034

EPA SAMPLE NO.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

OWLVER12

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456811

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 11 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/07/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	75	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	16	J
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	16	J

EPA SAMPLE NO.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

OWLVER200

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5456809

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 08/26/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	62	
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	30	J

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
WATER SURROGATE RECOVERY

000036

Name: Recra Environmental, Inc. Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

	Client Sample ID	2CP %REC	#	DCB %REC	#	FBP %REC	#	NBZ %REC	#	PHL %REC	#	TBP %REC	#	TPH %REC	#		TOT OUT
1	Matrix Spike Blank	80		73		81		55		74		111		135			0
2	Matrix Spike Blk Dup	79		69		74		50		74		95		129			0
3	MW-536-18	54		40		71		50		35		41		51			0
4	MW-536-19	82		90		75		68		77		84		102			0
5	SBLK10	51		47		72		58		53		44		74			0

			QC LIMITS
2CP	=	2-Chlorophenol-d4	(33-110)
DCB	=	1,2-Dichlorobenzene-d4	(16-110)
FBP	=	2-Fluorobiphenyl	(43-116)
NBZ	=	Nitrobenzene-D5	(35-114)
PHL	=	Phenol-D5	(10-110)
TBP	=	2,4,6-Tribromophenol	(10-123)
TPH	=	Terphenyl-D14	(33-141)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
SOIL SURROGATE RECOVERY

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Level (low/med): LOW

	Client Sample ID	2CP %REC	#	2FP %REC	#	DCB %REC	#	FBP %REC	#	NBZ %REC	#	PHL %REC	#	TBP %REC	#	TPH %REC	#	TOT OUT
1	Matrix Spike Blank	52		62		35		69		51		55		84		87		0
2	OWL-VER-02	71		74		39		65		65		73		44		82		0
3	OWL-VER-02 MS	71		66		34		79		55		71		96		98		0
4	OWL-VER-02 MSD	60		63		36		63		66		70		69		73		0
5	OWL-VER-03	78		63		33		67		76		71		76		89		0
6	OWL-VER-04	71		83		43		64		79		71		75		81		0
7	OWL-VER-05	62		77		30		65		54		67		94		94		0
8	OWL-VER-06	68		93		40		71		80		69		84		95		0
9	OWL-VER-07	53		76		38		61		55		68		54		67		0
10	OWL-VER-08	66		80		39		72		73		77		80		93		0
11	OWL-VER-09	76		77		42		83		83		60		61		99		0
12	OWL-VER-11	61		89		46		74		61		72		69		67		0
13	OWL-VER-12	65		85		44		83		69		75		62		100		0
14	OWL-VER-200	73		106		54		97		88		74		68		80		0
15	SBLK09	52		75		50		66		47		77		49		56		0

			QC LIMITS
2CP	=	2-Chlorophenol-d4	(20-130)
2FP	=	2-Fluorophenol	(25-121)
DCB	=	1,2-Dichlorobenzene-d4	(20-130)
FBP	=	2-Fluorobiphenyl	(30-115)
NBZ	=	Nitrobenzene-D5	(23-120)
PHL	=	Phenol-D5	(24-113)
TBP	=	2,4,6-Tribromophenol	(19-122)
TPH	=	Terphenyl-D14	(18-137)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

GC Column(1): DB608 ID: 0.53(mm) GC Column(2): DB1701 ID: 0.53(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK12	67	66	60	53*			1
02	MSB12	75	72	74	66			0
03	MSBD12	72	68	62	55*			1
04	MW53618	74	70	67	59*			1
05	MW53619	74	70	74	65			0

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2F

SOIL PESTICIDE SURROGATE RECOVERY

Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

GC Column(1): DB608 ID: 0.53(mm) GC Column(2): DB1701 ID: 0.53(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK13	17*	17*	84	80			2
02	MSB13	50*	46*	85	82			2
03	OWLVER02	12*	11*	58*	59*			4
04	OWLVER02MS	48*	45*	77	85			2
05	OWLVER02MSD	41*	39*	60	63			2
06	OWLVER03	51*	50*	75	81			2
07	OWLVER04	52*	52*	64	93			2
08	OWLVER05	53*	52*	72	101			2
09	OWLVER06	60	60	72	103			0
10	OWLVER07	43*	42*	54*	59*			4
11	OWLVER08	49*	48*	66	66			2
12	OWLVER09	69	66	80	100			0
13	OWLVER11	46*	43*	80	76			2
14	OWLVER12	56*	54*	70	96			2
15	OWLVER200	72	68	85	100			0

ADVISORY QC LIMITS

TCX = Tetrachloro-m-xylene (60-150)
DCB = Decachlorobiphenyl (60-150)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
SOIL MATRIX SPIKE BLANK RECOVERY

000040

ab : Recra Environmental, Inc. Contract: MQ772732MQ Lab Samp ID: A5B0570201

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

atrix Spike - Client Sample No.: ~~SBLK09~~ MS BLANK Level: (low/med) LOW

MTA 9/22/95

COMPOUND	SPIKE ADDED UG/KG	MSB CONCENTRATION UG/KG	MSB % REC #	QC LIMITS REC.
Acenaphthene	1700	1100	65	31 - 137
Pyrene	1700	1400	82	35 - 142

: Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

Spike recovery: 0 out of 2 outside limits

Comments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
WATER MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

C00041

ab Name: Recra Environmental, Inc. Contract: MD772732MD Lab Samp ID: A5B0570403

ab : RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

trix Spike - Client Sample No.: ~~SBH10~~ MS0/MSD entered 9/22/95

COMPOUND	SPIKE ADDED UG/L	MSB CONCENTRATION UG/L	MSB % REC #	QC LIMITS REC.
cenaphthene	50	38	76	46 - 118
yrene	50	54	108	26 - 127

COMPOUND	SPIKE ADDED UG/L	MSBD CONCENTRATION UG/L	MSBD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
cenaphthene	50	38	76	0	31	46 - 118
yrene	50	48	96	12	31	26 - 127

Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

PD: 0 out of 2 outside limits
ike recovery: 0 out of 4 outside limits

mments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Name: Recra Environmental, Inc. Contract: MQ772732MQ Lab Samp ID: A5456801

Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Matrix Spike - Client Sample No.: OWL-VER-02 Level: (low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	SAMPLE CONCENTRATION UG/KG	MS CONCENTRATION UG/KG	MS % REC #	QC LIMITS REC.
Acenaphthene	1800	0	1400	78	31 - 137
Pyrene	1800	58	1900	102	35 - 142

COMPOUND	SPIKE ADDED UG/KG	MSD CONCENTRATION UG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	1800	1100	61	24 *	19	31 - 137
Pyrene	1800	1600	86	17	36	35 - 142

Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 1 out of 2 outside limits
Spike recovery: 0 out of 4 outside limits

Comments: _____

3F

WATER PCB MATRIX SPIKE BLANK/MATRIX SPIKE BLANK DUPLICATE RECOVERY

Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix Spike - EPA Sample No.: ASB0570703 MSB12 / MSD12

9/22/95

COMPOUND	SPIKE ADDED (ug/L)	MSB CONCENTRATION (ug/L)	MSB % REC #
Aroclor 1242	10.0	7.7	77

COMPOUND	SPIKE ADDED (ug/L)	MSBD CONCENTRATION (ug/L)	MSBD % REC #	% RPD #
Aroclor 1242	10.0	7.6	76	1

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

3F

SOIL PCB MSB RECOVERY

I Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix Spike - EPA Sample No.: A5456814 MSB13 mm 9/22/95

COMPOUND	SPIKE ADDED (ug/Kg)	MSB CONCENTRATION (ug/Kg)	MSB % REC #
Aroclor 1242	330	240	73

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

3F

SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix Spike - EPA Sample No.: OWLVER02

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #
Aroclor 1242	360	0	320	89

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #
Aroclor 1242	360	240	67	0

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
METHOD BLANK SUMMARY

000046
Client No.

SBLK09

ıb ıe: Recra Environmental Contract: MO772732MO

ıb Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

ıb File ID: Z24130.RR Lab Sample ID: A5B0570201

ıstrument ID: I50Z-A Date Extracted: 08/29/95

atrix: (soil/water) SOIL Date Analyzed: 08/31/95

evel: (low/med) LOW Time Analyzed: 14:11

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	Matrix Spike Blank	A5456814	Z24131.RR	08/31/95
2	OWL-VER-02	A5456801	Z24132.RR	08/31/95
3	OWL-VER-02 MS	A5456801MS	Z24133.RR	08/31/95
4	OWL-VER-02 MSD	A5456801SD	Z24134.RR	08/31/95
5	OWL-VER-03	A5456802	Z24135.RR	08/31/95
6	OWL-VER-04	A5456803	Z24136.RR	08/31/95
7	OWL-VER-05	A5456804	Z24137.RR	08/31/95
8	OWL-VER-06	A5456805	Z24138.RR	08/31/95
9	OWL-VER-07	A5456806	Z24139.RR	08/31/95
10	OWL-VER-08	A5456807	Z24140.RR	08/31/95
11	OWL-VER-09	A5456808	Z24141.RR	08/31/95
12	OWL-VER-11	A5456810	Z24143.RR	08/31/95
13	OWL-VER-12	A5456811	Z24144.RR	08/31/95
14	OWL-VER-200	A5456809	Z24142.RR	08/31/95

Comments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

000047

Client No.

SBLK09

ab me: Recra Environmental. Contract: MQ772732MQ

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

atrix: (soil/water) SOIL Lab Sample ID: A5B0570201

ample wt/vol: 30.00 (g/mL) G Lab File ID: Z24130.RR

evel: (low/med) LOW Date Samp/Recv: _____ _____

Moisture: _____ decanted: (Y/N) N Date Extracted: 08/29/95

oncentrated Extract Volume: 500 (uL) Date Analyzed: 08/31/95

njection Volume: 2.00 (uL) Dilution Factor: 1.00

PC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	ACENAPHTHENE	300	U
208-96-8	ACENAPHTHYLENE	300	U
120-12-7	ANTHRACENE	300	U
56-55-3	BENZO(A)ANTHRACENE	300	U
2 99-2	BENZO(B)FLUORANTHENE	300	U
2 08-9	BENZO(K)FLUORANTHENE	300	U
191-24-2	BENZO(G,H,I)PERYLENE	300	U
50-32-8	BENZO(A)PYRENE	300	U
218-01-9	CHRYSENE	300	U
53-70-3	DIBENZO(A,H)ANTHRACENE	300	U
206-44-0	FLUORANTHENE	300	U
86-73-7	FLUORENE	300	U
193-39-5	INDENO(1,2,3-CD)PYRENE	300	U
91-57-6	2-METHYLNAPHTHALENE	300	U
91-20-3	NAPHTHALENE	300	U
85-01-8	PHENANTHRENE	300	U
129-00-0	PYRENE	300	U

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
METHOD BLANK SUMMARY

Client No.: SBLK10

Name: Recra Environmental, Inc. Contract: MQ772732MQ

Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

File ID: Z24145.RR Lab Sample ID: A5B0570403

Instrument ID: I50Z-A Date Extracted: 08/29/95

Matrix: (soil/water) WATER Date Analyzed: 08/31/95

Level: (low/med) LOW Time Analyzed: 22:03

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	Matrix Spike Blank	A5B0570401	Z24150.RR	09/01/95
2	Matrix Spike Blk Dup	A5B0570402	Z24151.RR	09/01/95
3	MW-536-18	A5456812	Z24146.RR	08/31/95
4	MW-536-19	A5456813	Z24149.RR	09/01/95

Comments: _____

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
ANALYSIS DATA SHEET

Client No.

SBLK10

) l. .e: Recra Environmental Contract: MQ772732MQ

) Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

:rix: (soil/water) WATER Lab Sample ID: A5B0570403

mple wt/vol: 1000.0 (g/mL) ML Lab File ID: Z24145.RR

vel: (low/med) LOW Date Samp/Recv: _____ _____

Moisture: _____ decanted: (Y/N) N Date Extracted: 08/29/95

ncentrated Extract Volume: 1000(uL) Date Analyzed: 08/31/95

jection Volume: 2.00(uL) Dilution Factor: 1.00

'C Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
83-32-9	ACENAPHTHENE	10	U
208-96-8	ACENAPHTHYLENE	10	U
120-12-7	ANTHRACENE	10	U
56-55-3	BENZO(A)ANTHRACENE	10	U
20 9-2	BENZO(B)FLUORANTHENE	10	U
20, 08-9	BENZO(K)FLUORANTHENE	10	U
191-24-2	BENZO(G,H,I)PERYLENE	10	U
50-32-8	BENZO(A)PYRENE	10	U
218-01-9	CHRYSENE	10	U
53-70-3	DIBENZO(A,H)ANTHRACENE	10	U
206-44-0	FLUORANTHENE	10	U
86-73-7	FLUORENE	10	U
193-39-5	INDENO(1,2,3-CD)PYRENE	10	U
91-57-6	2-METHYLNAPHTHALENE	10	U
91-20-3	NAPHTHALENE	10	U
85-01-8	PHENANTHRENE	10	U
129-00-0	PYRENE	10	U

4C

PESTICIDE METHOD BLANK SUMMARY

al me: RECRA ENVIRON Contract: NY94-606

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

ab Sample ID: A5B0570703 Lab File ID: _____

latrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

ulfur Cleanup: (Y/N) Y Date Extracted: 08/29/95

)ate Analyzed (1): 08/31/95 Date Analyzed (2): 08/31/95

Time Analyzed (1): 0259 Time Analyzed (2): 0259

Instrument ID (1): 5890A9 Instrument ID (2): 5890B9

GC Column (1): DB608 ID: 0.53 (mm) GC Column (2): DB1701 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	MSB12	A5B0570701	08/31/95	08/31/95
02	MSBD12	A5B0570702	08/31/95	08/31/95
03	MW53618	A5456812	08/31/95	08/31/95
04	MW53619	A5456813	08/31/95	08/31/95

COMMENTS:

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK12

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) WATER Lab Sample ID: A5B0570703

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/29/95

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/31/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLK13

ab me: RECRA ENVIRON Contract: NY94-606

ab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

ab Sample ID: A5B0570001 Lab File ID: _____

atrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

ulfur Cleanup: (Y/N) N Date Extracted: 08/29/95

ate Analyzed (1): 09/06/95 Date Analyzed (2): 09/06/95

ime Analyzed (1): 1452 Time Analyzed (2): 1452

nstrument ID (1): 5890A9 Instrument ID (2): 5890B9

C Column (1): DB608 ID: 0.53 (mm) GC Column (2): DB1701 ID: 0.53 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	MSB13	A5456814	09/06/95	09/06/95
02	OWLVER02	A5456801	09/06/95	09/06/95
03	OWLVER03	A5456802	09/06/95	09/06/95
04	OWLVER04	A5456803	09/06/95	09/06/95
05	OWLVER05	A5456804	09/06/95	09/06/95
06	OWLVER06	A5456805	09/06/95	09/06/95
07	OWLVER07	A5456806	09/06/95	09/06/95
08	OWLVER08	A5456807	09/06/95	09/06/95
09	OWLVER09	A5456808	09/06/95	09/06/95
10	OWLVER11	A5456810	09/07/95	09/07/95
11	OWLVER12	A5456811	09/07/95	09/07/95
12	OWLVER200	A5456809	09/06/95	09/06/95
13	OWLVER02MS	A5456801MS	09/06/95	09/06/95
14	OWLVER02MSD	A5456801SD	09/06/95	09/06/95

COMMENTS:

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK13

Lab Name: RECRA ENVIRON Contract: NY94-606

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER2B

Matrix: (soil/water) SOIL Lab Sample ID: A5B0570001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/29/95

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/06/95

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

000054

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ Labsampid: ASC0001147

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Lab File ID (Standard): Z24125.RR Date Analyzed: 08/31/95

Instrument ID: I50Z-A Time Analyzed: 11:15

	IS1 (ANT) AREA	#	RT	#	IS2 (CRY) AREA	#	RT	#	IS3 (DCB) AREA	#	RT	#
12 HOUR STD	370364		8.37		642188		16.17		182185		4.75	
UPPER LIMIT	740728		8.87		1284376		16.67		364370		5.25	
LOWER LIMIT	185182		7.87		321094		15.67		91093		4.25	
CLIENT SAMPLE												
1 Matrix Spike Blank	468976		8.37		709397		16.17		264216		4.77	
2 OWL-VER-02	410981		8.37		630886		16.17		167994		4.77	
3 OWL-VER-02 MS	445915		8.37		737123		16.18		242928		4.77	
4 OWL-VER-02 MSD	523176		8.37		847302		16.18		259592		4.77	
5 OWL-VER-03	556586		8.37		925461		16.17		295192		4.77	
6 OWL-VER-04	635237		8.37		969657		16.18		246568		4.77	
7 OWL-VER-05	542444		8.37		800937		16.17		283688		4.77	
8 OWL-VER-06	565541		8.37		867173		16.17		249008		4.77	
9 OWL-VER-07	459307		8.35		811464		16.17		226928		4.77	
10 OWL-VER-08	581492		8.35		886962		16.17		305584		4.77	
11 OWL-VER-09	537241		8.35		806166		16.17		278960		4.77	
12 OWL-VER-11	481582		8.35		827601		16.17		249528		4.75	
13 OWL-VER-12	532367		8.35		863003		16.17		280768		4.75	
14 OWL-VER-200	484895		8.35		919082		16.17		238296		4.75	
15 SBLK09	363438		8.35		626566		16.17		167177		4.75	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (ANT) = Acenaphthene-D10	(50-200)	-0.50 / +0.50 min
IS2 (CRY) = Chrysene-D12	(50-200)	-0.50 / +0.50 min
IS3 (DCB) = 1,4-Dichlorobenzene-D4	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM COMPANY OF AMERICA
ASP91-2 - HSL POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

C00055

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ Labsampid: ASC0001147

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Lab File ID (Standard): Z24125.RR Date Analyzed: 08/31/95

Instrument ID: I50Z-A Time Analyzed: 11:15

	IS4 (NPT) AREA	#	RT	#	IS5(PHN) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
12 HOUR STD	658856		5.97		579605		11.00		514536		18.78	
UPPER LIMIT	1317712		6.47		1159210		11.50		1029072		19.28	
LOWER LIMIT	329428		5.47		289803		10.50		257268		18.28	
CLIENT SAMPLE												
Matrix Spike Blank	935625		5.97		604621		11.00		490681		18.78	
OWL-VER-02	710179		5.97		646574		11.00		289566		18.80	
OWL-VER-02 MS	854761		5.97		661170		11.00		303028		18.80	
OWL-VER-02 MSD	941676		5.97		761276		11.00		358034		18.80	
OWL-VER-03	972639		5.97		895055		11.00		576504		18.78	
OWL-VER-04	948864		5.97		961080		11.00		366295		18.80	
OWL-VER-05	1084644		5.97		747365		11.00		470769		18.80	
OWL-VER-06	846704		5.95		886004		11.00		452903		18.80	
[illegible]-VER-07	830446		5.97		846028		11.00		406096		18.78	
-VER-08	992984		5.97		856818		11.00		525923		18.78	
OWL-VER-09	956832		5.95		909073		11.00		388690		18.78	
OWL-VER-11	842800		5.95		777227		11.00		508221		18.78	
OWL-VER-12	908704		5.95		1076715		11.00		355902		18.80	
OWL-VER-200	850168		5.95		916164		11.00		455592		18.78	
SBLK09	660794		5.97		618768		11.00		403786		18.78	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS4 (NPT) = Naphthalene-D8	(50-200)	-0.50 / +0.50 min
IS5 (PHN) = Phenanthrene-D10	(50-200)	-0.50 / +0.50 min
IS6 (PRY) = Perylene-D12	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

C00056

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ Labsampid: A5C0001147

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Lab File ID (Standard): Z24125.RR Date Analyzed: 08/31/95

Instrument ID: I50Z-A Time Analyzed: 11:15

		IS1 (ANT) AREA	#	RT	#	IS2 (CRY) AREA	#	RT	#	IS3 (DCB) AREA	#	RT	#
	12 HOUR STD	370364		8.37		642188		16.17		182185		4.75	
	UPPER LIMIT	740728		8.87		1284376		16.67		364370		5.25	
	LOWER LIMIT	185182		7.87		321094		15.67		91093		4.25	
	CLIENT SAMPLE												
1	MW-536-18	379497		8.35		502535		16.15		218168		4.75	
2	SBLK10	492389		8.37		697338		16.17		275432		4.75	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (ANT) = Acenaphthene-D10	(50-200)	-0.50 / +0.50 min
IS2 (CRY) = Chrysene-D12	(50-200)	-0.50 / +0.50 min
IS3 (DCB) = 1,4-Dichlorobenzene-D4	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

C00057

Lab Name: Recra Environmental, Inc. Contract: MQ772732MQ Labsampid: A5C0001147

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Lab File ID (Standard): Z24125.RR Date Analyzed: 08/31/95

Instrument ID: I50Z-A Time Analyzed: 11:15

	IS4 (NPT) AREA	#	RT	#	IS5(PHN) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
12 HOUR STD	658856		5.97		579605		11.00		514536		18.78	
UPPER LIMIT	1317712		6.47		1159210		11.50		1029072		19.28	
LOWER LIMIT	329428		5.47		289803		10.50		257268		18.28	
CLIENT SAMPLE												
1 MW-536-18	643144		5.95		678007		11.00		297521		18.77	
2 SBLK10	759328		5.95		840926		11.00		415331		18.78	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS4 (NPT) = Naphthalene-D8	(50-200)	-0.50 / +0.50 min
IS5 (PHN) = Phenanthrene-D10	(50-200)	-0.50 / +0.50 min
IS6 (PRY) = Perylene-D12	(50-200)	-0.50 / +0.50 min

Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

C00058

Name: Recra Environmental, Inc. Contract: MQ772732MQ Labsampid: A5C0001155

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Lab File ID (Standard): Z24148.RR Date Analyzed: 09/01/95

Instrument ID: I50Z-A Time Analyzed: 08:55

	IS1 (ANT) AREA	#	RT	#	IS2 (CRY) AREA	#	RT	#	IS3 (DCB) AREA	#	RT	#
12 HOUR STD	432649		8.32		809255		16.12		180448		4.72	
UPPER LIMIT	865298		8.82		1618510		16.62		360896		5.22	
LOWER LIMIT	216325		7.82		404628		15.62		90224		4.22	
CLIENT SAMPLE												
Matrix Spike Blank	436516		8.32		609428		16.12		209584		4.73	
Matrix Spike Blk Dup	436915		8.32		569508		16.12		197272		4.73	
MW-536-19	486042		8.32		661775		16.12		196080		4.72	

	AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (ANT) = Acenaphthene-D10	(50-200)	-0.50 / +0.50 min
IS2 (CRY) = Chrysene-D12	(50-200)	-0.50 / +0.50 min
IS3 (DCB) = 1,4-Dichlorobenzene-D4	(50-200)	-0.50 / +0.50 min

\# Column to be used to flag recovery values
* Values outside of contract required QC limits

ALUMINUM COMPANY OF AMERICA
ASP91-2 - POLYNUCLEAR AROMATIC HYDROCARBONS
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

000059

) Name: Recra Environmental, Inc. Contract: MQ772732MQ Labsampid: A5C0001155

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02B

Lab File ID (Standard): Z24148.RR Date Analyzed: 09/01/95

Instrument ID: I50Z-A Time Analyzed: 08:55

	IS4 (NPT) AREA	#	RT	#	IS5(PHN) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
12 HOUR STD	826630		5.93		584928		10.95		506628		18.73	
UPPER LIMIT	1653260		6.43		1169856		11.45		1013256		19.23	
LOWER LIMIT	413315		5.43		292464		10.45		253314		18.23	
CLIENT SAMPLE												
1 Matrix Spike Blank	937369		5.93		577153		10.95		381439		18.73	
2 Matrix Spike Blk Dup	969691		5.93		556828		10.95		344762		18.73	
3 MW-536-19	981594		5.93		745680		10.95		415916		18.73	

		AREA UNIT QC LIMITS	RT QC LIMITS
IS1 (NPT)	= Naphthalene-D8	(50-200)	-0.50 / +0.50 min
(PHN)	= Phenanthrene-D10	(50-200)	-0.50 / +0.50 min
IS3 (PRY)	= Perylene-D12	(50-200)	-0.50 / +0.50 min

Column to be used to flag recovery values
* Values outside of contract required QC limits

SAMPLE DATA PACKAGE

RECRA
ENVIRONMENTAL
INC.

SDG NARRATIVE:

Laboratory: Recra Environmental, Inc.

Laboratory Code: RECNY

Contract No.: NY94-606

SDG No.: VER02B

Sample Identifications:

MW-536-18
MW-536-19
OWL-VER-02
OWL-VER-02 MATRIX SPIKE
OWL-VER-02 MATRIX SPIKE DUPLICATE
OWL-VER-03
OWL-VER-04
OWL-VER-05
OWL-VER-06
OWL-VER-07
OWL-VER-08
OWL-VER-09
OWL-VER-11
OWL-VER-12
OWL-VER-200

METHODOLOGY

Analyses were performed in accordance with 1991 New York State Analytical Services protocol. (Revised 1993)

COMMENTS

Results are reported using standard qualifiers (Q) as defined on the Organic Data Comment Page.

Preliminary results were sent on September 7, 1995 via facsimile to Ms. Julie Schreiber of Camp, Dresser and McKee by Ms. Deborah Carella of Recra Environmental.

Quality Control analysis was performed on a batch basis for water samples.

The Chain of Custody stated that full analysis should be performed on sample MW-536-20, however, this sample was a Trip Blank and volume for Volatile analysis only was received.

Due to character limitations of the software the SDG number was abbreviated on the Pesticide forms.

SEMIVOLATILE DATA

Semivolatile sample and standard areas are listed on the corresponding data system printouts.

Semivolatile data was processed utilizing Teknivant Datasystem and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions. False positive compounds are crossed out, initialed and dated in this data package.

Samples OWL-VER-02MS and OWL-VER-02MSD exhibit the relative percent difference of Acenaphthene as above QC limits.

PCB DATA

The surrogate recovery of Decachlorobiphenyl fell outside QC limits in samples PBLK12, MW538618 and MW53618 on the DB1701 column.

The surrogate recovery of Tetrachloro-m-xylene fell outside QC limits in samples PBLK13, MSB13, OWLVER02, OWLVER02MS, OWLVER02MSD, OWLVER03, OWLVER04, OWLVER05, OWLVER07, OWLVER08, OWLVER11 and OWLVER12 on the DB608 and DB1701 columns. The surrogate recovery of Decachlorobiphenyl fell outside QC limits in samples OWLVER02 and OWLVER07 on the DB608 and DB1701 columns.

The Endrin percent breakdown and combined percent breakdown are above QC limits on the DB608 column in: PEM10 analyzed on 8/31/95 at 02:15; PEM11 analyzed on 9/6/95 at 14:08; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PEM14 analyzed on 9/9/95 at 01:37; PEM15 analyzed on 9/10/95 at 01:36; PEM16 analyzed on 9/10/95 at 23:23.

The relative percent difference of Methoxychlor fell outside QC limits on the DB1701 column in: PEM10 analyzed on 8/31/95 at 02:15; PEM11 analyzed on 9/6/95 at 14:08; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PEM14 analyzed on 9/9/95 at 01:37; PEM15 analyzed on 9/10/95 at 01:36; PEM16 analyzed on 9/10/95 at 23:23.

The relative percent difference of Methoxychlor fell outside QC limits on the DB608 column in: INDAM02 analyzed on 7/28/95 at 16:49; INDAM03 analyzed on 7/29/95 at 12:25.

The relative percent difference of 4,4'-DDT and Methoxychlor fell outside QC limits on the DB1701 column in: INDAM12 analyzed on 9/10/95 at 12:28. The retention time of gamma-BHC is outside QC limits. INDAM12 exhibits the following outside retention time windows: beta-BHC, delta-BHC, Endosulfan sulfate, Endrin ketone and Endrin aldehyde. INDAM13 analyzed on 9/11/95 at 11:01 exhibits the relative percent difference of Endrin, 4,4'-DDT and Methoxychlor as outside QC limits.

PIBLK23 analyzed on 9/7/95 at 16:11 and PIBLK25 analyzed on 9/8/95 at 13:59 both exhibit the retention time of surrogate Tetrachloro-m-xylene outside QC limits on the DB608 column.

PIBLK16 analyzed on 8/17/95 at 15:43 exhibits the retention time of surrogates Tetrachloro-m-xylene and Decachlorobiphenyl outside QC limits on the DB1701 column.

PIBLK22 analyzed on 9/7/95 at 03:57; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PIBLK20 analyzed on 9/10/95 at 22:40 and PEM16 analyzed on 9/10/95 at 23:23 all exhibit the retention time of Decachlorobiphenyl outside QC limits on the DB1701 column.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Michelle M. Pickle
Kenneth E. Kasperek
Laboratory Director
for KEK

09/25/95
Date

RECRA
ENVIRONMENTAL
INC.

CHAIN OF CUSTODY DOCUMENTATION

CHAIN OF CUSTODY RECORD - ALCOA REMEDIATION PROJECTS ORGANIZATION

SEQUENCE # 1417

PROJECT NAME ALCOA - OWL

ACCOUNT #

FIELD BOOK REFERENCE CLEANUP VERIF.

SHOP ORDER # REI 28

SAMPLE NUMBER			DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	ANALYSES: EXTR. ORG.	VOA	PCB	TRACE METALS	PCHK				NUMBER OF CONTAINERS	LOG BOOK PG NO	REMARKS
OWL	VER	02			GRID 2	SOIL		✓	✓	✓					2		ACCELERATED
OWL	VER	03			GRID 3	SOIL		✓	✓	✓					2		TURN
OWL	VER	04			GRID 4	SOIL		✓	✓	✓					2		AROUND
OWL	VER	05			GRID 5	SOIL		✓	✓	✓					2		
OWL	VER	06			GRID 6	SOIL		✓	✓	✓					2		ANALYZE
OWL	VER	07			GRID 7	SOIL		✓	✓	✓					2		BY SUPERFUND
OWL	VER	08			GRID 8	SOIL		✓	✓	✓					2		CLP VOCS,
OWL	VER	09			GRID 9	SOIL		✓	✓	✓					2		PAHS, & PCBS
OWL	VER	200			GRID 200	SOIL		✓	✓	✓					2		USING
OWL	VER	11			GRID 11	Soil		✓	✓	✓					2		NYDEC
OWL	VER	12			GRID 12	Soil		✓	✓	✓					2		METHODS
																	91-1, 91-2
																	AND 91-3
																	RESPECTIVELY
MW	536	18			GRID -	WATER		✓	✓	✓					4		DET. LIMITS
MW	636	19			GRID -	WATER		✓	✓	✓					4		VOC - .01 MG/KG
MW	536	20			GRID -	WATER		✓	✓	✓					2		PAHS - .30 MG/KG

PCBs - 1MG/KG

SAMPLED BY (SIGN)

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
① DATE/TIME 8/26/98 16:30	② DATE/TIME / /	DATE/TIME / /	④ DATE/TIME / /	⑤ DATE/TIME / /
RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)
① DATE/TIME / /	② DATE/TIME / /	③ DATE/TIME / /	④ DATE/TIME / /	⑤ DATE/TIME / /

METHOD OF SHIPMENT	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY BY (SIGN)	DATE/TIME
UPS 0660 5398 183		Cooler = 3°C	8/26/98 1600

ORIGINAL - SHIP W/SAMPLES COPY 1 - CDM FILE COPY 2 - PROJECT COORDINATOR COPY 3 - PROJECT ACCOUNTANT COPY 4 - CDM FILE

IS98000

Appendix C

Appendix C

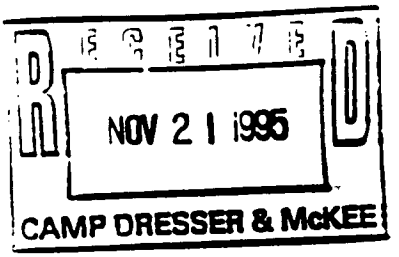
Data Validation Report
Prepared by Gradient Corporation

Sample ID Nos.:

OWL-VER-01
OWL-VER-02
OWL-VER-03
OWL-VER-04
OWL-VER-05
OWL-VER-06
OWL-VER-07
OWL-VER-08
OWL-VER-09
OWL-VER-10
OWL-VER-11
OWL-VER-12
OWL-VER-200
MW-536-16
MW-536-17
MW-536-18
MW-536-19
MW-536-20

Gradient Corporation

[redacted]



November 20, 1995

Mr. James Occhialini
Camp, Dresser & McKee
10 Cambridge Center
Cambridge, MA 02142

Dear Jim,

Please find enclosed the data validation reports for the volatile organic, semivolatile organic, and PCB analytical results associated with the Oily Waste Landfill Area at Alcoa-Massena, New York (Case 5324 SDGs OWLVE, VER02A, VER02B). Also enclosed is a diskette file containing Excel formatted data summary tables for these analyses. I have also sent a copy of the validation report to Julie Schreiber at CDM/Alcoa Remediation at her request.

If you have any questions, please do not hesitate to call me at (617) 576-1555.

Sincerely,

GRADIENT CORPORATION

Deborah A. Roskos
Analytical Chemist

cc: Julie Schreiber

enclosure

Ms. Julie Schreiber
Camp, Dresser & McKee
ALCOA Remediation
Alcoa Building 65
P.O. Box 150
Park Ave East
Massena, New York 13662

Schultz-LHL
Mimm-LHL
Anderson-LHL

Schreiber-Wade
Cesolak-Orig.

44 Brattle Street, Cambridge, MA 02138 • (617) 576-1555 • Facsimile (617) 864-8469
Cambridge, MA • Ann Arbor, MI • Sarasota, FL
info@gradcorp.com

NYSDEC ASP
DATA VALIDATION REPORT
ORGANIC ANALYSES

Site: *Oily Waste Landfill Area, Alcoa - Massena* **Laboratory:** *RECRA Environmental, Inc.*

Case No: *5324* **SDG:** *OWLVE*

Data Validation was performed by Gradient Corporation and completed under the guidelines set forth in the New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC-ASP), revised December 1991 and the Environmental Protection Agency (EPA) Region II's Standard Operating Procedure (SOP) for Contract Laboratory Program (CLP) Organics Data Review and Preliminary Review, January, 1992 (SOP No. HW-6, Rev. #8). The analytical protocols referenced throughout this report refer to the NYSDEC-ASP.

General Assessment

This case consisted of 2 soil samples, 1 rinsate blank, and 1 trip blank which were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs) by ASP91 analytical protocols. The trip blank was analyzed for VOCs only. The data package was complete and legible with the following exceptions. The volatile matrix spike blank duplicate Form I was not included in the data package. The quantitation limits for the SVOC compounds were not verifiable. All Aroclor IDLs were missing from the package with the exception of Aroclor-1248. The calibration factors for Aroclor-1242 (column 1) were not reported correctly on Form VI. A resubmittal was requested on October 12, 1995 and was received at Gradient on October 20, 1995.

The nondetect results for bromomethane, chloroethane, acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone results in samples OWL-VER-01 and OWL-VER-10; 2-hexanone results in samples MW-536-16 and MW-536-17; and dibenzo(a,h)anthracene results in samples MW-536-16, OWL-VER-01, and OWL-VER-10 were estimated (UJ) due to variable instrument responses. The positive Aroclor-1248 results in sample OWL-VER-01 and OWL-VER-10 were estimated (J) due to suspected method blank contamination. Trichloroethane and tetrachlorethane in sample OWL-VER-01 and benzo(a)anthracene and chrysene in sample OWL-VER-10 were quantitated at values less than 10% of the CRQL. Due to uncertainty in the laboratory's ability to accurately detect these compounds at this level, the results were raised to the CRQL and qualified with a "U".

All results were considered usable for the project objectives.

Primary reviewer: _____ Date: 11/20/95

Senior reviewer: _____ Date: 11/20/95

DATA COMPLETENESS

The following components were/were not present in the data package (Vol. 1, Exhibit B, Section IB). Items marked with "N" will have further explanation following the checklist.

1. *Yes* NYSDEC Data Package Summary Forms

2. *Yes* Traffic Report - COC Forms

3. *Yes* Case Narrative

4. *Yes* Cover Page and Forms 1 through 8 for volatile and semivolatile analyses and/or Forms 1 through 4 and Forms 6 through 10 for PCB analyses.

5. *Yes* Raw data supporting all sample analyses and quality control samples.

6. *Yes* Raw data supporting all calibration standard analyses

7. *Yes* Instrument Detection Limits (IDLs)

8. *No* Copy of calculation worksheet or formulas used to generate final results

9. *Yes* Extraction logs

Yes	-	present in data package
No	-	not present in data package
NA	-	not applicable

Comments

All required forms and supporting information were present in the data package with the following exceptions.

The laboratory was informed by CDM-Alcoa of the project specific quantitation limits of 300 µg/kg for semivolatile organic compounds which are lower than the method defined CRQLs. The laboratory understood this to mean that every nondetect semivolatile compound should be reported with a quantitation limit of 300 µg/kg, irrespective of sample specific preparation factors. In few cases, the laboratory did extract larger sample mass (up to 40g) to justify the lower quantitation limits. Nonetheless, for the majority of the semivolatile samples, the lower quantitation limits could not be supported as technically valid. The laboratory was sent a resubmittal request on October 12, 1995, regarding the need for information, such as an MDL study, to support the lower quantitation limits. The laboratory responded on November 1, 1995, with results from an aqueous MDL study. The results of the aqueous MDL study could not be used to support the lower soil quantitation limits due to method variations based on sample matrix and method requirements (e.g., sonication and GPC cleanup). It was agreed by RECRA, CDM, and Gradient on November 2, 1995, that a soil MDL needed to be analyzed using the NYSDEC ASP extraction and cleanup procedures in order to support the project specific quantitation limits. An acceptable soil MDL, supporting the lower semivolatile quantitation limits, was received at Gradient on November 16, 1995. The laboratory defaulted to reporting 300 µg/kg whenever the actual quantitation limit, based on percent solids, compound MDL, and sample weight was less than 300 µg/kg. Any compound with an actual quantitation limit above 300 µg/kg was reported to the exact quantitation limit.

The volatile matrix spike blank duplicate Form I was not included in the data package. All Aroclor IDLs were missing from the package with the exception of Aroclor-1248. The calibration factors for Aroclor-1242 (column 1) were not reported correctly on Form VI. A resubmittal request regarding the above items was sent to the laboratory on October 12, 1995 and the resubmittal was received at Gradient on October 20, 1995.

No calculation worksheets or formulas used for final results were submitted in the data package. The volatile and semivolatile organic compounds and PCB result calculations were verifiable with the exception of the semivolatile quantitation limits which appear to be rounded incorrectly. No resubmittals were requested from the laboratory for the calculations which were reproducible.

HOLDING TIMES

Listed below are the verified time of sample receipt (VTSR) extraction start and completion dates. and analysis date for each fraction of each sample associated with this data package.

Sample ID	Matrix	VSTR	Volatile		Semivolatile			PCBs		
			Are water samples preserved? (pH)	Date Analyzed	Date Extraction Started	Date Extraction Completed	Date Analyzed	Date Extraction Started	Date Extraction Completed	Date Analyzed
MW-536-16	aqueous	7/6/95	No (7)	7/7/95	7/7/95	7/8/95	7/11/95	7/8/95	7/8/95	7/11/95
MW-536-17	aqueous	7/6/95	No (7)	7/7/95	NA	NA	NA	NA	NA	NA
OWL-VER-01	soil	7/6/95	NA	7/6/95	7/7/95	7/8/95	7/11/95	7/7/95	7/8/95	7/12/95
OWL-VER-01RE	soil	7/6/95	NA	NA	NA	NA	NA	7/18/95	7/20/95	7/22/95
OWL-VER-10	soil	7/6/95	NA	7/6/95	7/7/95	7/8/95	7/11/95	7/7/95	7/8/95	7/12/95
OWL-VER-10RE	soil	7/6/95	NA	NA	NA	NA	NA	7/18/95	7/20/95	7/22/95

NA - Not Applicable

HOLDING TIMES cont.

Criteria

Volatiles	(Vol. 2, Exhibit D, Part II, Section 2.1)
Unpreserved waters:	Analyzed within 7 days of VTSR.
Preserved waters:	Analyzed within 10 days of VTSR.
Soils:	Analyzed within 7 days of VTSR.
Semivolatiles	(Vol. 2, Exhibit D, Part III, Section 3)
Waters:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Soils:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Pesticide/PCBs	(Vol. 2, Exhibit D, Part IV, Section 3)
Waters by Sepf:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Waters by Conc:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Soils:	Extraction started within 5 days and completed within 10 days of VTSR, and analyzed within 40 days of extraction.

Actions

If holding times are exceeded by less than 14 days, all positive results are estimated (J) and all nondetects are estimated (UJ).

If holding times are exceeded by more than 14 days but less and 28 days, all positive results are estimated (J) and the nondetects may be estimated (UJ) or rejected (R) based on the reviewers professional judgment.

If holding times are exceeded by more than 28 days, all positive results are estimated (J) and all nondetects are rejected (R).

All actions are described below.

Comments

All holding times were met for all analyses with the exception of samples OWL-VER-01RE and OWL-VER-10RE for PCB analyses. These samples were reextracted 11 days from VSTR due to method blank contamination. However, no actions were required as the original samples (OWL-VER-01 and OWL-VER-10) were extracted within holding time and were reported on the data summary sheets.

SYSTEM MONITORING COMPOUND (SMC)/SURROGATE SPIKE RECOVERIES

Listed below are the SMC/surrogate spike recoveries which did not meet criteria stated on Forms 2A through 2F.

Sample ID/Matrix	Base/Neutrals				Acids				Pest/PCBs			
	NBZ	FBP	TPH	DCB[1]	PHL	2FP	TBP	2CP	TCX Col 1	TCX Col 2	DCB[2] Col 1	DCB[2] Col 2
MSB (soil)			*151*									
MSBD (soil)		*116*										
PBLK10 (aqueous)										*56*		
MSB10 (aqueous)											*45*	*37*
MSBD10 (aqueous)											*57*	*46*
MW-536-16 (aqueous)												*56*
PBLK12 (soil)										*52*		
Criteria: water	*35-114*	*43-116*	*33-141*	*16-110*	*10-110**	*21-110*	*10-123*	*33-110**	*60-150**	*60-150**	*60-150**	*60-150**
soil	*23-120*	*30-115*	*18-137*	*20-130*	*24-113**	*25-121*	*19-122*	*20-130**	*60-150**	*60-150**	*60-150**	*60-150**

TOL - toluene-d_8
NBZ - nitrobenzene-d_5
PHL - phenol-d_5
TBP - 2,4,6-tribromophenol
DCB[2] - decachlorobiphenyl

BFB - bromofluorobenzene
FBP - 2-fluorobiphenyl
2FP - 2-fluorophenol
2CP - 2-chlorophenol-d_4

DCE - 1,2-dichloroethane-d_4
TPH - terphenyl-d_{14}
DCB[1] - 1,2-dichlorobenzene-d_4
TCX - tetrachloro-m-xylene

* - Advisory QC Limits

SYSTEM MONITORING COMPOUND (SMC)/SURROGATE SPIKE RECOVERIES cont.

Criteria

As stated on Forms 2A through 2F and in Vol. 2, Exhibit D, Part II, Section 10.9 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.5 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 13.6 for pesticide/PCBs.

Actions

Actions, as described below, are applied to sample results if one volatile SMC, two or more base/neutral surrogates, two or more acid surrogates, or both pesticide/PCB surrogates percent recovery (%R) fall outside of the QC limits but have recoveries which are >10% and/or if any one surrogate in a fraction has a recovery of <10%.

If one or more SMC or surrogate recoveries are <10%, qualify the positive results as estimated (J) and the nondetect results are unusable (R) in the associated fraction.

If surrogate recoveries are >10% and <QC limit, qualify the positive and nondetect results as estimated (J and UJ, respectively) in the associated fraction.

If surrogate recoveries are >QC limit, qualify the positive results as estimated (J) and accept the nondetect results as reported by the laboratory in the associated fraction.

Comments

system monitoring compound (SMC) spike recovery criteria were met for the volatile organic samples; therefore, no actions were required.

The recoveries for the TCX surrogate for aqueous sample MW-536-16 was low on column 2 (DB1701). The sample did not require qualification due to low surrogate recovery because the recoveries for both DCB surrogates and TCX on column 1 (DB608) were acceptable.

There were no actions required for the matrix spike blanks/duplicates (MSB, MSB10, MSBD and MSBD10) and the method blanks (PBLK10 and PBLK12), since these analyses were for QC purposes only.

MATRIX SPIKE BLANK (MSB)

Listed below are the percent recoveries (%R) of compounds which did not meet the criteria stated on Forms 3A-MSB through 3F-MSB.

Sample ID	Fraction	Compound	%R	QC Limits

Criteria

As stated on Forms 3A-MSB through 3F-MSB and in Vol. 2, Exhibit D, Part II, Section 10.10 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.6 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 15.2 for pesticide/PCBs.

Actions

No action is taken based on MSB data alone. However, using informed professional judgment, the MSB results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

Comments

The MSB criteria were met for all volatile, semivolatile and PCB compounds; therefore, no actions were required. A matrix spike blank duplicate (MSBD) was analyzed for all analyses for both soil and aqueous samples with the exception of the soil volatile analyses. All MSBDs met recovery (%R) criteria. Also the precision, measured as relative percent difference (RPD), between the MSB/MSBD results met MS precision criteria.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

V A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) - spiked compounds

Listed below are the percent recoveries (%R) and relative percent differences (RPDs) of compounds which did not meet the criteria stated on Forms 3A through 3F.

Sample ID	Fraction	Compound	%R	QC Limits

Criteria

As stated on Forms 3A through 3F and in Vol. 2, Exhibit D, Part II, Section 10.10 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.6 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 16 for pesticide/PCBs.

Actions

No action is taken based on MS/MSD data alone. However, using informed professional judgment, the MS/MSD results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

Comments

There were no MS/MSD analyses associated with the samples in this SDG; therefore, percent recoveries (%R) and relative percent differences (RPD), relative to sample matrix, could not be evaluated. Percent recoveries and relative percent differences, relative to laboratory performance, could be evaluated on the MSB/MSBD sample results. All compound results in the MSB and MSBD met %R and RPD criteria.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) - nonspiked compounds

Listed below are the concentrations of the nonspiked compounds detected in the sample, MS and MSD, and the calculated percent relative standard deviation (%RSD) between the concentrations.

Sample ID	Fraction	Compound	Concentrations (mg/Kg)			%D
			Sample	MS	MSD	
MSBD (soil)	*volatile*	*xylene (total)*		*0.8 µg/Kg*	*nondetect (10 U)*	*200 %*

Criteria

The precision between the nonspiked compound concentrations in the sample, MS, and MSD should be <100 %RSD. (EPA Region II)

Actions

If any nonspiked compounds have a %RSD >100, estimate (J) the positive results for those compounds in the sample. If any nonspiked compounds are reported in the MS and/or MSD at concentrations ≥ CRQL but are not detected in the sample, estimate (UJ) the nondetect results for those compounds in the sample.

Comments

The xylene (total) result in the MSB soil sample result was <10 % of the CRQL; therefore, the result was considered nondetect due to uncertainty in the result quantitation. The result was raised to the CRQL and qualified with a "U". No further actions were required.

BLANK ANALYSIS RESULTS and ACTION LEVELS

Listed below are the contaminants detected in the laboratory, field, equipment, and/or trip blanks. Trip blanks are analyzed for volatile organics only.

Laboratory Blanks

Sample ID	Matrix/Level	Fraction	Compound	Conc. Units (mg/Kg)	Blank Action Level (µg/kg)	Blank Action Level (mg/kg)	Associated Samples
PBLK11	soil/low	PCB	Aroclor-1248	32	-	160	OWL-VER-01 and OWL-VER-10
PBLK11	soil/low	PCB	Aroclor-1260	3.7	-	18.5	OWL-VER-01 and OWL-VER-10
PBLK12	soil/low	PCB	Aroclor-1254	6.1	-	30.5	OWL-VER-01RE and OWL-VER-10RE
PBLK12	soil/low	PCB	Aroclor-1260	2.7	-	13.5	OWL-VER-01RE and OWL-VER-10RE

Field, Equipment, and Trip Blanks

Sample ID	Blank Type	Fraction	Compound	Conc. Units (µg/L)	Blank Action Level (µg/kg)	Blank Action Level (mg/kg)	Associated Samples
MW-536-16	Rinsate blank	PCB	Aroclor-1260	0.12	4.0	20.0	OWL-VER-01, OWL-VER-10, OWL-VER-01RE and OWL-VER-10RE

BLANK ANALYSIS RESULTS and ACTION LEVELS cont.

Criteria

Blank action levels for each contaminant are calculated as 10 times the concentration for common contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates) and 5 times the concentration for all other contaminants. The blank action levels are compared to sample values after application of sample amount, dilution, and dry weight factors. (EPA Region II)

Actions

If the concentration of a compound is less than the CRQL and the associated blank action level, then the compound is considered not detected. Report the CRQL qualified with a "U".

If the concentration of a compound is greater than the CRQL, but less than the associated blank action level, then the compound is considered not detected. Report the result qualified with a "U".

If the concentration is greater than the blank action level, no action is required. Report the result unqualified. Blank actions do not apply to trip, rinsate, or equipment blank samples.

Comments

Sample MW-536-16 was the rinsate blank and sample MW-536-17 was the trip blank associated with the samples in this SDG.

There was no evidence of laboratory or field blank contamination for the volatile and semivolatile organic compounds; therefore, no actions were required.

The positive Aroclor-1248 result in sample OWL-VER-01 was detected at a concentration greater than the CRQL but less than the blank action level. The Aroclor-1248 result in sample OWL-VER-10 was detected at a concentration less than the CRQL and less than the blank action level. Both soil samples were reextracted and reanalyzed due to method blank contamination. The method blank associated with the reextracted samples (OWL-VER-01RE and OWL-VER-10RE), was not detected for Aroclor-1248. The reextracted samples confirmed the positive Aroclor-1248 results in the original samples; however, the reextracted samples were not reported on the data summary sheets due to holding time exceedances and retention time shifts. The original samples (OWL-VER-01 and OWL-VER-10) were reported on the data summary sheets and qualified (J) due to potential high bias from blank contamination

GCS/MS TUNING

Listed below are the bromofluorobenzene (BFB) and/or decafluorotriphenylphosphine (DFTPP) GC/MS tuning standards which did not meet the ion abundance/mass assignment criteria stated on Forms 5A and 5B.

BFB/DFTPP ID	Date/Time of Analysis	Outlier	Associated Samples

Listed below are the samples which were analyzed greater than 12 hours after a preceding BFB or DFTPP tuning standard.

Sample ID	Date/Time of Analysis	BFB/DFTPP ID	Date/Time of Analysis

Criteria

As stated on Forms 5A and 5B, and in Vol 2., Exhibit D, Part II, Section 6.4 for BFB and Vol 2., Exhibit D, Part III, Section 4.3 for DFTPP.

tions

If the mass assignment is in error, qualify all associated data as unusable (R).

If the ion abundance criteria are not met, professional judgment may be applied to determine to what extent the data may be utilized. The reviewer should refer to the expanded ion abundance criteria in EPA's "Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses" (February 1, 1988) for additional guidance. If necessary, qualify all associated data as unusable (R).

If samples are analyzed outside of an acceptable 12 hour calibration interval, qualify all results as unusable (R).

Comments

The BFB and DFTPP tuning standards were analyzed at the required frequencies and the ion abundance criteria were met. All samples were analyzed within 12 hours of the associated tuning standard.

II. CALIBRATION VERIFICATION

VIII A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration: 6/28/95
Date(s) of Continuing Calibrations: 7/6/95
Instrument ID: 150G
Matrix/Level: soil/low

Date	Criteria Out RF, %RSD, %D	Compound	Value	Associated Samples
7/6/95	%D	bromomethane	-34.5	OWL-VER-01 and OWL-VER-10
7/6/95	%D	chloroethane	-48.2	OWL-VER-01 and OWL-VER-10
7/6/95	%D	acetone	61.0	OWL-VER-01 and OWL-VER-10
7/6/95	%D	2-butanone	48.9	OWL-VER-01 and OWL-VER-10
7/6/95	%D	4-methyl-2-pentanone	33.6	OWL-VER-01 and OWL-VER-10
7/6/95	%D	2-hexanone	50.6	OWL-VER-01 and OWL-VER-10

Note: A separate worksheet should be filled out for each initial curve.

Date of Initial Calibration: 6/28/95
Date(s) of Continuing Calibrations: 7/7/95
Instrument ID: 150K
Matrix/Level: aqueous/low

Date	Criteria Out RF,%RSD, %D	Compound	Value	Associated Samples
7/7/95	%D	2-hexanone	26.8	MW-536-16 and MW-536-17

Note: A separate worksheet should be filled out for each initial curve.

: retention times (RT) outside of the retention time windows (RTW)

RT for TCX	RT for DCB
8.25	
8.25	
8.25	
8.26	
8.26	
8.26	
8.26	
8.26	
8.26	
8.26	
8.26	
8.26	
8.26	28.64
8.25	
9.96	29.98
9.96	29.98
9.96	30.00
9.97	30.00
9.97	
9.97	30.00
9.97	30.00
9.97	30.00
9.97	30.00
9.97	
9.97	
9.97	29.99
9.96	29.98
9.96	29.98
8.27-8.37	28.65-28.85
9.98-10.08	30.01-30.21

RPD

results as

(J and UJ,

usable (R),

none results
536-17 were

qualify

not be

C. PERFORMANCE EVALUATION MIXTURES

If any QC criteria (RPDs or %breakdown) have failed in either of the PEMs associated with the initial calibration (step 2 or 17), then all samples are potentially affected. Therefore, qualify all sample results in the entire analytical sequence as described in the ACTIONS Sections below. If the QC criteria have failed in a PEM verification calibration, review data beginning with the samples which followed the last in-control standard until the next acceptable PEM and qualify the data as described in the ACTIONS sections below.

Relative Percent Difference (RPD)
Listed below are the compounds in the PEMs and the continuing calibration Aroclors which did not meet the RPD criteria of ≤25.

Standard ID	Column	Compound	RPD	Peak #	Associated Samples
AR124807	*DB608*	*Aroclor-1248*	*31.0*	*1*	*MW-536-16, OWL-VER-01 and OWL-VER-10*
AR125407	*DB608*	*Aroclor-1254*	*29.0*	*1*	*MW-536-16, OWL-VER-01 and OWL-VER-10*
AR125407	*DB608*	*Aroclor-1254*	*30.0*	*2*	*MW-536-16, OWL-VER-01 and OWL-VER-10*
AR166007	*DB608*	*Aroclor-1016*	*39.0*	*1*	*MW-536-16, OWL-VER-01 and OWL-VER-10*
AR124808	*DB608*	*Aroclor-1248*	*30.0*	*2*	*MW-536-16, OWL-VER-01, OWL-VER-01RE, OWL-VER-10, and OWL-VER-10RE*
AR126608	*DB608*	*Aroclor-1016*	*67.0*	*1*	*MW-536-16, OWL-VER-01, OWL-VER-01RE, OWL-VER-10, and OWL-VER-10RE*
AR126608	*DB608*	*Aroclor-1016*	*28.0*	*2*	*MW-536-16, OWL-VER-01, OWL-VER-01RE, OWL-VER-10, and OWL-VER-10RE*
R126608	*DB608*	*Aroclor-1016*	*46.0*	*3*	*MW-536-16, OWL-VER-01, OWL-VER-01RE, OWL-VER-10, and OWL-VER-10RE*
R125408	*DB1701*	*Aroclor-1254*	*39.5*	*1*	*MW-536-16, OWL-VER-01, OWL-VER-01RE, OWL-VER-10, and OWL-VER-10RE*
PEM11	*DB1701*	*4,4'-DDT*	*29.0*	*-*	*MW-536-16, OWL-VER-01, OWL-VER-01RE, OWL-VER-10, and OWL-VER-10RE*

Criteria

The relative percent differences (RPDs) between the nominal and calculated concentrations in the performance evaluation mixture should be ≤25%.

Actions

If any RPDs exceed 25%, qualify all positive and nondetect results for those compounds as estimated (J and UJ, respectively).

Comments

Continuing calibration Aroclor standards were analyzed within the analytical sequence. However, no actions were taken since only one peak was not within criteria for each column where the sample results were positive. No actions were taken for the PEM result which did not meet recovery criteria as the samples were reported for PCBs only and the recovery of the pesticide standard would not affect the PCB results.

Only the initial calibration standards and the continuing calibration standards (including Aroclor standards) which bracketed the samples were verified for RPD criteria.

C. PERFORMANCE EVALUATION MIXTURES cont.

DDT and Endrin Degradation

Listed below are the standards which have DDT or Endrin breakdown of greater than 20% or combined breakdown greater than 30%.

Standard ID	DDT/Endrin	% Breakdown	Samples Affected	Breakdown Compounds Present

Criteria

The percent breakdown of DDT or endrin should be less than 20% and the combined breakdown of DDT and endrin should be less than 30% in the Performance Evaluation Mixtures (PEMs). (Vol 2, Exhibit D, Part IV, Section 9.2.3)

Actions

If the breakdown for DDT is greater than 20%:

- Qualify all positive results for DDT as estimated (J). If DDT was not detected, but DDD and/or DDE are positive, then qualify the nondetect result for DDT as unusable (R).
- Qualify positive results for DDE and/or DDE as presumptively present at an estimated quantity (JN).

If the breakdown for Endrin is greater than 20%:

- Qualify all positive results for Endrin as estimated (J). If Endrin was not detected, but Endrin aldehyde and/or Endrin ketone are positive, qualify the nondetect result for Endrin as unusable (R).
- Qualify all positive results for Endrin ketone and Endrin aldehyde as presumptively present at an estimated quantity (JN).

If the combined DDT and Endrin breakdown is greater than 30%:

- Qualify all positive results for DDT and endrin as estimated (J). If DDT was not detected, but DDD and/or DDE are positive, then qualify the nondetect result for DDT as unusable (R). If endrin was not detected, but endrin aldehyde and/or endrin ketone are positive, qualify the nondetect result for endrin as unusable (R).
- Qualify positive results for DDE, DDE, endrin aldehyde and/or endrin ketone as presumptively present at an estimated quantity (JN).

Comments

The endrin and DDT standards met % breakdown criteria; therefore, no actions were taken.

D. ANALYTICAL SEQUENCE

Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and have all samples been injected within 12 hours of an instrument blank? (Vol 2., Exhibit D, Part IV, Sections 6 and 7) yes

If no, use professional judgment to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered or the calibration was also out of limits.

Comments

A one point calibration was performed for each Aroclor. All positive Aroclor sample results were verified by analysis of a standard within 72 hours of the sample analysis as required by the method.

3. SURROGATE RETENTION TIMES

Listed below are the samples which have the surrogate retention times (RT) outside of the retention time windows (RTW) established during the initial calibration.

Sample ID	Column	RT for TCX	RT for DCB
AR124208	*DB608*	*8.25*	
AR124808	*DB608*	*8.25*	
AR125408	*DB608*	*8.25*	
AR166008	*DB608*	*8.26*	
PIBLK19	*DB608*	*8.26*	
PEM12	*DB608*	*8.26*	
PIBK12	*DB608*	*8.26*	
MSB12	*DB608*	*8.26*	
MSBD12	*DB608*	*8.26*	
OWL-VER-01RE	*DB608*	*8.26*	
OWL-VER-10RE	*DB608*	*8.26*	
PIBLK20	*DB608*	*8.26*	
INDAM09	*DB608*	*8.26*	*28.64*
INDBM09	*DB608*	*8.25*	
AR124208	*DB1701*	*9.96*	*29.98*
AR124808	*DB1701*	*9.96*	*29.98*
AR125408	*DB1701*	*9.96*	*30.00*
AR166008	*DB1701*	*9.97*	*30.00*
PIBLK19	*DB1701*	*9.97*	
PEM12	*DB1701*	*9.97*	*30.00*
PIBLK12	*DB1701*	*9.97*	*30.00*
MSB12	*DB1701*	*9.97*	*30.00*
MSBD12	*DB1701*	*9.97*	*30.00*
OWL-VER-01RE	*DB1701*	*9.97*	
OWL-VER-10RE	*DB1701*	*9.97*	
PIBLK20	*DB1701*	*9.97*	*29.99*
INDAM09	*DB1701*	*9.96*	*29.98*
INDBM09	*DB1701*	*9.96*	*29.98*
RTW Criteria: DB608		8.27-8.37	28.65-28.85
DB1701		9.98-10.08	30.01-30.21

teria

The RTs of both surrogates in each sample must be within the RTWs established during the initial calibration. (Vol 2., Exhibit D, Part IV, Section 14)

Actions

If the RTs are not met, the analysis may be qualified unusable (R) for that sample, based upon the professional judgment of the reviewer.

Comments

The PCBs were identified through pattern recognition rather than retention times. However, due to the many surrogates which shifted in retention times, the sample chromatograms were evaluated through pattern recognition for possible compound misidentification and false negative results. Due to holding time violations, a number of compound retention time shifts in the standards and surrogates retention time shifts in the samples, OWL-VER-01RE and OWL-VER-10RE were not reported. The original samples (OWL-VER-01 and OWL-VER-10) were reported on the data summary sheets due to compliant holding times and retention times.

Only the initial calibration standards and the continuing calibration standards which bracketed the samples were verified for retention time shifts.

F. RESOLUTION CHECK MIXTURE

Is the resolution between any two adjacent peaks in the Resolution Check Mixture >60% for both columns? (Vol 2., Exhibit D. Part IV. Section 6.2.2) yes

If no, positive results for compounds that were not adequately resolved should be qualified as estimated (J). Use professional judgment to determine if nondetects which elute in areas affected by coeluting peaks should be qualified as presumptively present (N) or unusable (R).

Comments

The resolution check mixture met resolution criteria; therefore, no actions were required.

XI G. FLORISIL CARTRIDGE CHECK

Are the percent recoveries of the pesticide and surrogate compounds used to check the efficiency of the cleanup procedures within the QC limits of 80-120%? (Vol 2., Exhibit D, Part IV, Section 7.3.1) yes

If recoveries are <80%, qualify positive and nondetects results for those compounds as estimated (J and UJ, respectively). If any compound is not recovered, qualify the nondetect result for that compound as unusable (R). Use professional judgment to qualify positive results if recoveries are greater than the 120%.

Comments

Florisil cartridge cleanup met recovery criteria for all compounds; therefore, no actions were required.

XI H. GPC CALIBRATION CHECK

Are the percent recoveries of the pesticide and surrogate compounds used to check the efficiency of the cleanup procedures within the QC limits of 80-110%? (Vol 2., Exhibit D, Part IV, Section 7.1.4.4) yes

If recoveries are <80%, qualify positive and nondetects results for those compounds as estimated (J and UJ, respectively). If any compound is not recovered, qualify the nondetect result for that compound as unusable (R). Use professional judgment to qualify positive results if recoveries are greater than 110%.

Comments

GPC recovery criteria were met for all compounds; therefore, no actions were required.

XII. COMPOUND IDENTIFICATION and QUANTITATION

XII A. IDENTIFICATION

Volatiles and Semivolatiles

Are the lab-generated standard and sample mass spectra of the identified volatile and semivolatile compounds present for each sample? *yes*

Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?
yes

Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum? *yes*

Do sample and standard relative ion intensities agree within 20%? *yes*

Actions

Use professional judgment to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be qualified as unusable (R) or presumptively present (N), or considered nondetect (U) at the calculated detection limit.

When sample carry-over is a possibility, professional judgment should be used to determine if instrument cross-contamination has affected any positive compound identifications.

Comments

Trichloroethane and tetrachloroethane in sample OWL-VER-01 and benzo(a)anthracene and chrysene in sample OWL-VER-10 were quantitated at values less than 10% of the CRQL. Due to uncertainty in the laboratory's ability to detect the compounds at this level, the results were considered to be not detected, raised to the CRQL, and qualified with a "U".

V. A. IDENTIFICATION cont.

Pesticides

Are the retention times for the compounds reported in each sample within the established RT windows on both columns?
NA

If no, qualify all positive results which were not confirmed on the second GC column analysis as unusable (R).

Specific retention times do not apply to PCBs as the compounds are identified by pattern recognition.

Has every compound confirmed on a second GC column been reported? *yes*

If no, contact the laboratory for resubmittals.

Actions

Use professional judgment to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be qualified as unusable (R) or considered nondetect (U) at the calculated detection limit.

Comments

NYSDEC ASP requires PCB results to be quantitated using a minimum of three peaks per column. Nonetheless, the laboratory reported Aroclor-1260 results in samples MW-536-16, and method blanks PBLK11 and PBLK12; and a Aroclor-1254 result in method blank PBLK12 that were confirmed on the second column using less than three quantitation peaks. This occurred because the peak-area reject threshold was set high eliminating many smaller PCB peaks from the sample quantitation report, even though the peaks were visible on the sample chromatograms. The PCB identifications were confirmed by comparison of standard vs. sample chromatograms

II A. IDENTIFICATION cont.

Pesticides

Listed below are the positive sample results which have >25 %D between the concentrations from the two columns.

Sample ID	Compound	%D
OWL-VER-01RE	*Aroclor-1248*	*25.7*
OWL-VER-10	*Aroclor-1248*	*84.0*
OWL-VER-10RE	*Aroclor-1248*	*84.2*
PIBLK11	*Aroclor-1248*	*40.6*
PIBLK11	*Aroclor-1260*	*27.0*
PIBLK12	*Aroclor-1260*	*125.9*

Action

If the percent difference is >25 but <50, qualify the positive results as estimated (J).
If the %D is >50 but <90, qualify the positive result as presumptively present and estimated (JN).
If the percent difference is >90, qualify the results as unusable (R). (EPA Region II)

Comments

Sample OWL-VER-10 should have been estimated for % D greater than 25%; however , the result was previously qualified (J) due to blank contamination. No further actions were taken.

The remaining samples were either not reported on the data summary sheets or were QC blanks and thus no actions were required.

B. QUANTITATION

Calculations

Did the laboratory perform all sample concentration calculations according to the method requirements? yes

If no, contact the laboratory for resubmittals.

Shown below are examples of at least one sample calculation per fraction:

Volatile

OWL-VER-01 (Methylene chloride)

$$C_c = \frac{A_c \times C_{is} \times V_{is}}{A_{is} \times RF \times 5} \times \frac{100}{\%\ solids}$$

$$C_c = \frac{1480 \times 50 \times 5}{34022 \times 1.168 \times 5} \times \frac{100}{93.0}$$

$$C_c = 2.0\ \mu g / kg$$

Matrix Spike Blank (Trichloroethene)

$$C_c = \frac{A_c \times C_{is} \times V_{is}}{A_{is} \times RF \times 5}$$

$$C_c = \frac{93161 \times 50 \times 5}{191424 \times 0.461 \times 5}$$

$$C_c = 53\ \mu g / L$$

Semivolatile

OWL-VER-10 (Anthracene)

$$C_c = \frac{A_c \times C_{is} \times V_f \times DF \times 2}{A_{is} \times RF \times V_i \times W_s} \times \frac{100}{\%\ solids}$$

$$C_c = \frac{66197 \times 40 \times 5000 \times 2}{895280 \times 1.1184 \times 40.14 \times 2} \times \frac{100}{93.0}$$

$$C_c = 35\ \mu g / kg$$

Matrix Spike Blank (Trichloroethene)

$$C_c = \frac{A_c \times C_{is} \times V_t \times DF}{A_{is} \times RF \times V_o \times V_i}$$

$$C_c = \frac{1227581 \times 40 \times 1000}{583059 \times 1.1154 \times 2 \times 1000}$$

$$C_c = 38\ \mu g / L$$

3s

()WL-VER-10 Arocior-1248 (column 1)

peak #1

$$C_c = \frac{A_c \times V_f \times 2}{CF_{mp} \times W_s \times 1} \times \frac{100}{\%\ solids}$$

$$C_c = \frac{62730 \times 5000 \times 2}{569900 \times 30 \times 1} \times \frac{100}{95.0}$$

$$C_c = 38.6\ \mu g / kg$$

peak #2

$$C_c = \frac{A_c \times V_f \times 2}{CF_{mp} \times W_s \times 1} \times \frac{100}{\%\ solids}$$

$$C_c = \frac{69008 \times 5000 \times 2}{548730 \times 30 \times 1} \times \frac{100}{95.0}$$

$$C_c = 44.1\ \mu g / kg$$

peak #3

$$C_c = \frac{A_c \times V_f \times 2}{CF_{mp} \times W_s \times 1} \times \frac{100}{\%\ solids}$$

$$C_c = \frac{108246 \times 5000 \times 2}{679020 \times 30 \times 1} \times \frac{100}{95.0}$$

$$C_c = 55.9\ \mu g / kg$$

Average of PCB peaks

$$\bar{x} = \frac{38.6 + 44.1 + 55.9}{3}$$

$$\bar{x} = 46\ \mu g / kg$$

B. QUANTITATION cont.

CRQLs

Did the laboratory meet the required CRQLs? *yes*

Are the CRQLs adjusted to reflect sample dilution and, for soils, percent moisture? *no*

Comments

The CRQLs for the semivolatile compounds were not adjusted for sample weight and percent solids. However, no actions were taken because the adjusted CRQLs, based on sample weight and percent solids were lower than the reported CRQLs of 300 µg/kg.

Sample Dilution

The following samples required dilution due to target compounds outside of the calibration range or matrix interference:

Not applicable

Comments

No samples required dilution due to target compounds outside of the calibration range or matrix interferences.

Percent Moisture

Listed below are soil samples which contain greater than 50% moisture.

Sample ID	%Moisture

Actions

If any sample analyzed as a soil contains 50%-90% water, all data should be qualified as estimated (J). If a soil sample contains more than 90% water, all data should be qualified as unusable (R). (EPA Region II)

Comments

All soil samples were less than 50% moisture; therefore, no actions were required.

I. TENTATIVELY IDENTIFIED COMPOUNDS (TIC) SUMMARY

Listed below is a summary of the TICs detected in the volatile and semivolatile sample analyses.

Sample ID	TICS										

Use professional judgment to determine acceptability of TIC identification. If it is determined that incorrect identifications were made, change the identification to "unknown" or to some less specific identification, as appropriate.

Comments

ntatively identified compounds were not reported by the laboratory and were not a requirement of the project.

V. OVERALL APPRAISAL

A. Actions Taken/Usability

The nondetect results for bromomethane, chloroethane, acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone results in samples OWL-VER-01 and OWL-VER-10 and the 2-hexanone results in samples MW-536-16 and MW-536-17 were estimated (UJ) due to uncertainty in the compound quantitation as indicated by variable instrument response. These results are usable as estimated quantitation limits.

The nondetect results for dibenzo(a,h)anthracene results in samples MW-536-16, OWL-VER-01, and OWL-VER-10 were estimated (UJ) due to uncertainty in the compound quantitation as indicated by variable instrument response. These results are usable as estimated quantitation limits

The positive Aroclor-1248 result in sample OWL-VER-01 was detected at a concentration greater than the CRQL but less than the blank action level. The Aroclor-1248 result in sample OWL-VER-10 was detected at a concentration less than the CRQL and less than the blank action level. The positive results were estimated due to a possible high bias as a result of method blank contamination. These results are usable as estimated values.

Trichloroethane and tetrachloroethane in sample OWL-VER-01 and benzo(a)anthracene and chrysene in sample OWL-VER-10 were quantitated at values less than 10% of the CRQL. Due to uncertainty in the laboratory's ability to detect the compounds at this level, the results were considered to be not detected, raised to the CRQL, and qualified with a "U".

Non-compliance

Volatile, semivolatile and PCB analyses were performed according to the specified methods. The data package was complete and compliant with the exception of the example calculations which were not included.

ATTACHMENT I

DATA SUMMARY TABLES

VOLATILE ORGANICS ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	OWL-VER-01	OWL-VER-10						
Laboratory ID	A5361001	A5361004						
Date Sampled	7/5/95	7/5/95						
Date Analyzed	7/6/95	7/6/95						
Percent Solids	93	94						
Dilution Factor	1.0	1.0						
Remarks								
Chloromethane	10 U	10 U						
Bromomethane	10 UJ	10 UJ						
Vinyl chloride	10 U	10 U						
Chloroethane	10 UJ	10 UJ						
Methylene chloride	2 J	2 J						
Acetone	10 UJ	10 UJ						
Carbon disulfide	10 U	10 U						
1,1-Dichloroethene	10 U	10 U						
1,1-Dichloroethane	10 U	10 U						
1,2-Dichloroethene (total)	10 U	10 U						
Chloroform	10 U	10 U						
1,2-Dichloroethane	10 U	10 U						
2-Butanone	10 UJ	10 UJ						
1,1,1-Trichloroethane	10 U	10 U						
Carbon tetrachloride	10 U	10 U						
Bromodichloromethane	10 U	10 U						
1,2-Dichloropropane	10 U	10 U						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

VALIDATED: 11/20/95

VOLATILE ORGANIC ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	OWL-VER-01	OWL-VER-10						
Laboratory ID	A5361001	A5361004						
Date Sampled	7/5/95	7/5/95						
Date Analyzed	7/6/95	7/6/95						
Percent Solids	93	94						
Dilution Factor	1.0	1.0						
Remarks								
cis-1,3-Dichloropropene	10 U	10 U						
Trichloroethene	10 U	10 U						
Dibromochloromethane	10 U	10 U						
1,1,2-Trichloroethane	10 U	10 U						
Benzene	10 U	10 U						
trans-1,3-Dichloropropene	10 U	10 U						
Bromoform	10 U	10 U						
4-Methyl-2-pentanone	10 UJ	10 UJ						
2-Hexanone	10 UJ	10 UJ						
Tetrachloroethene	10 U	10 U						
Toluene	2 J	10 U						
1,1,2,2-Tetrachloroethane	10 U	10 U						
Chlorobenzene	10 U	10 U						
Ethylbenzene	10 U	10 U						
Styrene	10 U	10 U						
Xylene (total)	10 U	10 U						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

File: SDV006.XLS

VOLATILE ORGANIC ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	MW-536-16	MW-536-17						
Laboratory ID	A5361002	A5361003						
Date Sampled	7/5/95	7/5/95						
Date Analyzed	7/7/95	7/7/95						
Dilution Factor	1.0	1.0						
Remarks	Rinsate Blank	Trip Blank						
Chloromethane	10 U	10 U						
Bromomethane	10 U	10 U						
Vinyl chloride	10 U	10 U						
Chloroethane	10 U	10 U						
Methylene chloride	10 U	10 U						
Acetone	10 U	10 U						
Carbon disulfide	10 U	10 U						
1,1-Dichloroethene	10 U	10 U						
1,1-Dichloroethane	10 U	10 U						
1,2-Dichloroethene (total)	10 U	10 U						
Chloroform	10 U	10 U						
1,2-Dichloroethane	10 U	10 U						
2-Butanone	10 U	10 U						
1,1,1-Trichloroethane	10 U	10 U						
Carbon tetrachloride	10 U	10 U						
Bromodichloromethane	10 U	10 U						
1,2-Dichloropropane	10 U	10 U						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

VALIDATED: 11/20/95

VOLATILE ORG...IC ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	MW-536-16	MW-536-17						
Laboratory ID	A5361002	A5361003						
Date Sampled	7/5/95	7/5/95						
Date Analyzed	7/7/95	7/7/95						
Dilution Factor	1.0	1.0						
Remarks	Rinsate Blank	Trip Blank						
cis-1,3-Dichloropropene	10 U	10 U						
Trichloroethene	10 U	10 U						
Dibromochloromethane	10 U	10 U						
1,1,2-Trichloroethane	10 U	10 U						
Benzene	10 U	10 U						
trans-1,3-Dichloropropene	10 U	10 U						
Bromoform	10 U	10 U						
4-Methyl-2-pentanone	10 U	10 U						
2-Hexanone	10 UJ	10 UJ						
Tetrachloroethene	10 U	10 U						
Toluene	10 U	10 U						
1,1,2,2-Tetrachloroethane	10 U	10 U						
Chlorobenzene	10 U	10 U						
Ethylbenzene	10 U	10 U						
Styrene	10 U	10 U						
Xylene (total)	10 U	10 U						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

File: SDV005.XLS

VALIDATED: 11/20/95

SEMIVOLATILE ORGANIC ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	OWL-VER-01	OWL-VER-10						
Laboratory ID	A5361001	A5361004						
Date Sampled	7/5/95	7/5/95						
Date Extracted	7/7/95	7/7/95						
Date Analyzed	7/11/95	7/11/95						
Percent Solids	94	94						
Dilution Factor	1.0	1.0						
Remarks								
Acenaphthene	300 U	300 U						
Acenaphthylene	300 U	300 U						
Anthracene	300 U	35 J						
Benzo(a)anthracene	300 U	300 U						
Benzo(b)fluoranthene	300 U	300 U						
Benzo(k)fluoranthene	300 U	300 U						
Benzo(g,h,i)perylene	300 U	300 U						
Benzo(a)pyrene	300 U	300 U						
Chrysene	300 U	300 U						
Dibenzo(a,h)anthracene	300 UJ	300 UJ						
Fluoranthene	300 U	300 U						
Fluorene	300 U	300 U						
Indeno(1,2,3-cd)pyrene	300 U	300 U						
2-Methylnaphthalene	300 U	300 U						
Naphthalene	300 U	300 U						
Phenanthrene	300 U	72 J						
Pyrene	300 U	60 J						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

File: SDV004.XLS

SEMIVOLATILE C .IIC ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	MW-536-16							
Laboratory ID	A5361002							
Date Sampled	7/5/95							
Date Extracted	7/7/95							
Date Analyzed	7/11/95							
Dilution Factor	1.0							
Remarks	Rinsate Blank							
Acenaphthene	10 U							
Acenaphthylene	10 U							
Anthracene	10 U							
Benzo(a)anthracene	10 U							
Benzo(b)fluoranthene	10 U							
Benzo(k)fluoranthene	10 U							
Benzo(g,h,i)perylene	10 U							
Benzo(a)pyrene	10 U							
Chrysene	10 U							
Dibenzo(a,h)anthracene	10 UJ							
Fluoranthene	10 U							
Fluorene	10 U							
Indeno(1,2,3-cd)pyrene	10 U							
2-Methylnaphthalene	10 U							
Naphthalene	10 U							
Phenanthrene	10 U							
Pyrene	10 U							

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

PCB . /SIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	OWL-VER-01	OWL-VER-10						
Laboratory ID	A5361001	A5361004						
Date Sampled	7/5/95	7/5/95						
Date Extracted	7/7/95	7/7/95						
Date Analyzed	7/12/95	7/12/95						
Percent Solids	95	95						
Dilution Factor	1.0	1.0						
Remarks								
Aroclor-1016	34 U	35 U						
Aroclor-1221	70 U	71 U						
Aroclor-1232	34 U	35 U						
Aroclor-1242	34 U	35 U						
Aroclor-1248	43 J	25 J						
Aroclor-1254	34 U	35 U						
Aroclor-1260	30 J	35 U						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

VALIDATED: 11/20/95

PCB ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG OWLVE

Sample ID	MW-536-16							
Laboratory ID	A5361002							
Date Sampled	7/5/95							
Date Extracted	7/8/95							
Date Analyzed	7/11/95							
Dilution Factor	1.0							
Remarks	Rinsate Blank							
Aroclor-1016	1 U							
Aroclor-1221	2 U							
Aroclor-1232	1 U							
Aroclor-1242	1 U							
Aroclor-1248	1 U							
Aroclor-1254	1 U							
Aroclor-1260	0.12 J							

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

File: SDV001.XLS

ATTACHMENT II

LABORATORY'S CASE NARRATIVE

NYSDEC ASP
DATA VALIDATION REPORT
ORGANIC ANALYSES

Site: *Oily Waste Landfill Area, Alcoa - Massena* Laboratory: *RECRA Environmental, Inc.*

Case No: *5324* SDG: *VER02A*

Data Validation was performed by Gradient Corporation and completed under the guidelines set forth in the New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC-ASP), revised December 1991 and the Environmental Protection Agency (EPA) Region II's Standard Operating Procedure (SOP) for Contract Laboratory Program (CLP) Organics Data Review and Preliminary Review, January, 1992 (SOP No. HW-6, Rev. #8). The analytical protocols referenced throughout this report refer to the NYSDEC-ASP.

General Assessment

This case consisted of 9 soil samples, 1 field duplicate, 1 field blank, 1 rinsate blank, and 1 trip blank which were analyzed for volatile organic compounds (VOCs) by ASP91 analytical protocols. The data package was complete and legible with the following exceptions. The acetone spectrum for sample OWL-VER-11 was not included in the data packgage. It was unclear based on the BFB tune and continuing calibration forms if a heated purge was used for the soil samples. A resubmittal was requested on October 10, 1995 and was received at Gradient on October 18, 1995.

ll soil sample results for acetone, chloromethane, and 2-butanone were estimated (J and UJ) due to variable instrument response.

Section XI was not included in this checklist, as it pertains to pesticide/PCB analyses.

All results were considered usable for the project objectives.

Primary reviewer: Deborah A. Betts Date: 11/20/95

Senior reviewer: C. Date: 11/20/95

DATA COMPLETENESS

The following components were/were not present in the data package (Vol. 1, Exhibit B, Section D). Items marked with "N" will have further explanation following the checklist.

1. *Yes* NYSDEC Data Package Summary Forms

2. *Yes* Traffic Report - COC Forms

3. *Yes* Case Narrative

4. *Yes* Cover Page and Forms 1 through 8 for volatile and semivolatile analyses and/or Forms 1 through 4 and Forms 6 through 10 for pesticide/PCB analyses.

5. Yes Raw data supporting all sample analyses and quality control samples.

6. *Yes* Raw data supporting all calibration standard analyses

7. *Yes* Instrument Detection Limits (IDLs)

8. *No* Copy of calculation worksheet or formulas used to generate final results

9. *NA* Extraction logs

Y	-	present in data package
No	-	not present in data package
NA	-	not applicable

Comments

All required forms and supporting information were present in the data package with the following exceptions. The acetone spectrum for sample OWL-VER-11 was not included in the data package. It was unclear based on the BFB and continuing calibration forms if a heated purge was used for the soil samples. A resubmittal request regarding the above two items was sent to the laboratory on October 10, 1995 and received at Gradient on October 18, 1995.

No calculation worksheets or formulas used for final results were submitted in the data package. The volatile organic soil and aqueous result calculations were verifiable; therefore, no resubmittal was requested from the laboratory.

HOLDING TIMES

Listed below are the verified time of sample receipt (VTSR) and analysis date for each fraction of each sample associated with this data package.

Sample ID	Matrix	VTSR	Volatile	
			Are water samples preserved? (pH)	Date Analyzed
MW-536-18	aqueous	8/26/95	No(6-8)	8/28/95
MW-536-19	aqueous	8/26/95	No(6-8)	8/28/95
MW-536-20	aqueous	8/26/95	No(6-8)	8/28/95
OWL-VER-02	soil	8/26/95	NA	8/28/95
OWL-VER-02MS	soil	8/26/95	NA	8/28/95
OWL-VER-02MSD	soil	8/26/95	NA	8/28/95
OWL-VER-03	soil	8/26/95	NA	8/28/95
OWL-VER-04	soil	8/26/95	NA	8/28/95
OWL-VER-05	soil	8/26/95	NA	8/28/95
OWL-VER-05DL	soil	8/26/95	NA	8/28/95
OWL-VER-06	soil	8/26/95	NA	8/28/95
OWL-VER-07	soil	8/26/95	NA	8/28/95
OWL-VER-08	soil	8/26/95	NA	8/28/95
OWL-VER-09	soil	8/26/95	NA	8/28/95
OWL-VER-11	soil	8/26/95	NA	8/28/95
OWL-VER-12	soil	8/26/95	NA	8/28/95
OWL-VER-200	soil	8/26/95	NA	8/28/95

NA - Not Applicable

HOLDING TIMES cont.

Criteria

Volatiles	(Vol. 2, Exhibit D, Part II, Section 2.1)
Unpreserved waters:	Analyzed within 7 days of VTSR.
Preserved waters:	Analyzed within 10 days of VTSR.
Soils:	Analyzed within 7 days of VTSR.
Semivolatiles	(Vol. 2, Exhibit D, Part III, Section 3)
Waters:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Soils:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Pesticide/PCBs	(Vol. 2, Exhibit D, Part IV, Section 3)
Waters by Sepf:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Waters by Conc:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Soils:	Extraction started within 5 days and completed within 10 days of VTSR, and analyzed within 40 days of extraction.

Actions

If holding times are exceeded by less than 14 days, all positive results are estimated (J) and all nondetects are estimated (UJ).

If holding times are exceeded by more than 14 days but less and 28 days, all positive results are estimated (J) and the nondetects may be estimated (UJ) or rejected (R) based on the reviewers professional judgment.

If holding times are exceeded by more than 28 days, all positive results are estimated (J) and all nondetects are rejected (R).

All actions are described below.

Comments

All samples for volatiles were analyzed within 7 days of VTSR; therefore, no actions were required.

SYSTEM MONITORING COMPOUND (SMC)/SURROGATE SPIKE RECOVERIES

Listed below are the SMC/surrogate spike recoveries which did not meet criteria stated on Forms 2A through 2F.

Sample ID	Matrix	Volatiles		
		BFB	DCE	TOL
Criteria	Aqueous	86-115	76-114	88-110
	Soil	59-113	70-121	84-138

BFB - bromofluorobenzene DCE - 1,2-dichloroethane-d_4 TOL - toluene-d_8

SYSTEM MONITORING COMPOUND (SMC)/SURROGATE SPIKE RECOVERIES cont.

Criteria

As stated on Forms 2A through 2F and in Vol. 2, Exhibit D, Part II, Section 10.9 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.5 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 13.6 for pesticide/PCBs.

Actions

Actions, as described below, are applied to sample results if one volatile SMC, two or more base/neutral surrogates, two or more acid surrogates, or both pesticide/PCB surrogates percent recovery (%R) fall outside of the QC limits but have recoveries which are >10% and/or if any one surrogate in a fraction has a recovery of <10%.

If one or more SMC or surrogate recoveries are <10%, qualify the positive results as estimated (J) and the nondetect results are unusable (R) in the associated fraction.

If surrogate recoveries are >10% and <QC limit, qualify the positive and nondetect results as estimated (J and UJ, respectively) in the associated fraction.

If surrogate recoveries are >QC limit, qualify the positive results as estimated (J) and accept the nondetect results as reported by the laboratory in the associated fraction.

Comments

system monitoring compound (SMC) spike recovery criteria were met for the volatile organic samples; therefore, no ions were required.

MATRIX SPIKE BLANK (MSB)

Listed below are the percent recoveries (%R) of compounds which did not meet the criteria stated on Forms 3A-MSB through 3F-MSB.

Sample ID	Fraction	Compound	%R	QC Limits

Criteria

As stated on Forms 3A-MSB through 3F-MSB and in Vol. 2, Exhibit D, Part II, Section 10.10 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.6 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 15.2 for pesticide/PCBs.

Actions

No action is taken based on MSB data alone. However, using informed professional judgment, the MSB results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

Comments

The MSB criteria were met for all volatile compounds; therefore, no actions were required.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

V A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) - spiked compounds

Listed below are the percent recoveries (%R) and relative percent differences (RPDs) of compounds which did not meet the criteria stated on Forms 3A through 3F.

Sample ID	Fraction	Compound	%R	QC Limits

Criteria

As stated on Forms 3A through 3F and in Vol. 2, Exhibit D, Part II, Section 10.10 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.6 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 16 for pesticide/PCBs.

Actions

No action is taken based on MS/MSD data alone. However, using informed professional judgment, the MS/MSD results ıy be used in conjunction with other QC criteria to determine the need for qualification of the data.

Comments

OWL-VER-02 was the sample which required MS/MSD analyses for the volatile soil samples. All compounds met recovery and relative percent difference criteria; therefore, no actions were required.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) - nonspiked compounds

Listed below are the concentrations of the nonspiked compounds detected in the sample, MS and MSD, and the calculated percent relative standard deviation (%RSD) between the concentrations.

Sample ID	Fraction	Compound	Concentrations (mg/Kg)			%RSD
			Sample	MS	MSD	

Criteria

The precision between the nonspiked compound concentrations in the sample, MS, and MSD should be <100 %RSD. (EPA Region II)

Actions

If any nonspiked compounds have a %RSD >100, estimate (J) the positive results for those compounds in the sample. If any nonspiked compounds are reported in the MS and/or MSD at concentrations ≥ CRQL but are not detected in the sample, estimate (UJ) the nondetect results for those compounds in the sample.

Comments

There were no nonspiked compounds detected in the volatile organic MS/MSD sample; therefore, no actions were required.

BLANK ANALYSIS RESULTS and ACTION LEVELS

Listed below are the contaminants detected in the laboratory, field, equipment, and/or trip blanks. Trip blanks are analyzed for volatile organics only.

Laboratory Blanks

Sample ID	Matrix/Level	Fraction	Compound	Conc. Units (mg/L)	Blank Action Level (µg/L)	Blank Action Level (mg/kg)	Associated Samples

Field, Equipment, and Trip Blanks

Sample ID	Blank Type	Fraction	Compound	Conc. Units (µg/L)	Blank Action Level (µg/L)	Blank Action Level (mg/kg)	Associated Samples

BLANK ANALYSIS RESULTS and ACTION LEVELS cont.

Criteria

Blank action levels for each contaminant are calculated as 10 times the concentration for common contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates) and 5 times the concentration for all other contaminants. The blank action levels are compared to sample values after application of sample amount, dilution, and dry weight factors. (EPA Region II)

Actions

If the concentration of a compound is less than the CRQL and the associated blank action level, then the compound is considered not detected. Report the CRQL qualified with a "U".

If the concentration of a compound is greater than the CRQL, but less than the associated blank action level, then the compound is considered not detected. Report the result qualified with a "U".

If the concentration is greater than the blank action level, no action is required. Report the result unqualified. Blank actions do not apply to trip, rinsate, or equipment blank samples.

Comments

Sample MW-536-18 was the rinsate blank, MW-536-19 was the field blank and sample MW-536-20 was the trip blank associated with the samples in this SDG.

There was no evidence of laboratory or field blank contamination; therefore, no actions were required.

VII. GC/MS TUNING

Listed below are the bromofluorobenzene (BFB) and/or decafluorotriphenylphosphine (DFTPP) GC/MS tuning standards which did not meet the ion abundance/mass assignment criteria stated on Forms 5A and 5B.

BFB/DFTPP ID	Date/Time of Analysis	Outlier	Associated Samples

Listed below are the samples which were analyzed greater than 12 hours after a preceding BFB or DFTPP tuning standard.

Sample ID	Date/Time of Analysis	BFB/DFTPP ID	Date/Time of Analysis

Criteria

As stated on Forms 5A and 5B, and in Vol 2., Exhibit D, Part II, Section 6.4 for BFB and Vol 2., Exhibit D, Part III, Section 4.3 for DFTPP.

Actions

If the mass assignment is in error, qualify all associated data as unusable (R).

If the ion abundance criteria are not met, professional judgment may be applied to determine to what extent the data may be utilized. The reviewer should refer to the expanded ion abundance criteria in EPA's "Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses" (February 1, 1988) for additional guidance. If necessary, qualify all associated data as unusable (R).

If samples are analyzed outside of an acceptable 12 hour calibration interval, qualify all results as unusable (R).

Comments

The BFB and DFTPP tuning standards were analyzed at the required frequencies and the ion abundance criteria were met. All samples were analyzed within 12 hours of the associated tuning standard.

VII. CALIBRATION VERIFICATION

VIII A. VOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration: 7/31/95
Date(s) of Continuing Calibrations: 8/28/95
Instrument ID: 150K
Matrix/Level: aqueous/low

Date	Criteria Out RF.%RSD. %D	Compound	Value	Associated Samples

Note: A separate worksheet should be filled out for each initial curve.

Date of Initial Calibration: 8/7/95
Date(s) of Continuing Calibrations: 8/28/95
Instrument ID: 150G
Matrix/Level: soil/low

Date	Criteria Out RF.%RSD. %D	Compound	Value	Associated Samples
8/28/95	%D	choromethane	49.8	all soil samples
8/28/95	%D	acetone	44.7	all soil samples
8/28/95	%D	2-butanone	40.6	all soil samples

Note: A separate worksheet should be filled out for each initial curve.

I A. VOLATILE CALIBRATION VERIFICATION cont.

Criteria

All initial calibration average response factors (RFs) and continuing calibration RFs must be > 0.05.
All initial calibration percent relative standard deviation (%RSDs) must be ≤ 30.
All continuing calibration percent differences (%Ds) must be ≤ 25. (EPA Region II)

Actions

If any compound has an average initial calibration or a continuing calibration RF of < 0.05, qualify the positive results as estimated (J) and the nondetects as unusable (R), for that compound.

If any compound has a %RSD >30 or a %D >25, but <90, qualify the positive results and nondetects as estimated (J and UJ, respectively), for that compound.

If any compound has a %RSD or %D >90, qualify the positive results as estimated (J) and the nondetects as unusable (R), for that compound.

Comments

The positive and nondetect results for chloromethane, acetone, and 2-butanone in all soil samples were estimated (J and UJ respectively) due to uncertainty in the compound quantitation as indicated by variable instrument response.

INTERNAL STANDARD PERFORMANCE

Listed below are the samples which have internal standards (IS) that did not meet the retention time (RT) and/or area criteria stated on Form 8A and 8B.

Sample ID	Date	Internal Standard	RT or AREA	Acceptable Range

Criteria

The IS areas in the samples must not vary by more than a factor of 2 (-50%/ +100%) and the IS retention times must not vary by more than 0.5 minutes (30 seconds) from the IS areas and retention times in the associated calibration standard.

Volatiles Vol 2., Exhibit D, Part II, Section 7.4.8
Semivolatiles Vol 2., Exhibit D, Part III, Section 5.8

Action

If an internal standard area count is >200% of the associated continuing calibration internal standard area, the positive results associated with the outlier are estimated (J) and the nondetect results are accepted unqualified.

an internal standard area count is <50% of the associated continuing calibration internal standard area, the positive and nondetect results associated with the outlier are estimated (J and UJ, respectively).

If an internal standard area count is <25% of the associated continuing calibration internal standard area, the positive results associated with the outlier are qualified as estimated (J) and the nondetect results associated with the outlier are qualified as unusable (R).

If an IS retention time varies by more than 30 seconds, the chromatography profile for that sample must be examined to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction.

Comments

The internal standard performance criteria were met for the volatile organic compounds in all samples.

FIELD DUPLICATE PRECISION

Listed below are sample and duplicate results which did not meet the RPD criteria of <100%.

Sample ID/Duplicate ID	Fraction	Compound	Sample Conc.	Duplicate Conc.	RPD

Criteria

The relative percent difference (RPD) between sample and duplicate results should be <100. (EPA Region II)

Actions

Actions apply to the field duplicate pair only.

If the results of any compounds do not meet the RPD criteria, qualify the positive results as estimated (J).

- If a compound is detected in one sample at a concentration above the CRQL, but is not detected in the other sample, qualify positive and nondetect results as estimated (J and UJ, respectively).

Comments

There was one field duplicate pair associated with the samples in this SDG:

OWL-VER-09 and OWL-VER-200

Field duplicate precision criteria were met for all compounds in the field duplicate pair; therefore, no further actions were required.

"I. COMPOUND IDENTIFICATION and QUANTITATION

XII A. IDENTIFICATION

Volatiles and Semivolatiles

Are the lab-generated standard and sample mass spectra of the identified volatile and semivolatile compounds present for each sample? *yes*

Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?
yes

Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum? *yes*

Do sample and standard relative ion intensities agree within 20%? *yes*

Actions

Use professional judgment to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be qualified as unusable (R) or presumptively present (N), or considered nondetect (U) at the calculated detection limit.

When sample carry-over is a possibility, professional judgment should be used to determine if instrument cross-ntamination has affected any positive compound identifications.

Comments

Compound identification and quantitation were acceptable. No actions were required.

VI B. QUANTITATION

Calculations

Did the laboratory perform all sample concentration calculations according to the method requirements? yes

If no, contact the laboratory for resubmittals.

Shown below are examples of at least one sample calculation per fraction:

Volatile

OWL-VER-05 (Acetone)

$$C_c = \frac{A_c \times C_{is} \times V_{is}}{A_{is} \times RF \times 5} \times \frac{100}{\%\ solids}$$

$$C_c = \frac{91184 \times 50 \times 5}{34775 \times 0.447 \times 5} \times \frac{100}{91.3}$$

$$C_c = 320\ \mu g / kg$$

Matrix Spike Blank (Benzene)

$$C_c = \frac{A_c \times C_{is} \times V_{is}}{A_{is} \times RF \times 5}$$

$$C_c = \frac{68870 \times 50 \times 5}{94549 \times 0.734 \times 5}$$

$$C_c = 50\ \mu g / L$$

'I B. QUANTITATION cont.

CRQLs

Did the laboratory meet the required CRQLs? *yes*

Are the CRQLs adjusted to reflect sample dilutions and, for soils, percent moisture? *yes*

Comments

All the CRQLs were adjusted appropriately.

Sample Dilutions

The following samples required dilutions due to target compounds outside of the calibration range or matrix interferences:

OWL-VER-05

Comments

Volatile sample OWL-VER-05 was diluted 5x (OWL-VER-05DL) due to the acetone result which exceeded the calibration range in the undiluted analyses.

'ercent Moisture

Listed below are soil samples which contain greater than 50% moisture.

Sample ID	%Moisture

Actions

If any sample analyzed as a soil contains 50%-90% water, all data should be qualified as estimated (J). If a soil sample contains more than 90% water, all data should be qualified as unusable (R). (EPA Region II)

Comments

All soil samples were less than 50% moisture; therefore, no actions were required.

VII. TENTATIVELY IDENTIFIED COMPOUNDS (TIC) SUMMARY

Listed below is a summary of the TICs detected in the volatile and semivolatile sample analyses.

Sample ID	TICS										

Use professional judgment to determine acceptability of TIC identification. If it is determined that incorrect identifications were made, change the identification to "unknown" or to some less specific identification, as appropriate.

Comments

Tentatively identified compounds were not reported by the laboratory and were not a requirement of the project.

IV. OVERALL APPRAISAL

A. Actions Taken/Usability

The positive and nondetect chloromethane, acetone, and 2-butanone results in all soil samples were estimated (J and UJ respectively) due to uncertainty in sample quantitation as indicated by variable instrument response. These results are usable as estimated results and quantitation limits.

B. Non-compliance

Volatile organic analyses were performed according to the specified methods. The data package was complete and compliant with the exception of the example calculations which were not included.

VOLATILE ORGANIC ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02A

Sample ID	OWL-VER-02	OWL-VER-03	OWL-VER-04	OWL-VER-05	OWL-VER-06	OWL-VER-07	OWL-VER-08	OWL-VER-09
Laboratory ID	A5456701	A5456702	A5456703	A5456704	A5456705	A5456706	A5456707	A5456708
Date Sampled	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95
Date Analyzed	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95
Percent Solids	91	93	92	91	93	94	93	92
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Remarks				Acetone DF = 5				
Chloromethane	11 UJ	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	11 UJ	11 UJ
Bromomethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Vinyl chloride	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Chloroethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Methylene chloride	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Acetone	11 UJ	11 UJ	11 UJ	790 J	10 UJ	10 UJ	140 J	11 UJ
Carbon disulfide	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
1,1-Dichloroethene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
1,1-Dichloroethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
1,2-Dichloroethene (total)	11 U	11 U	11 U	2 J	10 U	10 U	11 U	11 U
Chloroform	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
1,2-Dichloroethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
2-Butanone	11 UJ	11 UJ	11 UJ	110 J	10 UJ	10 UJ	11 UJ	11 UJ
1,1,1-Trichloroethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Carbon tetrachloride	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Bromodichloromethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
1,2-Dichloropropane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

ATTACHMENT I

DATA SUMMARY TABLES

VOLATILE ORGANIC ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02A

Sample ID	OWL-VER-02	OWL-VER-03	OWL-VER-04	OWL-VER-05	OWL-VER-06	OWL-VER-07	OWL-VER-08	OWL-VER-09
Laboratory ID	A5456701	A5456702	A5456703	A5456704	A5456705	A5456706	A5456707	A5456708
Date Sampled	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95
Date Analyzed	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95	8/28/95
Percent Solids	91	93	92	91	93	94	93	92
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Remarks				Acetone DF = 5				
cis-1,3-Dichloropropene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Trichloroethene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Dibromochloromethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
1,1,2-Trichloroethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Benzene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
trans-1,3-Dichloropropene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Bromoform	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
4-Methyl-2-pentanone	11 U	11 U	11 U	120	5 J	10 U	9 J	11 U
2-Hexanone	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Tetrachloroethene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Toluene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Chlorobenzene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Ethylbenzene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Styrene	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U
Xylene (total)	11 U	11 U	11 U	11 U	10 U	10 U	11 U	11 U

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

VOLATILE OR .C ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02A

Sample ID	OWL-VER-11	OWL-VER-12	OWL-VER-200					
Laboratory ID	A5456710	A5456711	A5456709					
Date Sampled	8/25/95	8/25/95	8/25/95					
Date Analyzed	8/28/95	8/28/95	8/28/95					
Percent Solids	91	87	92					
Dilution Factor	1.0	1.0	1.0					
Remarks			Dup of OWL-VER-09					
Chloromethane	11 UJ	11 UJ	11 UJ					
Bromomethane	11 U	11 U	11 U					
Vinyl chloride	11 U	11 U	11 U					
Chloroethane	11 U	11 U	11 U					
Methylene chloride	11 U	11 U	11 U					
Acetone	11 UJ	51 J	11 UJ					
Carbon disulfide	11 U	11 U	11 U					
1,1-Dichloroethene	11 U	11 U	11 U					
1,1-Dichloroethane	11 U	3 J	11 U					
1,2-Dichloroethene (total)	10 J	31	11 U					
Chloroform	11 U	11 U	11 U					
1,2-Dichloroethane	11 U	11 U	11 U					
2-Butanone	11 UJ	11 UJ	11 UJ					
1,1,1-Trichloroethane	11 U	11 U	11 U					
Carbon tetrachloride	11 U	11 U	11 U					
Bromodichloromethane	11 U	11 U	11 U					
1,2-Dichloropropane	11 U	11 U	11 U					

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

VALIDATED: 11/20/95

VOLATILE ORGANIC ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02A

Sample ID	OWL-VER-11	OWL-VER-12	OWL-VER-200					
Laboratory ID	A5456710	A5456711	A5456709					
Date Sampled	8/25/95	8/25/95	8/25/95					
Date Analyzed	8/28/95	8/28/95	8/28/95					
Percent Solids	91	87	92					
Dilution Factor	1.0	1.0	1.0					
Remarks			Dup of OWL-VER-09					
cis-1,3-Dichloropropene	11 U	11 U	11 U					
Trichloroethene	7 J	6 J	11 U					
Dibromochloromethane	11 U	11 U	11 U					
1,1,2-Trichloroethane	11 U	11 U	11 U					
Benzene	11 U	11 U	11 U					
trans-1,3-Dichloropropene	11 U	11 U	11 U					
Bromoform	11 U	11 U	11 U					
4-Methyl-2-pentanone	11 U	6 J	11 U					
2-Hexanone	11 U	11 U	11 U					
Tetrachloroethene	11 U	11 U	11 U					
Toluene	11 U	11 U	11 U					
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U					
Chlorobenzene	11 U	11 U	11 U					
Ethylbenzene	11 U	11 U	11 U					
Styrene	11 U	11 U	11 U					
Xylene (total)	11 U	11 U	11 U					

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

File: SDV008.XLS

VOLATILE O. ...IC ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02A

Sample ID	MW-536-18	MW-536-19	MW-536-20					
Laboratory ID	A5456712	A5456713	A5456714					
Date Sampled	8/25/95	8/25/95	8/25/95					
Date Analyzed	8/28/95	8/28/95	8/28/95					
Dilution Factor	1.0	1.0	1.0					
Remarks	Rinsate Blank	Field Blank	Trip Blank					
Chloromethane	10 U	10 U	10 U					
Bromomethane	10 U	10 U	10 U					
Vinyl chloride	10 U	10 U	10 U					
Chloroethane	10 U	10 U	10 U					
Methylene chloride	10 U	10 U	10 U					
Acetone	10 U	10 U	10 U					
Carbon disulfide	10 U	10 U	10 U					
1,1-Dichloroethene	10 U	10 U	10 U					
1,1-Dichloroethane	10 U	10 U	10 U					
1,2-Dichloroethene (total)	10 U	10 U	10 U					
Chloroform	10 U	10 U	10 U					
1,2-Dichloroethane	10 U	10 U	10 U					
2-Butanone	10 U	10 U	10 U					
1,1,1-Trichloroethane	10 U	10 U	10 U					
Carbon tetrachloride	10 U	10 U	10 U					
Bromodichloromethane	10 U	10 U	10 U					
1,2-Dichloropropane	10 U	10 U	10 U					

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

VALIDATED: 11/20/95

VOLATILE ORGANIC ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02A

Sample ID	MW-536-18	MW-536-19	MW-536-20					
Laboratory ID	A5456712	A5456713	A5456714					
Date Sampled	8/25/95	8/25/95	8/25/95					
Date Analyzed	8/28/95	8/28/95	8/28/95					
Dilution Factor	1.0	1.0	1.0					
Remarks	Rinsate Blank	Field Blank	Trip Blank					
cis-1,3-Dichloropropene	10 U	10 U	10 U					
Trichloroethene	10 U	10 U	10 U					
Dibromochloromethane	10 U	10 U	10 U					
1,1,2-Trichloroethane	10 U	10 U	10 U					
Benzene	10 U	10 U	10 U					
trans-1,3-Dichloropropene	10 U	10 U	10 U					
Bromoform	10 U	10 U	10 U					
4-Methyl-2-pentanone	10 U	10 U	10 U					
2-Hexanone	10 U	10 U	10 U					
Tetrachloroethene	10 U	10 U	10 U					
Toluene	10 U	10 U	10 U					
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U					
Chlorobenzene	10 U	10 U	10 U					
Ethylbenzene	10 U	10 U	10 U					
Styrene	10 U	10 U	10 U					
Xylene (total)	10 U	10 U	10 U					

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

File: SDV007.XLS

ATTACHMENT II

LABORATORY'S CASE NARRATIVE

SDG NARRATIVE:

Laboratory: Recra Environmental, Inc.

Laboratory Code: RECNY

Contract No.: NY94-606

SDG No.: VER02A

Sample Identifications:

MW-536-18
MW-536-19
MW-536-20
OWL-VER-02
OWL-VER-02 MATRIX SPIKE
OWL-VER-02 MATRIX SPIKE DUPLICATE
OWL-VER-03
OWL-VER-04
OWL-VER-05
OWL-VER-06
OWL-VER-07
OWL-VER-08
OWL-VER-09
OWL-VER-11
OWL-VER-12
OWL-VER-200

METHODOLOGY

Analyses were performed in accordance with 1991 New York State Analytical Services protocol. (Revised 1993)

COMMENTS

Results are reported using standard qualifiers (Q) as defined on the Organic Data Comment Page.

Preliminary results were sent on August 30, 1995 via facsimile to Ms. Julie Schreiber of Camp, Dresser and McKee by Ms. Deborah Carella of Recra Environmental.

Quality Control analysis was performed on a batch basis for water samples. All results were within acceptable limits.

VOLATILE DATA

Volatile sample and standard areas are listed on the corresponding data system printouts.

Volatile data was processed utilizing Finnigan DataPro Autoquantitation and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions. False positive compounds are crossed out, initialed and dated in this data package.

Ortho-Xylene and meta & para-Xylene elute separately on a capillary column. They are reported in this data package as Total Xylenes. The concentration is calculated by adding the areas of ortho-Xylene and meta & para-Xylene and using only the response factor form ortho-Xylene to calculate the nanogram amount.

Sample OWL-VER-05 required a dilution of five (5) due to the high concentration of Acetone.

The water samples in this SDG exhibit a pH of approximately 6-8.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Kenneth E. Kasperek
Laboratory Director

9/25/95
Date

ATTACHMENT III

DEC REQUIRED SAMPLE and ANALYSIS SUMMARY SHEETS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: RECRA ENVIRONMENTAL, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS					
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	OTHER
MW-536-18	A5456712	ASP91	-	-	-	-	-
MW-536-19	A5456713	ASP91	-	-	-	-	-
MW-536-20	A5456714	ASP91	-	-	-	-	-
OWL-VER-02	A5456701	ASP91	-	-	-	-	-
OWL-VER-03	A5456702	ASP91	-	-	-	-	-
OWL-VER-04	A5456703	ASP91	-	-	-	-	-
OWL-VER-05	A5456704	ASP91	-	-	-	-	-
OWL-VER-06	A5456705	ASP91	-	-	-	-	-
OWL-VER-07	A5456706	ASP91	-	-	-	-	-
OWL-VER-08	A5456707	ASP91	-	-	-	-	-
OWL-VER-09	A5456708	ASP91	-	-	-	-	-
OWL-VER-11	A5456710	ASP91	-	-	-	-	-
OWL-VER-12	A5456711	ASP91	-	-	-	-	-
OWL-VER-200	A5456709	ASP91	-	-	-	-	-

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-18	WATER	08/25/95	08/26/95	-	08/28/95
MW-536-19	WATER	08/25/95	08/26/95	-	08/28/95
MW-536-20	WATER	08/25/95	08/26/95	-	08/28/95
OWL-VER-02	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-03	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-04	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-05	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-06	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-07	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-08	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-09	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-11	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-12	SOIL	08/25/95	08/26/95	-	08/28/95
OWL-VER-200	SOIL	08/25/95	08/26/95	-	08/28/95

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
MW-536-18	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
MW-536-19	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
MW-536-20	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-02	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-03	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-04	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-05	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-06	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-07	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-08	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-09	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-11	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-12	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-200	SOIL	ASP91	-	AS REQUIRED	AS REQUIRED

ATTACHMENT IV

TELEPHONE LOGS and RESUBMITTALS REQUESTS

Gradient Corporation

FACSIMILE MEMORANDUM

To:	Deborah A Carella, Program Manager	Date	October 10, 1995
	RECRA Environmental Inc.		
FAX:	(716) 691-3011	Project No.	9510700
From:	Deborah A. Roskos DAR	No. Pages	1

Subject: Resubmittal Request for Case 5324, SDG VER02A, ID #A95-4567, #NY5A5324

The above referenced Camp Dresser & McKee/Grace data package from RECRA is currently being validated by Gradient Corporation and the following resubmittal is requested:

SDG VER02A

Volatiles

- Form V (BFB tune dated 8/28/95 on instrument I50G) and Form VII (continuing calibration on 8/28/95 on instrument I50G) were reported as unheated purges. The associated samples were soil samples. Please verify if the purges were heated or not and resubmit the appropriate forms.

- The acetone spectrum for sample OWL-VER-11 (page 146) was not included in the data package. Pleas submit this missing information.

Please send or fax this resubmittal within 7 days to the following address:

Gradient Corporation
44 Brattle Street 4th Floor
Cambridge, MA 02138

Attn: Deborah A. Roskos

Telephone: 617-576-1555
FAX: 617-864-8469

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Analysis Services

October 17, 1995

rec'd
10/19/95
DAR

Ms. Deborah A. Roskos
Gradient Corporation
44 Brattle Street
Cambridge, Massachusetts 02138

RE: Case 5324, SDG VER02A - Data Validation

In response to your request, here are the resubmitted forms to your questions per the fax received October 10th, 1995.

The samples and the associated tunes and continuings were heated purge and are now revised and attached.

The Acetone spectrum is now attached for your review.

If you have any further questions or comments please do not hesitate to contact me with any at (716)691-2600.

Sincerely,

RECRA ENVIRONMENTAL, INC.
Deborah A. Carella
Deborah A. Carella
Program Manager

DAC/dac

Gradient Corporation

Dec'd 10/10/95

FACSIMILE MEMORANDUM

To:	Deborah A Carella, Program Manager	Date	October 10, 1995
	RECRA Environmental Inc.		
FAX:	(716) 691-3011	Project No.	9510700
From:	Deborah A. Roskos DAR	No. Pages	1

Subject: Resubmittal Request for Case 5324, SDG VER02A, ID #A95-4567, #NY5A5324

The above referenced Camp Dresser & McKee/Grace data package from RECRA is currently being validated by Gradient Corporation and the following resubmittal is requested:

SDG VER02A

Volatiles

- Form V (BFB tune dated 8/28/95 on instrument I50G) and Form VII (continuing calibration on 8/28/95 on instrument I50G) were reported as unheated purges. The associated samples were soil samples. Please verify if the purges were heated or not and resubmit the appropriate forms.

- The acetone spectrum for sample OWL-VER-11 (page 146) was not included in the data package. Pleas submit this missing information.

Please send or fax this resubmittal within 7 days to the following address:

Gradient Corporation
44 Brattle Street 4th Floor
Cambridge, MA 02138

Attn: Deborah A. Roskos

Telephone: 617-576-1555
FAX: 617-864-8469

ALUMINUM COMPANY OF AMERICA
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

b Name: Recra Environmental, Contract: MO772732MQ Tune ID: A5B0569802

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: VER02A

Lab File ID: G3264.TUN BFB Injection Date: 08/28/95

Instrument ID: I50G BFB Injection Time: 13:28

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N): Y

m/e	ION Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	24.3		
75	30.0 - 60.0% of mass 95	57.3		
95	Base peak, 100% relative abundance	100.0		
96	5.0 - 9.0% of mass 95	7.3		
173	Less than 2.0% of mass 174	0.0	(0.0)	1
174	Greater than 50.0% of mass 95	63.9		
175	5.0 - 9.0% of mass 174	4.0	(6.3)	1
176	95.0 - 101.0% of mass 174	61.3	(96.0)	1
177	5.0 - 9.0% of mass 176	3.8	(6.2)	2

1-Value is % mass 174 2-Value is % mass 176

This Tune Applies to the Following Samples, MS, MSD, Blanks, and Standards:

	Client Sample No.	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
1	VSTD050	A5B0569803-1	G3265.MSQ	08/28/95	13:40
2	Matrix Spike Blank	A5456716	G3266.MSQ	08/28/95	14:30
3	VBLK57	A5B0569801	G3267.MSQ	08/28/95	15:33
4	OWL-VER-03	A5456702	G3268.MSQ	08/28/95	16:06
5	OWL-VER-04	A5456703	G3269.MSQ	08/28/95	16:38
6	OWL-VER-05	A5456704	G3270.MSQ	08/28/95	17:12
7	OWL-VER-06	A5456705	G3271.MSQ	08/28/95	17:44
8	OWL-VER-07	A5456706	G3272.MSQ	08/28/95	18:17
9	OWL-VER-08	A5456707	G3273.MSQ	08/28/95	18:49
10	OWL-VER-09	A5456708	G3274.MSQ	08/28/95	19:23
11	OWL-VER-200	A5456709	G3275.MSQ	08/28/95	19:55
12	OWL-VER-11	A5456710	G3276.MSQ	08/28/95	20:27
13	OWL-VER-12	A5456711	G3277.MSQ	08/28/95	21:00
14	OWL-VER-02	A5456701	G3278.MSQ	08/28/95	21:32
15	OWL-VER-02 MS	A5456701MS	G3279.MSQ	08/28/95	22:06
16	OWL-VER-02 MSD	A5456701SD	G3280.MSQ	08/28/95	22:38
17	OWL-VER-05 DL	A5456704DL	G3282.MSQ	08/28/95	23:48

CASE NARRATIVE:

Laboratory: Recra Environmental, Inc.

Laboratory Code: RECNY

Contract No.: NY94-606

SDG No.: OWLVE

Sample Identifications: MW-536-16
MW-536-17
OWL-VER-01
OWL-VER-10

METHODOLOGY

Analyses were performed in accordance with 1991 New York State Analytical Services protocol. (Revised 1993)

COMMENTS

Results are reported using standard qualifiers (Q) as defined on the Organic Data Comment Page.

Preliminary results were sent on July 10 and 28, 1995 via facsimile to Ms. Julie Schreiber of Camp, Dresser and McKee by Ms. Deborah Carella of Recra Environmental.

Quality Control analysis was performed on a batch basis. All results were within acceptable limits.

VOLATILE DATA

Volatile sample and standard areas are listed on the corresponding data system printouts.

Volatile data was processed utilizing Finnigan DataPro Autoquantitation and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions. False positive compounds are crossed out, initialed and dated in this data package.

Ortho-Xylene and meta & para-Xylene elute separately on a capillary column. They are reported in this data package as Total Xylenes. The concentration is calculated by adding the areas of ortho-Xylene and meta & para-Xylene and using only the response factor form ortho-Xylene to calculate the nanogram amount.

The water samples in this SDG exhibit a pH of approximately 7.

SEMIVOLATILE DATA

Semivolatile sample and standard areas are listed on the corresponding data system printouts.

Semivolatile data was processed utilizing Teknivant Datasystem and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions.

PESTICIDE DATA

Samples OWLVER01 and OWLVER10 required re-extraction due to a contaminated PCB Blank. The re-extractions of samples OWLVER01RE and OWLVER10RE were performed outside the required holding time, therefore, both sets of data are included in this data package as per the request of Mr. Jim Occholini of Camp, Dresser and McKee.

PBLK11 contains Aroclors 1248 and 1260 at concentrations below the CRDL; Aroclor 1260 was quantitated from two peaks on the DB1701 column. PBLK12 contains Aroclors 1254 and 1260 at concentrations below the CRDL; Aroclors 1254 and 1260 were quantitated from one peak on the DB1701 column.

Aroclor 1260 was quantitated from two peaks on the DB1701 column in sample MW53616.

The surrogate recoveries of Tetrachloro-m-xylene fell outside the QC limit on the DB1701 column in samples PBLK10 and PBLK12. The surrogate recoveries of Decachlorobiphenyl fell outside the QC limit on the DB608 and DB1701 columns in samples MSB10, MSBD10; and on the DB1701 column in sample MW53616.

The retention times of various aroclor peaks fell outside the established retention time windows on the DB608 and DB1701 columns in the re-extracted soil samples.

The relative percent difference of Aldrin fell outside the QC limit on the DB608 column in INDBM05 analyzed 06/27/95 at 07:01; alpha-BHC, gamma-BHC, Heptachlor, Tetrachloro-m-xylene in INDAM09 analyzed 07/22/95 at 04:21; and Aldrin, Tetrachloro-m-xylene in INDBM09 analyzed 07/22/95 at 05:04.

The relative percent difference of 4,4'-DDT fell outside the QC limit on the DB1701 column in PEM11 analyzed 07/11/95 at 20:01.

The retention time of beta-BHC fell outside the established retention time window on the DB608 column in INDBM06 analyzed 07/01/95 at 05:27; beta-BHC, gamma-BHC in PEM11 analyzed 07/21/95 at 22:32; alpha-BHC, gamma-BHC, Heptachlor in INDAM09 analyzed 07/22/95 at 04:21; and beta-BHC, delta-BHC, Aldrin in INDBM09 analyzed 07/22/95 at 05:04. The retention times of the second and third peaks of aroclor 1248 fell outside the established retention time windows on the DB608 column analyzed 07/21/95 at 19:37.

The retention time of Endrin ketone fell outside the established retention time window on the DB1701 column in PEM03 analyzed 06/20/95 at 14:05; beta-BHC, delta-BHC in INDBM05 analyzed 06/27/95 at 07:01; alpha-BHC, gamma-BHC in INDAM06 analyzed 07/01/95 at 04:44; beta-BHC, delta-BHC, Aldrin, Endrin ketone in INDBM06 analyzed 07/01/95 at 05:27; alpha-BHC, beta-BHC, gamma-BHC, 4,4'-DDT, Methoxychlor, Endrin ketone in PEM11 analyzed 07/21/95 at 22:32; and all compounds in INDAM09 analyzed 07/22/95 at 04:21 and IND8M09 analyzed 07/22/95 at 05:04. The retention times of the first and second peaks of Aroclor 1248 fell outside the established retention time windows on the DB1701 column analyzed 07/21/95 at 19:37; the first peak of Aroclor 1254 analyzed 07/21/95 at 20:21; and the second and third peaks of Aroclor 1260 analyzed 07/21/95 at 21:04.

The retention times of surrogates Tetrachloro-m-xylene and Decachlorobiphenyl fell outside the established retention time windows on the DB608 column in INDAM09; and Tetrachloro-m-xylene in samples AR124208, AR124808, AR125408, AR16608, PIBLK19, PEM12, PBLK12, MSB12, MSBD12, OWLVER01RE, OWLVER10RE, PIBLK20 and INDBM09. The retention times of surrogates Tetrachloro-m-xylene and Decachlorobiphenyl fell outside the established retention time windows on the DB1701 column in samples AR124208, AR124808, AR125408, AR16608, PEM12, PBLK12, MSB12, MSBD12, PIBLK20, INDAM09, INDBM09; and Tetrachloro-m-xylene in samples PIBLK19, OWLVER01RE, and OWLVER10RE.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Michelle M. Pitkin for KEK

Kenneth E. Kasperek
Laboratory Director

08/01/95
Date

ATTACHMENT III

DEC REQUIRED SAMPLE and ANALYSIS SUMMARY SHEETS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: RECRA ENVIRONMENTAL, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS					
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	OTHER
MW-536-16	A5361002	ASP91	ASP91	-	ASP91	-	-
MW-536-17	A5361003	ASP91	-	-	-	-	-
OWL-VER-01	A5361001	ASP91	ASP91	-	ASP91	-	-
OWL-VER-10	A5361004	ASP91	ASP91	-	ASP91	-	-

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-16	WATER	07/05/95	07/06/95	-	07/07/95
MW-536-17	WATER	07/05/95	07/06/95	-	07/07/95
OWL-VER-01	SOIL	07/05/95	07/06/95	-	07/06/95
OWL-VER-10	SOIL	07/05/95	07/06/95	-	07/06/95

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
B\N-A ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-16	WATER	07/05/95	07/06/95	07/07/95	07/11/95
OWL-VER-01	SOIL	07/05/95	07/06/95	07/07/95	07/11/95
OWL-VER-10	SOIL	07/05/95	07/06/95	07/07/95	07/11/95

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PCB ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-16	WATER	07/05/95	07/06/95	07/08/95	07/11/95
OWL-VER-01	SOIL	07/05/95	07/06/95	07/07/95	07/12/95
OWL-VER-10	SOIL	07/05/95	07/06/95	07/07/95	07/12/95

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
MW-536-16	WATER	ASP91	CONT,SEPF	AS REQUIRED	AS REQUIRED
MW-536-17	WATER	ASP91	-	AS REQUIRED	AS REQUIRED
OWL-VER-01	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-10	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED

ATTACHMENT IV

TELEPHONE LOGS and RESUBMITTALS REQUESTS

Gradient Corporation

FACSIMILE MEMORANDUM

To:	Deborah A Carella, Program Manager	Date	October 12, 1995
	RECRA Environmental Inc.		
FAX:	(716) 691-3011	Project No.	9510700
From:	Deborah A. Roskos	No. Pages	2

Subject: Resubmittal Request for Case 5324, SDG OWLVE, ID #A95-3610, #NY5A53243

The above referenced Camp Dresser & McKee/Grace data package from RECRA is currently being validated by Gradient Corporation and the following resubmittals are requested:

SDG OWLVE

Volatiles

- Form I for the matrix spike blank duplicate was not included in the data package (page 206). Please submit this missing Form I.

Semivolatiles

- The quantitation limits for the PAH compounds were not verifiable. It appears that the quantitation limits were rounded to one significant figure from 250 µg/kg to 300 µg/kg. Please submit an example calculation.

PCBs

- Aroclor-1248 was the only IDL submitted with the data package. Please submit any other available Aroclor IDLs.
- Please confirm the calibration factors reported for Aroclor-1242 on column 1 (DB608) and resubmit a corrected Form VI.

44 Brattle Street, Cambridge, MA 02138 • (617) 576-1555 • Telefax (617) 864-8469

Please send or fax this resubmittal within 7 days to the following address:

Gradient Corporation
44 Brattle Street 4th Floor
Cambridge, MA 02138

Attn: Deborah A. Roskos

Telephone: 617-576-1555
FAX: 617-864-8469

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Analysis Services

October 18, 1995

Ms. Deborah A. Roskos
Gradient Corporation
44 Brattle Street
Cambridge, Massachusetts 02138

recd 10/20/95

DAR

RE: Case 5324, SDG OWLVE - Data Validation

In response to your request, the answers to your questions per the fax received October 12th, 1995 are as follows.

The missing matrix spike duplicate Form 1 is resubmitted.

The Semivolatile quantitation limits are set up in a test profile by the program manager. It was determined that Alcoa wanted a reporting limit of 300 ppb, therefore, that is the limit reported on the Form 1's.

Aroclor-1242 was the only IDL reported with the data package, due to the method only calling for submittal of Aroclor-1242.

The calibration factors reported on the Form VI for Aroclor-1242 have been corrected and a new Form is re-submitted.

If you have any further questions or comments please do not hesitate to contact me with any at (716)691-2600.

Sincerely,

RECRA ENVIRONMENTAL, INC.

Deborah A. Carella

Deborah A. Carella
Program Manager

DAC/dac

Gradient Corporation

FACSIMILE MEMORANDUM

To:	Deborah A Carella, Program Manager	Date	October 12, 1995
	RECRA Environmental Inc.		
FAX:	(716) 691-3011	Project No.	9510700
From:	Deborah A. Roskos DAR	No. Pages	2

Subject: Resubmittal Request for Case 5324, SDG OWLVE, ID #A95-3610, #NY5A53243

The above referenced Camp Dresser & McKee/Grace data package from RECRA is currently being validated by Gradient Corporation and the following resubmittals are requested:

SDG OWLVE

Volatiles

- Form I for the matrix spike blank duplicate was not included in the data package (page 206). Please submit this missing Form I.

Semivolatiles

- The quantitation limits for the PAH compounds were not verifiable. It appears that the quantitation limits were rounded to one significant figure from 250 µg/kg to 300 µg/kg. Please submit an example calculation. tot prot

PCBs

- Aroclor-1248 was the only IDL submitted with the data package. Please submit any other available Aroclor IDLs.

- Please confirm the calibration factors reported for Aroclor-1242 on column 1 (DB608) and resubmit a corrected Form VI.

44 Brattle Street, Cambridge, MA 02138 • (617) 576-1555 • Telefax (617) 864-8469

Please send or fax this resubmittal within 7 days to the following address:

Gradient Corporation
44 Brattle Street 4th Floor
Cambridge, MA 02138

Attn: Deborah A. Roskos

Telephone: 617-576-1555
FAX: 617-864-8469

ALUMINUM CO OF AMERICA
ASP91-1 - VOLATILES
ANALYSIS DATA SHEET

000206
Client No.

Matrix Spike Blk Dup

Lab Name: Recra Environmental Contract: _____

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Matrix: (soil/water) WATER Lab Sample ID: A5B0441802

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: K8770.MSO

Level: (low/med) LOW Date Samp/Recv: _____ _____

% Moisture: not dec. _____ Heated Purge: N Date Analyzed: 07/07/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.00

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	CHLOROMETHANE	10	U
74-83-9	BROMOMETHANE	10	U
75-01-4	VINYL CHLORIDE	10	U
75-00-3	CHLOROETHANE	10	U
75-09-2	METHYLENE CHLORIDE	10	U
[illegible]54-1	ACETONE	10	U
[illegible]15-0	CARBON DISULFIDE	10	U
75-35-4	1,1-DICHLOROETHENE	52	
75-34-3	1,1-DICHLOROETHANE	10	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	U
67-66-3	CHLOROFORM	10	U
107-06-2	1,2-DICHLOROETHANE	10	U
78-93-3	2-BUTANONE	10	U
71-55-6	1,1,1-TRICHLOROETHANE	10	U
56-23-5	CARBON TETRACHLORIDE	10	U
75-27-4	BROMODICHLOROMETHANE	10	U
78-87-5	1,2-DICHLOROPROPANE	10	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	U
79-01-6	TRICHLOROETHENE	52	
124-48-1	DIBROMOCHLOROMETHANE	10	U
79-00-5	1,1,2-TRICHLOROETHANE	10	U
71-43-2	BENZENE	47	
10061-02-6	Trans-1,3-DICHLOROPROPENE	10	U
75-25-2	BROMOFORM	10	U
108-10-1	4-METHYL-2-PENTANONE	10	U
591-78-6	2-HEXANONE	10	U
127-18-4	TETRACHLOROETHENE	10	U
108-88-3	TOLUENE	48	
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	U
108-90-7	CHLOROBENZENE	52	
[illegible]00-41-4	ETHYLBENZENE	10	U
-42-5	STYRENE	10	U
1330-20-7	XYLENE (TOTAL)	10	U

6F

PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: RECRA ENVIRON Contract: NY95-438

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No.: OWLVE

Instrument ID: 5890A9 Date(s) Analyzed: 06/15/95 06/15/95

GC Column: DB608 ID: 0.53 (mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Toxaphene	0.500	*1	19.94	19.87	20.01	159000
		*2	20.14	20.07	20.21	257000
		*3	20.45	20.38	20.52	266000
		4				
		5				
Aroclor 1016	0.100	*1	10.71	10.64	10.78	223000
		*2	12.16	12.09	12.23	826000
		*3	13.47	13.40	13.54	1240000
		4				
		5				
Aroclor 1221	0.200	*1	9.93	9.86	10.00	158000
		*2	10.47	10.40	10.54	88900
		*3	10.70	10.63	10.77	274000
		4				
		5				
Aroclor 1232	0.100	*1	10.71	10.64	10.78	288000
		*2	12.16	12.09	12.23	383000
		*3	13.47	13.40	13.54	526000
		4				
		5				
Aroclor 1242	0.100	*1	10.70	10.63	10.77	203000
		*2	12.16	12.09	12.23	609000
		*3	13.47	13.40	13.54	897000
		4				
		5				
Aroclor 1248	0.100	*1	15.63	15.56	15.70	570000
		*2	16.54	16.47	16.61	549000
		*3	16.73	16.66	16.80	679000
		4				
		5				
Aroclor 1254	0.100	*1	16.97	16.90	17.04	723000
		*2	17.20	17.13	17.27	853000
		*3	18.90	18.83	18.97	1110000
		4				
		5				
Aroclor 1260	0.100	*1	19.46	19.39	19.53	1030000
		*2	19.76	19.69	19.83	992000
		*3	22.87	22.80	22.94	1550000
		4				
		5				

* Denotes required peaks

ALUMINUM COMPANY OF AMERICA
VOLATILE 3/90, ASP '91
CONTINUING CALIBRATION CHECK

Lab Name: Recra Environmental, Contract: MO772732MO Lab Samp ID: A5B0569803-1

Lab Code: RECNY Case No.: 5324 SAS No.: _____ SDG No: VER02A

Lab File Id: G3265.MSQ Calibration Date: 08/28/95 Time: 13:40

Intrument ID: I50G Init. Calib. Date(s): 08/07/95 08/07/95

Heated Purge (Y/N): Y Init. Calib. Times: 13:30 15:37

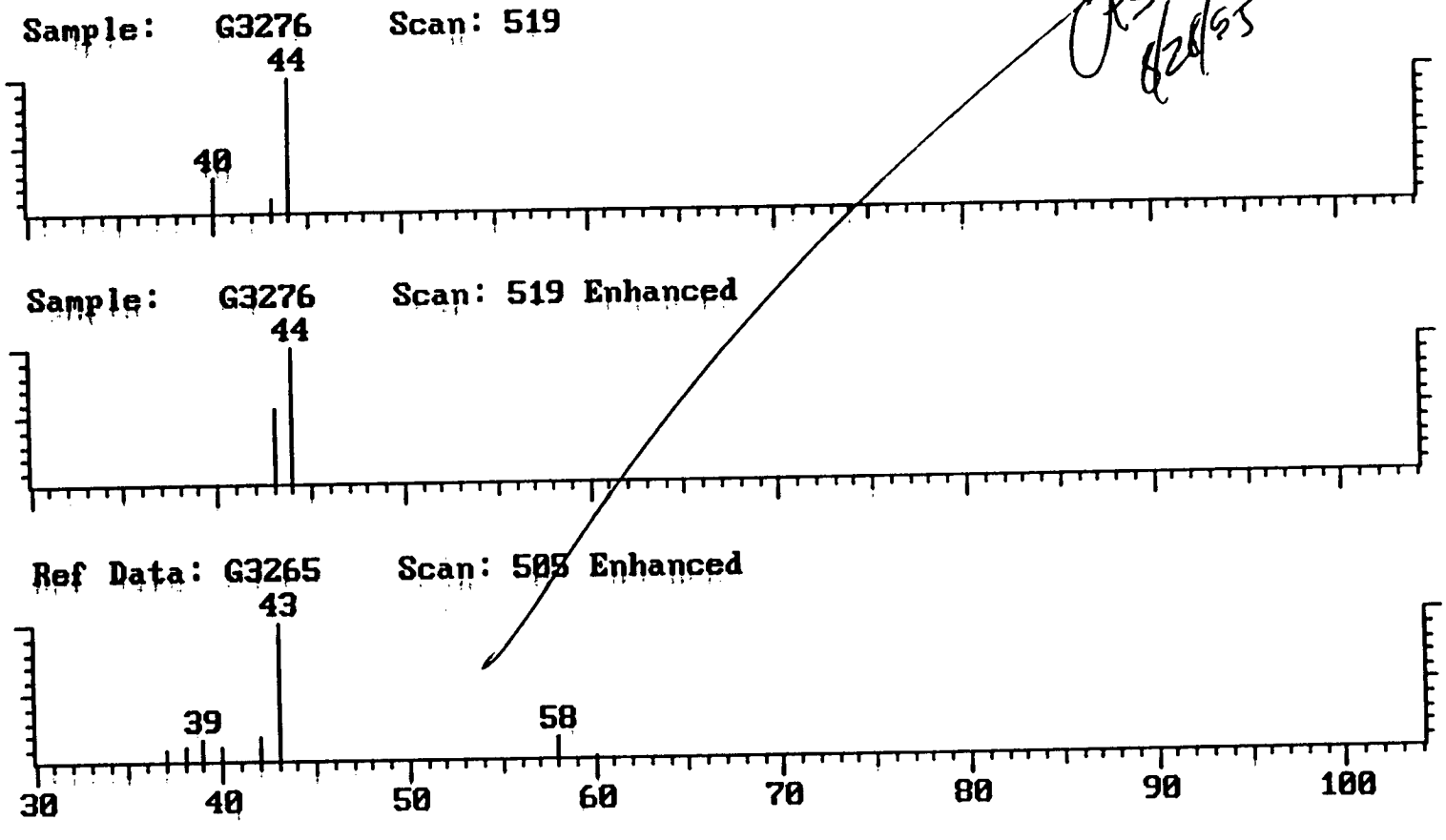
GC Column: DB-624 ID: 0.53 (mm)

COMPOUND	AVG RRF	RRF50	MIN RRF	% D	MAX % D
CHLOROMETHANE	0.6960	1.0430	0.0100	-49.800	100.00
BROMOMETHANE	1.9270	1.7050	0.1000	11.500	25.00
VINYL CHLORIDE	0.9400	1.0610	0.1000	-12.900	25.00
CHLOROETHANE	1.0970	1.1110	0.0100	-1.300	100.00
METHYLENE CHLORIDE	1.3420	1.1870	0.0100	11.500	100.00
ACETONE	0.8080	0.4470	0.0100	44.700	100.00
CARBON DISULFIDE	3.4550	2.6730	0.0100	22.600	100.00
1,1-DICHLOROETHENE	1.3390	1.2330	0.1000	7.900	25.00
1,1-DICHLOROETHANE	2.6640	2.3530	0.2000	11.700	25.00
1,2-DICHLOROETHENE(TOTAL)	1.4120	1.1980	0.0100	15.200	100.00
CHLOROFORM	2.7100	2.9110	0.2000	-7.400	25.00
1,2-DICHLOROETHANE	1.8750	2.3260	0.1000	-24.000	25.00
2-BUTANONE	0.7420	0.4410	0.0100	40.600	100.00
1,1,1-TRICHLOROETHANE	0.9390	1.0140	0.1000	-8.000	25.00
CARBON TETRACHLORIDE	0.8990	0.9670	0.1000	-7.600	25.00
BROMODICHLOROMETHANE	0.9260	0.9980	0.2000	-7.800	25.00
1,2-DICHLOROPROPANE	0.2830	0.3170	0.0100	-12.000	100.00
CIS-1,3-DICHLOROPROPENE	0.4900	0.5470	0.2000	-11.600	25.00
TRICHLOROETHENE	0.6430	0.6160	0.3000	4.200	25.00
DIBROMOCHLOROMETHANE	1.0620	1.0230	0.1000	3.700	25.00
1,1,2-TRICHLOROETHANE	0.4110	0.4050	0.1000	1.400	25.00
BENZENE	0.6650	0.7720	0.5000	-16.100	25.00
Trans-1,3-DICHLOROPROPENE	0.4960	0.5450	0.1000	-9.900	25.00
BROMOFORM	0.9230	0.7100	0.1000	23.100	25.00
4-METHYL-2-PENTANONE	0.3450	0.3470	0.0100	-0.600	100.00
2-HEXANONE	0.3080	0.2460	0.0100	20.100	100.00
TETRACHLOROETHENE	0.5570	0.5170	0.2000	7.200	25.00
TOLUENE	0.8590	1.0640	0.4000	-23.900	25.00
1,1,2,2-TETRACHLOROETHANE	0.5580	0.4320	0.5000	22.600	25.00
CHLOROBENZENE	0.9290	0.9160	0.5000	1.400	25.00
ETHYLBENZENE	0.3730	0.4260	0.1000	-14.200	25.00
STYRENE	0.8660	0.8550	0.3000	1.300	25.00
XYLENE(TOTAL)	0.5180	0.5430	0.3000	-4.800	25.00
1,2-Dichloroethane-D4	1.5880	1.9010	0.0100	-19.700	100.00
Toluene-D8	0.8560	1.0110	0.0100	-18.100	100.00
p-Bromofluorobenzene	0.9350	0.9130	0.2000	2.400	25.00

Method I50G SOIL Target Compound Comparison

File : G3276 Date: Aug-28-1995 Time: 20:27:00 Instrument: I50G
Sample: A5456710

#14 C035 Acetone



[redacted] Corporation

TELEPHONE CALLS

DATE: 10/6/95

TIME: _____

FROM: _____

TO: Julie Schreiber

PROJECT #: _____

COMPANY: _____

PHONE #: _____

SUBJECT: _____

SUMMARY OF CALL:

Tics were not reported by the laboratory. are they necessary for the project?

Julie called the lab and they did not report TICS because it was not required. only a specific list of compounds was being looked at.

NAME: _____

Telephone.Form/mtw

NYSDEC ASP
DATA VALIDATION REPORT
ORGANIC ANALYSES

Site: *Oily Waste Landfill Area, Alcoa - Massena* **Laboratory:** *RECRA Environmental, Inc.*

Case No: *5324* **SDG:** *VER02B*

Data Validation was performed by Gradient Corporation and completed under the guidelines set forth in the New York State Department of Environmental Conservation Analytical Services Protocol (NYSDEC-ASP), revised December 1991 and the Environmental Protection Agency (EPA) Region II's Standard Operating Procedure (SOP) for Contract Laboratory Program (CLP) Organics Data Review and Preliminary Review, January, 1992 (SOP No. HW-6, Rev. #8). The analytical protocols referenced throughout this report refer to the NYSDEC-ASP.

General Assessment

This case consisted of 10 soil samples, 1 field duplicate, 1 field blank, and 1 rinsate blank which were analyzed for semivolatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs) by ASP91 analytical protocols. The data package was complete and legible with the following exceptions. The quantitation limits for the semivolatile organic compounds were not supported in the data package. Aroclor IDLs were missing from the data package with the exception of Aroclor-1242. The calibration factors for the majority of the Aroclors were incorrect on Form 6F. A resubmittal was requested on October 18, 1995 and was received at Gradient on November 1, 1995 and November 16, 1995.

. positive and nondetect PCB results in all samples were estimated due to low surrogate recoveries or variable instrument response. The nondetect result for naphthalene in sample MW-536-19 was estimated due to uncertainty in the compound quantitation as indicated by variable instrument response. Benzo(k)fluoranthene and 2-methylnaphthalene results in sample OWL-VER-02; benzo(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, and phenanthrene results in sample OWL-VER-04; benzo(a)anthracene, chrysene, fluoranthene, and phenanthrene results in sample OWL-VER-06; the pyrene result in sample OWL-VER-07; and anthracene, benzo(a)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene results in sample OWL-VER-09 were raised to the CRQL and qualified with a "U" due to uncertainty in the laboratory's ability to quantitate the results at concentrations less than 10% of the CRQL.

Aroclor-1260 results in samples OWL-VER-05, and OWL-VER-07; and the Aroclor-1248 result in sample OWL-VER-03 were rejected (R) due to poor dual column precision.

All results were considered usable for the project objectives with the exception of three Aroclor results which were rejected and are unusable for project decisions.

Primary reviewer: Deborah A. Rice Date: 11/20/95

Senior reviewer: Date: 11/20/95

DATA COMPLETENESS

The following components were/were not present in the data package (Vol. 1, Exhibit B, Section II). Items marked with "N" will have further explanation following the checklist.

1. *Yes* NYSDEC Data Package Summary Forms

2. *Yes* Traffic Report - COC Forms

3. *Yes* Case Narrative

4. *Yes* Cover Page and Forms 1 through 8 for volatile and semivolatile analyses and/or Forms 1 through 4 and Forms 6 through 10 for PCB analyses.

5. *Yes* Raw data supporting all sample analyses and quality control samples.

6. *Yes* Raw data supporting all calibration standard analyses

7. *Yes* Instrument Detection Limits (IDLs)

8. *No* Copy of calculation worksheet or formulas used to generate final results

9. *Yes* Extraction logs

Yes	-	present in data package
No	-	not present in data package
NA	-	not applicable

Comments

All required forms and supporting information were present in the data package with the following exceptions.

The laboratory was informed by CDM-Alcoa of the project specific quantitation limits of 300 µg/kg for semivolatile organic compounds which are lower than the method defined CRQLs. The laboratory understood this to mean that every nondetect semivolatile compound should be reported with a quantitation limit of 300 µg/kg, irrespective of sample specific preparation factors. In few cases, the laboratory did extract larger sample mass (up to 40g) to justify the lower quantitation limits. Nonetheless, for the majority of the semivolatile samples, the lower quantitation limits could not be supported as technically valid. The laboratory was sent a resubmittal request on October 18, 1995, regarding the need for information, such as an MDL study, to support the lower quantitation limits. The laboratory responded on November 1, 1995, with results from an aqueous MDL study. The results of the aqueous MDL study could not be used to support the lower soil quantitation limits due to method variations based on sample matrix and method requirements (e.g., sonication and GPC cleanup). It was agreed by RECRA, CDM, and Gradient on November 2, 1995, that a soil MDL needed to be analyzed using the NYSDEC ASP extraction and cleanup procedures in order to support the project specific quantitation limits. An acceptable soil MDL, supporting the lower semivolatile quantitation limits, was received at Gradient on November 16, 1995. The laboratory defaulted to reporting 300 µg/kg whenever the actual quantitation limit, based on percent solids, compound MDL, and sample weight was less than 300 µg/kg. Any compound with an actual quantitation limit above 300 µg/kg was reported to the exact quantitation limit.

Aroclor IDLs were missing from the data package with the exception of Aroclor-1242. The calibration factors for the majority of the Aroclors were incorrect on Form 6F. A resubmittal request regarding the above items was sent to the laboratory on October 18, 1995 and the resubmittal was received at Gradient on November 1, 1995.

No calculation worksheets or formulas used for final results were submitted in the data package. The semivolatile organic compounds and PCB result calculations were verifiable with the exception of the semivolatile quantitation limits. No resubmittals were requested from the laboratory for the calculations which were reproducible.

II. HOLDING TIMES

Listed below are the verified time of sample receipt (VTSR) extraction start and completion dates, and analysis date for each fraction of each sample associated with this data package.

Sample ID	Matrix	VSTR	Volatile		Semivolatile			PCBs		
			Are water samples preserved? (pH)	Date Analyzed	Date Extraction Started	Date Extraction Completed	Date Analyzed	Date Extraction Started	Date Extraction Completed	Date Analyzed
MW-536-18	*aqueous*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/29/95*	*8/31/95*
MW-536-19	*aqueous*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/29/95*	*8/31/95*
OWL-VER-02	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31//95*	*9/6/95*
OWL-VER-02MS	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-02MSD	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-03	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-04	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-05	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-06	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-07	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-08	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-09	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-11	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-12	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*
OWL-VER-200	*soil*	*8/26/95*	*NA*	*NA*	*8/29/95*	*8/30/95*	*8/31/95*	*8/29/95*	*8/31/95*	*9/6/95*

NA - Not Applicable

II. HOLDING TIMES cont.

Criteria

Volatiles	(Vol. 2, Exhibit D, Part II, Section 2.1)
Unpreserved waters:	Analyzed within 7 days of VTSR.
Preserved waters:	Analyzed within 10 days of VTSR.
Soils:	Analyzed within 7 days of VTSR.
Semivolatiles	(Vol. 2, Exhibit D, Part III, Section 3)
Waters:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Soils:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Pesticide/PCBs	(Vol. 2, Exhibit D, Part IV, Section 3)
Waters by Sepf:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Waters by Conc:	Extraction started within 5 days and completed within 7 days of VTSR, and analyzed within 40 days of extraction.
Soils:	Extraction started within 5 days and completed within 10 days of VTSR, and analyzed within 40 days of extraction.

Actions

If holding times are exceeded by less than 14 days, all positive results are estimated (J) and all nondetects are estimated (UJ).

If holding times are exceeded by more than 14 days but less and 28 days, all positive results are estimated (J) and the nondetects may be estimated (UJ) or rejected (R) based on the reviewers professional judgment.

If holding times are exceeded by more than 28 days, all positive results are estimated (J) and all nondetects are rejected (R).

All actions are described below.

Comments

All holding times for extraction and analysis were met for the semivolatile and PCB samples; therefore, no actions were required.

III. SYSTEM MONITORING COMPOUND (SMC)/SURROGATE SPIKE RECOVERIES

Listed below are the SMC/surrogate spike recoveries which did not meet criteria stated on Forms 2A through 2F.

Sample ID/Matrix	Base/Neutrals				Acids				Pest/PCBs			
	NBZ	FBP	TPH	DCB[1]	PHL	2FP	TBP	2CP	TCX Col 1	TCX Col 2	DCB[2] Col 1	DCB[2] Col 2
PBLK12 (aqueous)												*53*
MSBD12 (aqueous)												*55*
MW-536-18 (aqueous)												*59*
PBLK13 (soil)									*17*	*17*		
MSB13 (soil)									*50*	*46*		
OWL-VER-02 (soil)									*12*	*11*	*58*	*59*
OWL-VER-02MS (soil)									*48*	*45*		
OWL-VER-02MSD (soil)									*41*	*39*		
OWL-VER-03 (soil)									*51*	*50*		
OWL-VER-04 (soil)									*52*	*52*		
OWL-VER-05 (soil)									*53*	*52*		
OWL-VER-07 (soil)									*43*	*42*	*54*	*59*
OWL-VER-08 (soil)									*49*	*48*		
OWL-VER-11 (soil)									*46*	*43*		
OWL-VER-12 (soil)									*56*	*54*		
Criteria: water	*35-114*	*43-116*	*33-141*	*16-110*	*10-110**	*21-110*	*10-123*	*33-110**	*60-150**	*60-150**	*60-150**	*60-150**
soil	*23-120*	*30-115*	*18-137*	*20-130*	*24-113**	*25-121*	*19-122*	*20-130**	*60-150**	*60-150**	*60-150**	*60-150**

TOL - toluene-d_8
NBZ - nitrobenzene-d_5
PHL - phenol-d_5
TBP - 2,4,6-tribromophenol
DCB[2] - decachlorobiphenyl

BFB - bromofluorobenzene
FBP - 2-fluorobiphenyl
2FP - 2-fluorophenol
2CP - 2-chlorophenol-d_4

DCE - 1,2-dichloroethane-d_4
TPH - terphenyl-d_{14}
DCB[1] - 1,2-dichlorobenzene-d_4
TCX - tetrachloro-m-xylene

* - Advisory QC Limits

VII. SYSTEM MONITORING COMPOUND (SMC)/SURROGATE SPIKE RECOVERIES cont.

Criteria

As stated on Forms 2A through 2F and in Vol. 2, Exhibit D, Part II, Section 10.9 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.5 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 13.6 for pesticide/PCBs.

Actions

Actions, as described below, are applied to sample results if one volatile SMC, two or more base/neutral surrogates, two or more acid surrogates, or both pesticide/PCB surrogates percent recovery (%R) fall outside of the QC limits but have recoveries which are >10% and/or if any one surrogate in a fraction has a recovery of <10%.

If one or more SMC or surrogate recoveries are <10%, qualify the positive results as estimated (J) and the nondetect results are unusable (R) in the associated fraction.

If surrogate recoveries are >10% and <QC limit, qualify the positive and nondetect results as estimated (J and UJ, respectively) in the associated fraction.

If surrogate recoveries are >QC limit, qualify the positive results as estimated (J) and accept the nondetect results as reported by the laboratory in the associated fraction.

Comments

ll surrogate spike recovery criteria were met for the semivolatile organic samples; therefore, no actions were required.

mples OWL-VER-02 and OWL-VER-07 did not meet the lower recovery limit for either TCX or DCB on either of the two columns. Samples OWL-VER-02MS, OWL-VER-02MSD, OWL-VER-03, OWL-VER-04, OWL-VER-05, OWL-VER-08, OWL-VER-11, and OWL-VER-12 did not meet TCX recovery on either column but met DCB recovery on both columns. All positive and nondetect PCB results in samples OWL-VER-02, OWL-VER-03, OWL-VER-04, OWL-VER-05, OWL-VER-07, OWL-VER-08, OWL-VER-11, and OWL-VER-12 were qualified as estimated (J and UJ, respectively) and maybe biased low as indicated by low surrogate recoveries.

No actions were taken for MW-536-18 because only one surrogate did not meet recovery criteria on one column. There were no actions required for the matrix spike blanks/duplicates (MSBD12 and MSB13), the matrix spike/duplicates (OWL-VER-02MS and OWL-VER-02MSD), and the method blanks (PBLK12 and PBLK13), since these analyses were for QC purposes only.

IV. MATRIX SPIKE BLANK (MSB)

Listed below are the percent recoveries (%R) of compounds which did not meet the criteria stated on Forms 3A-MSB through 3F-MSB.

Sample ID	Fraction	Compound	%R	QC Limits

Criteria

As stated on Forms 3A-MSB through 3F-MSB and in Vol. 2, Exhibit D, Part II, Section 10.10 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.6 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 15.2 for pesticide/PCBs.

Actions

No action is taken based on MSB data alone. However, using informed professional judgment, the MSB results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

Comments

The MSB criteria were met for all semivolatile organic and PCB compounds; therefore, no actions were required. Since a matrix spike/matrix spike duplicate could not be performed on an aqueous sample due to insufficient sample volume, the laboratory performed a MSBD to access precision of the aqueous sample analyses. All MSBDs met recovery (%R) criteria. Also the precision, measured as relative percent difference (RPD), between the MSB/MSBD results met MS precision criteria.

V. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

V A. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) - spiked compounds

Listed below are the percent recoveries (%R) and relative percent differences (RPDs) of compounds which did not meet the criteria stated on Forms 3A through 3F.

Sample ID	Fraction	Compound	RPD	QC Limits
OWL-VER-02	*semivolatile*	*acenaphthene*	*24*	*19*

Criteria

As stated on Forms 3A through 3F and in Vol. 2, Exhibit D, Part II, Section 10.10 for volatiles; Vol. 2, Exhibit D, Part III, Section 8.6 for semivolatiles; and Vol. 2, Exhibit D, Part IV, Section 16 for pesticide/PCBs.

Actions

No action is taken based on MS/MSD data alone. However, using informed professional judgment, the MS/MSD results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

Comments

All semivolatile organic and PCB compounds met %R and RPD criteria for the MS/MSD with the exception of acenaphthene which did not meet RPD criterion. No actions were taken as the compound was not detected in the original sample.

B. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) - nonspiked compounds

Listed below are the concentrations of the nonspiked compounds detected in the sample, MS and MSD, and the calculated percent relative standard deviation (%RSD) between the concentrations.

Sample ID	Fraction	Compound	Concentrations (mg/kg)			%D
			Sample	MS	MSD	
OWL-VER-02	*semivolatile*	*benzo(a)anthracene*	*34*	*34*	*21*	***25.3***
OWL-VER-02	*semivolatile*	*benzo(b)fluoranthene*	*59*	*60*	*47*	***13.1***
OWL-VER-02	*semivolatile*	*benzo(k)fluoranthene*	*18*	*20*	*16*	***11.1***
OWL-VER-02	*semivolatile*	*benzo(a)pyrene*	*32*	*60*	*46*	***30.4***
OWL-VER-02	*semivolatile*	*chrysene*	*47*	*52*	*35*	***19.5***
OWL-VER-02	*semivolatile*	*fluoranthene*	*51*	*66*	*46*	***19.2***
OWL-VER-02	*semivolatile*	*fluorene*	*ND*	*ND*	*10*	***NC***
OWL-VER-02	*semivolatile*	*phenanthene*	*36*	*40*	*28*	***17.6***

ND - Not detected
NC - Not calculated

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The precision between the nonspiked compound concentrations in the sample, MS, and MSD should be <100 %RSD. (EPA Region II)

Actions

If any nonspiked compounds have a %RSD >100, estimate (J) the positive results for those compounds in the sample. If any nonspiked compounds are reported in the MS and/or MSD at concentrations ≥ CRQL but are not detected in the sample, estimate (UJ) the nondetect results for those compounds in the sample.

Comments

All nonspiked compounds either met %RSD precision criterion or were not detected above the CRQL; therefore, no actions were required.

VI. BLANK ANALYSIS RESULTS and ACTION LEVELS

Listed below are the contaminants detected in the laboratory, field, equipment, and/or trip blanks. Trip blanks are analyzed for volatile organics only.

Laboratory Blanks

Sample ID	Matrix/Level	Fraction	Compound	Conc. Units (mg/Kg)	Blank Action Level (µg/kg)	Blank Action Level (mg/kg)	Associated Samples

Field, Equipment, and Trip Blanks

ple ID	Blank Type	Fraction	Compound	Conc. Units (µg/L)	Blank Action Level (µg/kg)	Blank Action Level (mg/kg)	Associated Samples

VI. BLANK ANALYSIS RESULTS and ACTION LEVELS cont.

Criteria

Blank action levels for each contaminant are calculated as 10 times the concentration for common contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates) and 5 times the concentration for all other contaminants. The blank action levels are compared to sample values after application of sample amount, dilution, and dry weight factors. (EPA Region II)

Actions

If the concentration of a compound is less than the CRQL and the associated blank action level, then the compound is considered not detected. Report the CRQL qualified with a "U".

If the concentration of a compound is greater than the CRQL, but less than the associated blank action level, then the compound is considered not detected. Report the result qualified with a "U".

If the concentration is greater than the blank action level, no action is required. Report the result unqualified. Blank actions do not apply to trip, rinsate, or equipment blank samples.

Comments

Sample MW-536-18 was the rinsate blank and sample MW-536-19 was the field blank associated with the samples in this SDG.

There was no evidence of field, laboratory or rinsate blank contamination for the semivolatile organic or PCB compounds; therefore, no actions were required.

VII. GCS/MS TUNING

Listed below are the bromofluorobenzene (BFB) and/or decafluorotriphenylphosphine (DFTPP) GC/MS tuning standards which did not meet the ion abundance/mass assignment criteria stated on Forms 5A and 5B.

BFB/DFTPP ID	Date/Time of Analysis	Outlier	Associated Samples

Listed below are the samples which were analyzed greater than 12 hours after a preceding BFB or DFTPP tuning standard.

Sample ID	Date/Time of Analysis	BFB/DFTPP ID	Date/Time of Analysis

Criteria

As stated on Forms 5A and 5B, and in Vol 2., Exhibit D, Part II, Section 6.4 for BFB and Vol 2., Exhibit D, Part III, Section 4.3 for DFTPP.

Actions

If the mass assignment is in error, qualify all associated data as unusable (R).

If the ion abundance criteria are not met, professional judgment may be applied to determine to what extent the data may be utilized. The reviewer should refer to the expanded ion abundance criteria in EPA's "Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses" (February 1, 1988) for additional guidance. If necessary, qualify all associated data as unusable (R).

If samples are analyzed outside of an acceptable 12 hour calibration interval, qualify all results as unusable (R).

Comments

The DFTPP tuning standards were analyzed at the required frequencies and the ion abundance criteria were met. All samples were analyzed within 12 hours of the associated tuning standard.

II SEMIVOLATILE CALIBRATION VERIFICATION

Date of Initial Calibration: *8/31/95*
Date(s) of Continuing Calibrations: *8/31/95 and 9/1/95*
Instrument ID: *150Z-A*

Date	Criteria Out RF, %RSD, %D	Compound	Value	Associated Samples
9/1/95	*% D*	*naphthalene*	*27.8*	*MW-536-19*

A separate worksheet should be filled out for each initial curve.

VIII B. SEMIVOLATILE CALIBRATION VERIFICATION cont.

Criteria

All initial calibration average response factors (RFs) and continuing calibration RFs must be > 0.05.
All initial calibration percent relative standard deviation (%RSDs) must be ≤ 30.
All continuing calibration percent differences (%Ds) must be ≤ 25. (EPA Region II)

Actions

If any compound has an average initial calibration or a continuing calibration RF of < 0.05, qualify the positive results as estimated (J) and the nondetects as unusable (R), for that compound.

If any compound has a %RSD >30 or a %D >25, but <90, qualify the positive results and nondetects as estimated (J and UJ, respectively), for that compound.

If any compound has a %RSD or %D >90, qualify the positive results as estimated (J) and the nondetects as unusable (R), for that compound.

Comments

The nondetect naphthalene result in sample MW-536-19 was estimated (UJ) due to uncertainty in the compound quantitation as indicated by variable instrument response.

INTERNAL STANDARD PERFORMANCE

Listed below are the samples which have internal standards (IS) that did not meet the retention time (RT) and/or area criteria stated on Form 8A and 8B.

Sample ID	Date	Internal Standard	RT or AREA	Acceptable Range

Criteria

The IS areas in the samples must not vary by more than a factor of 2 (-50%/ +100%) and the IS retention times must not vary by more than 0.5 minutes (30 seconds) from the IS areas and retention times in the associated calibration standard.

Volatiles Vol 2., Exhibit D, Part II, Section 7.4.8
Semivolatiles Vol 2., Exhibit D, Part III, Section 5.8

Action

If an internal standard area count is >200% of the associated continuing calibration internal standard area, the positive results ociated with the outlier are estimated (J) and the nondetect results are accepted unqualified.

If an internal standard area count is <50% of the associated continuing calibration internal standard area, the positive and nondetect results associated with the outlier are estimated (J and UJ, respectively).

If an internal standard area count is <25% of the associated continuing calibration internal standard area, the positive results associated with the outlier are qualified as estimated (J) and the nondetect results associated with the outlier are qualified as unusable (R).

If an IS retention time varies by more than 30 seconds, the chromatography profile for that sample must be examined to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction.

Comments

The internal standard performance criteria were met for the semivolatile organic compounds in all samples.

FIELD DUPLICATE PRECISION

Listed below are sample and duplicate results which did not meet the RPD criteria of <100%.

Sample ID/Duplicate ID	Fraction	Compound	Sample Conc.	Duplicate Conc.	RPD

ND - Not detected
NC - Not calculated

Criteria

The relative percent difference (RPD) between sample and duplicate results should be <100. (EPA Region II)

Actions

:tions apply to the field duplicate pair only.

If the results of any compounds do not meet the RPD criteria, qualify the positive results as estimated (J).

If a compound is detected in one sample at a concentration above the CRQL, but is not detected in the other sample, qualify the positive and nondetect results as estimated (J and UJ, respectively).

Comments

Samples OWL-VER-09 and OWL-VER-200 were the samples in the field duplicate pair associated with the samples in this SDG. All compounds either met RPD criterion or were not detected above the CRQL; therefore, no actions were required.

XI. PESTICIDE INSTRUMENT PERFORMANCE

XI A. PESTICIDE INITIAL and CONTINUING CALIBRATION VERIFICATION

Date of Initial Calibration: *7/27/95*
Date(s) of Continuing Calibrations: *7/22/95*
Instrument ID: *5890A9 and 5890B9*

Date	Column	Compound	Value % D	Associated Samples
8/31/95	*DB608*	*methoxychlor*	*28.0*	*PBLK12, MW-536-18, MW-536-19, MSB12, MSBD12, PBLK13, MSB13, and all soil samples with the exception of OWL-VER-11 and OWL-VER-12*
9/7/95	*DB608*	*methoxychlor*	*33.0*	*OWL-VER-11 and OWL-VER-12*
9/7/95	*DB1701*	*methoxychlor*	*29.0*	*OWL-VER-11 and OWL-VER-12*
9/8/95	*DB608*	*4,4'-DDT*	*26.0*	*none*
9/8/95	*DB608*	*methoxychlor*	*29.5*	*none*
9/8/95	*DB1701*	*methoxychlor*	*27.5*	*none*
9/10/95	*DB608*	*endrin*	*27.8*	*none*
9/10/95	*DB608*	*4,4'-DDT*	*25.5*	*none*
9/10/95	*DB608*	*methoxychlor*	*35.0*	*none*
9/10/95	*DB1701*	*4,4'-DDT*	*27.8*	*none*
9/10/95	*DB1701*	*methoxychlor*	*32.0*	*none*
9/11/95	*DB608*	*endrin*	*34.8*	*none*
9/11/95	*DB608*	*4,4'-DDT*	*25.2*	*none*
9/11/95	*DB608*	*methoxychlor*	*44.5*	*none*
9/11/95	*DB1701*	*endrin*	*29.5*	*none*
9/11/95	*DB1701*	*4,4'-DDT*	*28.5*	*none*
9/11/95	*DB1701*	*methoxychlor*	*36.5*	*none*

A separate worksheet should be filled out for each initial curve.

XI A. PESTICIDE INITIAL and CONTINUING CALIBRATION VERIFICATION cont.

Criteria

All initial calibration percent relative standard deviation (%RSDs) must be ≤20 for all compounds with the exception of the two surrogates which must be ≤30. All continuing calibrations (Individual Mixtures A and B) relative percent differences (RPDs) must be ≤25. (Vol. 2, Exhibit D, Part IV, Section 6)

Actions

If the initial calibration QC criterion (%RSD) has failed, then all samples are potentially affected. Therefore, qualify all sample analyses in the entire analytical sequence as described below. If the continuing calibration QC criterion has failed, review data beginning with the samples which followed the last in-control standard until the next acceptable continuing calibration and qualify the data as described below.

If any compound has a %RSD >20 or a RPD >25, but <90, qualify the positive and nondetect results as estimated (J and UJ, respectively), for that compound.

If any compound has a %RSD or RPD >90, qualify the positive results as estimated (J) and the nondetects as unusable (R), for that compound.

Comments

No actions were taken for the associated samples because the samples were analyzed for PCBs only and recovery of the pesticide standards would not affect the PCB results.

VI B. PESTICIDE INITIAL and CONTINUING CALIBRATION VERIFICATION

Retention Times

Listed below are standards which have compound retention times (RT) outside of the retention times windows (RTW) established during the initial calibration.

Standard ID	Column	Compound	RT	RTW	Associated Samples
AR166005	*DB608*	*Aroclor-1016*	*13.82*	*13.67-13.81*	*OWL-VER-11 and OWL-VER-12*
PEM09	*DB1701*	*beta-BHC*	*17.27*	*17.28-17.38*	*none*
PEM10	*DB1701*	*alpha-BHC*	*13.43*	*13.44-13.54*	*PBLK12, MSB12, MSBD12, M-536-18, and MW-536-19*
PEM10	*DB1701*	*beta-BHC*	*17.25*	*17.28-17.38*	*PBLK12, MSB12, MSBD12, M-536-18, and MW-536-19*
PEM10	*DB1701*	*gamma-BHC (Lindane)*	*14.82*	*14.84-14.94*	*PBLK12, MSB12, MSBD12, M-536-18, and MW-536-19*
PEM11	*DB1701*	*beta-BHC*	*17.27*	*17.28-17.38*	*PBLK12, MSB12, MSBD12, PBLK13, MSB13, MW-536-18, MW-536-19, and all soils with the exception of OWL-VER-11 and OWL-VER-12*
PEM12	*DB1701*	*alpha-BHC*	*13.42*	*13.44-13.54*	*OWL-VER-11 and OWL-VER-12*
PEM12	*DB1701*	*beta-BHC*	*17.23*	*17.28-17.38*	*OWL-VER-11 and OWL-VER-12*
PEM12	*DB1701*	*gamma-BHC (Lindane)*	*14.81*	*14.84-14.94*	*OWL-VER-11 and OWL-VER-12*
PEM12	*DB1701*	*endrin*	*21.48*	*21.49-21.63*	*OWL-VER-11 and OWL-VER-12*
PEM13	*DB1701*	*alpha-BHC*	*13.42*	*13.44-13.54*	*none*
PEM13	*DB1701*	*beta-BHC*	*17.24*	*17.28-17.38*	*none*
PEM13	*DB1701*	*gamma-BHC (Lindane)*	*14.82*	*14.84-14.94*	*none*
PEM13	*DB1701*	*methoxychlor*	*25.11*	*25.12-25.26*	*none*
PEM14	*DB1701*	*beta-BHC*	*17.26*	*17.28-17.38*	*none*
PEM15	*DB1701*	*beta-BHC*	*17.27*	*17.28-17.38*	*none*
PEM16	*DB1701*	*alpha-BHC*	*13.41*	*13.44-13.54*	*none*
PEM16	*DB1701*	*beta-BHC*	*17.22*	*17.28-17.38*	*none*
PEM16	*DB1701*	*gamma-BHC (Lindane)*	*14.80*	*14.84-14.94*	*none*
PEM16	*DB1701*	*endrin*	*21.48*	*21.49-21.63*	*none*
PEM16	*DB1701*	*4,4'-DDT*	*23.25*	*23.26-23.40*	*none*
PEM16	*DB1701*	*methoxychlor*	*25.11*	*25.12-25.26*	*none*

XI B. PESTICIDE INITIAL and CONTINUING CALIBRATION VERIFICATION

Retention Times (cont)

Standard ID (cont.)	Column (cont.)	Compound (cont.)	RT (cont.)	RTW (cont.)	Associated Samples (cont.)
INDAM09	*DB1701*	*gamma-BHC (Lindane)*	*14.83*	*14.84-14.94*	*PBLK13, MSB13, and all soil samples*
INDBM09	*DB1701*	*beta-BHC*	*17.26*	*17.28-17.38*	*PBLK13, MSB13, and all soil samples*
INDBM09	*DB1701*	*delta-BHC*	*18.11*	*18.13-18.23*	*PBLK13, MSB13, and all soil samples*
INDBM09	*DB1701*	*endosulfan sulfate*	*25.24*	*25.25-25.39*	*PBLK13, MSB13, and all soil samples*
INDBM09	*DB1701*	*endrin ketone*	*26.77*	*26.78-26.92*	*PBLK13, MSB13, and all soil samples*
INDAM12	*DB1701*	*gamma-BHC (Lindane)*	*14.83*	*14.84-14.94*	*none*
INDBM12	*DB1701*	*beta-BHC*	*17.25*	*17.28-17.38*	*none*
INDBM12	*DB1701*	*delta-BHC*	*18.10*	*18.13-13.23*	*none*
INDBM12	*DB1701*	*endosulfan sulfate*	*25.23*	*25.25-25.39*	*none*
INDBM12	*DB1701*	*endrin ketone*	*26.75*	*26.78-26.92*	*none*
INDBM12	*DB1701*	*endrin aldehyde*	*24.26*	*24.27-24.41*	*none*

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All compounds in the initial and continuing calibration standards must be within the retention time windows established during the initial calibration. (Vol 2., Exhibit D, Part IV, Section 6 and 7)

Actions

If compounds in the standards are outside of the retention time windows, check the sample chromatograms to see if they contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and the surrogates are visible, the nondetects are valid. If peaks are present and cannot be identified through pattern recognition (PCBs) or using a revised RT window, qualify all positive results and nondetects as unusable (R).

Comments

The PCBs were identified through pattern recognition rather than retention times. However, due to the many pesticide compounds which shifted in retention times, the sample chromatograms were evaluated in-detail to verify compound identification based on pattern recognition. No actions were required.

.I C. PERFORMANCE EVALUATION MIXTURES

If any QC criteria (RPDs or %breakdown) have failed in either of the PEMs associated with the initial calibration (step 2 or 17), then all samples are potentially affected. Therefore, qualify all sample results in the entire analytical sequence as described in the **ACTIONS** Sections below. If the QC criteria have failed in a PEM verification calibration, review data beginning with the samples which followed the last in-control standard until the next acceptable PEM and qualify the data as described in the **ACTIONS** sections below.

Relative Percent Difference (RPD)

Listed below are the compounds in the PEMs and continuing calibration Aroclors which did not meet the RPD criteria of ≤25.

Standard ID	Column	Compound	RPD	Peak #	Associated Samples
AR166003	*DB1701*	*Aroclor-1016*	*30.0*	*1*	*none*
AR124204	*DB608*	*Aroclor-1242*	*37.3*	*1*	*MSB12, MSBD12, PBLK12, MW-536-18 and MW-536-19*
AR124204	*DB608*	*Aroclor-1242*	*28.2*	*3*	*MSB12, MSBD12, PBLK12, MW-536-18 and MW-536-19*
AR166004	*DB608*	*Aroclor-1016*	*32.3*	*1*	*MSB12, MSBD12, PBLK12, MW-536-18 and MW-536-19*
AR166004	*DB608*	*Aroclor-1016*	*28.3*	*3*	*MSB12, MSBD12, PBLK12, MW-536-18 and MW-536-19*
R124205	*DB608*	*Aroclor-1242*	*29.0*	*1*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples*
AR124205	*DB608*	*Aroclor-1242*	*26.7*	*3*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples*
AR166005	*DB608*	*Aroclor-1016*	*36.6*	*1*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples*
AR166605	*DB608*	*Aroclor-1016*	*29.4*	*3*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples*
AR124206	*DB608*	*Aroclor-1242*	*37.8*	*1*	*OWL-VER-11 and OWL-VER-12*
AR124206	*DB608*	*Aroclor-1242*	*33.7*	*3*	*OWL-VER-11 and OWL-VER-12*
AR166006	*DB608*	*Aroclor-1016*	*36.6*	*1*	*OWL-VER-11 and OWL-VER-12*
AR166006	*DB608*	*Aroclor-1016*	*32.9*	*3*	*OWL-VER-11 and OWL-VER-12*
PEM01	*DB608*	*methoxychlor*	*30.8*	-	*none*
PEM02	*DB608*	*methoxychlor*	*27.6*	-	*none*
PEM03	*DB608*	*methoxychlor*	*25.2*	-	*none*
PEM10	*DB1701*	*methoxychlor*	*28.8*	-	*MSB12, MSBD12, PBLK12, MW-536-18, and MW-536-19*
PEM11	*DB1701*	*methoxychlor*	*26.0*	-	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, PBLK13, MSB13 and all soil samples except OWL-VER-11 and OWL-VER-12*

ndard ID ont)	Column (cont)	Compound (cont)	RPD (cont)	Peak # (cont)	Associated Samples (cont)
PEM13	*DB1701*	*methoxychlor*	*26.8*	-	*none*
PEM14	*DB1701*	*methoxychlor*	*26.4*	-	*none*
PEM15	*DB1701*	*endrin*	*28.0*	-	*none*
PEM15	*DB1701*	*methoxychlor*	*32.0*	-	*none*
PEM16	*DB1701*	*endrin*	*30.0*	-	*none*
PEM16	*DB1701*	*methoxychlor*	*40.4*	-	*none*

Criteria

The relative percent differences (RPDs) between the nominal and calculated concentrations in the performance evaluation mixture should be ≤25%.

Actions

If any RPDs exceed 25%, qualify all positive and nondetect results for those compounds as estimated (J and UJ, respectively).

Comments

Continuing calibration Aroclor standards were analyzed within the analytical sequence. Since all Aroclors are made up of PCBs, the same system conditions that affect one Aroclor would similarly affect the others. All positive and nondetect soil and aqueous sample results, with the exception of the samples OWL-VER-02, OWL-VER-03, OWL-VER-04, OWL-VER-05, OWL-VER-07, OWL-VER-08, OWL-VER-11, and OWL-VER-12 which were previously estimated for low surrogate recoveries, were qualified as estimated (J and UJ, respectively) due to instrument variability as indicated by exceeded continuing calibration RPD criterion for Aroclor-1016 and Aroclor-1242.

No actions were taken for the PEM results which did not meet recovery criteria as the associated samples were reported for PCBs only and the recovery of the pesticide standard would not affect the PCB results.

XI C. PERFORMANCE EVALUATION MIXTURES cont.

DDT and Endrin Degradation

Listed below are the standards which have DDT or Endrin breakdown of greater than 20% or combined breakdown greater than 30%.

Standard ID	DDT/Endrin	% Breakdown	Samples Affected	Breakdown Compounds Present
PEM10	*endrin*	*27.0*	*MSB12, MSBD12, PBLK12, MW-536-18, and MW-536-19*	
PEM10	*combined*	*31.9*	*MSB12, MSBD12, PBLK12, MW-536-18, and MW-536-19*	
PEM11	*endrin*	*27.6*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples with the exception of OWL-VER-11 and OWL-VER-12*	
PEM11	*combined*	*33.2*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples with the exception of OWL-VER-11 and OWL-VER-12*	
PEM11	*endrin*	*21.2*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples with the exception of OWL-VER-11 and OWL-VER-12*	
PEM11	*combined*	*30.4*	*MSB12, MSBD12, PBLK12, MW-536-18, MW-536-19, MSB13, PBLK13, and all soil samples with the exception of OWL-VER-11 and OWL-VER-12*	
PEM12	*endrin*	*22.2*	*OWL-VER-11 and OWL-VER-12*	
PEM12	*endrin*	*22.0*	*OWL-VER-11 and OWL-VER-12*	
PEM12	*combined*	*30.3*	*OWL-VER-11 and OWL-VER-12*	
PEM13	*endrin*	*23.2*	*none*	
PEM14	*combined*	*34.5*	*none*	
PEM15	*endrin*	*28.4*	*none*	
PEM15	*combined*	*36.2*	*none*	
PEM15	*endrin*	*24.8*	*none*	
PEM15	*combined*	*36.2*	*none*	
PEM16	*endrin*	*35.2*	*none*	
PEM16	*combined*	*43.1*	*none*	
PEM16	*endrin*	*28.4*	*none*	
PEM16	*combined*	*40.0*	*none*	

)T and Endrin Degradation Criteria cont

The percent breakdown of DDT or endrin should be less than 20% and the combined breakdown of DDT and endrin should be less than 30% in the Performance Evaluation Mixtures (PEMs). (Vol 2., Exhibit D, Part IV, Section 6.2.3)

Actions

If the breakdown for DDT is greater than 20%:

- Qualify all positive results for DDT as estimated (J). If DDT was not detected, but DDD and/or DDE are positive, then qualify the nondetect result for DDT as unusable (R).

- Qualify positive results for DDE and/or DDE as presumptively present at an estimated quantity (JN).

If the breakdown for Endrin is greater than 20%:

- Qualify all positive results for Endrin as estimated (J). If Endrin was not detected, but Endrin aldehyde and/or Endrin ketone are positive, qualify the nondetect result for Endrin as unusable (R).

- Qualify all positive results for Endrin ketone and Endrin aldehyde as presumptively present at an estimated quantity (JN).

If the combined DDT and Endrin breakdown is greater than 30%:

- Qualify all positive results for DDT and endrin as estimated (J). If DDT was not detected, but DDD and/or DDE are positive, then qualify the nondetect result for DDT as unusable (R). If endrin was not detected, but endrin aldehyde and/or endrin ketone are positive, qualify the nondetect result for endrin as unusable (R).

- Qualify positive results for DDE, DDE, endrin aldehyde and/or endrin ketone as presumptively present at an estimated quantity (JN).

Comments

No actions were taken due to exceeded endrin and DDT percent breakdown criteria because the associated samples were analyzed for PCBs only. The PCB results would not be affected by the degradation of endrin and DDT.

D. ANALYTICAL SEQUENCE

Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and have all samples been injected within 12 hours of an instrument blank? (Vol 2., Exhibit D, Part IV, Sections 6 and 7) _____yes_____

If no, use professional judgment to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered or the calibration was also out of limits.

Comments

A one point calibration was performed for each Aroclor. All positive Aroclor sample results were verified by analysis of a standard within 72 hours of the sample analysis as required by the method. However, these Aroclor standards were not injected within a compliant 12 hour sequence. No further actions were taken because all sample results were estimated (J and UJ) for either low surrogate recoveries or variable instrument response.

TE. SURROGATE RETENTION TIMES

Listed below are the samples which have the surrogate retention times (RT) outside of the retention time windows (RTW) established during the initial calibration.

Sample ID	Column	RT for TCX	RT for DCB
PIBLK23	*DB608*	*8.65*	
PIBLK25	*DB608*	*8.65*	
PIBLK16	*DB1701*	*10.17*	*30.38*
PIBLK22	*DB1701*		*30.38*
PEM12	*DB1701*		*30.38*
PEM13	*DB1701*		*30.38*
PIBLK29	*DB1701*		*30.38*
PEM16	*DB1701*		*30.37*
RTW Criteria: DB608		8.54-8.64	29.19-29.39
DB1701		10.18-10.28	30.39-30.59

Criteria

The RTs of both surrogates in each sample must be within the RTWs established during the initial calibration. (Vol 2., Exhibit D, Part IV, Section 14)

Actions

If the RTs are not met, the analysis may be qualified unusable (R) for that sample, based upon the professional judgment of the reviewer.

Comments

The PCBs were identified through pattern recognition rather than retention times. No actions were required because all of the above surrogate retention time shifts affected instrument continuing calibration standards and blanks; also the surrogate retention times in the samples were within retention time windows.

XI F. RESOLUTION CHECK MIXTURE

Is the resolution between any two adjacent peaks in the Resolution Check Mixture >60% for both columns? (Vol 2., Exhibit D, Part IV, Section 6.2.2) yes

If no, positive results for compounds that were not adequately resolved should be qualified as estimated (J). Use professional judgment to determine if nondetects which elute in areas affected by coeluting peaks should be qualified as presumptively present (N) or unusable (R).

Comments

The resolution check mixture met resolution criteria; therefore, no actions were required.

XI G. FLORISIL CARTRIDGE CHECK

Are the percent recoveries of the pesticide and surrogate compounds used to check the efficiency of the cleanup procedures within the QC limits of 80-120%? (Vol 2., Exhibit D, Part IV, Section 7.3.1) yes

If recoveries are <80%, qualify positive and nondetects results for those compounds as estimated (J and UJ, respectively). If any compound is not recovered, qualify the nondetect result for that compound as unusable (R). Use professional judgment to qualify positive results if recoveries are greater than the 120%.

Comments

Florisil cartridge cleanup met recovery criteria for all compounds; therefore, no actions were required.

XI H. GPC CALIBRATION CHECK

Are the percent recoveries of the pesticide and surrogate compounds used to check the efficiency of the cleanup procedures within the QC limits of 80-110%? (Vol 2., Exhibit D, Part IV, Section 7.1.4.4) yes

If recoveries are <80%, qualify positive and nondetects results for those compounds as estimated (J and UJ, respectively). If any compound is not recovered, qualify the nondetect result for that compound as unusable (R). Use professional judgment to qualify positive results if recoveries are greater than 110%.

Comments

GPC recovery criteria were met for all compounds; therefore, no actions were required.

XII. COMPOUND IDENTIFICATION and QUANTITATION

XII A. IDENTIFICATION

Volatiles and Semivolatiles

Are the lab-generated standard and sample mass spectra of the identified volatile and semivolatile compounds present for each sample? *yes*

Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?
yes

Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum? *yes*

Do sample and standard relative ion intensities agree within 20%? *yes*

Actions

Use professional judgment to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be qualified as unusable (R) or presumptively present (N), or considered nondetect (U) at the calculated detection limit.

When sample carry-over is a possibility, professional judgment should be used to determine if instrument cross-contamination has affected any positive compound identifications.

Comments

Benzo(k)fluoranthene and 2-methylnaphthalene results in sample OWL-VER-02; benzo(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, and phenanthrene results in sample OWL-VER-04; benzo(a)anthracene, chrysene, fluoranthene, and phenanthrene results in sample OWL-VER-06; the pyrene result in sample OWL-VER-07; and anthracene, benzo(a)anthracene, chrysene, fluoranthene, phenanthene and pyrene results in sample OWL-VER-09 were quantitated at values less than 10% of the CRQL. Due to uncertainty in the laboratory's ability to detect the compounds at this level, the results were considered to be not detected, raised to the CRQL, and qualified with a "U".

XII A. IDENTIFICATION cont.

Pesticides

Are the retention times for the compounds reported in each sample within the established RT windows on both columns? *NA*

If no, qualify all positive results which were not confirmed on the second GC column analysis as unusable (R).

Specific retention times do not apply to PCBs as the compounds are identified by pattern recognition.

Has every compound confirmed on a second GC column been reported? *yes*

If no, contact the laboratory for resubmittals.

Actions

Use professional judgment to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be qualified as unusable (R) or considered nondetect (U) at the calculated detection limit.

Comments

NYSDEC ASP requires PCB results to be quantitated using a minimum of three peaks per column. Nonetheless, the reported Aroclor-1248 result in sample OWL-VER-03 and the Aroclor-1260 results in samples OWL-VER-05, OWL-VER-07, and OWL-VER-12 were confirmed on the second column using less than three quantitation peaks. This occurred because the peak-area reject threshold was set high eliminating many smaller PCB peaks from the sample quantitation report, even though the peaks were visible on the sample chromatograms. The PCB identifications were confirmed by comparison of standard vs. sample chromatograms. No actions were for taken Aroclor-1260 results in samples OWL-VER-05 and OWL-VER-07; and the Aroclor-1248 result in sample OWL-VER-03 because the results were rejected (R) for poor dual column precision. No actions were taken for the Aroclor-1260 result in sample OWL-VER-12 because the result was previously estimated (J) for low surrogate recovery.

II A. IDENTIFICATION cont.

Pesticides

Listed below are the positive sample results which have >25 %D between the concentrations from the two columns.

Sample ID	Compound	%D
OWL-VER-02	*Aroclor-1254*	*28.3*
OWL-VER-03	*Aroclor-1248*	*106.9*
OWL-VER-04	*Aroclor-1254*	*42.9*
OWL-VER-05	*Aroclor-1260*	*226.9*
OWL-VER-06	*Aroclor-1260*	*206.7*
OWL-VER-07	*Aroclor-1248*	*27.3*
OWL-VER-07	*Aroclor-1260*	*214.8*
OWL-VER-02MS	*Aroclor-1254*	*45.0*
OWL-VER-02MSD	*Aroclor-1254*	*45.6*

Action

If the percent difference is >25 but <50, qualify the positive results as estimated (J).
the %D is >50 but <90, qualify the positive result as presumptively present and estimated (JN).
the percent difference is >90, qualify the results as unusable (R). (EPA Region II)

Comments

Aroclor-1254 results in samples OWL-VER-02 and OWL-VER-04; and the Aroclor-1248 result in sample OWL-VER-06 should have been estimated for % D greater than 25% but less than 50%; however, the results were previously qualified (J) due to low surrogate recoveries. No further actions were taken.

Aroclor-1260 results in samples OWL-VER-05 and OWL-VER-07; and the Aroclor-1248 result in sample OWL-VER-03 were rejected (R) for dual column precision greater than 90%.

The remaining samples were for QC purposes only and thus no actions were required.

XII B. QUANTITATION

Calculations

Did the laboratory perform all sample concentration calculations according to the method requirements? *yes*

If no, contact the laboratory for resubmittals.

Shown below are examples of at least one sample calculation per fraction:

Semivolatile

OWL-VER-02 (2-methylnaphthalene)

$$C_c = \frac{A_c \times C_{is} \times V_f \times DF \times 2}{A_{is} \times RF \times V_i \times W_s} \times \frac{100}{\%\,solids}$$

$$C_c = \frac{6529 \times 40 \times 5000 \times 2}{710179 \times 0.53 \times 30.48 \times 2} \times \frac{100}{91.0}$$

$$C_c = 12.5\ \mu g / kg$$

PCBs

OWL-VER-02 Aroclor-1248 (column 1)

peak #1

$$C_c = \frac{A_c \times V_f \times 2}{CF_{mp} \times W_s \times 1} \times \frac{100}{\%solids}$$

$$C_c = \frac{1653594 \times 5000 \times 2}{711000 \times 30.1 \times 1} \times \frac{100}{91.0}$$

$$C_c = 849\ \mu g / kg$$

PCBs cont.

peak #2

$$C_c = \frac{A_c \times V_f \times 2}{CF_{mp} \times W_s \times 1} \times \frac{100}{\%solids}$$

$$C_c = \frac{938986 \times 5000 \times 2}{775000 \times 30.1 \times 1} \times \frac{100}{91.0}$$

$$C_c = 442\ \mu g / kg$$

peak #3

$$C_c = \frac{A_c \times V_f \times 2}{CF_{mp} \times W_s \times 1} \times \frac{100}{\%solids}$$

$$C_c = \frac{1814541 \times 5000 \times 2}{899000 \times 30.1 \times 1} \times \frac{100}{91.0}$$

$$C_c = 737\ \mu g / kg$$

Average of PCB peaks

$$x = \frac{849 + 442 + 737}{3}$$

$$x = 680\ \mu g / kg$$

II B. QUANTITATION cont.

CRQLs

Did the laboratory meet the required CRQLs? *yes*

Are the CRQLs adjusted to reflect sample dilution and, for soils, percent moisture? *no*

Comments

The CRQLs for the semivolatile compounds were not adjusted for sample weight and percent solids. However, no actions were taken because the adjusted CRQLs, based on sample weight, percent solids, and an MDL study, were lower than the reported CRQLs of 300 µg/kg.

Sample Dilution

The following samples required dilution due to target compounds outside of the calibration range or matrix interference:

Not applicable

Comments

No samples required dilution due to target compounds outside of the calibration range or matrix interferences.

ercent Moisture

Listed below are soil samples which contain greater than 50% moisture.

Sample ID	%Moisture

Actions

If any sample analyzed as a soil contains 50%-90% water, all data should be qualified as estimated (J). If a soil sample contains more than 90% water, all data should be qualified as unusable (R). (EPA Region II)

Comments

All soil samples were less than 50% moisture; therefore, no actions were required.

VII. TENTATIVELY IDENTIFIED COMPOUNDS (TIC) SUMMARY

Listed below is a summary of the TICs detected in the volatile and semivolatile sample analyses.

Sample ID	TICS										

Use professional judgment to determine acceptability of TIC identification. If it is determined that incorrect identifications were made, change the identification to "unknown" or to some less specific identification, as appropriate.

Comments

ntatively identified compounds were not reported by the laboratory and were not a requirement of the project.

IV. OVERALL APPRAISAL

A. Actions Taken/Usability

All positive and nondetect PCB results in samples OWL-VER-02, OWL-VER-03, OWL-VER-04, OWL-VER-05, OWL-VER-07, OWL-VER-08, OWL-VER-11, and OWL-VER-12 were qualified as estimated (J and UJ, respectively) and maybe biased low as indicated by low surrogate recoveries. These results and quantitation limits are usable as estimated value and quantitation limits.

All positive and nondetect soil and aqueous sample results, with the exception of the samples OWL-VER-02, OWL-VER-03, OWL-VER-04, OWL-VER-05, OWL-VER-07, OWL-VER-08, OWL-VER-11, and OWL-VER-12 which were previously estimated for low surrogate recoveries, were qualified as estimated (J and UJ, respectively) due to instrument variability as indicated by exceeded continuing calibration RPD criterion for Aroclor-1016 and Aroclor-1242.

The nondetect result for naphthalene in sample MW-536-19 was estimated (UJ) due to uncertainty in the compound quantitation as indicated by variable instrument response. These result is usable as an estimated quantitation limit.

Benzo(k)fluoranthene, and 2-methylnaphthalene results in sample OWL-VER-02; benzo(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, and phenanthene results in sample OWL-VER-04; benzo(a)anthracene, chrysene, fluoranthene and phenanthene results in sample OWL-VER-06; the pyrene result in sample OWL-VER-07; and anthracene, benzo(a)anthracene, chrysene, fluoranthene, phenanthene and pyrene results in sample OWL-VER-09 were raised to the CRQL and qualified with a "U" due to uncertainty in the laboratory's ability to quantitate the result at 10% of the CRQL. These results are usable as nondetects at the reported quantitation limit.

Aroclor-1260 results in samples OWL-VER-05 and OWL-VER-07; and the Aroclor-1248 result in sample OWL-VER-03 were rejected (R) due to poor dual column precision. The results are unusable.

B. Non-compliance

Semivolatile organic and PCB analyses were performed according to the specified methods. The data package was complete and compliant with the exception of the example calculations which were not included.

ATTACHMENT I

DATA SUMMARY TABLES

SEMIVOLATILE (NIC ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02B

Sample ID	OWL-VER-02	OWL-VER-03	OWL-VER-04	OWL-VER-05	OWL-VER-06	OWL-VER-07	OWL-VER-08	OWL-VER-09
Laboratory ID	A5456801	A5456802	A5456803	A5456804	A5456805	A5456806	A5456807	A5456808
Date Sampled	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95
Date Extracted	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95
Date Analyzed	8/31/95	8/31/95	8/31/95	8/31/95	8/31/95	8/31/95	8/31/95	8/31/95
Percent Solids	91	93	94	93	95	93	93	93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Remarks								
Acenaphthene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Acenaphthylene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Anthracene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Benzo(a)anthracene	34 J	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Benzo(b)fluoranthene	59 J	300 U	36 J	300 U	300 U	300 U	300 U	300 U
Benzo(k)fluoranthene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Benzo(g,h,l)perylene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Benzo(a)pyrene	32 J	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Chrysene	47 J	300 U	32 J	300 U	300 U	300 U	300 U	300 U
Dibenzo(a,h)anthracene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Fluoranthene	51 J	300 U	51 J	300 U	300 U	300 U	300 U	300 U
Fluorene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Indeno(1,2,3-cd)pyrene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
2-Methylnaphthalene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Naphthalene	300 U	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Phenanthrene	36 J	300 U	300 U	300 U	300 U	300 U	300 U	300 U
Pyrene	58 J	300 U	67 J	300 U	38 J	300 U	300 U	300 U

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

SEMIVOLATILE ...NIC ANALYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02B

Sample ID	OWL-VER-11	OWL-VER-12	OWL-VER-200					
Laboratory ID	A5456810	A5456811	A5456809					
Date Sampled	8/25/95	8/25/95	8/25/95					
Date Extracted	8/29/95	8/29/95	8/29/95					
Date Analyzed	8/31/95	8/31/95	8/31/95					
Percent Solids	86	89	92					
Dilution Factor	1.0	1.0	1.0					
Remarks			Dup of OWL-VER-09					
Acenaphthene	300 U	300 U	300 U					
Acenaphthylene	300 U	300 U	300 U					
Anthracene	300 U	300 U	300 U					
Benzo(a)anthracene	300 U	300 U	300 U					
Benzo(b)fluoranthene	300 U	300 U	300 U					
Benzo(k)fluoranthene	300 U	300 U	300 U					
Benzo(g,h,i)perylene	300 U	300 U	300 U					
Benzo(a)pyrene	300 U	300 U	300 U					
Chrysene	300 U	300 U	300 U					
Dibenzo(a,h)anthracene	300 U	300 U	300 U					
Fluoranthene	300 U	300 U	300 U					
Fluorene	300 U	300 U	300 U					
Indeno(1,2,3-cd)pyrene	300 U	300 U	300 U					
2-Methylnaphthalene	300 U	300 U	300 U					
Naphthalene	300 U	300 U	300 U					
Phenanthrene	300 U	300 U	300 U					
Pyrene	300 U	300 U	300 U					

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

SEMIVOLATILE C.. ..NIC ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02B

Sample ID	MW-536-18	MW-536-19						
Laboratory ID	A5456812	A5456813						
Date Sampled	8/25/95	8/25/95						
Date Extracted	8/29/95	8/29/95						
Date Analyzed	8/31/95	8/31/95						
Dilution Factor	1.0	1.0						
Remarks	Rinsate Blank	Field Blank						
Acenaphthene	10 U	10 U						
Acenaphthylene	10 U	10 U						
Anthracene	10 U	10 U						
Benzo(a)anthracene	10 U	10 U						
Benzo(b)fluoranthene	10 U	10 U						
Benzo(k)fluoranthene	10 U	10 U						
Benzo(g,h,i)perylene	10 U	10 U						
Benzo(a)pyrene	10 U	10 U						
Chrysene	10 U	10 U						
Dibenzo(a,h)anthracene	10 U	10 U						
Fluoranthene	10 U	10 U						
Fluorene	10 U	10 U						
Indeno(1,2,3-cd)pyrene	10 U	10 U						
2-Methylnaphthalene	10 U	10 U						
Naphthalene	10 U	10 UJ						
Phenanthrene	10 U	10 U						
Pyrene	10 U	10 U						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

PCB . .YSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02B

Sample ID	OWL-VER-02	OWL-VER-03	OWL-VER-04	OWL-VER-05	OWL-VER-06	OWL-VER-07	OWL-VER-08	OWL-VER-09
Laboratory ID	A5456801	A5456802	A5456803	A5456804	A5456805	A5456806	A5456807	A5456808
Date Sampled	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95	8/25/95
Date Extracted	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95	8/29/95
Date Analyzed	9/6/95	9/6/95	9/6/95	9/6/95	9/6/95	9/6/95	9/6/95	9/6/95
Percent Solids	91	93	94	93	95	93	93	93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Remarks								
Aroclor-1016	36 UJ	35 UJ	35 UJ	35 UJ	34 UJ	35 UJ	35 UJ	35 UJ
Aroclor-1221	73 UJ	71 UJ	71 UJ	72 UJ	70 UJ	72 UJ	72 UJ	71 UJ
Aroclor-1232	36 UJ	35 UJ	35 UJ	35 UJ	34 UJ	35 UJ	35 UJ	35 UJ
Aroclor-1242	36 UJ	35 UJ	35 UJ	35 UJ	34 UJ	35 UJ	35 UJ	35 UJ
Aroclor-1248	680 J	R	47 J	12 J	36 J	11 J	35 UJ	48 J
Aroclor-1254	460 J	35 UJ	70 J	35 UJ	34 UJ	35 UJ	35 UJ	35 UJ
Aroclor-1260	36 UJ	35 UJ	35 UJ	R	7.5 J	R	35 UJ	23 J

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

PCB ... LYSIS
NYSDEC PROTOCOLS
SOIL ANALYTICAL RESULTS (UG/KG)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02B

Sample ID	OWL-VER-11	OWL-VER-12	OWL-VER-200					
Laboratory ID	A5456810	A5456811	A5456809					
Date Sampled	8/25/95	8/25/95	8/25/95					
Date Extracted	8/29/95	8/29/95	8/29/95					
Date Analyzed	9/6/95	9/6/95	9/6/95					
Percent Solids	86	89	92					
Dilution Factor	1.0	1.0	1.0					
Remarks			Dup of OWL-VER-09					
Aroclor-1016	38 UJ	37 UJ	36 UJ					
Aroclor-1221	77 UJ	75 UJ	72 UJ					
Aroclor-1232	38 UJ	37 UJ	36 UJ					
Aroclor-1242	38 UJ	37 UJ	36 UJ					
Aroclor-1248	38 UJ	16 J	56 J					
Aroclor-1254	38 UJ	37 UJ	36 UJ					
Aroclor-1260	38 UJ	16 J	32 J					

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

PCB ANALYSIS
NYSDEC PROTOCOLS
AQUEOUS ANALYTICAL RESULTS (UG/L)
OILY WASTE LANDFILL AREA, ALCOA-MASSENA, NEW YORK
SDG VER02B

Sample ID	MW-536-18	MW-536-19						
Laboratory ID	A5456812	M5456813						
Date Sampled	8/25/95	8/25/95						
Date Extracted	8/29/95	8/29/95						
Date Analyzed	8/31/95	8/31/95						
Dilution Factor	1.0	1.0						
Remarks	Rinsate Blank	Field Blank						
Aroclor-1016	1 UJ	1 UJ						
Aroclor-1221	2 UJ	2 UJ						
Aroclor-1232	1 UJ	1 UJ						
Aroclor-1242	1 UJ	1 UJ						
Aroclor-1248	1 UJ	1 UJ						
Aroclor-1254	1 UJ	1 UJ						
Aroclor-1260	1 UJ	1 UJ						

J-Value is an estimated quantity.
U-Analyte was not detected. Value is the sample detection limit.
UJ-Analyte was not detected. Detection limit is estimated.
R-Datum was rejected.

ATTACHMENT II

LABORATORY'S CASE NARRATIVE

SEMIVOLATILE DATA

Semivolatile sample and standard areas are listed on the corresponding data system printouts.

Semivolatile data was processed utilizing Teknivant Datasystem and Recra Environmental's Inc.'s Analytical Information Management Systems (AIMS). All compounds determined to be present by the computer-generated autoquantitation were subjected to a manual ion search for secondary and tertiary ions. False positive compounds are crossed out, initialed and dated in this data package.

Samples OWL-VER-02MS and OWL-VER-02MSD exhibit the relative percent difference of Acenaphthene as above QC limits.

PCB DATA

The surrogate recovery of Decachlorobiphenyl fell outside QC limits in samples PBLK12, MW538618 and MW53618 on the DB1701 column.

The surrogate recovery of Tetrachloro-m-xylene fell outside QC limits in samples PBLK13, MSB13, OWLVER02, OWLVER02MS, OWLVER02MSD, OWLVER03, OWLVER04, OWLVER05, OWLVER07, OWLVER08, OWLVER11 and OWLVER12 on the DB608 and DB1701 columns. The surrogate recovery of Decachlorobiphenyl fell outside QC limits in samples OWLVER02 and OWLVER07 on the DB608 and DB1701 columns.

The Endrin percent breakdown and combined percent breakdown are above QC limits on the DB608 column in: PEM10 analyzed on 8/31/95 at 02:15; PEM11 analyzed on 9/6/95 at 14:08; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PEM14 analyzed on 9/9/95 at 01:37; PEM15 analyzed on 9/10/95 at 01:36; PEM16 analyzed on 9/10/95 at 23:23.

The relative percent difference of Methoxychlor fell outside QC limits on the DB1701 column in: PEM10 analyzed on 8/31/95 at 02:15; PEM11 analyzed on 9/6/95 at 14:08; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PEM14 analyzed on 9/9/95 at 01:37; PEM15 analyzed on 9/10/95 at 01:36; PEM16 analyzed on 9/10/95 at 23:23.

The relative percent difference of Methoxychlor fell outside QC limits on the DB608 column in: INDAM02 analyzed on 7/28/95 at 16:49; INDAM03 analyzed on 7/29/95 at 12:25.

The relative percent difference of 4,4'-DDT and Methoxychlor fell outside QC limits on the DB1701 column in: INDAM12 analyzed on 9/10/95 at 12:28. The retention time of gamma-BHC is outside QC limits. INDAM12 exhibits the following outside retention time windows: beta-BHC, delta-BHC, Endosulfan sulfate, Endrin ketone and Endrin aldehyde. INDAM13 analyzed on 9/11/95 at 11:01 exhibits the relative percent difference of Endrin, 4,4'-DDT and Methoxychlor as outside QC limits.

PIBLK23 analyzed on 9/7/95 at 16:11 and PIBLK25 analyzed on 9/8/95 at 13:59 both exhibit the retention time of surrogate Tetrachloro-m-xylene outside QC limits on the DB608 column.

PIBLK16 analyzed on 8/17/95 at 15:43 exhibits the retention time of surrogates Tetrachloro-m-xylene and Decachlorobiphenyl outside QC limits on the DB1701 column.

PIBLK22 analyzed on 9/7/95 at 03:57; PEM12 analyzed on 9/7/95 at 04:40; PEM13 analyzed on 9/8/95 at 03:49; PIBLK29 analyzed on 9/10/95 at 22:40 and PEM16 analyzed on 9/10/95 at 23:23 all exhibit the retention time of Decachlorobiphenyl outside QC limits on the DB1701 column.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Michelle M. Pickin for KEK

Kenneth E. Kasperek
Laboratory Director

09/25/95

Date

ATTACHMENT III

DEC REQUIRED SAMPLE and ANALYSIS SUMMARY SHEETS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION
AND
ANALYTICAL REQUEST SUMMARY

LAB NAME: RECRA ENVIRONMENTAL, INC.

CUSTOMER SAMPLE ID	LABORATORY SAMPLE ID	ANALYTICAL REQUIREMENTS					
		VOA GC/MS	BNA GC/MS	VOA GC	PEST PCB	METALS	OTHER
MW-536-18	A5456812	-	ASP91	-	ASP91	-	-
MW-536-19	A5456813	-	ASP91	-	ASP91	-	-
OWL-VER-02	A5456801	-	ASP91	-	ASP91	-	-
OWL-VER-03	A5456802	-	ASP91	-	ASP91	-	-
OWL-VER-04	A5456803	-	ASP91	-	ASP91	-	-
OWL-VER-05	A5456804	-	ASP91	-	ASP91	-	-
OWL-VER-06	A5456805	-	ASP91	-	ASP91	-	-
OWL-VER-07	A5456806	-	ASP91	-	ASP91	-	-
OWL-VER-08	A5456807	-	ASP91	-	ASP91	-	-
OWL-VER-09	A5456808	-	ASP91	-	ASP91	-	-
OWL-VER-11	A5456810	-	ASP91	-	ASP91	-	-
OWL-VER-12	A5456811	-	ASP91	-	ASP91	-	-
OWL-VER-200	A5456809	-	ASP91	-	ASP91	-	-

RECRA
ENVIRONMENTAL
INC.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
B\N-A ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-18	WATER	08/25/95	08/26/95	08/29/95	08/31/95
MW-536-19	WATER	08/25/95	08/26/95	08/29/95	09/01/95
OWL-VER-02	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-03	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-04	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-05	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-06	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-07	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-08	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-09	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-11	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-12	SOIL	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-200	SOIL	08/25/95	08/26/95	08/29/95	08/31/95

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	DATE COLLECTED	DATE RECEIVED AT LAB	DATE EXTRACTED	DATE ANALYZED
MW-536-18	WATER	08/25/95	08/26/95	08/29/95	08/31/95
MW-536-19	WATER	08/25/95	08/26/95	08/29/95	08/31/95
OWL-VER-02	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-03	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-04	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-05	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-06	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-07	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-08	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-09	SOIL	08/25/95	08/26/95	08/29/95	09/06/95
OWL-VER-11	SOIL	08/25/95	08/26/95	08/29/95	09/07/95
OWL-VER-12	SOIL	08/25/95	08/26/95	08/29/95	09/07/95
OWL-VER-200	SOIL	08/25/95	08/26/95	08/29/95	09/06/95

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

LAB NAME: RECRA ENVIRONMENTAL, INC.

SAMPLE IDENTIFICATION	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
MW-536-18	WATER	ASP91	CONT, SEPF	AS REQUIRED	AS REQUIRED
MW-536-19	WATER	ASP91	CONT, SEPF	AS REQUIRED	AS REQUIRED
OWL-VER-02	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-03	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-04	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-05	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-06	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-07	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-08	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-09	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-11	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-12	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED
OWL-VER-200	SOIL	ASP91	SONC	AS REQUIRED	AS REQUIRED

ATTACHMENT IV

TELEPHONE LOGS and RESUBMITTALS REQUESTS

Appendix D

Appendix D

Statistical Analysis

OILY WASTE LANDFILL
CLEANUP VERIFICATION STATISTICS

PURPOSE: COMPLETE A STATISTICAL ANALYSIS ON THE LABORATORY ANALYZED CLEANUP VERIFICATION SAMPLES FOR THE OILY WASTE LANDFILL. THIS ANALYSIS WILL BE PERFORMED TO DETERMINE IF THE REMEDIATED AREA IS STATISTICALLY BELOW CLEANUP GOALS FOR PCBs, PAHs, AND VOCs.

GIVEN: NINE CLEANUP VERIFICATION SAMPLES WERE COLLECTED FROM THE OWL SITE. ALL SAMPLES WERE ANALYZED FOR PCBs, PAHs, AND VOCs.

ALL NINE SAMPLES WERE NONDETECT FOR THE VOCs 1,1,1 TRICHLOROETHANE, BENZENE, AND TOTAL XYLENE AND THE PAHs ACENAPHTHENE, ACENAPHTHYLENE, BENZO (G,H,I) PERYLENE, DIBENZO (A,H) ANTHRACENE, FLUORENE, INDENO (1,2,3-CD) PYRENE AND NAPHTHALENE.

ONE SAMPLE (OWL-VER-02) CONTAINED A TOTAL PCB CONCENTRATION (1.7 MG/KG) ABOVE CLEANUP GOALS.

THE REMAINING CLEANUP GOAL PARAMETERS CONTAIN EITHER NON-DETECT OR LOW LEVEL CONCENTRATIONS BELOW CLEANUP GOALS.

A COPY OF THE CLEANUP GOALS ARE ATTACHED.

STATISTICS: THE REQUIRED RESULT IS THE UPPER 80% CONFIDENCE LIMIT ON THE MEAN, GEOMETRIC MEAN, OR MEDIAN OF THE PCB, PAH, AND VOC DATA. A COMPARISON MUST BE MADE BETWEEN THE 80% CONFIDENCE LIMIT AND THE CORRESPONDING CLEANUP GOALS.

PARAMETRIC: IF THE UNTRANSFORMED OR LOG TRANSFORMED DATA CAN BE FIT TO A NORMAL DISTRIBUTION, THE FOLLOWING PROCEDURE WILL BE FOLLOWED.

ALL NONDETECT CONCENTRATIONS WILL BE REPRESENTED BY 1/2 OF THE DETECTION LIMIT.

THE DATA WILL THEN BE INPUT INTO SYSTAT TO DETERMINE WHETHER THE UNTRANSFORMED OR LOG TRANSFORMED DATA IS NORMALLY

TABLE 2-1

Soil Cleanup Goals From Record of Decision

Compound	Areas Outside Groundwater Management Units*	Areas within Groundwater Management Units**
1,1,1-Trichloroethane	0.76 mg/kg	7.6 mg/kg
Benzene	0.04 mg/kg	0.4 mg/kg
Tetrachloroethene	0.02 mg/kg	0.2 mg/kg
Trichloroethene	0.13 mg/kg	1.3 mg/kg
Toluene	0.15 mg/kg	1.5 mg/kg
Total Xylene	0.12 mg/kg	1.2 mg/kg
Phenanthrene	2.20 mg/kg	2.2 mg/kg
Pyrene	6.60 mg/kg	6.6 mg/kg
Other PAHs	0.30 mg/kg	0.3 mg/kg
PCBs	1.00 mg/kg	10.0 mg/kg

* Areas "within" groundwater management units are considered areas within the influence of groundwater pumping wells, groundwater drains, or groundwater monitoring wells.

** Areas "outside" of groundwater management units are areas other than areas "within" groundwater management units.

DISTRIBUTED.

IF ACCORDING TO THE PROBABILITY PLOT AND THE LILLEFORS TEST IT IS DETERMINED THAT THE UNTRANSFORMED DATA BEST FITS THE NORMAL DISTRIBUTION, THEN SYSTAT WILL BE USED TO FIND THE MEAN AND STANDARD DEVIATION OF THE DATA SET.

THE ANALYSIS WILL THEN BE PERFORMED IN ACCORDANCE WITH THE <u>SOIL REMEDIATION VERIFICATION GUIDE</u> (CDM)

$$UCL_{0.80} = \bar{X} + t_{0.80, n-1} \frac{S}{\sqrt{n}}$$

$UCL_{0.80}$ = UPPER 80% CONFIDENCE LIMIT

$\bar{X}$ = MEAN
t = STUDENT'S T-VALUE
n = SAMPLE SIZE
S = STANDARD DEVIATION

IF ACCORDING TO THE PROBABILITY PLOT AND THE LILLEFORS TEST IT IS DETERMINED THAT THE LOG TRANSFORMED DATA BEST FITS THE NORMAL DISTRIBUTION, THEN SYSTAT WILL BE USED TO FIND THE GEOMETRIC MEAN AND STANDARD DEVIATION OF THE DATA SET.

A SIMILAR CALCULATION WILL BE PERFORMED.

$$UCL_{0.80} = EXP\left(\bar{X} + t_{0.80, n-1} \frac{S}{\sqrt{n}}\right)$$

$\bar{X}$ = MEAN OF THE LOG TRANSFORMED DATA
S = STANDARD DEVIATION OF THE LOG TRANSFORMED DATA

<u>NONPARAMETRIC</u>: IF THE DATA SET IS SMALL (<5), CONTAINS A LARGE AMOUNT OF NONDETECTS (≥50%), OR DOES NOT FIT A NORMAL OR LOGNORMAL DISTRIBUTION THEN A NON-PARAMETRIC ANALYSIS MUST BE PERFORMED.

ALL NONDETECT CONCENTRATIONS WILL BE REPRESENTED BY ½ OF THE DETECTION LIMIT.
THE DATA WILL THEN BE RANKED FROM LOWEST CONCENTRATION (1) TO THE HIGHEST CONCENTRATION (>1).

THE ANALYSIS WILL THEN BE PERFORMED IN ACCORDANCE WITH PRACTICAL NONPARAMETRIC STATISTICS BY CONOVER 1980.

$$P(x_p^* \leq x^{(s)}) = 1 - \alpha$$

BEGIN BY ENTERING THE FOLLOWING DATA INTO TABLE A.3

n = SAMPLE SIZE
p = MEDIAN PROBABILITY = 0.50
α_1 = SIGNIFICANCE LEVEL = 0.20

$1 - \alpha_1 = 0.80$

THIS INPUT IS USED TO FIND A CORRESPONDING Y VALUE.

y = TABULATED VALUE

$y = s - 1$

s = THE RANK OF THE SAMPLE VALUE WHICH REPRESENTS THE UPPER CONFIDENCE LIMIT

A COPY OF TABLE A.3 IS ATTACHED.

ANALYSIS:

PCBs

GIVEN: A MAJORITY OF THE SAMPLES (8 OF 9) CONTAINED DETECTABLE CONCENTRATIONS OF PCBs.

ASSUME: A PARAMETRIC ANALYSIS WILL BE PERFORMED.

CALCULATIONS: THE DATA WAS INPUT INTO SYSTAT. THE LOG TRANSFORMED DATA APPEARS TO BEST FIT THE NORMAL DISTRIBUTION.

$$UCL_{0.80} = EXP\left(\bar{X} + t_{0.80,n-1}\frac{s}{\sqrt{n}}\right)$$

$$= EXP\left(-3.090 + 0.889\right)\frac{1.517}{\sqrt{9}}$$

$$= 0.071 \text{ MG/KG PCBs} < 1 \text{ MG/KG PCBs CLEANUP GOAL}$$

THE SYSTAT INPUT AND OUTPUT ARE ATTACHED.

Table A3 (Continued)

n	x	p = .05	.10	.15	.20	.25	.30	.35	.40	.45
12	0	.5404	.2824	.1422	.0687	.0317	.0138	.0057	.0022	.0008
	1	.8816	.6590	.4435	.2749	.1584	.0850	.0424	.0196	.0083
	2	.9804	.8891	.7358	.5583	.3907	.2528	.1513	.0834	.0421
	3	.9978	.9744	.9078	.7946	.6488	.4925	.3467	.2253	.1345
	4	.9998	.9957	.9761	.9274	.8424	.7237	.5833	.4382	.3044
	5	1.0000	.9995	.9954	.9806	.9456	.8822	.7873	.6652	.5269
	6	1.0000	.9999	.9993	.9961	.9857	.9614	.9154	.8418	.7393
	7	1.0000	1.0000	.9999	.9994	.9972	.9905	.9745	.9427	.8883
	8	1.0000	1.0000	1.0000	.9999	.9996	.9983	.9944	.9847	.9644
	9	1.0000	1.0000	1.0000	1.0000	1.0000	.9998	.9992	.9972	.9921
	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	.9999	.9997	.9989
	11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	.9999
	12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
13	0	.5133	.2542	.1209	.0550	.0238	.0097	.0037	.0013	.0004
	1	.8646	.6213	.3983	.2336	.1267	.0637	.0296	.0126	.0049
	2	.9755	.8661	.6920	.5017	.3326	.2025	.1132	.0579	.0269
	3	.9969	.9658	.8820	.7473	.5843	.4206	.2783	.1686	.0929
	4	.9997	.9935	.9658	.9009	.7940	.6543	.5005	.3530	.2279
	5	1.0000	.9991	.9925	.9700	.9198	.8346	.7159	.5744	.4268
	6	1.0000	.9999	.9987	.9930	.9757	.9376	.8705	.7712	.6437
	7	1.0000	1.0000	.9998	.9988	.9944	.9818	.9538	.9023	.8212
	8	1.0000	1.0000	1.0000	.9998	.9990	.9960	.9874	.9679	.9302
	9	1.0000	1.0000	1.0000	1.0000	.9999	.9993	.9975	.9922	.9797
	10	1.0000	1.0000	1.0000	1.0000	1.0000	.9999	.9997	.9987	.9959
	11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	.9999	.9995
	12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
14	0	.4877	.2288	.1028	.0440	.0178	.0068	.0024	.0008	.0002
	1	.8470	.5846	.3567	.1979	.1010	.0475	.0205	.0081	.0029
	2	.9699	.8416	.6479	.4481	.2811	.1608	.0839	.0398	.0170
	3	.9958	.9559	.8535	.6982	.5213	.3552	.2205	.1243	.0632
	4	.9996	.9908	.9533	.8702	.7415	.5842	.4227	.2793	.1672
	5	1.0000	.9985	.9885	.9561	.8883	.7805	.6405	.4859	.3373
	6	1.0000	.9998	.9978	.9884	.9617	.9067	.8164	.6925	.5461
	7	1.0000	1.0000	.9997	.9976	.9897	.9685	.9247	.8499	.7414
	8	1.0000	1.0000	1.0000	.9996	.9978	.9917	.9757	.9417	.8811
	9	1.0000	1.0000	1.0000	1.0000	.9997	.9983	.9940	.9825	.9574
	10	1.0000	1.0000	1.0000	1.0000	1.0000	.9998	.9989	.9961	.9886
	11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	.9999	.9994	.9978
	12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	.9999	.9997
	13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

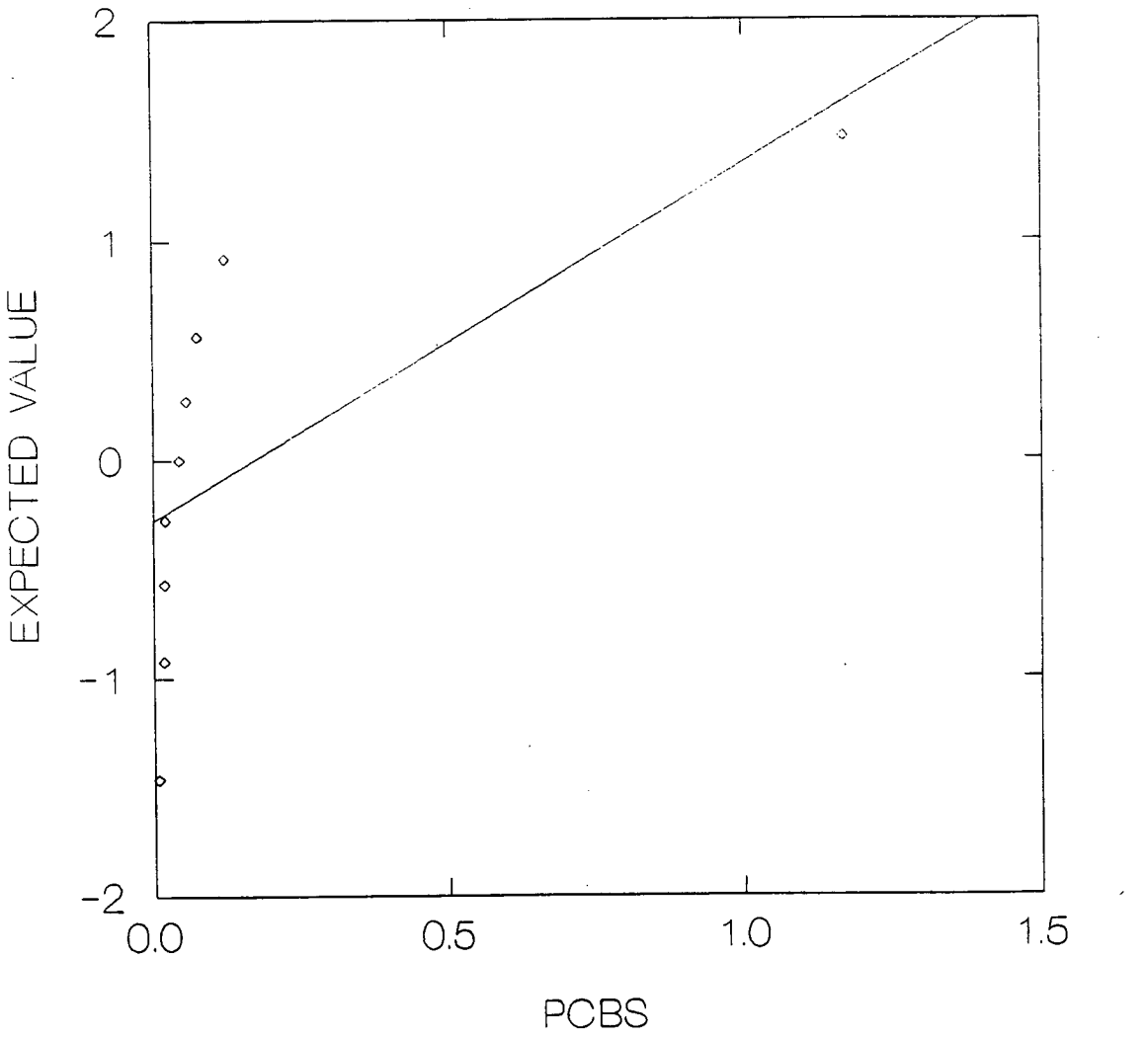
ILY WASTE LANDFILL
YSTMT INPUT

		SAMPLES	PCBS	LNPCBS
CASE	1	ver-1	0.055	-2.900
CASE	2	ver-2	1.170	0.157
CASE	3	ver-3	0.006	-5.051
CASE	4	ver-4	0.121	-2.112
CASE	5	ver-5	0.019	-3.974
CASE	6	ver-6	0.043	-3.149
CASE	7	ver-7	0.016	-4.135
CASE	8	ver-8	0.018	-4.046
CASE	9	ver-9	0.074	-2.604

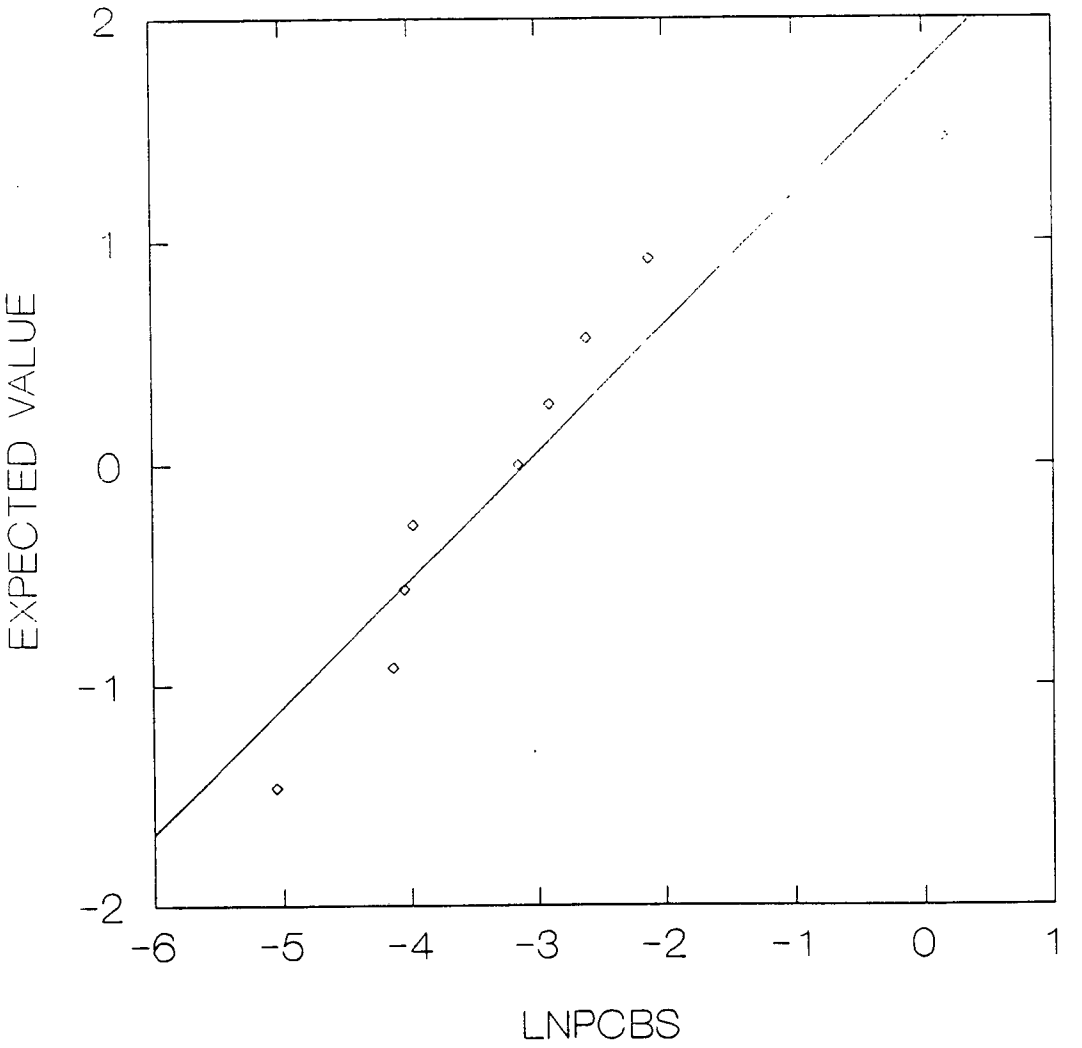
ILY WASTE LANDFILL
YSTAT OUTPUT

```
FRI 10/27/95 10:41:08 AM

SYSTAT VERSION 5.0
C    IGHT, 1990-1992
SYSTAT, INC.

Welcome to SYSTAT!
 WORKSPACE CLEAR FOR CREATING NEW DATASET

>USE 'C:\SYSTATW5\OWLPCB.SYS'
 SYSTAT FILE VARIABLES AVAILABLE TO YOU ARE:
     SAMPLE$          PCBS          LNPCBS

>STATS
>STATS PCBS LNPCBS /  Maximum Mean Minimum SD


FRI 10/27/95 10:41:30 AM   C:\SYSTATW5\OWLPCB.SYS

 TOTAL OBSERVATIONS:      9

                        PCBS       LNPCBS

   N OF CASES              9            9
   MINIMUM             0.006       -5.051
   MAXIMUM             1.170        0.157
   MEAN                0.169       -3.090
   STANDARD DEV        0.377        1.517



>N...K
>KS PCBS LNPCBS/LILLIEFORS


FRI 10/27/95 10:41:40 AM   C:\SYSTATW5\OWLPCB.SYS

 KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

   VARIABLE     N-OF-CASES   MAXDIF  LILLIEFORS PROBABILITY (2-TAIL)

       PCBS          9.000    0.440        0.000
     LNPCBS          9.000    0.164        0.860

>
```

Oily Waste Landfill Cleanup Verifcation



Oily Waste Landfill Cleanup Verification



CONCLUSION: THE OWL IS STATISTICALLY BELOW CLEANUP GOALS FOR PCBs.

PAHs

GIVEN: A MAJORITY OF THE SAMPLES (5 OF 9) CONTAINED DETECTABLE CONCENTRATIONS OF PYRENE.

ANTHRACENE, BENZO (A) ANTRACENE, BENZO (B) FLUORANTHENE, BENZO (K) FLUORANTHENE, BENZO (A) PYRENE, CHRYSENE, FLUORANTHENE, 2 METHYLNAPHTHALENE, AND PHENANTHRENE WERE DETECTED IN ONE OR MORE OF THE NINE SAMPLES, BUT >50% OF THE SAMPLES WERE NONDETECT.

THE REMAINING PAHs (OTHERS) WERE NONDETECT FOR ALL NINE SAMPLES.

ASSUME: A PARAMETRIC ANALYSIS FOR PYRENE AND A NONPARAMETRIC ANALYSIS FOR ALL DETECTABLE PARAMETERS WILL BE PERFORMED.

CALCULATION:

PARAMETRIC: PYRENE DATA WAS INPUT INTO SYSTAT. THE LOG TRANSFORMED AND UNTRANSFORMED DATA BOTH APPEAR TO BE NORMALLY DISTRIBUTED. YET THE LOG TRANSFORMED DATA HAD THE BEST FIT BY THE LILLIEFORS TEST.

$$\text{LOG TRANSFORMED } UCL_{0.80} = EXP\left(\bar{x} + t_{0.80,n-1}\frac{s}{\sqrt{n}}\right)$$

$$= EXP\left(-2.781 + (.889)\frac{1.005}{\sqrt{9}}\right)$$

$$= 0.083 \text{ MG/KG} < 6.6 \text{ MG/KG PYRENE CLEANUP GOAL}$$

THE SYSTAT INPUT AND OUTPUT ARE ATTACHED.

LY WASTE LANDFILL
ISTAT INPUT

		SAMPLES	PYRENE	LNPYRENE
CASE	1	ver-1	0.150	-1.897
CASE	2	ver-2	0.058	-2.847
CASE	3	ver-3	0.150	-1.897
CASE	4	ver-4	0.067	-2.703
	5	ver-5	0.150	-1.897
	6	ver-6	0.038	-3.270
CASE	7	ver-7	0.012	-4.423
CASE	8	ver-8	0.150	-1.897
CASE	9	ver-9	0.015	-4.200

-Y WASTE LANDFILL
YSTAT OUTPUT

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SYSTAT VERSION 5.0
CC HT, 1990-1992
S INC.

Welcome to SYSTAT!
WORKSPACE CLEAR FOR CREATING NEW DATASET
SYSTAT FILE VARIABLES AVAILABLE TO YOU ARE:
SAMPLES PYRENE LNPYRENE

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TOTAL OBSERVATIONS: 9

	PYRENE	LNPYRENE
N OF CASES	9	9
MINIMUM	0.012	-4.423
MAXIMUM	0.150	-1.897
MEAN	0.088	-2.781
STANDARD DEV	0.062	1.005

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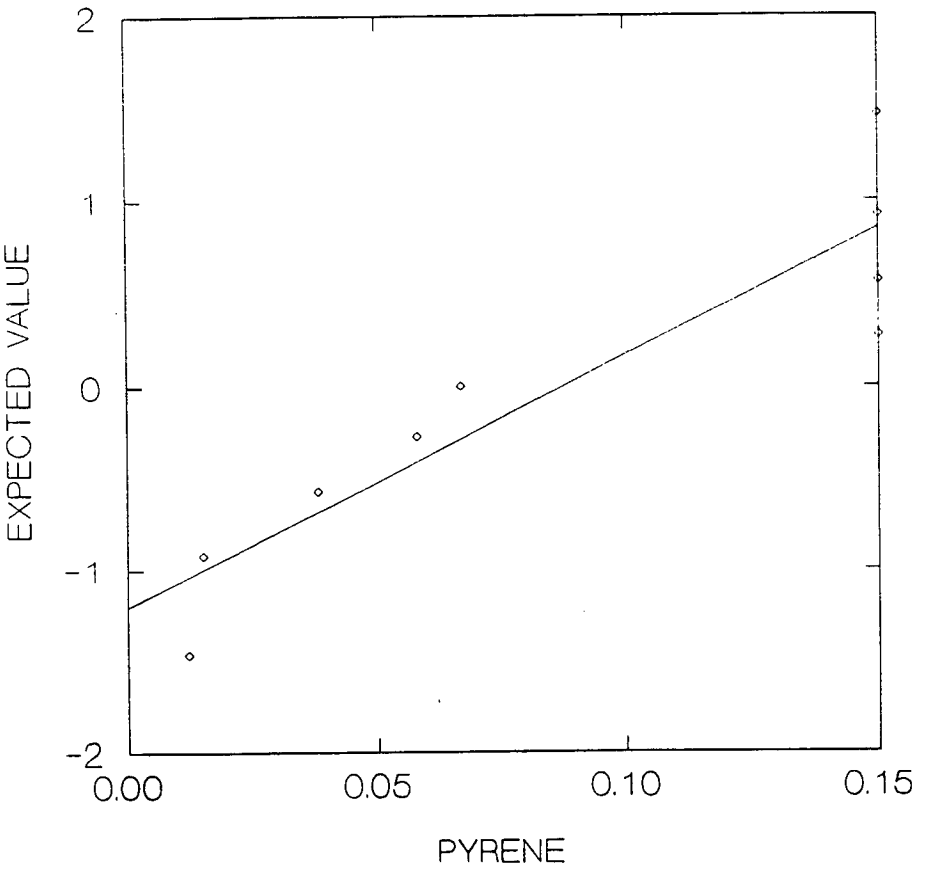
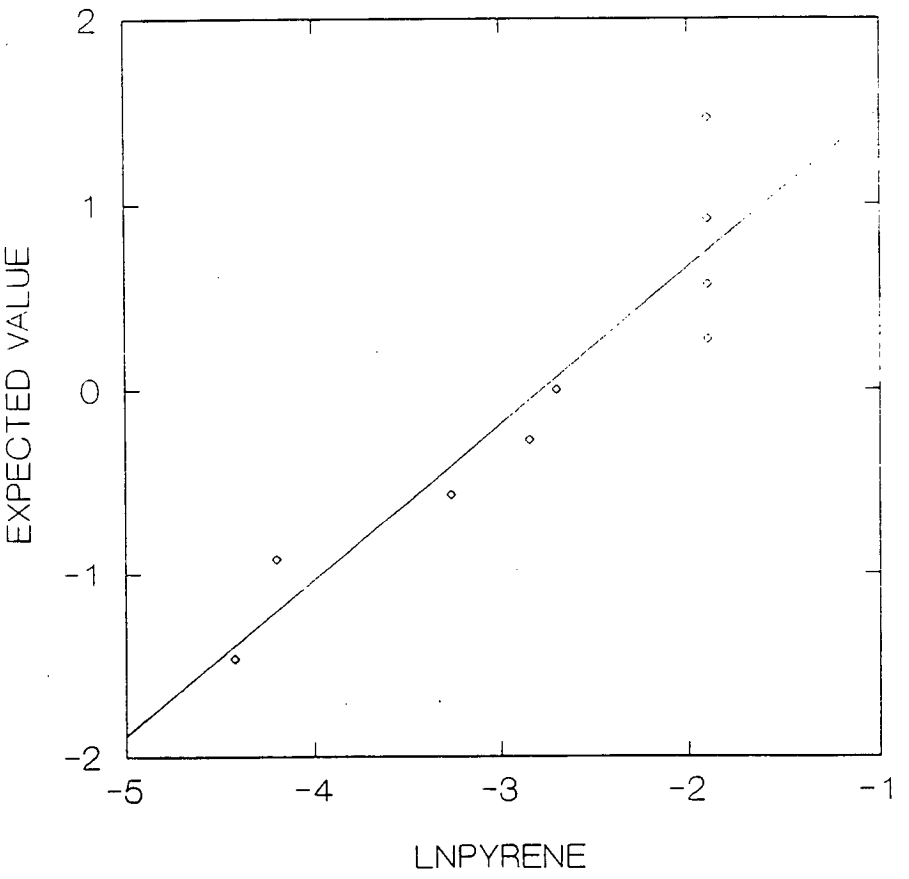
KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
YRENE	9.000	0.288	0.030
LNPYRENE	9.000	0.255	0.095

Oily Waste Landfill Cleanup Verification



Oily Waste Landfill Cleanup Verification



NONPARAMETRIC: $P(Yp^* \leq X^{(s)}) = 1-\alpha$

TABLE A.3 $n = 9$

$p = 0.50$

$\alpha_1 = 0.20$

$1-\alpha_1 = 0.80$

$Y = 5 \qquad s = Y+1$

$s = 6 \quad = 6^{th}$ RANK SAMPLE

PARAMETER	6TH RANK		CLEANUP
ANTHRACENE	.150 MG/KG	<	.300 MG/K
BENZO (A) ANTHRACENE	.150 MG/KG	<	.300 MG/K
BENZO (B) FLUORANTHENE	.150 MG/KG	<	.300 MG/K
BENZO (K) FLUORANTHENE	.150 MG/KG	<	.300 MG/K
BENZO (A) PYRENE	.150 MG/KG	<	.300 MG/K
CHRYSENE	.150 MG/KG	<	.300 MG/K
FLUORANTHENE	.150 MG/KG	<	.300 MG/K
2 METHYL NAPHTHALENE	.150 MG/KG	<	.300 MG/K
PHENANTHRENE	.150 MG/KG	<	2.2 MG/K

ATTACHED IS A SPREADSHEET THAT SHOWS THE LAB RESULTS AND THE RANK OF THE DATA FOR THE DETECTABLE PARAMETERS.

CONCLUSION: THE OWL SITE IS STATISTICALLY BELOW CLEANUP GOALS FOR PAHs.

VOCs

GIVEN: TETRACHLOROETHENE, TRICHLOROETHENE AND TOLUENE WERE NONDETECT IN >50% OF THE SAMPLES

ASSUME: A NONPARAMETRIC ANALYSIS WILL BE PERFORMED

CALCULATIONS: $P(Xp^* \leq X^{(s)}) = 1-\alpha$

SEE THE CALCULATIONS ABOVE.

$s = 6 \quad = 6^{th}$ RANK SAMPLE

PARAMETER	6TH RANK		CLEANUP GOAL
TETRACHLOROETHENE	0.006 MG/KG	<	0.02 MG/KG
TRICHLOROETHENE	0.006 MG/KG	<	0.13 MG/KG
TOLUENE	0.006 MG/KG	<	0.15 MG/KG

CONCLUSION: THE OWL SITE IS STATISTICALLY BELOW CLEANUP GOALS FOR VOCs.

ALCOA REMEDIATIO OJECTS ORGANIZATION
OILY WASTE LANDFILL

Analytical Results of Parameters Containing Detectable Concentrations

Rank	Other PAHs									
	Sample #	Anthracene (mg/kg)	Sample #	Benzo(A) Anthracene (mg/kg)	Sample #	Benzo(B) Fluoranthene (mg/kg)	Sample #	Benzo(K) Fluoranthene (mg/kg)	Sample #	Benzo(A) Pyrene (mg/kg)
1	OWL-VER-09	0.017 J	OWL-VER-09	0.004 J	OWL-VER-04	0.036 J	OWL-VER-04	0.012 J	OWL-VER-04	0.021 J
2	OWL-VER-01	0.150 U	OWL-VER-06	0.011 J	OWL-VER-02	0.059 J	OWL-VER-02	0.018 J	OWL-VER-02	0.032 J
3	OWL-VER-02	0.150 U	OWL-VER-04	0.017 J	OWL-VER-01	0.150 U	OWL-VER-01	0.150 U	OWL-VER-01	0.150 U
4	OWL-VER-03	0.150 U	OWL-VER-02	0.034 J	OWL-VER-03	0.150 U	OWL-VER-03	0.150 U	OWL-VER-03	0.150 U
5	OWL-VER-04	0.150 U	OWL-VER-01	0.150 U	OWL-VER-05	0.150 U	OWL-VER-05	0.150 U	OWL-VER-05	0.150 U
6	OWL-VER-05	0.150 U	OWL-VER-03	0.150 U	OWL-VER-06	0.150 U	OWL-VER-06	0.150 U	OWL-VER-06	0.150 U
7	OWL-VER-06	0.150 U	OWL-VER-05	0.150 U	OWL-VER-07	0.150 U	OWL-VER-07	0.150 U	OWL-VER-07	0.150 U
8	OWL-VER-07	0.150 U	OWL-VER-07	0.150 U	OWL-VER-08	0.150 U	OWL-VER-08	0.150 U	OWL-VER-08	0.150 U
9	OWL-VER-08	0.150 U	OWL-VER-08	0.150 U	OWL-VER-09	0.150 U	OWL-VER-09	0.150 U	OWL-VER-09	0.150 U

Rank	Other PAHs						PAHs			
	Sample #	Chrysene (mg/kg)	Sample #	Fluoranthene (mg/kg)	Sample #	2 Methyl-naphthalene (mg/kg)	Sample #	Phenanthrene (mg/kg)	Sample #	Pyrene (mg/kg)
1	OWL-VER-06	0.019 J	OWL-VER-09	0.009 J	OWL-VER-02	0.012 J	OWL-VER-04	0.011 J	OWL-VER-07	0.012 J
2	OWL-VER-09	0.020 J	OWL-VER-06	0.028 J	OWL-VER-01	0.150 U	OWL-VER-06	0.011 J	OWL-VER-09	0.015 J
3	OWL-VER-04	0.032 J	OWL-VER-02	0.051 J	OWL-VER-03	0.150 U	OWL-VER-09	0.015 J	OWL-VER-06	0.038 J
4	OWL-VER-02	0.047 J	OWL-VER-04	0.051 J	OWL-VER-04	0.150 U	OWL-VER-02	0.036 J	OWL-VER-02	0.058 J
5	OWL-VER-01	0.150 U	OWL-VER-01	0.150 U	OWL-VER-05	0.150 U	OWL-VER-01	0.150 U	OWL-VER-04	0.067 J
6	OWL-VER-03	0.150 U	OWL-VER-03	0.150 U	OWL-VER-06	0.150 U	OWL-VER-03	0.150 U	OWL-VER-01	0.150 U
7	OWL-VER-05	0.150 U	OWL-VER-05	0.150 U	OWL-VER-07	0.150 U	OWL-VER-05	0.150 U	OWL-VER-03	0.150 U
8	OWL-VER-07	0.150 U	OWL-VER-07	0.150 U	OWL-VER-08	0.150 U	OWL-VER-07	0.150 U	OWL-VER-05	0 150 U
9	OWL-VER-08	0.150 U	OWL-VER-08	0.150 U	OWL-VER-09	0.150 U	OWL-VER-08	0.150 U	OWL-VER-08	0 150 U

Rank	PCBs		VOCs					
	Sample #	Total PCBs (mg/kg)	Sample #	Tetrachloroethene (mg/kg)	Sample #	Trichloroethene (mg/kg)	Sample #	Toluene (mg/kg)
1	OWL-VER-07	0.006 JP	OWL-VER-01	0.001 J	OWL-VER-01	0.001 J	OWL-VER-01	0.002 J
2	OWL-VER-03	0.008 JP	OWL-VER-06	0.005 U	OWL-VER-06	0.005 U	OWL-VER-06	0.005 U
3	OWL-VER-08	0.018 U	OWL-VER-07	0.005 U	OWL-VER-07	0.005 U	OWL-VER-07	0.005 U
4	OWL-VER-05	0.019 JP	OWL-VER-02	0.006 U	OWL-VER-02	0.006 U	OWL-VER-02	0.006 U
5	OWL-VER-06	0.043 JP	OWL-VER-03	0.006 U	OWL-VER-03	0.006 U	OWL-VER-03	0.006 U
6	OWL-VER-01	0.055 BP	OWL-VER-04	0.006 U	OWL-VER-04	0.006 U	OWL-VER-04	0.006 U
7	OWL-VER-09	0.074 J	OWL-VER-05	0.006 U	OWL-VER-05	0.006 U	OWL-VER-05	0.006 U
8	OWL-VER-04	0.121 P	OWL-VER-08	0.006 U	OWL-VER-08	0.006 U	OWL-VER-08	0.006 U
9	OWL-VER-02	1.170 P	OWL-VER-09	0.006 U	OWL-VER-09	0.006 U	OWL-VER-09	0.006 U

* Cleanup goals are as shown on Table 2-1 attached.

U - Analyte was not detected. Value is half of the detection limit

J - Indicates an estimated value

B - The parameter was also present in the associated blank

P - The percent difference for detected concentrations between two GC columns were greater than 25%

ALUMINUM COMPANY OF AMERICA
MASSENA, NEW YORK

REMEDIATION PROJECTS ORGANIZATION

CONSTRUCTION QUALITY ASSURANCE

CERTIFICATION REPORT

FOR THE

OILY WASTE LANDFILL

December 1, 1995
(Revised January 12, 1996)

Prepared By

CDM Camp Dresser & McKee
Massena, New York 13662

CERTIFICATION WITH SUBMITTAL OF THE CERTIFICATION REPORT FOR THE OILY WASTE LANDFILL

All information contained in this document is to the best of our knowledge, factual and represents CDM's total understanding of the conditions and circumstances at the Alcoa facility and impacted area. The conclusions and recommendations contained in this document represent CDM's best professional engineering judgement on remediation that meets those applicable, or relevant and appropriate requirements, and represents sound engineering practices and principles required to protect public health and the environment.

Signature: Wayne M. Kimball

Wayne M. Kimball, P.E.
Construction Quality Assurance Officer
CAMP DRESSER & McKEE

Date: January 12, 1996

Contents

Contents

List of Figures

List of Tables

1 Section One

Section 1
Introduction

1.1 General

The subject matter contained within this Certification Report deals with the Construction Quality Assurance (CQA) items associated with the Oily Waste Landfill (OWL) remediation project at the Aluminum Company of America's (Alcoa) Massena, New York facility. The CQA organization functioned as an independent party that determined, documented and provided assurance that the project was constructed in a manner that met the intent of the *Final Remedial Design Report for the Oily Waste Landfill* (FDR). Statements of conformance with the FDR in this report are meant to imply conformance with the *Construction Quality Assurance Plan* (CQAP), Technical Specifications and Design Drawings.

CQA was distinct from Construction Quality Control (CQC) which was a planned system used by the contractor, Morrison Knudsen Corporation (MKE) to control quality of work, cost and schedule.

Remediation procedures for the OWL site, New York State Department of Environmental Conservation (NYSDEC) site code 6-45-016, were established through a Record of Decision (ROD) dated March 1991. Pursuant with the ROD, reports were developed as an integral part of the overall remediation process, and submitted to and approved by the NYSDEC. These reports are as follows:

- *Work Plan for Sampling and Analysis of [the] Oily Waste Landfill*, CDM, November 1991;
- *Sampling and Analysis Report for the Oily Waste Landfill Site*, CDM, March 1993;
- *Conceptual Design Report and Design Work Plan for the Oily Waste Landfill*, CDM, March 1994;
- *Preliminary Remedial Design Report for the Oily Waste Landfill*, CDM, July 1994;
- *Post-Closure Operation and Maintenance Manual for the Oily Waste Landfill*, CDM, July 1994;
- *Oily Waste Landfill Operational Health and Safety Plan*, MKE, July 1994;
- *Cleanup Verification Work Plan for the Oily Waste Landfill*, CDM, September 1994;
- *Construction Quality Assurance Plan [for the] Oily Waste Landfill*, CDM, September 1994;
- *Final Remedial Design Report for the Oily Waste Landfill*, CDM, October 1994;
- *Oily Waste Landfill Construction Work Plan*, MKE, October 1994;
- *Oily Waste Landfill Health and Safety Plan*, CDM, April 1995;

- *Quality Assurance Project Plan*, CDM, July 1995;
- *Oily Waste Landfill Roll-off Sampling Plan*, CDM, October 1995; and
- *Cleanup Verification Sampling and Analysis Report for the Oily Waste Landfill*, CDM, November 1995.

1.2 Intent of Report

The intent of this Certification Report is to document that the work completed during the remediation of the OWL was in conformance with the design intent of the FDR. As part of the documentation process, this report presents a discussion of the inspection activities and testing programs that were undertaken during construction. Moreover, this document is intended to satisfy the requirements of Section 6.8 of the CQAP. That section outlined procedures and requirements for the submittal of reports and documentation.

Documentation included minutes from weekly progress meetings, Construction Quality Assurance Inspector's (CQAI) Daily Reports (IDRs), Construction Quality Assurance Officer (CQAO) Monthly Status Reports, Inspection Data Sheets, Design Change Orders (DCOs), Design Clarification Forms (DCFs), soils laboratory analysis and data summary sheets, Field Engineering submittals and project photographs. See Section 1.4 for a discussion of DCFs, DCOs and Problem Identification and Correction Reports (PICRs). All of these items have been reviewed by the NYSDEC's onsite representative prior to submittal of this report and are archived in Building 65 at Alcoa, Massena. A listing of these archived files is provided in Appendix A.

Record Drawings and certification by the Engineer of Record will be submitted with this report to the NYSDEC.

1.3 Background Information

The OWL site, approximately 1-acre in size, was operated as a disposal area for oily rags, sludges, "speedi dry" wastes and drums containing uncharacterized wastes. A location plan is shown in Figure 1-1.

Required remedial action for this listed inactive hazardous waste site was stipulated under a ROD issued in March 1991. The ROD required excavation and removal of contaminated soils to reduce or eliminate their potential for contributing to groundwater contamination. The contaminants of concern included polychlorinated biphenyls (PCBs), phenols and volatile organic compounds (VOCs). Remediation activities included:

- excavation and disposal of waste materials and contaminated soils meeting land

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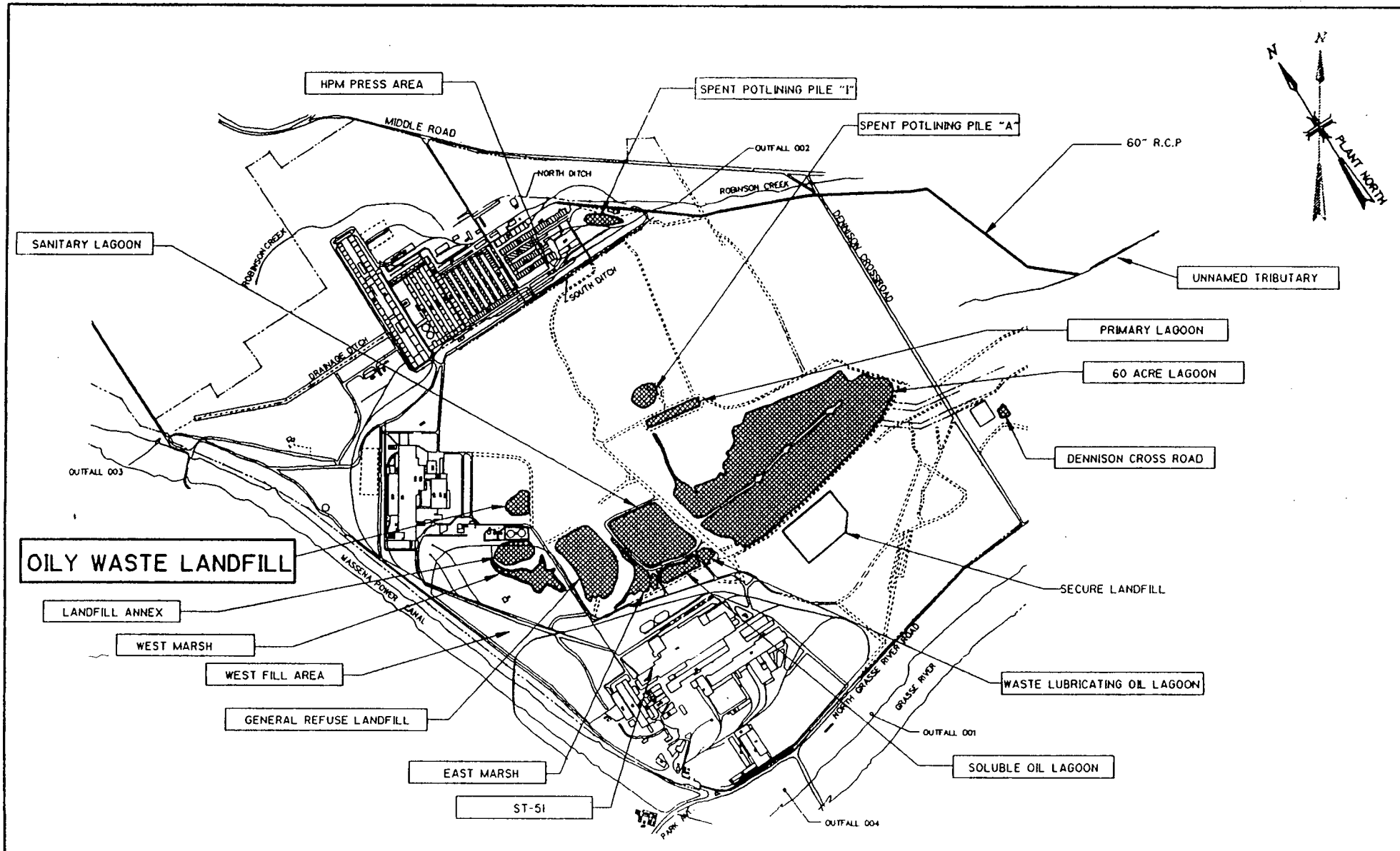

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ALCOA - MASSENA, NEW YORK

SITE LOCATION PLAN OILY WASTE LANDFILL

FIGURE 1-1

disposal restrictions (LDRs) in the onsite Secure Landfill (SLF);
- excavation of drums containing uncharacterized wastes for either onsite or offsite disposal;
- cleanup verification sampling;
- backfilling; and
- the construction of a low-permeability cap.

1.4 Supplemental Documentation

To facilitate documentation of the remediation of the OWL, construction activities were divided into work items as listed in Table 1-1. The CQAI recorded construction activities by work item numbers in the IDRs.

Pursuant with the format of the CQAP, CQA program activities conducted during the remediation of the OWL are discussed under the following headings in this report:

- preconstruction activities;
- construction activities; and
- post-construction activities.

Modifications to the project design were implemented through DCOs which were issued by the Engineer of Record and approved by the NYSDEC. One DCO, listed in Table 1-2, was required during remediation of the OWL.

Questions regarding design intent were answered via DCFs. DCFs for the OWL are listed in Table 1-3.

Similarly, PICRs were to be issued if the CQAO was of the opinion that formal documentation was warranted to resolve issues which were significant enough to jeopardize the certification process. No PICRs were required during OWL remediation activities.

1.5 Construction Approval

Approval for the remediation of the OWL was issued by the NYSDEC in October 1994.

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CERTIFICATION REPORT

Table 1-1

Construction Work Items

Work Item Number	Description of Item
1	Mobilization and Site Preparation
1a	Erosion Control Measures
2	Excavation
2a	Cell No. 1 Excavation
2b	Drum Excavation / Removal
2c	Solidification
3	Clean Up Verification
4	Backfill
4a	Common Fill
4b	Select Fill
5	Final Cap
5a	Geosynthetic Clay Liner
6	Topsoil and Hydroseeding
7	Demobilization

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CERTIFICATION REPORT

Table 1-2

Design Change Orders

No.	Item	Description	Date Submitted to NYSDEC
1	Construction Work Plan (Drum Handling)	Modification of the construction work plan and health and safety plan to incorporate the drum excavation, storage, handling and disposal process.	5/16/95

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CERTIFICATION REPORT

Table 1-3

Design Clarifications

No.	Item	Description	Date Submitted to NYSDEC
1	Solidification Process	Allowed for the use of 10 percent quicklime and 40 percent hydrated lime for solidification, if needed.	3/13/95
2	Liquid Waste/Technical Specification 02200	Clarified the disposal of product saturated sump material.	8/10/95
3	GCL Anchor Trench	Clarified the location, and construction of the GCL anchor trench.	9/12/95
4	GCL Anchor Trench	Clarified the location, and construction of the GCL anchor trench.	9/19/95

1.6 Operation and Maintenance

Operation and maintenance activities are discussed in the *Post-Closure Operation and Maintenance Manual for the Oily Waste Landfill.*

1.7 Construction Personnel and Equipment

General construction proceeded on a four day work week, single shift basis, consisting of the following average staffing level for MKE:

- 1 - construction superintendent;
- 1 - health and safety representative;
- 1 - survey crew;
- 2 - operators; and
- 5 - laborers.

Staffing levels varied directly with the nature of the work being performed. The entire operation was overseen by a sitewide construction manager and monitored by CQC personnel. Equipment utilized for drum removal, subgrade preparation, placement and compaction of common borrow and geosynthetic clay liner (GCL) placement adequately achieved specified requirements.

2 Section Two

Section 2
Excavation of Waste Materials and Contaminated Soils

2.1 General

The excavation and removal of waste materials and contaminated soils to design limits were intended to expose soil that tested in compliance with predetermined cleanup goals. These goals are listed in Table 2-1.

Post-excavation field screening, immunoassay testing for PCBs and jar headspace testing for VOCs, were conducted as outlined in the *Soil Cleanup Verification Plan for the Oily Waste Landfill*. Sampling was conducted by Field Engineering personnel and the results are presented in the *Cleanup Verification Sampling and Analysis Report for the Oily Waste Landfill*. It was the conclusion of this report that contamination levels in remaining soils at the limits of excavation were in statistical compliance with the cleanup goals.

A discussion of the CQA program requirements for excavation of waste materials and contaminated soils was presented in Section 3 of the CQAP.

2.2 Preconstruction Activities

The CQAI confirmed that mobilization activities proceeded in conformance with Technical Specifications, Sections 02100 and 02140 and the Construction Work Plan (CWP). Mobilization activities consisted of grubbing, clearing and preparing stormwater controls. A staging area was constructed for excavated drums as detailed in DCO No. 1 along with a holding area for contaminated storm and/or perched water and a staging area for a trailer mounted tank. These items are shown in Figure 2-1. At the onset of construction the groundwater table was determined to be below the deepest part of the limits of excavation. Therefore, no pre-excavation dewatering was required.

Observation well OW-12 was abandoned by Atlantic Testing Laboratory (ATL), an Alcoa contractor, prior to the start of construction at the OWL. This activity was performed in accordance with the standard procedure outlined in Appendix F of the *Quality Assurance Project Plan* (QAPP.).

2.3 Construction Activities

The CQAI observed and documented that the excavation of waste materials and contaminated

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CERTIFICATION REPORT

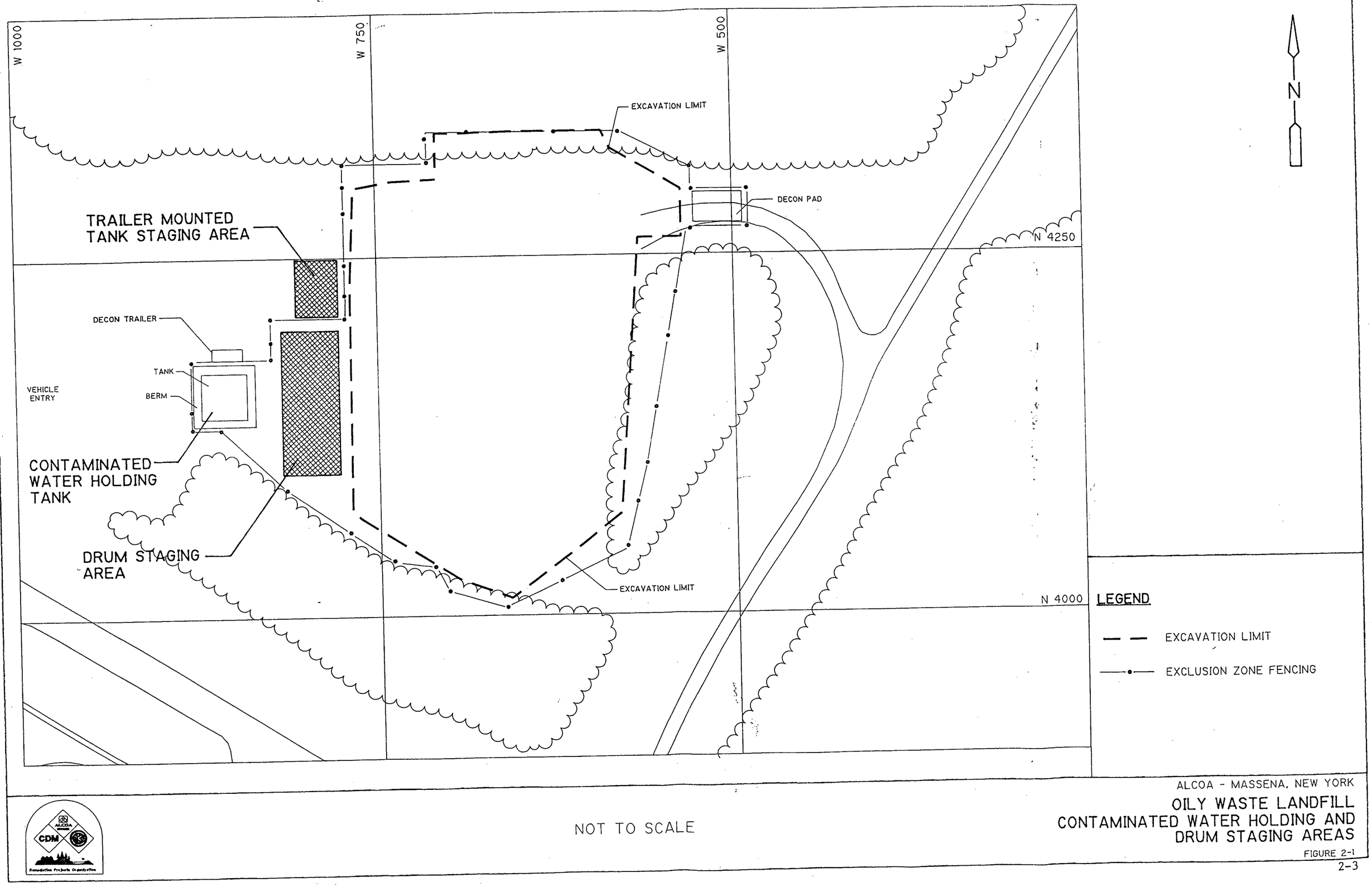
Table 2-1

Soil Cleanup Goals from Record of Decision

Compound	Areas Outside Groundwater Management Units[1]	Areas Within Groundwater Management Units[2]
1,1,1-Trichloroethane	0.76 mg/kg	7.6 mg/kg
Benzene	0.04 mg/kg	0.4 mg/kg
Tetrachloroethene	0.02 mg/kg	0.2 mg/kg
Trichloroethene	0.13 mg/kg	1.3 mg/kg
Toluene	0.15 mg/kg	1.5 mg/kg
Total Xylene	0.12 mg/kg	1.2 mg/kg
Phenanthrene	2.2 mg/kg	2.2 mg/kg
Pyrene	6.6 mg/kg	6.6 mg/kg
Other PAHs	0.3 mg/kg	0.3 mg/kg
PCBs	1.00 mg/kg	10.0 mg/kg

Notes:

1. Areas "within" groundwater management units are considered areas within the influence of groundwater pumping wells, groundwater drains, or groundwater monitoring wells.
2. Areas "outside" of groundwater management units are areas other than areas "within" groundwater management units.



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ALCOA - MASSENA, NEW YORK

OILY WASTE LANDFILL
CONTAMINATED WATER HOLDING AND DRUM STAGING AREAS

FIGURE 2-1

soils from the OWL was in accordance with the requirements of the FDR. Excavated waste materials and contaminated soils were transported directly to the SLF Cell Nos. 1 and 2 for disposal (disposal of material in Cell No. 1 is discussed in Section 2.3.1).

Drums were encountered during excavation of waste materials and contaminated soils. The excavation of drums was overseen by the CQAI. Drum content segregation/consolidation into roll-offs and/or trailer mounted tanks for sampling and analysis/disposal purposes was the responsibility of Sterling Environmental, an Alcoa consultant. Trailer mounted tankers for liquid wastes were supplied by OpTech, an Alcoa contractor.

The horizontal and vertical limits of the completed excavation were surveyed by MKE and are presented in Record Drawing Nos. B-137743-JM, B-137745-JM and B-137746-JM. Review of this data, as well as observations during excavation, confirms that the areas were excavated to design grades. In fact, in most areas, over-excavation was needed to remove all visible waste materials and contaminated soils.

During the remediation of the OWL progression of excavation activities was affected by the following five items:

- disposal of a portion of the soils in Cell No. 1 at the SLF;
- excavation of drums containing waste materials;
- the presence of perched water and its disposal;
- temporary sump abandonment; and
- the excavation and sampling of a visibly stained sand lens that was present within and outside the designed excavation limits of the OWL.

These items are discussed separately in the following subsections.

2.3.1 Disposal of Soils in Cell No. 1

It was the original design concept that Cell No. 1 at the SLF would receive only material excavated from the Spent Potlining Pile A (PPA) site. The location of the PPA site is shown on Figure 1-1. However, as remediation of the PPA site progressed it became evident that there would be excess capacity in Cell No. 1. In response to this development SLF DCO No. 23 was issued. SLF DCO No. 23 allowed for the disposal of OWL materials and soils with PCB concentrations less than 50 ppm and VOC levels less than 100 ppm in Cell No. 1. In most areas of the OWL, the top 3-to 6-feet of backfill material (i.e., topsoil and clay) was isolated from the underlying waste material and contaminated soils by 6 mil plastic sheeting. Sampling of this backfill by CDM and NYSDEC established that it met the parameters provided in SLF DCO No. 23 and was acceptable for disposal in Cell No. 1. The results of these tests are summarized in Table 2-2.

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CERTIFICATION REPORT

Table 2-2

Field Screening Results for Cell 1 Confirmation [1]

Sample Number	Date Sampled	Sample Location [2]	Date Tested	PCB Immunoassay Result [3]	VOC Jar Headspace Result [4]	Send to Cell 1 (Yes or No)
OWL-CEL-01	5/16/95	Location 1	5/16/95	< 50 ppm	0 ppm	Yes
OWL-CEL-02	5/16/95	Location 2	5/16/95	< 50 ppm	0 ppm	Yes
OWL-CEL-03	5/16/95	Location 3	5/16/95	< 50 ppm	0 ppm	Yes
OWL-CEL-04	5/18/95	Location 4	5/18/95	< 50 ppm	0 ppm	Yes
OWL-CEL-05	5/18/95	Location 4	5/18/95	< 50 ppm	1 ppm	Yes
OWL-CEL-06	5/18/95	Location 1	5/18/95	< 50 ppm	0 ppm	Yes
OWL-CEL-07	5/18/95	Location 5	5/18/95	< 50 ppm	7 ppm	Yes
OWL-CEL-08	5/18/95	Location 5	5/18/95	< 50 ppm	11 ppm	Yes
OWL-CEL-09	5/18/95	Location 6	5/18/95	< 50 ppm	0 ppm	Yes
OWL-CEL-10	5/18/95	Location 7	5/18/95	< 50 ppm	25 ppm	Yes
OWL-CEL-11	6/1/95	Location 8	6/1/95	< 50 ppm	0 ppm	Yes
OWL-CEL-12	6/1/95	Location 8	6/1/95	< 50 ppm	0 ppm	Yes
OWL-CEL-13	6/1/95	Location 9	6/1/95	< 50 ppm	0 ppm	Yes
OWL-CEL-14	6/1/95	Location 10	6/1/95	< 50 ppm	0 ppm	Yes
OWL-CEL-15	6/1/95	Location 10	6/1/95	< 50 ppm	0 ppm	Yes
OWL-CEL-16	6/2/95	Location 11	6/2/95	< 50 ppm	0 ppm	Yes
OWL-CEL-17	6/2/95	Location 11	6/2/95	< 50 ppm	0 ppm	Yes

Notes:

1. Excavated soil was sampled and field screened once every 500 cubic yards, or as required, to confirm that the material met Cell 1 requirements.
2. Sample location and elevations are indicated in IDR OWL-026.
3. The Millipore EnviroGard PCB Test Kit was used for immunoassay analysis.
4. The VOC jar headspace analysis was performed in accordance with the QAPP.

The CQAI oversaw the sampling effort and observed that the techniques outlined in Section 3.2.3 of the *Cleanup Verification Work Plan for the Oily Waste Landfill* were followed.

Subsequent to the above sampling effort, the CQAI monitored excavation progress to ensure that the physical characteristics of the backfill remained consistent with what had been tested. On occasion, materials and soils were encountered that were stained or had a petroleum odor. At this point, excavation for disposal in Cell No. 1 would cease. Waste material and contaminated soils that were stained and/or had petroleum odors were sent to Cell No. 2 for disposal.

CQA inspection activities during the excavation and transportation of approved OWL materials and soils to Cell No. 1 were recorded in the IDRs under Work Item No. 2a.

2.3.2 Drum Excavation

A total of 3,575 drums were removed during the remediation of the OWL. The CQAI inspected the removal and overpacking of these drums, ensuring that the drum excavation process was in compliance with the Waste Management Decision Tree in Section 02200 of the Technical Specifications. The Decision Tree outlined procedures for handling different forms of waste, not all of which were encountered.

Of the total 3,575 drums, 1,629 were found in a crushed condition and determined to be "RCRA" empty (40 CFR 261.7). The remaining 1,946 contained waste materials and/or contaminated soils and were typically open, dented and partially crushed, 55 gallon steel drums. These were overpacked and characterized by Sterling Environmental. Approximately 1 percent of the drums that were overpacked were closed, sealed and considered intact.

During the overpacking process it was common for drum contents to fall out of a drum. The spilled contents, along with any soil that came in contact with it, was placed in the same overpack as the associated drum. Perched water that drained from the waste material and contaminated soil matrix, or from partially crushed and open drums, was collected in temporary sumps located within the excavation area. Perched water is discussed in Section 2.3.3. Drums that contained perched water were allowed to drain to a sump before being overpacked. Saturated soils from sump areas were processed as described in Section 2.3.4. A drum was immediately overpacked (i.e., not purposely allowed to drain) if it appeared to contain an oil-type product.

As mentioned above, overpacked drums were characterized by Sterling Environmental. The contents of overpacks containing liquids were pumped to a trailer mounted tank supplied by OpTech. After liquids were transferred to the tanker, any remaining contents within the drums were recharacterized by Sterling Environmental for segregation and placement into roll-offs.

Processing of roll-offs is discussed below. Drums that were recharacterized as RCRA empty were removed from the overpacks, crushed and transported to Cell No. 2 for disposal. The empty overpacks were then decontaminated and reused.

As described in IDR OWL-060 (July 24, 1995), one of the trailer mounted tanks supplied by OpTech developed a leak and released its contents on the ground. MKE responded by collecting the leaking liquid, evacuating the remaining contents with a vacuum truck and replacing the tank with another unit. All visibly stained soil was removed and placed in four red open top drums and the vacuum truck was off-loaded into the replacement tank. Field Engineering approved the spill cleanup process.

The majority of the waste materials and contaminated soils reflected the physical characteristics identified in borings 167, 172, 175, 182 and 187. The location of these borings is shown on Record Drawing No. B-137739-JM.

Unexpected wastes encountered during remediation that were characterized in the field by Sterling Environmental included:

- one drum containing acid which was overpacked and sent to Building 79C for processing/disposal; and
- five gallon buckets containing paint solids that were placed in a total of ten overpacks.

In addition, 20 overpacks were used to collect contaminated soils from a temporary sump in the drum excavation area.

OWL DCO No. 1 incorporated drum excavation and shredding procedures into MKE's *Operational Health and Safety Plan* and *Oily Waste Landfill Construction Work Plan.* As stated in MKE's CWP, Sterling Environmental characterized the overpacked drums for segregation and testing purposes and directed MKE with regard to the handling of the excavated drums. OWL drums that were characterized by Sterling Environmental and shredded at the Dennison Cross Road (DCR) site, were isolated from the latter's waste and placed into separate roll-offs. These roll-offs were covered and are currently being temporarily stored in Alcoa's Building 79C. Table 2-3 contains the roll-off identification numbers for shredded OWL drums. Alcoa will administer and document the activities associated with the final disposal of these roll-offs.

CQA inspection activities during drum excavation and removal operations were recorded in the IDRs under Work Item No. 2b.

ALCOA REMEDIATION PROJECTS ORGANIZATION

OILY WASTE LANDFILL

CERTIFICATION REPORT

Table 2-3

Roll-off Checklist

Roll-off Number	Box Number	Type of Material[1]	Fill Date	Date Sampled	Remarks
24	30070	Aluminum Mill Pit Solids	6/7/95	6/15/95	OWL Roll-off
28	30062	Carbon Mill Pit Solids	8/28/95	11/7/95	OWL Roll-off - Partially filled
30	84001	Aluminum Mill Pit Solids	6/13/95		OWL Roll-off
41	30067	Aluminum Mill Pit Solids	6/20/95		OWL Roll-off
42	84005	Caustics	6/21/95		OWL Roll-off
43	84016	Aluminum Mill Pit Solids	6/27/95		OWL Roll-off
48	84008	Aluminum Mill Pit Solids	7/3/95		OWL Roll-off
52	84013	Aluminum Mill Pit Solids	7/7/95		OWL Roll-off
54	84017	Aluminum Mill Pit Solids	7/11/95		OWL Roll-off
56	CWMU 7322	Caustics	7/12/95		OWL Roll-off
60	53	Aluminum Mill Pit Solids	7/19/95		OWL Roll-off
61	200	Aluminum Mill Pit Solids	7/25/95	11/6/95	OWL Roll-off
63	CWMU 7120	Sludges	7/26/95	11/7/95	OWL Roll-off
65	CWMU 7440	Aluminum Mill Pit Solids	8/1/95	11/6/95	OWL Roll-off
66	CWMU 7374	Aluminum Mill Pit Solids	8/3/95		OWL Roll-off

Continued on next page

ALCOA REMEDIATION PROJECTS ORGANIZATION

OILY WASTE LANDFILL

CERTIFICATION REPORT

Table 2-3 *(Continued)*

Roll-off Checklist

Roll-off Number	Box Number	Type of Material[1]	Fill Date	Date Sampled	Remarks
68	CWMU 7388	Sludges	8/16/95		OWL Roll-off - including 6 soils overpacks w/liquid waste
69	CWMU 7088	Caustics	8/28/95	11/6/95	OWL Roll-off - Partially filled
71	CWMU 7135	Aluminum Mill Pit Solids	8/8/95		OWL Roll-off
72	CWMU 7268	Aluminum Mill Pit Solids	8/10/95		OWL Roll-off
73	CWMU 7409	Aluminum Mill Pit Solids	8/16/95		OWL Roll-off
74	CWMU 7354	Sludges	9/6/95		OWL Roll-off - half of DCR roll-off 49 6780 and a 55-gallon drum

Note:

1. As characterized by Sterling Environmental, an Alcoa consultant.

2.3.3 Perched Water

Perched water was initially encountered while excavating near boring B-172 during the drum excavation and removal process. It continued towards the north to the previous location of abandoned observation well OW-12 with borings B-168 to B-166 being the approximate western and eastern limits respectively. Perched water was encountered at approximately 8-to 16-feet below original grade. For the majority of the excavation, the perched water contained little to no free product.

CQA inspection activities for handling perched water were recorded in the IDRs under Work Item No. 2b.

2.3.4 Sump Abandonment

Excavated drums that were leaking perched water were allowed to drain into a temporary sump before being overpacked. The water that collected in the sump was pumped on a routine basis to the 50,000 gallon holding tank shown on Figure 2-1. If the liquid leaking out of a drum appeared to be anything besides water, it was immediately overpacked and the ground that was contaminated by the product was collected and placed into the same or a separate overpack. This method was discussed with an onsite NYSDEC representative.

When a temporary sump was abandoned it was typically pumped down and the saturated soil left in-place to dry or the soil was excavated and bulked with dry material. DCF No. 1 provided guidelines for the addition of 10 percent quicklime or 40 percent hydrated lime as a solidifying reagent to saturated soils. However, with the abundance of dry material, there was no need for solidification with lime. The method of pumping down a sump and bulking saturated soil with dry material was discussed with an onsite NYSDEC representative.

An exception to the above occurred at the beginning of the excavation of the last lift of drums. A noticeable amount of oil-type product began collecting on the surface of the water in the temporary sump. When the water was removed, the oil-type product saturated the soil in the sump area. DCF No. 2 was issued requesting guidance on disposal of this saturated soil. The response to DCF No. 2 stated that residual material in the sump was to be segregated, contained and analyzed for LDR compliance. As a result, two double-bung red drums were filled with a product/water mix and eleven overpacks were used to contain the saturated soil from the sump.

CQA inspection activities for sump abandonment were also recorded in the IDRs under Work Item No. 2b.

2.3.5 Sand Lens

A black stained sand lens was encountered during excavation of the waste materials and contaminated soils. It was generally found from 2-feet above to 5-feet below the excavation limits. To alleviate concerns that the lens may have acted as a pathway for offsite contaminant migration, Field Engineering performed immunoassay testing on six sand lens samples. The results of this testing, Table 2-4, indicated that contaminant concentrations were less than cleanup goals. Field Engineering and the NYSDEC re-sampled two of the locations as part of cleanup verification testing. Analytical results for these latter two samples indicated that contaminant concentrations remained less than cleanup goals. Additional information about the testing of the sand lens can be found in the *Cleanup Verification Sampling and Analysis Report for the Oily Waste Landfill.*

CQA inspection activities for the excavation and sampling of the sand lens were recorded in the IDRs under Work Item No. 2.

2.4 Post-Construction

Post-construction activities consisted of confirmation that the excavation was completed to the required horizontal and vertical limits and/or that all waste materials and contaminated soils were removed from the OWL. In addition, the CQAI inspected the completed excavation to approve the subgrade for the backfilling process.

An additional post-construction activity, as recorded in IDR 105, included the removal of two crushed drums reported to the NYSDEC onsite representative by MKE's survey crew. These two drums were noted by the surveyors while performing a bench elevation check to the southwest of the site. A walk-over of the area revealed two more crushed drums towards the southeast. All four drums were transported to SLF Cell No. 2 for disposal.

2.5 Summary

Excavation acceptance was based on compliance with design drawing elevations and the achievement of cleanup verification goals. The subgrade elevations shown on the Record Drawings were in conformance with the excavation requirements of the FDR. Results of cleanup verification sampling, as observed by the CQAI, were presented in the *Cleanup Verification Sampling and Analysis Report for the Oily Waste Landfill.* This report documented that cleanup goals were achieved. Therefore, the excavation of the OWL was in conformance with the FDR.

ALCOA REMDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CERTIFICATION REPORT

Table 2-4

Sand Lens Immunoassay Testing Results [1]

Sample Number	Date Sampled	Sample Area	Date Tested	Difference in Optical Density [2]	OD Sample 1 ppm	Interpretation of Results [3]
Standard 1 ppm	---	---	8/22/95	-0.11	---	Good QC
OWL-STG-01	8/22/95	North Floor	8/22/95	---	0.41	< 1 ppm
OWL-STG-02	8/22/95	Northeast Bank	8/22/95	---	0.31	< 1 ppm
OWL-STG-03	8/22/95	Northeast Bank	8/22/95	---	0.50	< 1 ppm
OWL-STG-04	8/22/95	Southeast Bank	8/22/95	---	0.46	< 1 ppm
OWL-STG-05	8/22/95	Southwest Bank	8/22/95	---	0.33	< 1 ppm
OWL-STG-06	8/22/95	Southwest Bank	8/22/95	---	0.32	< 1 ppm

Notes:

1. The EnSys Samplepro PCB Test Kit was used for immunoassay analysis.
2. The difference in the optical density between the standards should be negative and greater than -0.30.
3. If the optical density of the sample is zero or negative, then the sample contains a constituent concentration greater than the detection limit.

3 Section Three

Section 3
Backfill and Cap

3.1 General

The cap constructed over the OWL consists of a low-permeability geosynthetic clay liner with a protective overlying soil cover that minimizes erosion and promotes drainage away from the site. The purpose of the cap is to reduce the percolation of stormwater and snowmelt into the remediated area.

Before the OWL cap was constructed, the excavation was backfilled within 2-feet of final grade with common fill. The first component of the cap consisted of a 6-inch layer of select fill, which protected the geomembrane layer from mechanical damage and acted as a subgrade for the GCL. A 12-inch layer of select fill was placed over the GCL to provide the required restraining load during hydration, mechanical protection, a support layer for vegetative growth and a horizontal pathway over the GCL for infiltrating stormwater. The final component of the OWL cap was 6-inches of topsoil for the support of vegetative growth and erosion control.

A discussion of the CQA program requirements for installation of the OWL cap was presented in Section 4 of the CQAP.

3.2 Preconstruction Activities

Preconstruction activities undertaken by the CQAI for the OWL cap included verification that materials delivered to the project site were in conformance with the FDR. Deliveries included the following:

- geosynthetic clay liner;
- common/select fill;
- topsoil; and
- seed and fertilizer.

Observations during delivery to the site were recorded on logs or in the IDRs and are included in the project files. The CQAI inspected and confirmed that the items were in conformance with the FDR. In addition, Field Engineering provided the CQAI with approved submittals and manufactures' certifications for these items. Moreover, the CQAI reviewed the FDR installation procedures for these components where applicable. The following subsections provide details related to the above materials.

3.2.1 Common Fill/Select Fill

Common fill was utilized in the backfilling and construction of the OWL cap. Common fill was provided from borrow sources MK-13 and MK-13A. Technical Specifications, Section 02200, detailed the material property requirements for common fill and Section 4 of the CQAP detailed material testing methods and frequencies. Results of common fill testing are archived with the project files.

3.2.2 Geosynthetic Clay Liner

GCL manufactured by Colloid Environmental Technologies Company was utilized to provide a low-permeable layer over the OWL. Technical Specifications, Section 02275, detailed GCL requirements.

3.2.3 Topsoil

Topsoil was utilized to protect the cap soils against erosion by supporting vegetative growth. Topsoil was supplied from borrow source MK-12. Technical Specifications, Section 02930, detailed the material property requirements for topsoil and Section 4 of the CQAP detailed material testing methods and frequencies. Results of topsoil testing are archived with the project files.

3.2.4 Seed and Fertilizer

Technical Specifications, Section 02930, detailed the requirements for seed and fertilizer.

3.3 Construction Activities

CQA inspection and testing activities associated with the construction of the OWL cap are discussed in the following subsections.

All Record Drawing survey information was obtained and provided by MKE. Final grades and cross sections of the cap are shown in Record Drawing Nos. B-137744-JM, B-137745-JM and B-137746-JM.

3.3.1 Common Fill/Select Fill

Moisture/density testing was performed on the common/select fill as outlined in Sections 4 and 5 of the CQAP. The results of this testing are archived with the project files. Installation of the common/select fill layers was in accordance with the requirements of the FDR.

CQAI inspection activities during placement and compaction of the common/select fill layers were recorded in the IDRs under Work Item Nos. 4, 4a and 4b.

3.3.2 Geosynthetic Clay Liner

Installation of the GCL was continuously observed by the CQAI to verify that the requirements of the FDR were met. The quality assurance parameters observed during installation included:

- panel orientation;
- seam preparation, location and overlap;
- seam augmentation; and
- proper keying of the GCL into the anchor trench.

The CQAI collected roll labels for the GCL panels installed. Table 3-1 provides the panel identification roll numbers.

DCF Nos. 3 and 4 clarified the location and the construction requirements for the GCL anchor trench.

GCL installation was completed in accordance with the requirements of the FDR.

CQAI inspection activities during installation of the GCL were recorded in the IDRs under Work Item Nos. 5 and 5a.

3.3.3 Topsoil

The CQAI monitored installation of the topsoil layer as outlined in the CQAP. The uniformity and thickness of the application process was confirmed through random depth checks.

CQAI inspection activities during placement of the topsoil layer were recorded in the IDRs under Work Item No. 6.

3.3.4 Seed and Fertilizer

Seed mixtures were monitored by the CQAI and applications rates were checked to insure that the seed mixture was applied as specified.

Although seed and fertilizer were hand applied (i.e., the area was not hydroseeded), the task was considered to have been completed in conformance with the intent of the FDR.

ALCOA REMEDIATION PROJECTS ORGANIZATION
OILY WASTE LANDFILL
CERTIFICATION REPORT

Table 3-1

Geosynthetic Clay Liner Placement

Date Placed	Report No.	Bentomat Lot/Roll No.	Placement No. [1]
9/20/95	102	25895A/07	1
9/20/95	102	25895A/03	2
9/20/95	102	25795A/05	3
9/20/95	102	25895A/05	4
9/20/95	102	25895A/01	5
9/20/95	102	25795A/03	6
9/20/95	102	25895A/06	7
9/20/95	102	25795A/02	8
9/20/95	102	25795A/08	9
9/21/95	103	25895A/04	10
9/21/95	103	25695A/120	11
9/21/95	103	25795A/95	12
9/21/95	103	25795A/100	13
9/21/95	103	25795A/90	14
9/21/95	103	25795A/97	15
9/21/95	103	25795A/99	16
9/21/95	103	25795A/96	17
9/21/95	103	25795A/98	18
9/21/95	103	25795A/88	19
9/21/95	103	25795A/74	20
9/25/95	105	25795B/89	21
9/25/95	105	25795B/68	22
9/25/95	105	28794A/16	23
9/25/95	105	28894B/56	24

Continued on next page

Table 3-1 *(Continued)*

Geosynthetic Clay Liner Placement

Date Placed	Report No.	Bentomat Lot/Roll No.	Placement No. [1]
9/25/95	105	28194B/85	25
9/25/95	105	28794B/32	26
9/25/95	105	25795A/70	27
9/25/95	105	28894B/57	28
9/25/95	105	25795A/09	29
9/25/95	105	25895A/02	30
9/25/95	105	25795A/04	31
9/26/95	106	25795A/07	32
9/26/95	106	25795A/06	33
9/26/95	106	25795A/10	34
9/26/95	106	25795A/11	35
9/26/95	106	25795A/71	36
9/26/95	106	25695B/137	37

Note:

1. Placement number corresponds with Figure 3-1.

CQAI inspection activities during the seeding of the topsoil layer were recorded in the IDRs under Work Item No. 6.

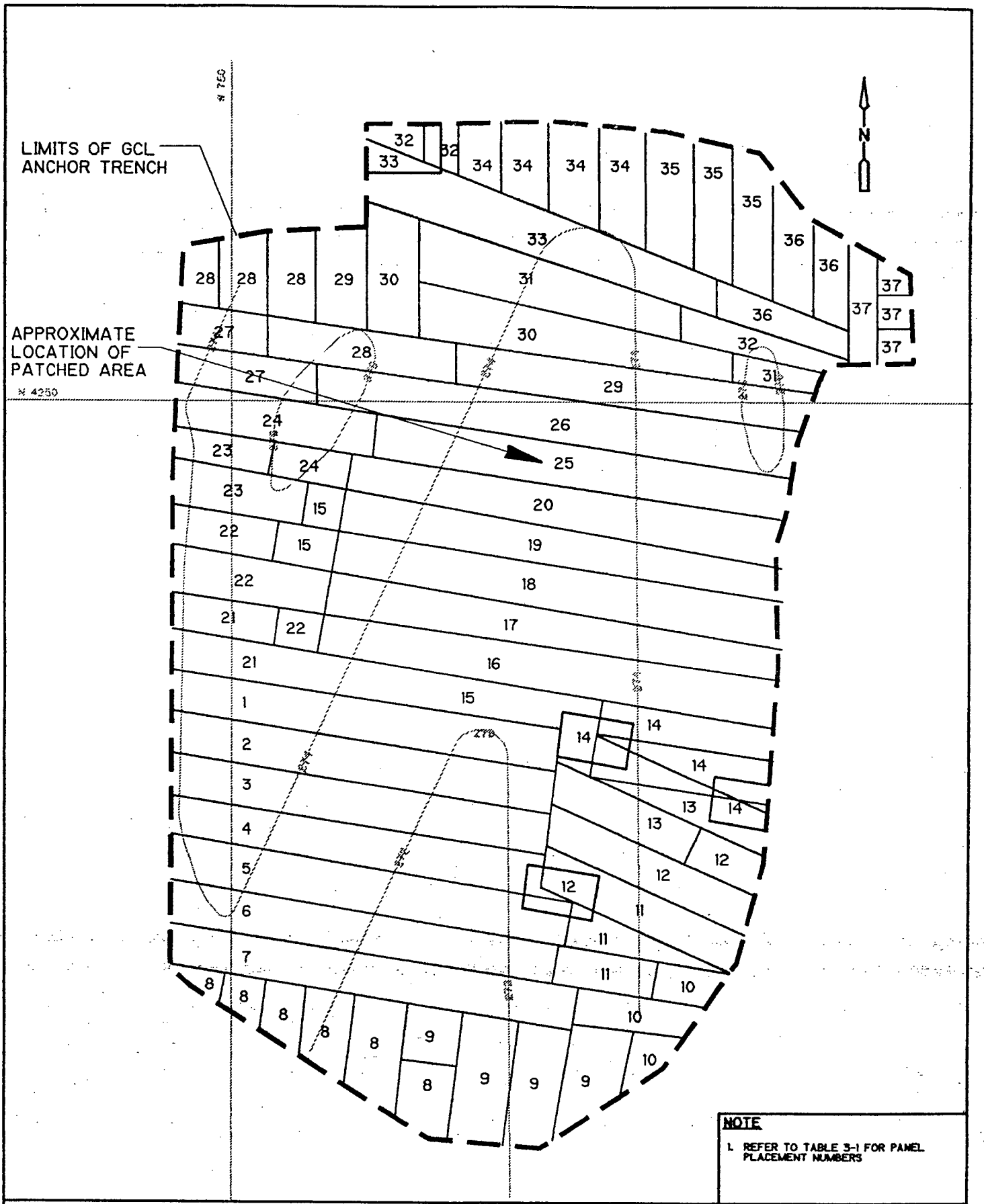
3.4 Post-Construction

Final inspection and acceptance of the vegetative cover has not been completed and remains a punch list item pending full germination and two mowings as stipulated in the Technical Specifications.

It should be noted that an Alcoa maintenance vehicle damaged a portion of the GCL liner around October 10, 1995, subsequent to construction completion and demobilization. The CQAI confirmed that repair procedures were performed in accordance with the Technical Specifications. A bag of bentonite and a 3-foot by 6-foot piece of GCL were placed over the 3-foot tear and the area regraded and seeded. The approximate location of the repair area is shown on Figure 3-1.

3.5 Summary

Installation of the OWL cap was in conformance with the requirements of the FDR. All components were installed as specified and the required CQA testing was completed as outlined in the CQAP and the FDR.



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NOT TO SCALE

OILY WASTE LANDFILL GCL PANEL PLACEMENT

FIGURE 3-1

4 Section Four

Section 4
Conclusions

4.1 General

A construction quality assurance program was conducted during the OWL remediation effort. The program implementation for the items discussed in this report was in accordance with the CQAP and met the objective of documenting that the project was completed in conformance with the requirements of the FDR.

Construction quality assurance sampling and testing met or exceeded the requirements of the CQAP and the FDR. Any deviations from the provisions of these documents has been noted and discussed in the appropriate sections of this report.

It is the conclusion of the CQAO that construction was in conformance with, and met the intent of, the FDR.

4.2 Punch List Items

The punch list is limited to the observation of full germination of the grass seed and adequate site coverage after two mowings, as stipulated in the Technical Specifications. This should be considered an item that will be addressed under post-closure operation and maintenance activities and CQA activities are considered complete.

Appendix A

Appendix A
List of Archived Files

ALCOA REMEDIATION PROJECTS ORGANIZATION

CAMP DRESSER & McKEE

OILY WASTE LANDFILL

LIST OF ARCHIVED FILES

Box No.	Description	Technical Specification No.	File No.
1	Field Engineering	10050	1-1
	Submittals	01300	1-2
	Control of Materials	01601	1-3
	Earthwork	02200	1-4
	Geosynthetic Liner	02275	1-5
	Topsoil and Hydroseeding	02930	1-6
	Health and Safety Information		1-7
	NYSDEC Comments		1-8
	Record Drawings		1-9
	Weekly Progress Meeting Minutes		1-10
	Soils Lab Information		1-11
	Secure Landfill Information		1-12
	Cleanup Verification		1-13
	Field Moisture/Density Results		1-14
	Immunoassay Testing Results		1-15
	Miscellaneous		1-16
	Weekly CDM Activities		1-17
	Weekly RPO Meeting Minutes		1-18
	Inspectors Daily Reports		1-19
	Construction Work Plan		1-20
	Post-Closure Monitoring Plan		1-21
	PICRs, DCOs, DCFs		1-22

ALCOA REMEDIATION PROJECTS ORGANIZATION

CAMP DRESSER & McKEE

OILY WASTE LANDFILL

LIST OF ARCHIVED FILES

Box No.	Description	Technical Specification No.	File No.
2	Site Photos		2-1
	CQAP		2-2
	Soil Cleanup Verification Plan		2-3
	Final Design Report		2-4
	Post-Closure Operations and Maintenance Manual		2-5
	CDM and MKE Safety Plans		2-6
	Field Books (2)		2-7