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Environmental Restoration Program

Main Hill Seeps, Operable Unit 2, On-Scene Coordinator Report for CERCLA Section 104 Removal Action, West Powerhouse PCB Site

Mound Plant
Miamisburg, Ohio

October

~~July~~ 1991

Draft

(Revision ~~0~~ 1)

Department of Energy
Albuquerque Operations Office

Environmental Restoration Program
Technical Support Office
Los Alamos National Laboratory

ENVIRONMENTAL RESTORATION PROGRAM

MAIN HILL SEEPS, OPERABLE UNIT 2, ON-SCENE COORDINATOR REPORT FOR CERCLA SECTION 104 REMOVAL ACTION, WEST POWERHOUSE PCB SITE

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Updated
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1.1.3. Toxic Substance Control Act (TSCA) Cleanup Activity - Program Description

On April 27, 1990, an oil leak was discovered at a spare transformer that had never been energized and was stored on a curbed concrete pad on the west side of the Mound Plant Powerhouse. The leak was discovered at approximately 1:00 pm, and initial cleanup was completed by 3:00 pm. Some of the leak impinged on a concrete surface outside of the dike. At 3:00 pm, a bag was placed on the leaking flange to catch any further leakage. The material absorbed was bagged and placed in the PCB storage area. At 5:00 pm, EG&G Mound, Industrial Hygiene, and Waste Management were at the scene and discussed regulatory compliance with the compliance specialist. Upon receipt of information that the transformer fluid had been removed and replaced with non-PCB fluid, it was estimated that 1,000 parts per million (ppm) PCB or less were leaked. The total liquid capacity of the transformer was 203 gallons. The release amount was set at a very conservative 20 gallons or less. These estimates were used to calculate whether or not a reportable quantity was spilled. The reportable quantity is 10 lbs of PCB material (generally 10 gallons of PCB dielectric fluid) (40 CFR 761, IV,c). The Ohio Emergency Response Center and the Nuclear Regulatory Committee (NRC) were contacted by the DOE representative on April 27, 1990, and notified of the spill. The chronology of the events related to this release was obtained from representatives of the Mound Waste Management Department. It consists of a brief summary of events prepared by the Waste Management Department and the events as recorded by an on-call local environmental response contractor, Enroserv, Inc., including analytical result summaries. This information is presented in Appendix A.

Cleanup was initiated, using Enroserv, as required by the Toxic Substance Control Act (TSCA) (40 CFR 761. They arrived on the scene at approximately 8:30 pm. They swept up some remaining absorbent, scrubbed the discolored concrete with a mild detergent, and took some swipe samples of the concrete. The liquid in the transformer was pumped into drums to lower the level below the leak point. The covering of the flange was then removed, and the area inside was cleaned up. A sample was taken of the removed fluid, and the area was covered with plastic. All wastes were stored in the PCB storage area.

The initial response cleanup included several stages of sampling to define the extent of the area affected by the release, removal of the transformer from the site, and removal of contaminated concrete and soil. Initial samples of the oil in the transformer contained 64,500 ppm of PCBs. The difference in the concentration between the estimate and the sample results received on May 5, 1990, warranted recalculating the possibility of a reportable quantity spill. A better estimate was determined for the leak rate based on discussion with personnel that had been working in the area. It was established that there had been no leak until approximately 1:00 pm. From the time the leak was bagged at 3:00 pm until 5:00 pm, 1 quart was collected. An assumed leak rate of 0.5 quart per hour was established. Since there

was no visible leak at 11:00 am, it was assumed to have started leaking around 12:00 noon. An estimate of 2.5 quarts was assumed lost. Both sets of calculations are listed below.

Leak Rate Calculations

4/27/90:	(20 gallons x 13.2 [lb/gallon] x 1000 ppm/1M) = 0.26 lb
5/04/90:	(2.5 qt/4[qt/gal] x 13.2 [lb/gal] x 64500.0 ppm/1M) = 0.53 lb

The transformer and contaminated oil were removed and sent offsite for disposal at ENSCO in El Dorado, Arkansas. Removal of contaminated soil and concrete continued through November 1990. All waste was disposed of by incineration at ENSCO. Excavation was continued because of observed staining/discoloration on the foundation wall of the in-line substation located directly west of the Powerhouse. On October 31, 1990, a pocket of oil and water was encountered at a depth of 5 to 6 ft BGS and directly adjacent to the substation foundation wall. Samples taken of this liquid contained a maximum of 230,000 ppm of PCBs (Aroclor 1260). Analytical results of the TSCA cleanup activity are presented in Appendix A.

Limited excavation was performed after the oil was encountered. Laboratory analyses of the transformer oil that was released in April 1990 and the oil/water encountered at 5 to 6 ft BGS, identified the same PCB, Aroclor 1260. It was believed, however, that the two areas of contamination resulted from separate incidents based on the small volume of the April 1990 release (2.5 quarts) and the depth (5 to 6 ft) at which the oil/water was encountered in October and November 1990. At that point in time, it was determined that this oil was not from the original spill. It was a problem that fell under CERCLA; therefore, Mound turned this project over to the Environmental Restoration (ER) Program, with Waste Management continuing to provide support. On November 8, 1990, state and federal authorities were informed of the discovery of the subsurface oil.

1.1.3.1. Waste Disposal

The wastes generated in both the TSCA cleanup activity and the CERCLA removal action were handled through the Mound Waste Management Department. A list of waste types and amounts is located in Appendix B, together with the Uniform Hazardous Waste Manifests. A total of 1,563 lbs of oil, 18,379 lbs of oil/water, 52,739 lbs of concrete/soil/debris, and one transformer were disposed of. All waste was disposed of by incineration at ENSCO.

1.1.4. CERCLA Removal Action - Program Description

A Sampling and Analysis Plan (SAP) dated January 1991 was developed by Roy F. Weston, Inc. (WESTON) for the DOE under CERCLA to address the West Powerhouse PCB contamination (DOE 1991b). Copies of the SAP were provided to the regulatory agency remedial project managers, Ms. Diana Mally of the United States Environmental Protection Agency (EPA) and Ms. Martha Hatcher of the State of Ohio Environmental Protection Agency (OEPA). The objective of the SAP was to determine the extent of subsurface PCB contamination in the vicinity of the 1990 West Powerhouse excavation, including the utility pipe chases and surrounding subsurface soils. One of the primary

investigation methods outlined in the SAP was the drilling of boreholes in a grid system with subsequent subsurface soil sampling and analyses. Due to the abundance of underground utilities in proximity to the release area, boreholes could not be drilled. The site conditions dictated the use of backhoe and hand excavation techniques with subsequent soil analyses to determine the extent of PCB contamination. The DOE made a determination that a removal aciton was appropriate because of the criteria in 40 CFR 300.415 (b)(2)(viii), "Other situations or factors that may pose threats to public health or welfare of the environment," on the basis that

- the contamination was in contact with subsurface water where it could possibly migrate rapidly and pose a threat to the environment; and
- once it was necessary to excavate soil in order to sample, the contaminated soil should be stored, treated, or disposed of to minimize further threat to public welfare and the environment.

The following subsections describe the March 13 through March 27, 1991, removal action procedures conducted under the criteria of Section 300.400 of the National Contingency Plan, the analytical results of the investigation, and the extent of PCB contamination.

1.1.4.1. Soil Excavation and Sampling Procedures

To determine the extent of PCB contamination, excavation of soils at the West Powerhouse site was performed in stages with an episode of excavation followed by soil sampling and onsite analyses for PCBs. Excavation was performed in two-foot vertical lifts followed by sampling and analyses. Excavation commenced at the area of the original TSCA excavation and expanded to the north, south, and west based on analytical results. Soil excavation was discontinued at each particular stage when total PCB levels were below 10 ppm, the required cleanup level for soils as outlined in 40 CFR 761.125 (c)(4)(v).

Confirmation samples were collected at each stage of excavation to delineate the extent of contamination at a particular depth below ground surface. All soils were removed as encountered and containerized onsite in 55-gallon drums.

1.1.4.2. Water Sampling Procedures

Groundwater and surface water was pumped from the bottom of the excavation when necessary and containerized in 55-gallon drums. Water collected in the drums was sampled and analyzed to determine appropriate disposal methods.

1.1.4.3. Soil and Water Analytical Procedures

The number of samples and analyses completed for each media is summarized in Table I.1.

Table I.1. Summary of Sampling and Analyses

Media	Number of Drums	Number of Analyses	Type of Analyses
In-situ Soil	N/A	109	Onsite thorium-232 and plutonium-238
In-situ Soil	N/A	109	Onsite PCB
In-situ Soil	N/A	22	Offsite PCB (fixed laboratory)
In-situ Soil	N/A	6	Target Compound List (TCL)
Drums-Soil	89	89	Onsite PCB
Drums-Soil	9	9	Toxicity Characteristic Leaching Procedure
Drums-Water	34	34	Offsite PCB (fixed laboratory)
Drums-Water	3	3	TCL volatile organics

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Drums-Soil	9	9	Toxicity Characteristic Leaching Procedure
Drums-Water	34	34	Offsite PCB (fixed laboratory)
Drums-Water	3	3	TCL volatile organics

Soil samples were analyzed onsite for PCBs with a L2000 PCB Analyzer™ manufactured by Dexsil Corporation, which has a detection limit of 5 ppm for PCBs in soil. The procedure for performing this analysis is presented in Appendix C. As soils were excavated, sample splits were collected and analyzed onsite for plutonium-238 and thorium-232 by EG&G Mound representatives. Approximately one of each ten soil samples collected was sent to the Roy F. Weston Analytics Division Lionville Laboratory in Lionville, Pennsylvania, for PCB analyses. A comparison of field-generated PCB results and laboratory-generated PCB results show that in the majority of cases the field generated result was the conservative value (i.e., higher than the lab value). An additional six samples that delineated the extent of PCB contamination directly above bedrock were sent to WESTON's analytical laboratory for analyses of Target Compound List (TCL) parameters.

Excavated soils were containerized in a total of 89 55-gallon drums, each drum was sampled and the soil was analyzed onsite for PCBs. Drums that contained soil with PCB concentrations less than 10 ppm were considered to be nonhazardous and were stored onsite. Additional analyses were conducted on one out of each ten nonhazardous drums for Toxicity Characteristic Leaching Procedure analyses in order to determine proper disposal methods.

Groundwater and surface water that entered the excavation during investigation activities was pumped out of the excavation into 55-gallon drums. Decontamination water was also containerized in 55-gallon drums. A total of 34 water drums were produced from site activities; each drum was analyzed for PCB concentrations by WESTON's analytical laboratory in Lionville, Pennsylvania. Three of the drums were also analyzed for TCL volatile organic compounds.

1.1.4.4. Analytical Results/Extent of Contamination

As described in subsection 1.1.4.1, a process of vertical and horizontal soil excavation followed by soil sampling and analyses was used to delineate the extent of subsurface PCB contamination at the West Powerhouse site. Figures 1.3 through 1.6 show the approximate boundaries of excavated soils at each two foot vertical interval and the locations of confirmation samples. The confirmation samples represent uncontaminated soil conditions and delineate the horizontal and vertical extent of PCB contamination. As shown in Figure 1.6, the extent of PCB contamination was relatively confined; the excavation measured approximately 30 ft by 5 ft and extended to an approximate depth of 8.5 ft BGS (top of bedrock).

Analytical results for soils analyzed onsite for PCBs, thorium-232, and plutonium-238 are presented in Appendix D. A summary of these results is presented in Table I.2. Laboratory analytical results, data validation reports, and chain-of-custody forms are presented in Appendix E. Data validation was

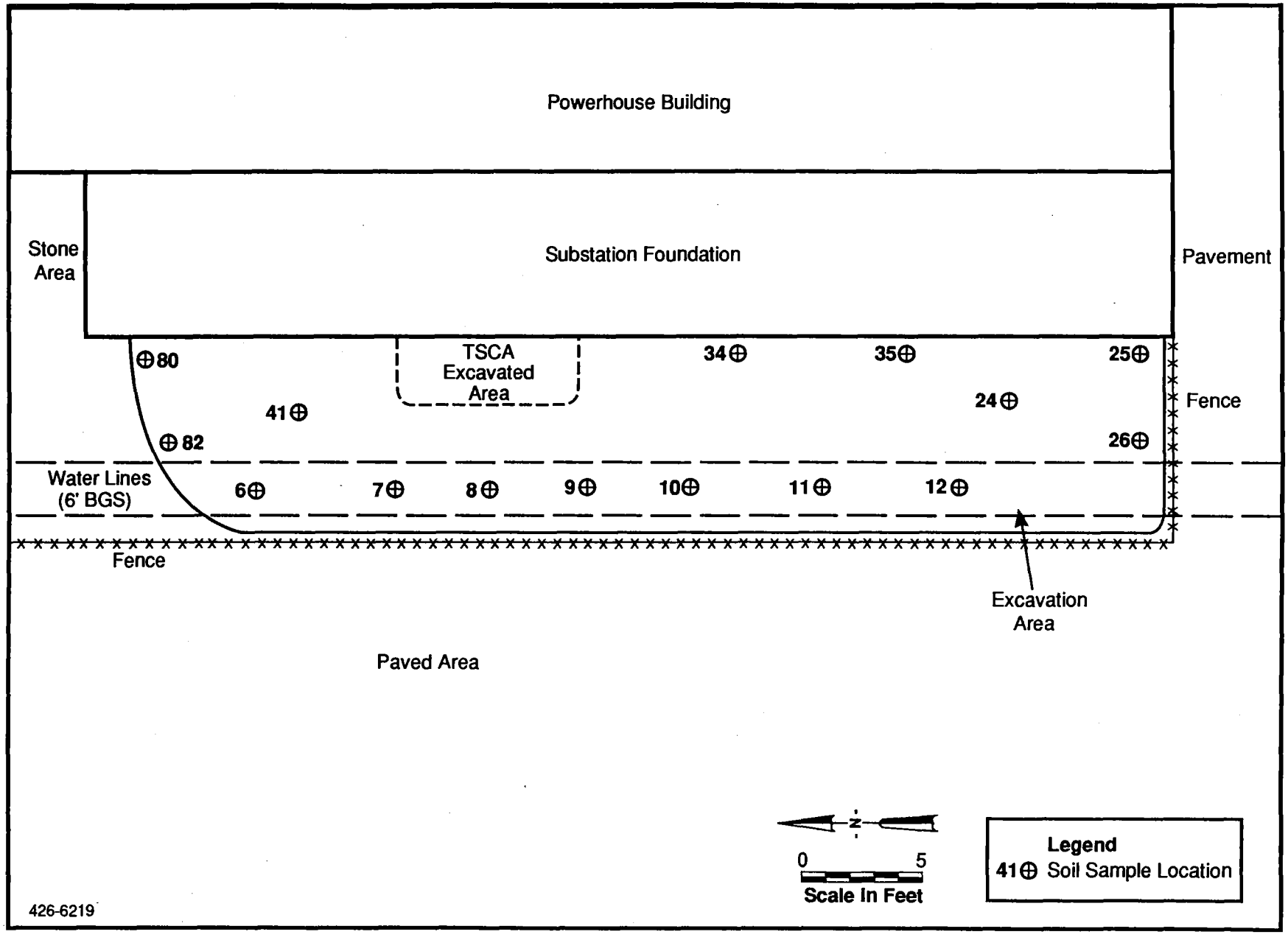

Figure 1.3. Excavated area from 0-2 feet BGS, confirmation sample locations

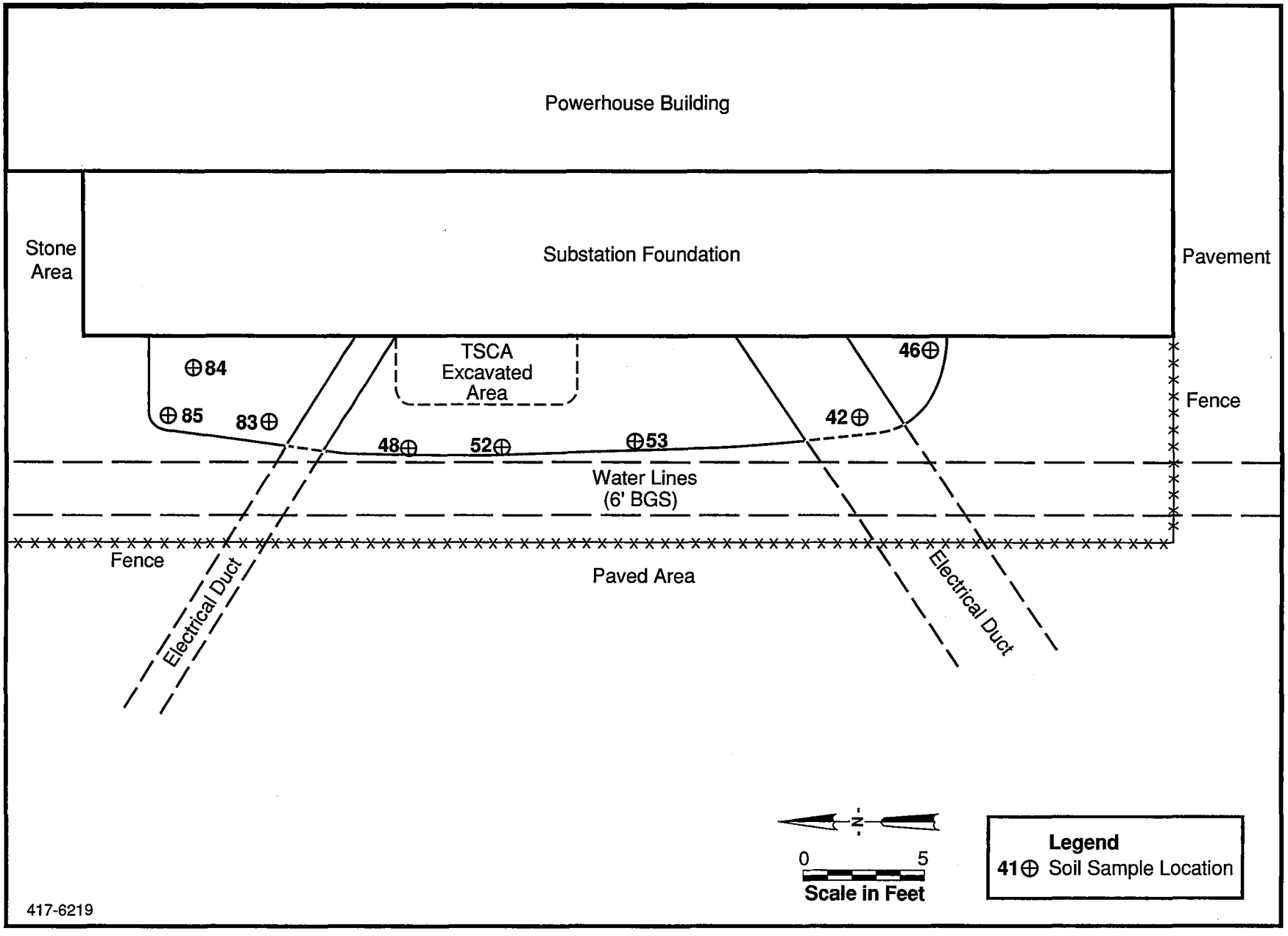

Figure 1.4. Excavated area from 2-4 ft BGS, confirmation sample locations

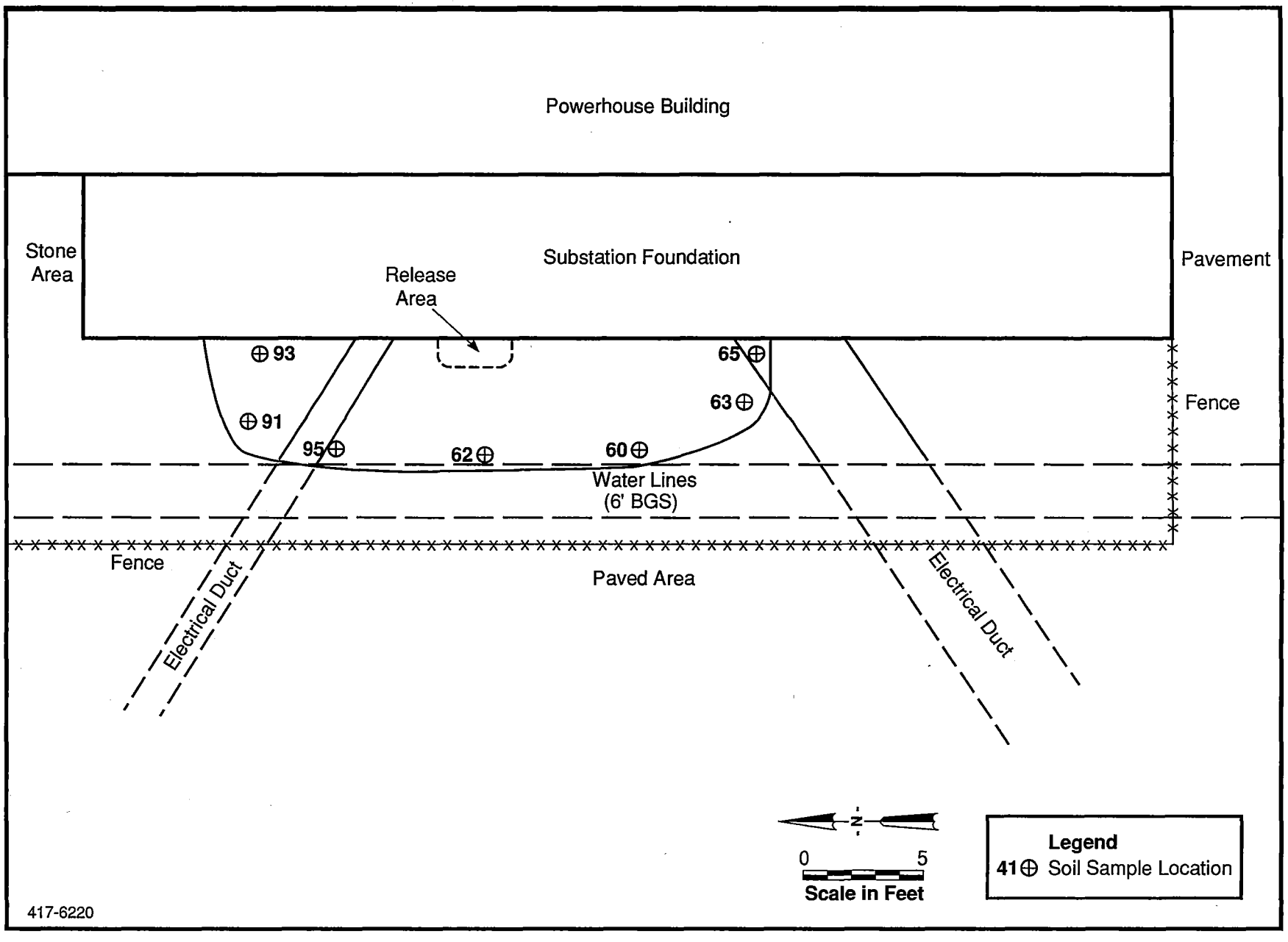

Figure 1.5. Excavated area from 4-6 ft BGS, confirmation sample locations

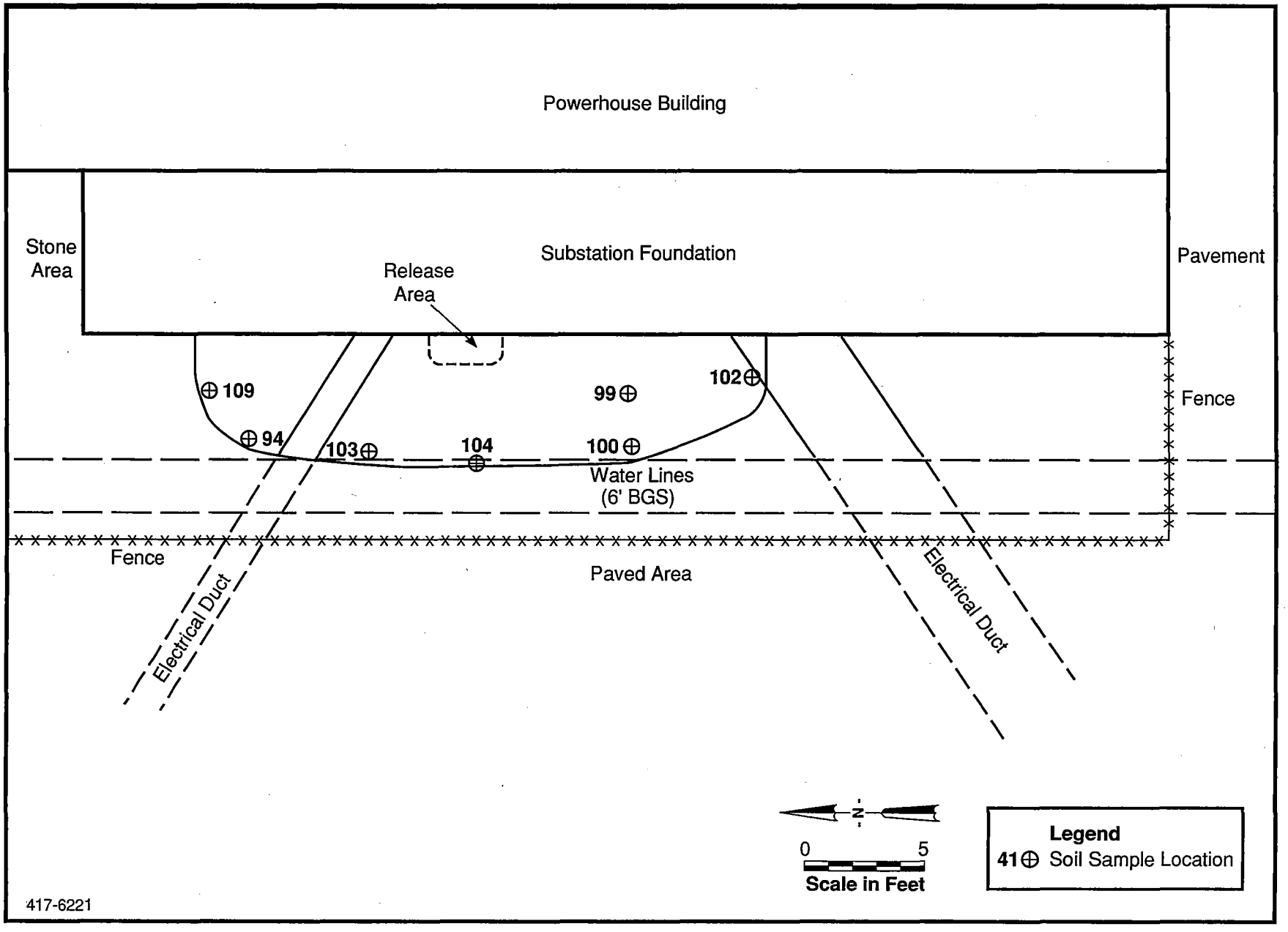

Figure 1.6. Excavated area from 6-8.5 ft BGS (Bedrock at 8.5 ft BGS), confirmation sample locations

Table I.2. Summary of the Detected Analytes for Onsite PCB, Thorium-232, and Plutonium-238

Sample ID	Aroclor 1260 ppm	TH 232 Pci/g	PU 238 Pci/g	Sample ID	Aroclor 1260 ppm	TH 232 Pci/g	PU 238 Pci/g
MND20-0019-0001	3.7	1.1	0.0	MND20-0019-0056	1.5	0.4	2.0
MND20-0019-0002	8.7	0.5	0.0	MND20-0019-0057	2.1	0.5	0.0
MND20-0019-0003	6.1	1.0	7.0	MND20-0019-0058	1.8	0.1	0.0
MND20-0019-0004	6.4	0.8	0.0	MND20-0019-0059	8.2	0.6	7.0
MND20-0019-0005	2.5	1.4	3.0	MND20-0019-0060	8.4	0.7	0.0
MND20-0019-0006	6.1	0.5	0.0	MND20-0019-0061	3.2	0.5	4.0
MND20-0019-0007	4.2	0.8	4.0	MND20-0019-0062	2.0	0.2	0.0
MND20-0019-0008	4.3	0.6	3.0	MND20-0019-0063	4.5	0.1	0.0
MND20-0019-0009	4.0	1.0	0.0	MND20-0019-0064	2.7	0.4	0.0
MND20-0019-0010	4.9	0.7	0.0	MND20-0019-0065	3.6	0.7	3.0
MND20-0019-0011	4.1	0.8	0.0	MND20-0019-0066	1.7	0.1	0.0
MND20-0019-0012	3.1	0.2	0.0	MND20-0019-0067	15.8	0.8	2.0
MND20-0019-0013	6.3	1.0	0.0	MND20-0019-0068	22.0	0.7	0.0
MND20-0019-0014	2.0	0.4	2.0	MND20-0019-0069	5.6	0.3	0.0
MND20-0019-0015	15.2	0.6	0.0	MND20-0019-0070	15.0	0.6	5.0
MND20-0019-0016	6.7	0.5	0.0	MND20-0019-0071	9.2	0.4	0.0
MND20-0019-0017	4.3	0.1	0.0	MND20-0019-0072	3.4	0.6	0.0
MND20-0019-0018	3.9	0.6	0.0	MND20-0019-0073	3.6	0.2	0.0
MND20-0019-0019	2.8	0.4	2.0	MND20-0019-0074	2.3	0.8	1.0
MND20-0019-0020	3.1	0.1	0.0	MND20-0019-0075	1.9	0.4	0.0
MND20-0019-0021	81.1	0.4	8.0	MND20-0019-0076	3.1	0.9	2.0
MND20-0019-0022	25.6	0.2	2.3	MND20-0019-0077	2.4	1.0	2.0
MND20-0019-0023	27.8	0.2	0.0	MND20-0019-0078	2.7	0.4	0.0
MND20-0019-0024	3.2	0.5	0.0	MND20-0019-0079	17.3	0.5	0.0
MND20-0019-0025	4.6	0.5	0.0	MND20-0019-0080	3.6	0.6	0.0
MND20-0019-0026	4.4	0.2	0.0	MND20-0019-0081	8.3	0.3	0.0
MND20-0019-0027	3.8	0.6	2.0	MND20-0019-0082	3.9	0.7	0.0
MND20-0019-0028	2.9	0.4	0.0	MND20-0019-0083	4.4	0.7	3.0
MND20-0019-0029	4.0	0.4	0.0	MND20-0019-0084	4.3	0.6	5.0
MND20-0019-0030	3.5	0.6	1.0	MND20-0019-0085	1.5	0.2	0.0
MND20-0019-0031	183.8	0.4	0.0	MND20-0019-0086	3.1	0.8	2.0
MND20-0019-0032	4.6	0.7	6.0	MND20-0019-0087	2.7	0.3	0.0
MND20-0019-0033	>2000	0.2	0.0	MND20-0019-0088	3.3	0.5	3.0
MND20-0019-0034	4.0	0.5	3.0	MND20-0019-0089	3.6	0.2	0.0
MND20-0019-0035	4.2	0.6	0.0	MND20-0019-0090	3.8	0.7	0.0
MND20-0019-0036	>2000	2.0	0.0	MND20-0019-0091	3.9	0.6	0.0
MND20-0019-0037	35.9	0.7	0.0	MND20-0019-0092	5.4	0.4	0.0
MND20-0019-0038	12.7	0.3	0.0	MND20-0019-0093	5.9	0.1	0.0
MND20-0019-0039	3.1	0.2	0.0	MND20-0019-0094	4.4	0.5	6.0
MND20-0019-0040	14.9	0.6	7.0	MND20-0019-0095	4.3	0.5	0.0
MND20-0019-0041	4.3	0.5	0.0	MND20-0019-0096	6.4	0.1	0.0
MND20-0019-0042	4.9	0.1	0.0	MND20-0019-0097	5.5	0.7	5.0
MND20-0019-0043	4.8	0.5	1.0	MND20-0019-0098	4.6	0.5	0.0
MND20-0019-0044	8.1	0.4	0.0	MND20-0019-0099	3.6	0.6	0.0
MND20-0019-0045	5.1	0.3	0.0	MND20-0019-0100	3.8	0.7	5.0
MND20-0019-0046	5.5	0.3	2.0	MND20-0019-0101	3.6	0.7	1.5
MND20-0019-0047	5.0	0.4	0.0	MND20-0019-0102	2.5	0.6	2.0
MND20-0019-0048	3.7	0.6	0.0	MND20-0019-0103	2.9	0.9	2.0
MND20-0019-0049	9.8	0.7	0.0	MND20-0019-0104	2.9	0.8	2.0
MND20-0019-0050	4.0	0.4	0.0	MND20-0019-0105	3.1	0.3	0.0
MND20-0019-0051	4.3	0.0	0.0	MND20-0019-0106	15.4	0.1	0.0
MND20-0019-0052	3.8	0.4	3.0	MND20-0019-0107	20.7	0.3	2.0
MND20-0019-0053	4.5	0.6	0.0	MND20-0019-0108	6.3	0.3	0.0
MND20-0019-0054	3.2	0.7	0.0	MND20-0019-0109	3.7	0.8	0.0
MND20-0019-0055	4.0	0.7	0.0				

performed for all samples analyzed by WESTON's analytical laboratory. Results of data validation show no significant changes to analytical results or significant problems with analyses. Tables I.3 through I.7 present a list of detected analytes for all samples analyzed at WESTON's analytical laboratory.

1.1.4.5. Excavation Backfill Procedure

Backfill of the excavation took place immediately after all soils were removed from the excavation and all soil sample PCB analytical results were received. The excavation was backfilled with "clean" gravel to the surface, was compacted, and was then leveled.

1.2. CAUSE AND SOURCE OF THE RELEASE

Record searches and employee interviews previously completed for the Mound Plant Environmental Restoration Program have not identified the potential for PCB contamination (DOE 1991c). Subsequent discussions with Mound Plant utilities personnel have also indicated that there have been no known large-volume PCB spills at Mound Plant.

Based on the results of the March 1991 removal action, the source of the subsurface PCB contamination appears to have originated from a surface release in the same area as the April 1990 release of approximately 2.5 quarts of transformer oil. The subsurface PCB contamination was of limited depth and lateral extent and may have resulted from the April 1990 release or a previous undocumented release.

1.3. EFFORTS TO OBTAIN RESPONSE BY RESPONSIBLE PARTIES

Not applicable, because the DOE is the responsible party.

1.4. ORGANIZATION OF THE RESPONSE

Not applicable, because DOE was the sole agency involved.

1.5. THE RESOURCES COMMITTED

One of the criteria for initiating the removal action was the indication that the removal action could be completed in less than one year and for less than one million dollars. The total project cost was less than $350,000.

Table I.3. Summary of the Detected Analytes for Soil PCB from WESTON's Lionville Laboratory

Sample ID	Aroclor 1254 ug/g	Aroclor 1260 ug/g
MND20-0019-0010	U	3.0
MND20-0019-0014	U	0.035J
MND20-0019-0020	0.13J	U
MND20-0019-0030	0.059J	U
MND20-0019-0033	U	310
MND20-0019-0036	U	22000
MND20-0019-0040	U	190
MND20-0019-0050	U	0.032J
MND20-0019-0060	U	0.037J
MND20-0019-0065	U	5.2
MND20-0019-0070	U	0.055J
MND20-0019-0080	U	0.18J
MND20-0019-0090	U	0.32
MND20-0019-0093	U	0.97
MND20-0019-0107	U	37
MND20-0019-0109	U	0.86
MND20-0021-0001	0.11J	U

J – Analyte present at less than detection limit.

U – Not detected.

Table I.4. Summary of the Detected Analytes for Water PCB from WESTON's Lionville Laboratory

Sample ID	Aroclor 1260 ug/L
MND20-0019-W1	6200
MND20-0019-W2	1600
MND20-0019-W3	1.2
MND20-0019-W4	9.5
MND20-0019-W5	86
MND20-0019-W6	600
MND20-0019-W7	29
MND20-0019-W8	7400
MND20-0019-W9	1900
MND20-0019-W10	6.2
MND20-0019-W11	2.5
MND20-0019-W12	4.3
MND20-0019-W13	6.1
MND20-0019-W14	2.9
MND20-0019-W15	10
MND20-0019-W16	2.0
MND20-0019-W17	0.56J
MND20-0019-W18	440
MND20-0019-W19	56
MND20-0019-W20	33
MND20-0019-W21	1.3
MND20-0019-W22	1.5
MND20-0019-W23	74
MND20-0019-W24	0.54J
MND20-0019-W25	36
MND20-0019-W26	0.57J
MND20-0019-W27	82
MND20-0019-W28	0.17J
MND20-0019-W29	0.98
MND20-0019-W30	1.9
MND20-0019-W31	0.81J
MND20-0019-W32	0.19J
MND20-0019-W33	7.0
MND20-0019-W34	1.1

J – Analyte present at less than detection limit.

Table I.5. Summary of the Detected Analytes for Water TCL from WESTON's Lionville Laboratory

Sample ID	Methylene Chloride µg/L	Acetone µg/L
MND20-00019-W14	4 JB	13 B
MND20-00019-W22	3 JB	7 JB
MND20-00019-W30	17 B	12 B

J - Analyte present at less than detection limit

B - Analyte found in associated blank

Table I.6. Summary of the Detected Analytes for Soil TCL from WESTON's Lionville Laboratory

COMPOUND	SAMPLE ID					
	MND20-00019-0092A	MND20-00019-0094	MND20-00019-0100	MND20-00019-0102	MND20-00019-0104	MND20-00019-0109
Volatiles ug/Kg						
Methylene Chloride	31 B	40 B	53 B	47 B	56 B	57 B
Acetone	8 JB	16 B	24 B	30 B	35 B	34 B
Semivolatiles ug/Kg						
1,2,4-Trichlorobenzene	560	U	U	U	U	U
Naphthalene	U	U	U	120 J	U	U
Acenaphthene	U	U	U	210 J	U	54 J
Dibenzofuran	U	U	U	83 J	U	U
Fluorene	U	U	U	160 J	U	U
Phenanthrene	U	U	U	1400	U	280 J
Anthracene	U	U	U	220 J	U	55 J
Fluoranthene	59 J	U	U	1700	U	360 J
Pyrene	61 J	U	U	1500	U	310 J
Benzo(a)anthracene	U	U	U	640	U	120 J
Chrysene	U	U	U	760	U	170 J
bis(2-Ethylhexyl)phthalate	130 J	86 J	48 J	U	50 J	76 J
Benzo(b)fluoranthene	U	U	U	630	U	130 J
Benzo(k)fluoranthene	U	U	U	510	U	97 J
Benzo(a)pyrene	U	U	U	550	U	110 J
Indeno(1,2,3-cd)pyrene	U	U	U	350 J	U	74 J
Dibenzo(a,h)anthracene	U	U	U	120 J	U	U
Benzo(g,h,i)perylene	U	U	U	380 J	U	93 J
PCBs ug/Kg						
Aroclor 1260	4400	52 J	U	U	U	690
Metals mg/Kg						
Aluminum	1560	1070	1500	1540	1130	2260
Antimony	4.70 B	U	U	4.60 B	U	U
Arsenic	4.80	3.13	5.30	4.80	4.40	5.60
Barium	18.9 B	7.80 B	11.5 B	23.3 B	19.4 B	23.0 B
Calcium	130000	113000	118000	156000	110000	124000
Chromium	1.40 B	U	0.860B	5.40	U	5.10
Cobalt	2.20 B	1.80 B	2.70 B	2.00 B	1.90 B	3.10 B
Copper	8.20	6.7	6.70	7.00	6.70	8.20
Iron	5620	4670	6250	5020	5260	6860
Lead	8.00	4.6	6.70	8.00	6.00	10.0
Magnesium	49500	38700	42700	49700	39900	36800
Manganese	275	170	222	265	174	264
Nickel	5.00 B	3.60 B	5.90 B	4.50 B	5.10 B	5.20 B
Potassium	341 B	U	281 B	383 B	271 B	417 B
Sodium	178 B	164 B	206 B	201 B	206 B	92.4 B
Vanadium	14.1	11.6	13.2	14.7	12.2	8.90 B
Zinc	25.4	22.2	30.3	26.2	23.8	29.3

J – Analyte present at less than detection limit.
U – Not detected.
B – Analyte found in associated blank.

Table I.6. Summary of the Detected Analytes for Soil TCL from WESTON's Lionville Laboratory

COMPOUND	SAMPLE ID					
	MND20-00019-0092A	MND20-00019-0094	MND20-00019-0100	MND20-00019-0102	MND20-00019-0104	MND20-00019-0109
Volatiles ug/Kg						
Methylene Chloride	31 B	40 B	53 B	47 B	56 B	57 B
Acetone	8 JB	16 B	24 B	30 B	35 B	34 B
Semivolatiles ug/Kg						
1,2,4-Trichlorobenzene	560	U	U	U	U	U
Naphthalene	U	U	U	120 J	U	U
Acenaphthene	U	U	U	210 J	U	54 J
Dibenzofuran	U	U	U	83 J	U	U
Fluorene	U	U	U	160 J	U	U
Phenanthrene	U	U	U	1400	U	280 J
Anthracene	U	U	U	220 J	U	55 J
Fluoranthene	59 J	U	U	1700	U	360 J
Pyrene	61 J	U	U	1500	U	310 J
Benzo(a)anthracene	U	U	U	640	U	120 J
Chrysene	U	U	U	760	U	170 J
bis(2-Ethylhexyl)phthalate	130 J	86 J	48 J	U	50 J	76 J
Benzo(b)fluoranthene	U	U	U	630	U	130 J
Benzo(k)fluoranthene	U	U	U	510	U	97 J
Benzo(a)pyrene	U	U	U	550	U	110 J
Indeno(1,2,3-cd)pyrene	U	U	U	350 J	U	74 J
Dibenzo(a,h)anthracene	U	U	U	120 J	U	U
Benzo(g,h,i)perylene	U	U	U	380 J	U	93 J
PCBs ug/Kg						
Aroclor 1260	4400	52 J	U	U	U	690
Metals mg/Kg						
Aluminum	1560	1070	1500	1540	1130	2260
Antimony	4.70 B	U	U	4.60 B	U	U
Arsenic	4.80	3.13	5.30	4.80	4.40	5.60
Barium	18.9 B	7.80 B	11.5 B	23.3 B	19.4 B	23.0 B
Calcium	130000	113000	118000	156000	110000	124000
Chromium	1.40 B	U	0.860B	5.40	U	5.10
Cobalt	2.20 B	1.80 B	2.70 B	2.00 B	1.90 B	3.10 B
Copper	8.20	6.7	6.70	7.00	6.70	8.20
Iron	5620	4670	6250	5020	5260	6860
Lead	8.00	4.6	6.70	8.00	6.00	10.0
Magnesium	49500	38700	42700	49700	39900	36800
Manganese	275	170	222	265	174	264
Nickel	5.00 B	3.60 B	5.90 B	4.50 B	5.10 B	5.20 B
Potassium	341 B	U	281 B	383 B	271 B	417 B
Sodium	178 B	164 B	206 B	201 B	206 B	92.4 B
Vanadium	14.1	11.6	13.2	14.7	12.2	8.90 B
Zinc	25.4	22.2	30.3	26.2	23.8	29.3

J – Analyte present at less than detection limit.
U – Not detected.
B – Analyte found in associated blank.

Table I.7. Summary of the Detected Analytes for Soil TCLP from WESTON's Lionville Laboratory

Sample ID	Benzene µg/L	Barium µg/L
MND20-00019-0010	U	1220
MND20-00019-0024	11 J	1190
MND20-00019-0035	50 J	478
MND20-00019-0046	U	479
MND20-00019-0058	U	354
MND20-00019-0069	U	489
MND20-00019-0080	U	350
MND20-00019-0089	U	U
MND20-00019-0105	18 J	279

J - Analyte present at less than detection limit

U - Not detected

1.6. NATURAL RESOURCE TRUSTEE NOTIFICATION

A notification letter consistant with 40 CFR 300.410(g), summarizing the PCB removal action, was sent from the DOE Dayton Area Office to the EPA and the OEPA on February 22, 1991.

1.7. FEDERAL OR STATE TRUSTEE DAMAGE ASSESSMENT ACTIVITIES

A formal damage assessment was not completed by federal or state trustees.

1.8. THREAT ABATEMENT ACTION

Threat abatement action was not taken under CERCLA or under Section 311 (c) or (d) of the Clean Water Act.

1.9. DISPOSAL ACTIVITIES - PCB CONTAMINATED SOIL AND WATER

1.9.1. Alternatives Considered

Multiple treatment/disposal alternatives were considered for both soil and water, as described below.

Soil

Alternatives considered for treatment/disposal of soil, along with the reason not chosen, are as follows:

- Treatment with quicklime, an emerging technology at the time the removal was completed. It was not chosen because the relatively small volume of soil and low contaminant concentrations would not make it cost-effective.
- Disposal in a municipal landfill for contamination less than 50 ppm. Although allowable under TSCA regulations, it was discarded because it did not reduce the mobility, toxicity, or volume of the contaminants.

Water

Alternatives considered for treatment/disposal of water, along with the reason not chosen, are as follows:

- Discharge into the Mound Plant effluent was considered because of the extremely low concentration of PCBs. It was not chosen because of prohibitions against discharging PCBs into navigable waters (40 CFR 129.105).

- Disposal in a hazardous waste landfill was considered because concentrations were much less than 50 ppm, and disposal of soil in a municipal landfill is allowable at that level. It was not chosen because it was not prudent to place free liquid in a landfill.

Alternative Chosen

Contaminated soil and water were cleaned by incineration.

1.9.2. Summary of Disposal Activities

Excavated soils were containerized in 55-gallon drums as the investigation proceeded. Each drum was sampled for PCB analysis. Based on these results, the contents of each drum were determined to be contaminated (>10 ppm PCB) or non contaminated (<10 ppm PCB). The clean up level of 10 ppm for PCBs in soil is consistent with the TSCA requirement for the decontamination of spills involving 1 lb or more of PCBs in non restricted access areas. A total of approximately 96 drums of soil were generated from site activities; of this total, 15 drums of contaminated soils and 7 drums of health-and-safety-generated waste (i.e., tyvek, plastic, etc.) were sent offsite to the Ensco facility in Arkansas for treatment by incineration.

Groundwater and surface water that entered the excavation during the investigation was pumped into 55-gallon drums for subsequent analysis. Each 55-gallon drum was sampled and analyzed for PCBs. The water in all 34 drums contained a total PCB concentration greater than the detection limit of 1.0 μg/L. The release of pollutants in water from Mound Plant is regulated under an OEPA National Pollution Discharge Elimination System (NPDES) permit, numbered 11000005CD. The NPDES permit does not specifically address the release of PCBs, and the monitoring of Total Toxic Organic does not include PCBs on the list of analytical parameters. Therefore, no quantity of PCBs may be released through the NPDES system. EG&G Mound has transported all 34 liquid drums to the Ensco facility in Arkansas for treatment by incineration.

Removal activities at the site also generated approximately 252 ft^3 of concrete rubble. Samples were collected and analyzed onsite for PCBs. In addition, one of the three samples was split for analyses

at the WESTON analytical laboratory. The maximum concentration of the three samples was 37 ppm. Therefore, EG&G Mound has disposed of the concrete offsite at the Laidlaw Environmental/GSX facility (landfill) in South Carolina. Waste disposal manifests for all materials shipped offsite are included in Appendix F.

1.10. PUBLIC INFORMATION/COMMUNITY RELATIONS ACTIVITIES

A Notice of Availability of the administrative record for the West Powerhouse PCB removal action will be advertised by the DOE in an appropriate newspaper of general circulation in the community. An administrative record for this action, which will include the Sampling and Analysis Plan and the OSC Report, will be available at the Public Repository located at the Miamisburg Branch of the Dayton-Montgomery County Library. Public comment will be accepted and responses to comments will be included in the final document of action and will be available for public viewing at the Miamisburg Branch of the Dayton-Montgomery County Library. A draft copy of the notice is presented in Appendix G. A photographic record of the action was included in the March 1991 monthly report submitted by DOE to EPA (DOE 1991d). A copy of that report is contained in the administrative record.

2. EFFECTIVENESS OF REMOVAL ACTION

Cleanup activities resulting from the April 1990 release at the West Powerhouse area were conducted according to TSCA standards by an on-call environmental response contractor, Enroserv Inc. of Dayton, Ohio. Additional site work was performed by WESTON for the DOE in March 1991. The March 1991 site work was performed according to CERCLA Removal Action Standards, which resulted in the removal and disposal of all PCB-contaminated soil with a concentration of 10 parts per million or greater and all PCB-contaminated water. Soil excavation was continued in the area until all soils were removed to the top of bedrock. Final confirmation samples were collected along the side walls of the excavation as shown on Figure 1.6.

A summary of analytical results for the confirmation samples collected to define the extent of contamination at the bottom of the excavation (as shown on Figure 1.6), is presented in Table II.1. These analytical results along with the results of confirmation samples collected along the side walls at each two-foot level of the excavation document that all PCB-contaminated soil was removed from the release area.

Table II.1. Summary of Analytical Results for Confirmation Samples at 6 to 8.5 ft BGS

Sample I.D.	PCB Concentration (ppm)
094	0.05
099	Not detected
100	Not detected
102	Not detected
103	2.9[a]
104	Not detected
109	0.86

[a]Onsite analyses

3. PROBLEMS ENCOUNTERED AND RECOMMENDATIONS

There were no significant problems encountered throughout the duration of this project. The removal action was conducted solely by the DOE as a non-funded federal lead. As such, the action presented no potential problems in inter-agency cooperation. In order to prevent the recurrence of releases of hazardous substances such as transformer oils, the OSC recommends that the temporary storage of transformers be conducted at an approved onsite containment structure.

4. REFERENCES

DOE. 1991a. "Remedial Investigation/Feasibility Study Operable Unit 9, Site-wide Work Plan." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. February 1991.

DOE. 1991b. "Mound Plant, Main Hill Seeps, Operable Unit 2 West Powerhouse PCB Contamination Sampling and Analyses Plan, Health and Safety Plan." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. January 1991.

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DOE. 1991d. "Remedial Investigation/Feasibility Study Monthly Progress Report." Environmental Restoration, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. March 1991.

APPROVAL

This document was prepared under University of California, Los Alamos National Laboratory, Subcontract 9-XS8-0146R-1, by Roy F. Weston, Inc.

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ACRONYMS

BGS	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
NPDES	National Pollution Discharge Elimination System
NRC	Nuclear Regulatory Commission
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
PCB	polychlorinated biphenyl
ppm	parts per million
RI/FS	Remedial Investigation/Feasibility Study
SAP	Sampling and Analysis Plan
TCL	Target Compound List
TSCA	Toxic Substances Control Act

ACKNOWLEDGEMENTS

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1. SUMMARY OF EVENTS

As required by 40 CFR 300.165 (OSC Reports), this report of the On Scene Coordinator (OSC) has been submitted within one year after completion of removal activities associated with the release of a hazardous substance. The content of this report is that specified in 40 CFR 300.165 (c).

The removal action described by this report was completed by the U.S. Department of Energy (DOE) as a non-fund federal lead under the DOE authority by Sections 104 and 120 of the Comprehensive Environmental Compensation Response and Liability Act (CERCLA). Therefore, several OSC report elements specified in 40 CFR 300.165 are not applicable and are designated as such in this text.

1.1. HAZARDOUS SUBSTANCE RELEASE SUMMARY

1.1.1. Installation/Site Background

The Mound Plant in Miamisburg, Ohio, is operated for the DOE by EG&G Mound Applied Technologies. The plant started operating in 1946 and today is an integrated research, development, and production facility operated in support of the DOE weapons and energy programs. A polychlorinated biphenyl (PCB) release and subsequent removal action occurred in an area on the west side of the Mound Plant Powerhouse, which is located on the Mound Plant Main Hill, also designated as Operable Unit 2. Figures 1.1 and 1.2 show the location of the Mound Plant and the Powerhouse area. Additional details on the physical features of Mound Plant, and additional background information on the ongoing remedial investigation/feasibility study (RI/FS), is available in the RI/FS Work Plan (DOE 1991a).

1.1.2. Physical Setting

The Mound Plant Main Hill has a relatively complicated physical setting. Groundwater perches on top of the shale and limestone bedrock that is 5 to 15 ft below ground surface (BGS). The shale and limestone have relatively low permeability but are fractured and able to transmit water. The hydrogeology is complicated by the presence of numerous buried utility corridors and associated permeable sandy backfill. Other cultural modifications to the flow regimen include local incision of the bedrock surface, building foundations, and recharge from leaky water pipes and sewers.

The west side of the Powerhouse Building, where the release occurred, has a utility corridor where several utilities including water, sewer, and high voltage electric lines are located below ground surface. The electrical lines are located approximately 2 to 3 ft BGS; water and sewer lines are buried at approximately 5 to 6 ft BGS.

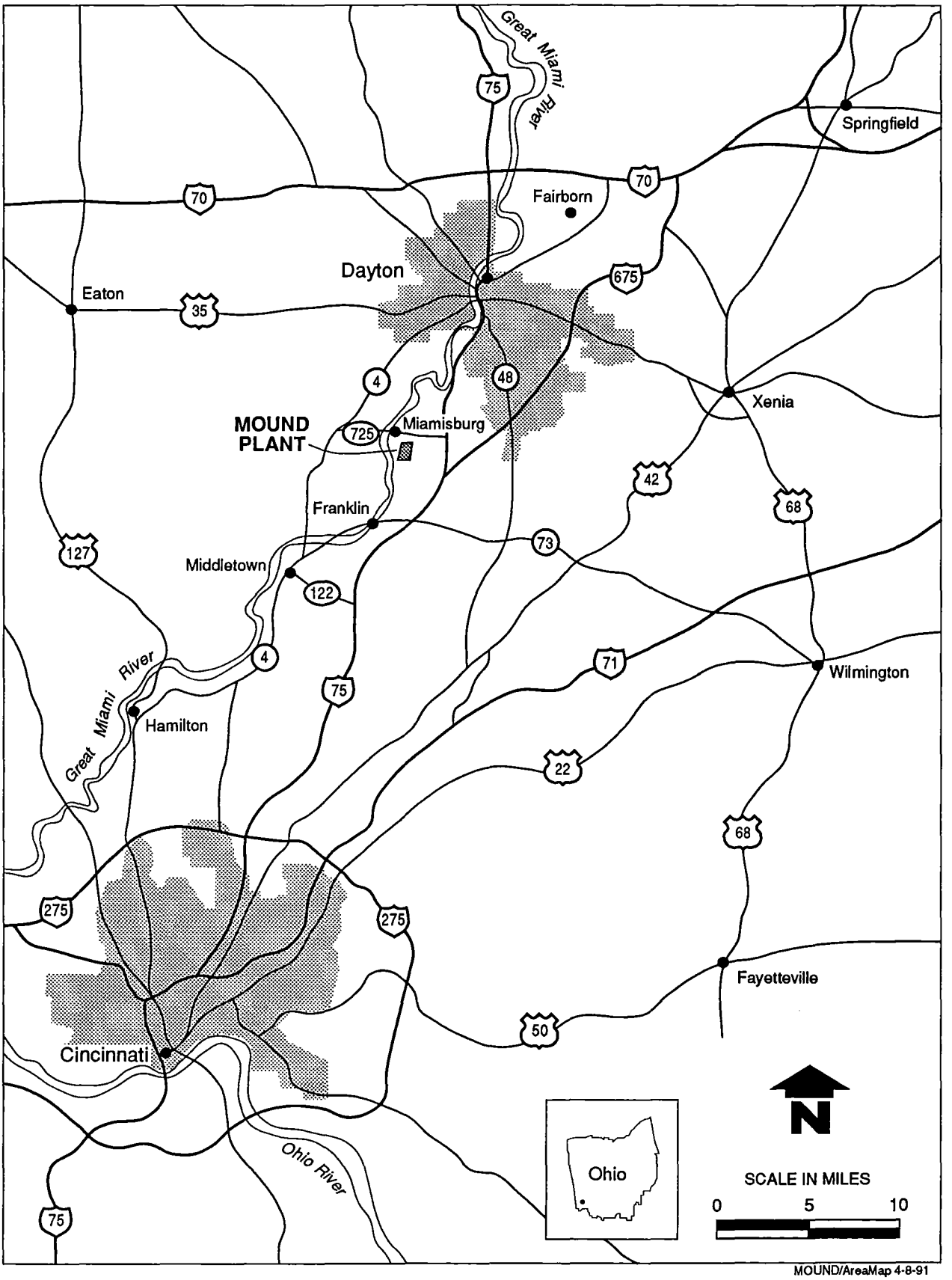

Figure 1.1. Location of Mound Plant.

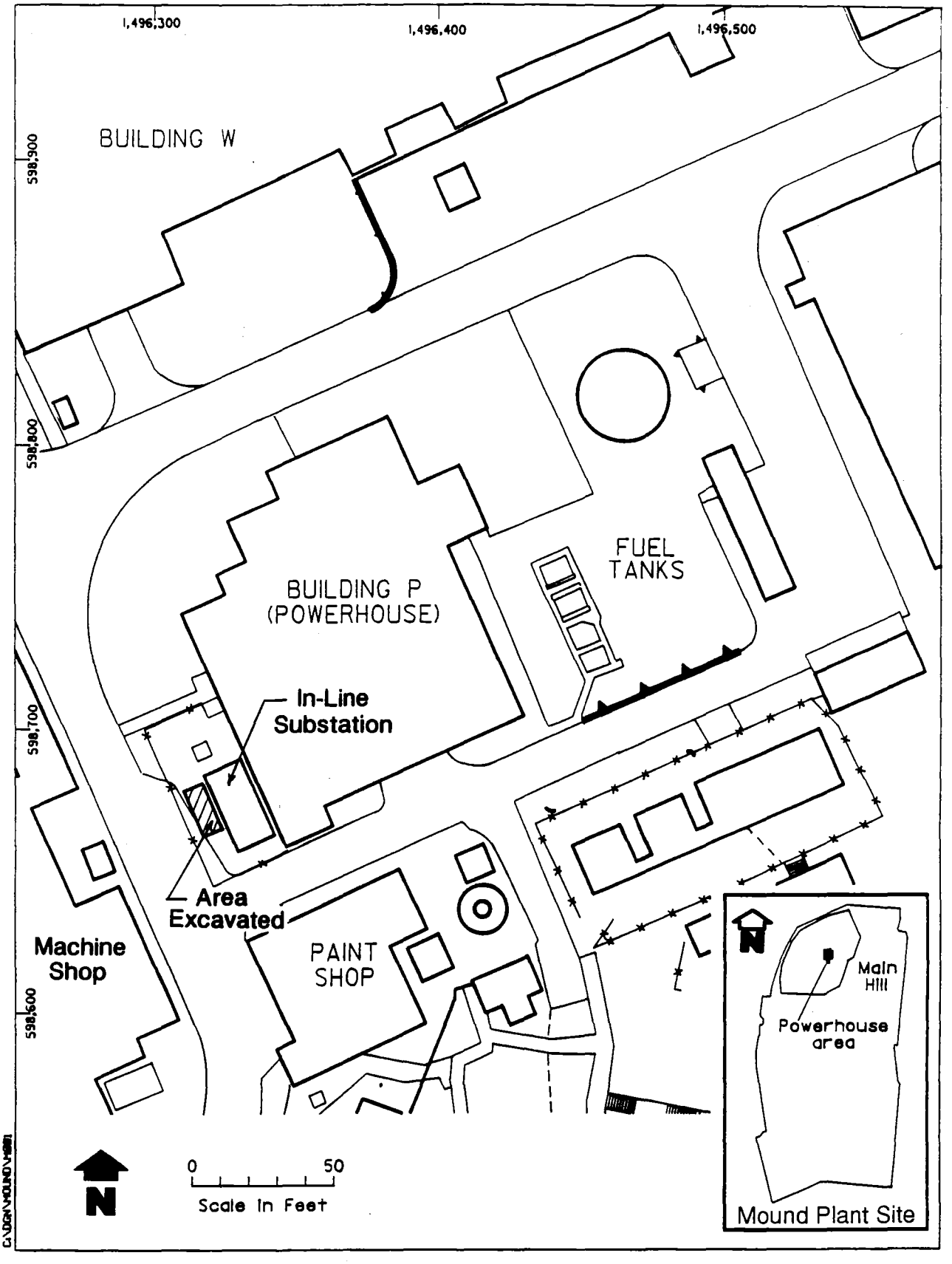

Figure 1.2. Location of Powerhouse area.

A

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APPENDIX A

DESCRIPTION OF 1990 RELEASE ACTIVITIES

WASTE MANAGEMENT SUMMARY OF EVENTS

4/27/90 A spill of transformer dielectric fluid was discovered in the dike of a spare transformer west of the powerhouse at Mound. A local emergency cleanup vendor Enroserv was called in to provide cleanup services. Initial cleanup was performed, the leaking fluid was sampled, sample wipes were taken on surrounding areas, wastes materials were stored in the powerhouse and the area covered with plastic.Leak was discovered at spare transformer located west of powerhouse. Enroserv came in to initiate cleanup and take samples. Estimated volume of spilled oil was < 20 gals.

4/30/90 Enroserv returned to finish cleanup.

5/4/90 Sample results were received from oil at the bottom of the transformer. This sample was pulled by Mound personnel and sampled here. Oil was 275,000 ppm. Leak rate was recalculated after talking to personnel working in the area.

5/7/90 Sample results were received from samples taken by Enroserv.
See Figure 1 for exact locations where samples were taken.

Sample ID	Result	Location
OD-01	20.7 ug/wipe	NW corner outside diked area
OD-02	415 ug/wipe	East side outside diked area
ID-02	125 ug/wipe	South side inside diked area
ID-01	50.8 ug/wipe	North side inside diked area
BG-01	<10 ug/wipe	Background NE of housing pad
EGBL-1	<10 ug/wipe	Blank sample
EG-001-TR	64,500 ppm	Transformer oil

5/8/90 Enroserv came in to transfer contents of PCB liquid placed in DOT 17H drums into a DOT 17E drums.

5/9/90 Enroserv returned to drain transformer, bustup additional discolored concrete, excavate dirt directly below concrete, and pull additional samples to establish boundaries of the contaminated zone.

5/10/90 PCB waste drums (PCB90-164 thru PCB90-177) were transferred to Building 72 to be staged for removal by GSX.

BELOW IS A SKETCH OF TRANSFORMER AREA

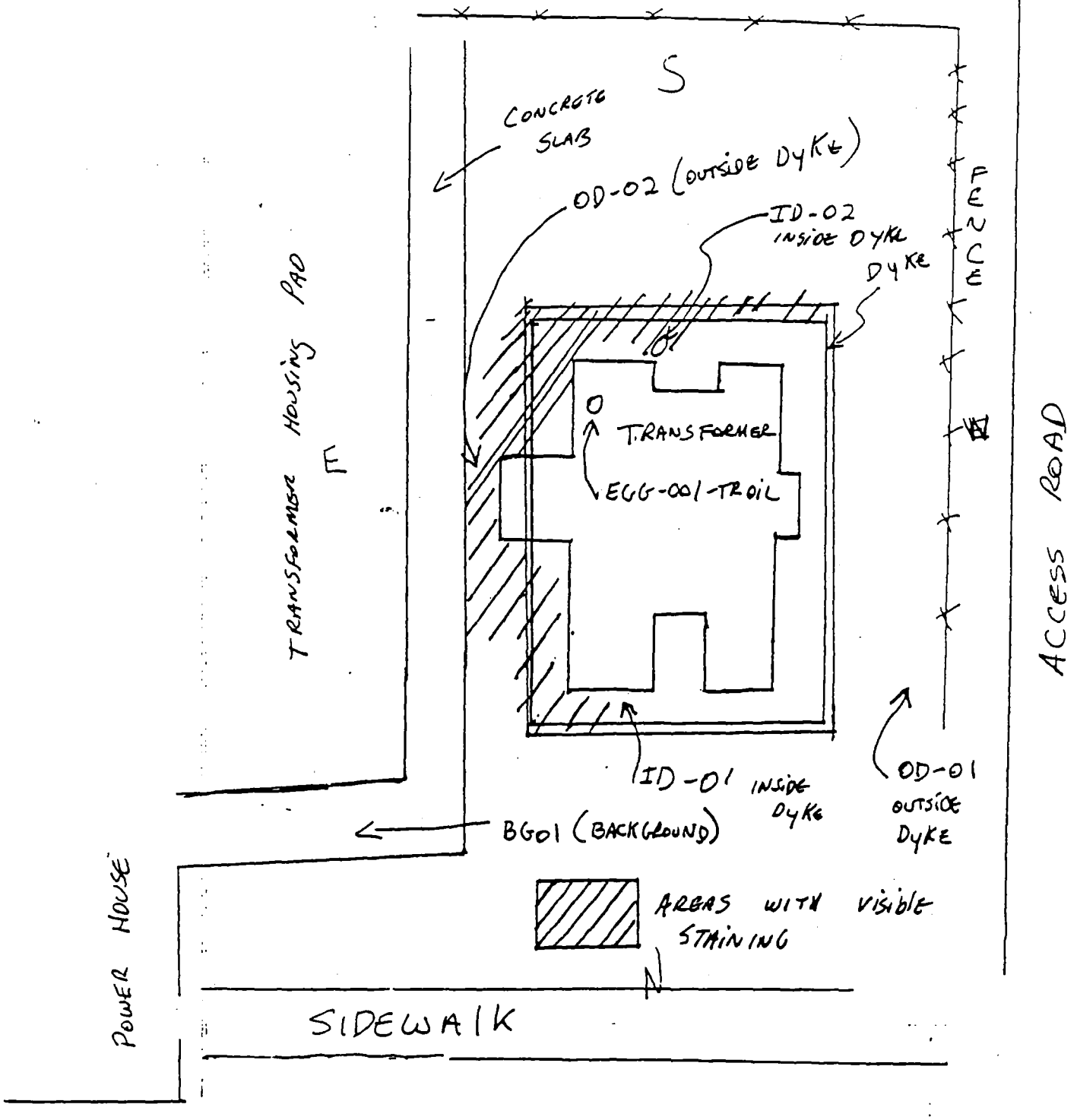


FIGURE 1

5/16/90 Sample results were received from samples taken on 5/7/90. See Figure 2 for exact locations where samples were taken.

Sample ID	Result	Location
Con-01	202 ppm	Concrete east side
Con-03	46.1 ppm	Concrete SE side
Con-05	346 ppm	Concrete SW side
Soil-02	27.5 ppm	Soil east side
Soil-04	81 ppm	Soil SE side
Soil-06	814 ppm	Soil SW side

6/8/90 S.D.Myers removed transformer and PCB contaminated oil from site. Transformer and PCB-contaminated oil were sent to Ensco in El Dorado, Ak for disposal.
Met with Enroserv to discuss further remediation plans.

7/17/90 Enroserv returned to bust up a 2' x 2' L-shaped section of the concrete pad and excavate 6" of soil below the concrete removed. Additional samples were taken to establish boundaries.

7/25/90 Sample results were received from samples taken on 7/17/90. See Figures 3 and 4 for exact locations where samles were taken.

Sample ID	Result	Location
001	266 ppm	Composite of removed concrete
002	33.7 ppm	Remaining concrete
003	0.77 ppm	Soil NE corner under removed concrete
004	425 ppm	Soil SE corner under removed concrete
005	<10 ug/wipe	Wipe sample NE corner
006	1610 ug/wipe	Wipe sample SE corner
007	<10 ug/wipe	Tarp

8/2/90 Enroserv returned to excavate additional concrete and remove an additional 6" of soil where results were > 10 ppm. Additional samples were pulled to establish boundaries of contamination.

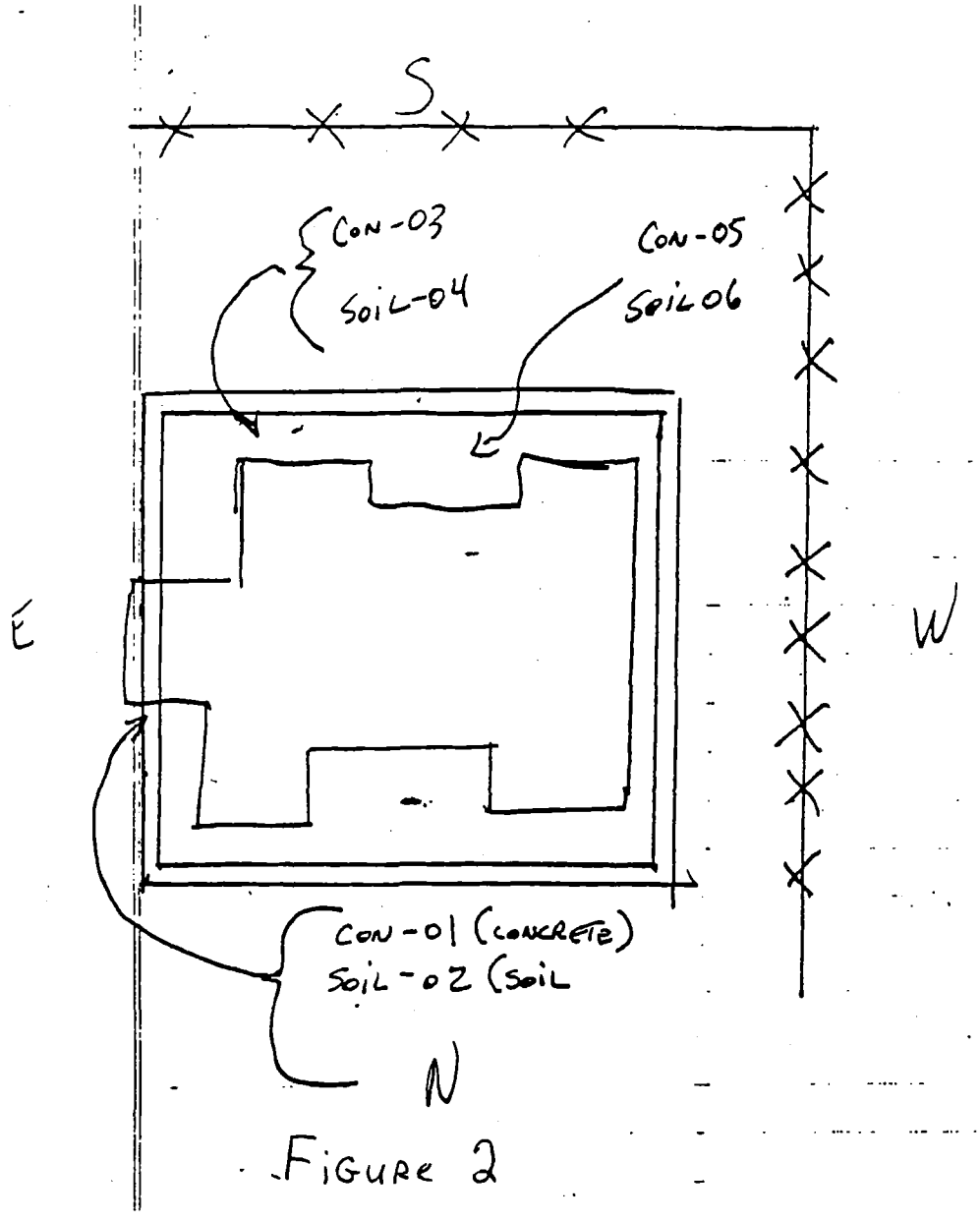


FIGURE 2

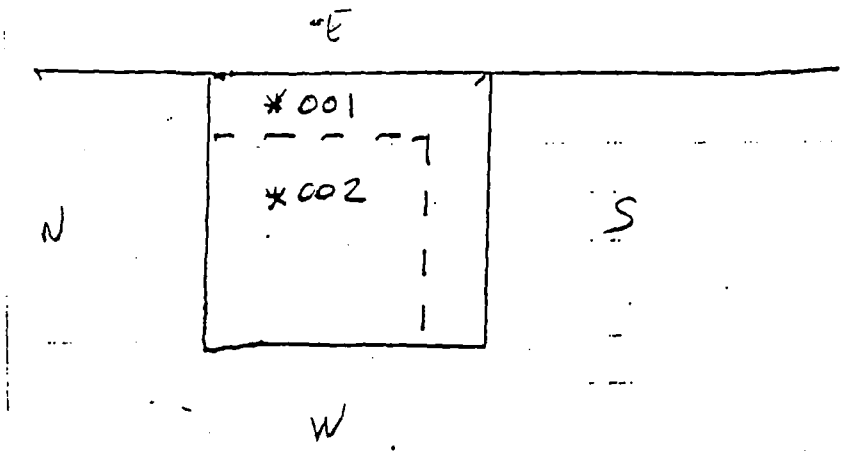


FIGURE 3

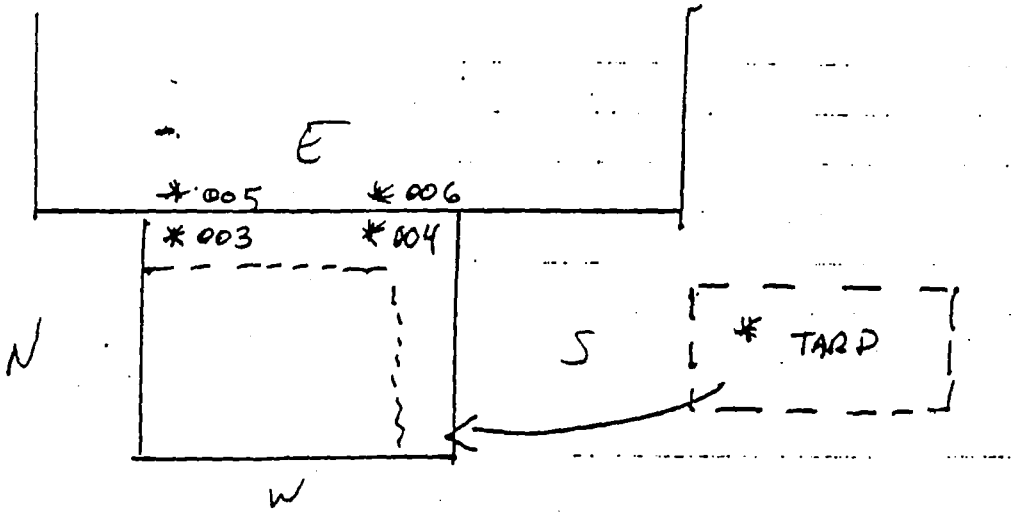


FIGURE 4

8/10/90 Sample results were received from samples taken on 8/2/90. See Figure 5 for exact location where samples were taken.

Sample ID	Result	Location
001	21.0 ppm	Soil SE corner
002	7.92 ppm	Composite soil taken after removing additional concrete, 6" deep
003	11.6 ppm	Composite concrete taken from N side of removed concrete pad
004	17.7 ug/wipe	Surface wipe of vault wall NE corner after scabbling off 1/4" of concrete
005	< 0.53 ppm	Soil sample in NE corner at a depth of 10"
006	9.17 ug/wipe	Surface wipe of vault wall SE corner after scabbling off 1/4" of concrete

9/7/90 Based on sample results Enroserv return to excavate soil to a total depth of 10" and to scabble discoloration off the vault wall.

9/10/90 Enroserv returned to finish excavating soil and take samples on vault wall in to establish contamination boundaries.

9/14/90 Enroserv returned to finish excavating soil.

9/17/90 Sample results were received from samples taken on 9/10/90. See Figure 6 for exact locations where samples were taken.

Sample ID	Result	Location
001	1250 ug/wipe	Wipe sample of housing pad prior to additional scabbling
002	197 ug/wipe	Wipe sample in SE corner before scabbling
003	<10 ug/wipe	Wipe sample of housing pad after scabbling of 1/4" concrete
004	<10 ug/wipe	Wipe sample in SE corner after scabbling of 1/4" concrete
005	40.4 ppm	Soil sample 10" deep SE corner

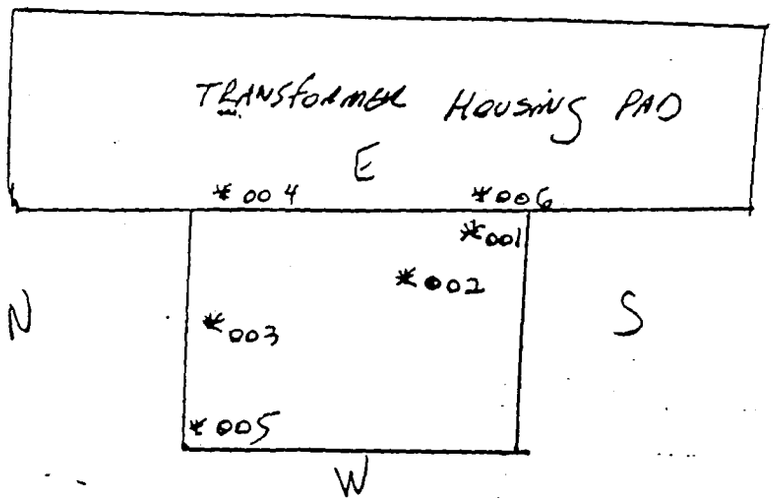


Figure 5

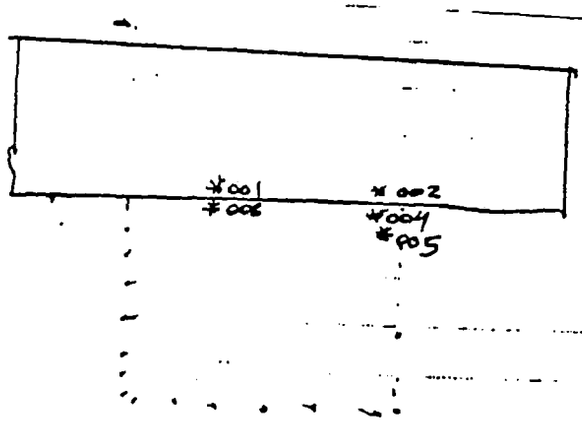


Figure 6

10/31/90 Based on sample results Enroserv returned to further remediate the site. The remediation plan was to remove the dark discoloration along the vault wall based on the results of the wipe samples taken on 9/10/90. The results of the wipe samples were recevied on 9/17/90. The counts on the wall were 1250 ug/wipe. EPA requires that surfaces shall be cleaned to 100 ug/wipe (40 CFR 761.125 (c)(3)(iv)). It was necessary to excavate 2' out in the east direction in order to have enough working area in which to scabble. The sample results of the soil two feet out from the vault wall were below the required 10 ppm. After excavating a section approximately 4'deep by 2' wide of dry soil below the surface the soil started to become oily, after excavating to an additional depth of approximately 1', a pocket of free standing liquid was found.

11/1/90 A sample of the liquid was submitted to a local lab to look for PCB level and total VOC's.

11/2/90 Enroserv returned to try and pump out the free standing liquid to establish if the liquid was just a pocket or possibly coming from another source. Prior to pumping the liquid out part of the dirt wall collapsed. A construction inspector was assigned to the project to provide Mound's shoring requirements and oversee this aspect of the project. While in the area reviewing the project with the construction inspector additional dirt collapsed thus completely covering the liquid.

11/5/90 Sample results were received on liquid sampled 11/1/90. The count was 230,000 ppm. Enroserv was scheduled to come in but did not due to the weather conditions.

11/6/90 Enroserv came in and shored off the dirt wall and drummed up the dirt that collapsed into the free standing fluid. Members of Enroserv's technical advisory staff came to Mound to help develop a new method for attacking the problem. Plans on how to establish the boundaries of the contamination needed to developed. At this time there is no way to tell how far the contamination may have spread along the top of the water underneath the surface. The top 4' of soil appears to be contamination free, the next 2'+ area below the surface is contaminated. The next steps established to be taken were as follows:

1. Pump out liquid all day tomorrow.
2. Visual analysis water vs. oil.
3. Sample different levels at 1' intervals of the soil.
4. Contact lab to see if they could fingerprint the oil.
5. Expose supply water pipes so that this depth information is available if borings must be done in the area.

11/7/90 Enroserv returned to continue pumping out oil and excavating some additional dirt. During this process a vein of oil approximately 3 - 4 inches deep was discovered. The contamination level of this vein was higher than that of the transformer. At that point in time it was determined that this oil was not from the original spill. It was a problem that fell under CERCLA therefore Mound turned this project over to Environmental Restoration and Waste Management continued to provide support. This project was handed over to ER and handled under the Federal Facilities Agreement both DOE and EPA agreed to this as a an interim cleanup project. Samples were collected to assist in identifying the source of contamination and the extent of contamination.

Enro Serv's Package

4-27-90

17:15 - DICK BLAUVELT of EG+G CONTACTS JIM DARNALL of ENROSERV concerning TRANSFORMER leaking on EG+G property in Miamisburg OHIO.
DETAILS DISCUSSED: OUTSIDE TRANSFORMER
DRAINED TRANSFORMER & REPLACED fluid w/ MINERAL OIL LAST DECEMBER
TRANSFORMER leaking - NON REPORTABLE QUANITY
DIRECTIONS TO EG+G MOUND AVE MIAMISBURG OHIO
GO TO LOWER GUARD GATE - VENDOR'S GATE

1800 - RICK GRANT, SCOTT SCHUAMAN LEAVE FOR ENROSERV SHOP TO GET SUPPLIES & EMERGENCY RESPONSE TRUCK.

1830 - RG & SRS MEET TWO TECHNICANS AT ENROSERV SHOP GET SUPPLIES, EMT mobilize for JOB SITE

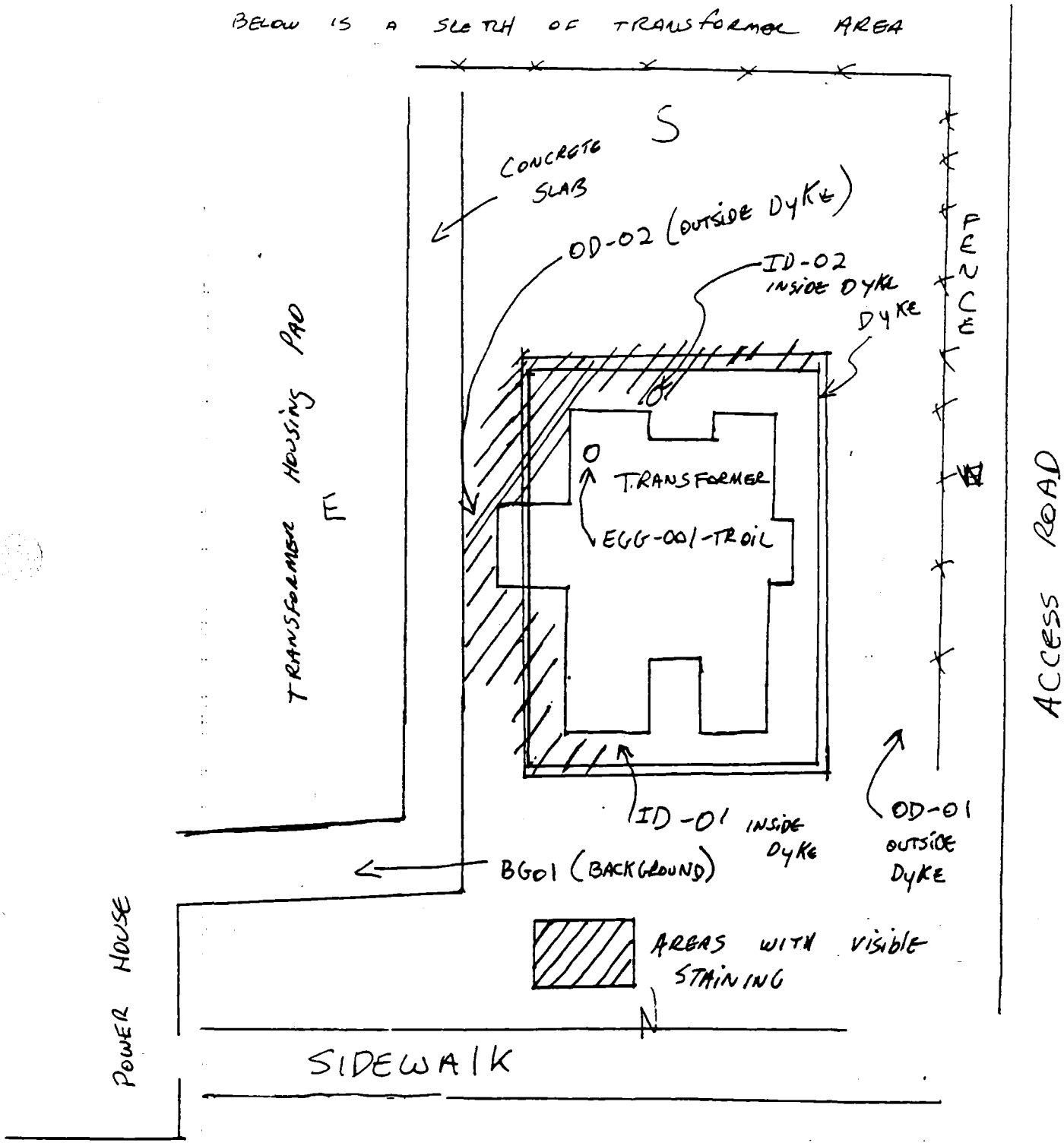
1930 - ARRIVE @ GUARD GATE VENDORS GATE
CHECK IN procedures w/ GUARDS BEGIN

2030 - ARRIVE @ spill LOCATION
RICK GRANT AND SCOTT SCHUEMAN TALK w/ DICK BLAUVELT of EG+G AND DISCUSS Spill AND plan of ACTIONS

2045 - TECHNICANS SET up GENERATOR AND flood lights

2100 - 2 TECHNICANS (Todd coffey AND Niec Phillips) BEGIN SHOVELING up floor DRY AND PACKING IT INTO 17-H DRUMS

BELOW IS A SKETCH OF TRANSFORMER AREA



2140: 2 TECHNICANS START DRAINING EXISTING TRANSFORMERS INTO DRUMS 2 DRUMS ARE USED
THE following INFORMATION IS GATHERED FROM TRANSFORMER NAMEPLATE

TRANSFORMER I-T-E CIRCUIT BREAKER CO.
PHILA. PA

KVA - 1000 NAMEPLATE 526479-2
HV - 12,500 TEMP RISE 65°C
LV - 480Y-277 3 PHASE HZ 60
CLASS OA - FA SPEC NO 93537-A
TYPE - LTA INSTR BOOK 5623
SER # 19231
LIQUID IN TANK 203 GAL when full
2660 #

The 25°C level is 6 5/8" from HIGHEST point of the hand hole flange surface

LIQUID level changes .438" w/ each 10°C change in liquid temp.

MAX PRESSURE 6.5 PSI + or -

2210: SRS suits up in LEVEL "C" w/ SARANEX TO OBTAIN OIL AND WIPE SAMPLES
A TOTAL of 6 wipe samples AND ONE oil SAMPLE IS OBTAINED THE SAMPLES ARE AS FOLLOWS

OD-01 - wipe sample
OD-02 - wipe sample
ID-01 - wipe sample
ID-02 - wipe sample
BG-01 - ~~BLACK~~ ~~BLANK~~ BACKGROUND SAMPLE
EG-BL-1 - BLANK SAMPLE wipe sample
EG-001-TR OIL - TRANSFORMER OIL
- APPROX AREA of WIPE SAMPLES IS 100 CM²

ACCESS ROAD

~~THE~~ SAMPLE LOCATIONS ARE FOUND ON PP#Q OF log
2245- TWO TECHS finished TRANSFERING OIL
Sampling Completed.

2300 - liquids DRUMS AND DRUMS of floor
DRY ARE MOVED AND STAGED INSIDE
POWER HOUSE

2330- ENROSEN STARTS TO GATHER EQUIPMENT
UP. RG & SRS TALK w/ DICK BLAUVELT
ABOUT SAMPLES GET QUICK TURN AROUND
WOULD BE IN CONTACT MONDAY. ON
FURTHER REMEDIATION of SITE

2345- Enrosen Mobilizes back to
SHOP CHECKS OUT w/ ~~GAT~~ GUARDS @ EG&G

4-30-90

1300 - Todd Coffey & Steve Grant mobilize to EG&G

1345 - Enro arrives on site Mobilize equipment.

1400 - Two technicans start transferring liquid from existing drums into 17-E drums

1500 - liquid transfer completed drum staged in Power House. labeled.

1530 - Enrosery Demobilizes

5-7-90

Results from EG&G received results from sampling from 4-27-90

OD-01 - 20.7 ug/wipe
OD-02 - 415 ug/wipe
ID-02 - 125 ug/wipe
ID-01 - 50.8 ug/wipe
BG-01 - <10 ug/wipe
EG BL-1 - <10 ug/wipe
EG-001-TR - 64,5000 mg/kg

- All results are Aroclor 1260.
- Blank QA/QC taken during course of sampling EG-BL-1 was <10 ug/wipe
- Approx area of wipe samples is 100 cm^2

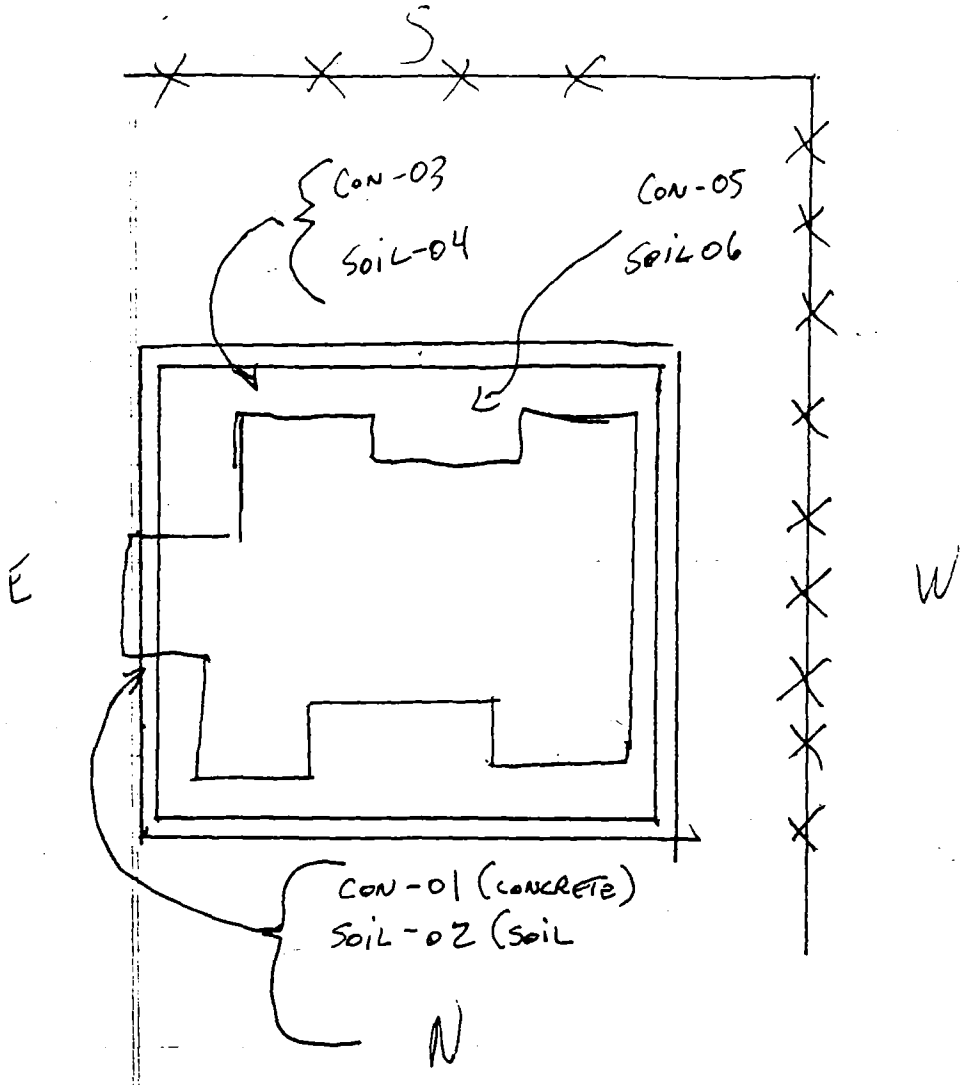
5-8-90

STEVE GRANT, BLAKE HATFIELD AND BARRY BLAKENSHIP
MOBILIZE TO EG&G
JACK HAMMER EXISTING CONCRETE THAT
WAS VISIBLY STAINED AREA
TWO DRUMS OF CONCRETE REMOVED
AND STAGED IN POWER HOUSE.
SAMPLE WERE NOT TAKEN
ENROSEN DID NOT COMPLETE STAINED
CONCRETE REMOVAL.

5-9-90 - BARRY BLAKENSHIP & BLAKE HATFIELD
MOBILIZE TO EG&G ~~TAKE~~ COMPLETE
CONCRETE REMOVAL OF STAINED AREA
CONCRETE SAMPLES AND SOIL SAMPLES
ARE OBTAINED SAMPLE WERE

CON-01 - CONCRETE SAMPLE
SOIL-02 - SOIL SAMPLE
CON-03 - CONCRETE SAMPLE
SOIL 04 - SOIL SAMPLE
CON-05 - CONCRETE SAMPLE
SOIL 06 - SOIL SAMPLE

SAMPLE LOCATIONS ARE FOUND ON THE FOLLOWING
PAGE



5-16-90

RESULTS RECEIVED FROM ~~HOWARD~~ NET LABORATORIES
FROM SAMPLING PERFORMED ON 5-9-90
RESULTS WERE:

CON-01	202	mg/Kg
CON-03	46.1	mg/Kg
CON-05	346	mg/Kg
SOIL-02	27.5	mg/Kg
SOIL 04	81	mg/Kg
SOIL 06	814	mg/Kg

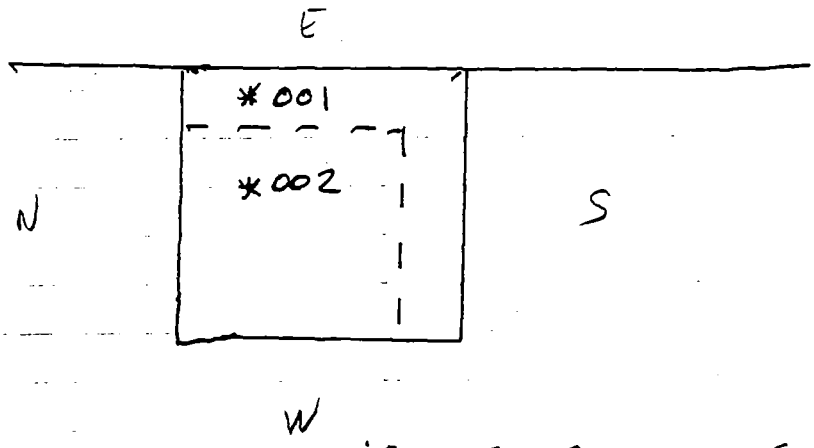
ALL RESULTS WERE AROCLOR 1260
- FAXED COPIES TO MARY SIZEMORE of EGYC

MEETING @ EG&G TO DISCUSS FURTHER REMEDIATION OF TRANSFORMER AREA

- COST TO TAKE A 2'X2' L SHAPED AREA OUT OF CONCETE PAD
- CHIP SAMPLE OF SWITCH GEAR BOX
- CORE SAMPLE NOT FEASABLE
- SAMPLE AFTER CONCETE AREA TAKEN OUT

7-17-90

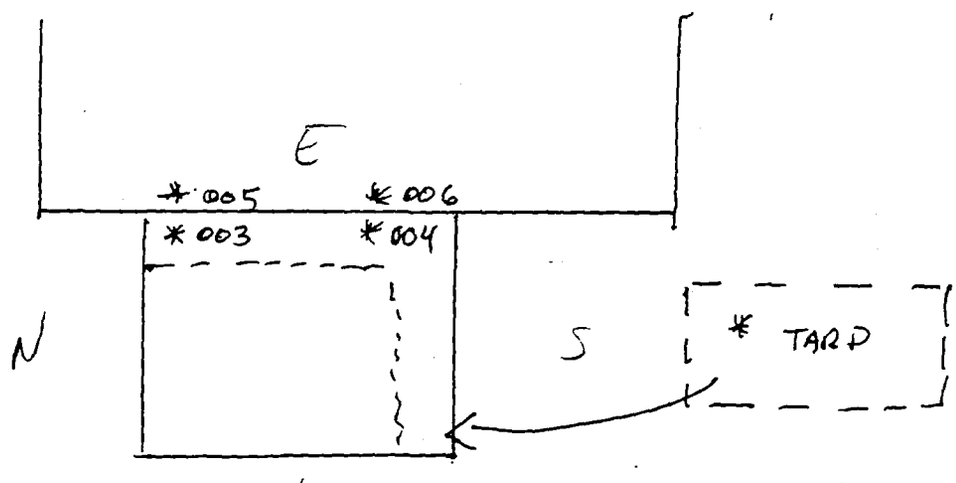
JIM ~~Bolw~~ Bowling, JEFF SHOOP ARRIVED @ EG&G @ 6:30 AM. Completed orientation @ 7.30 WORK COMMENCED ON CONCRETE PAD @ 8:00 AM VISQUEENED AREA AROUND PAD. JACK HAMMERED 2'x2' L SHAPED SECTION OUT OF PAD. Exposing Soil UNDERNEATH. EXCAVATED SOIL to Approx 6" DEEP BELOW CONCRETE. All MATERIAL DRUMMED
SAMPLES TAKEN 2 - CONCRETE SHOWN BELOW



001 - Composite of Removed Concrete
002 - Sample of Concrete left behind.

7-18-90

JIM BOWLING, JEFF SHOOP ARRIVED @ 7:30 TRENCH BEGAN WORK 8:00 EXCATETED ~~more soil~~ LINED W/ VISQUEEN. SCABBLED Approx 1/4" of OF FACE OF TRANSFORMER HOUSING PAD WHICH WAS STAINED WITH OIL. MATERIAL & VISQUEEN DRUMMED UP. EXCAVATED Approx 12" DEEPER EXPOSING MORE STAINED AREAS OF TRANS HOUSING PAD. SAMPLES TAKEN SEE BELOW



- SAMPLE 003 WAS A SOIL SAMPLE TAKEN 6" DEEPER IN THE SOIL AFTER 6" OF SOIL AND THE 2'X2' SECTION OF CONCRETE WAS REMOVED
- SAMPLE 004 WAS A SOIL SAMPLE TAKEN 6" DEEPER IN THE SOIL AFTER 6" OF SOIL AND THE 2'X2' SECTION WAS REMOVED
- SAMPLE 005 WAS A WIPE SAMPLE TAKEN FROM TRANSFORMER HOUSING PAD 12" DEEP FROM THE TOP OF PAD.
- SAMPLE 006 WAS A WIPE SAMPLE TAKEN FROM THE TRANSFORMER HOUSING PAD 12" DEEP FROM THE TOP OF PAD.
- SAMPLE 007 WAS A WIPE SAMPLE TAKEN OF THE TARP THAT WAS COVERING CONTAMINATED CONCRETE PAD.

7-24-90

SAMPLE RESULTS RECEIVED FROM NET
RESULTS WERE AS FOLLOWS:

Sample #

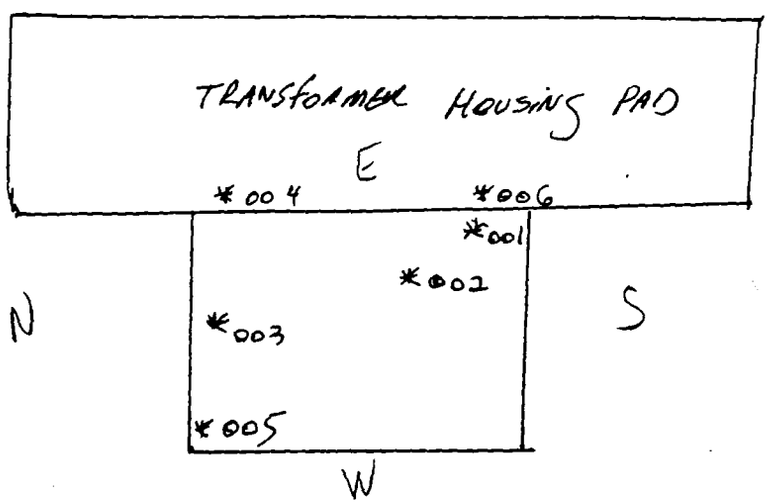
001 - 266 mg/Kg
002 - 33.7 mg/Kg
003 - 0.77 mg/Kg
004 - 425 mg/Kg
005 - < 10 ug/wipe
006 - 1610 ug/wipe
007 - < 10 ug/wipe

faxed copies to Mary Sizemore of EGTC

12

8-2-90

BARRY BLANKENSHIP & TERRY BOOKER
MOBILIZE TO EGHG GO THROUGH ORIENTATION
REMOVE CONCRETE EXISTING PAD REGN REMOVED
4" OF SOIL UNDER RE-EXISTING PAD
AND 6" UNDER WERE THE 2'x2' SECTION
THAT WAS TAKEN OUT ON 7-17 & 7-18
SAMPLES ALSO TAKEN SEE MAP BELOW
FOR SAMPLE LOCATIONS.



SAMPLE 001 - WAS A COMPOSITE SOIL SAMPLE
TAKEN AFTER 6" OF SOIL WAS REMOVED
AND AFTER REMAINING CONCRETE PAD & DYKE WAS REMOVED
SAMPLE 002 - WAS A COMPOSITE SOIL SAMPLE
TAKEN AFTER CONCRETE PAD WAS REMOVED
SAMPLE 003 - WAS A COMPOSITE CONCRETE SAMPLE
TAKEN AFTER CONCRETE PAD WAS REMOVED.
SAMPLE 004 - WAS A WIPE SAMPLE OF THE
TRANSFORMER HOUSING ~~HOUSING~~ PAD WALL AFTER
ANOTHER 1/4" OF CONCRETE WAS REMOVED
SAMPLE 005 - WAS A SOIL SAMPLE TAKEN 4" DEEPER
AFTER 4" OF SOIL WAS REMOVED.
SAMPLE 006 - WAS A WIPE SAMPLE OF THE
TRANS HOUSING PAD WALL AFTER 1/4" OF CONCRETE
WAS REMOVED

8-10-90

SAMPLE RESULTS BACK FROM NET
RESULTS ARE AS FOLLOWS:

001- 21.0 mg/kg
002 - 7.92 mg/kg
003 - 11.6 mg/kg
004 17.7 ~~mg/kg~~ ug/wipe
005 - <.53 mg/kg
006 - 9.17 ug/wipe

RESULTS FAXED TO MARY SIZEMORE OF EG&G
All RESULTS FOR AROCLOR 1260

9-6-90

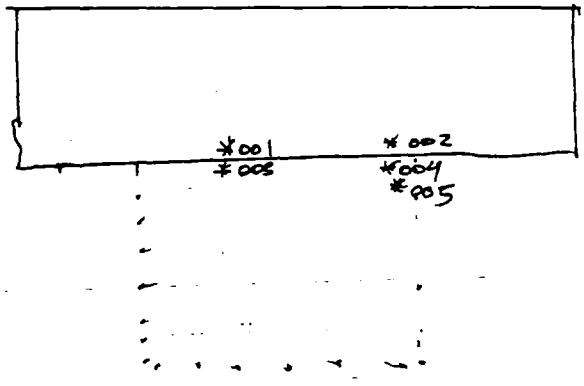
Mobilized to EG&G Neil phillips + willie BOLDEN
problems w/ SECURITY HAD TO RETURN
TO SHOP

9-7-90

Neil phillips AND willie BOLDEN mobilize
BACK TO THE MOUND EG&G. SET UP
REMOVED MORE DIRT + clay UNDER THE
PRE-EXISTING CONCRETE PAD TAKING TOTAL
LEVEL DOWN TO 10" UNDER THE
PRE-EXISTING. DID NOT GET FINISHED

9-10-90

ARRIVED ON SITE Niel phillips & willie Bolden
ARRIVED @ 8:00 NO ESCORT TILL 11:30
Mobilized & SET UP JACK HAMMERED SMALL
PORTION OFF SOUTHEAST CORNER OF PIT NEAR
TRANSFORMER HOUSING PAD.
SRS DISCUSSES w/ MARY SIZEMORE ON
SAMPLES TO BE TAKEN.
4 WIPE SAMPLES AND ONE Soil SAMPLES
ARE TAKEN SEE plot below
REMOVED MORE DIRT & CLAY filling
8 - 17H DRUMS SCORED AREA



TRANFORMER HOUSING PAD

001 - wipe sample ~~MIDDLE OF PAD~~ OF STAINED AREA BEFORE ~~SCAPPLETING~~ SCABBELING
002 - wipe Sample TAKEN OF SOUTHEAST CORNER OF TRANSFORMER HOUSING PAD BEFORE ~~SCAPP~~ SCABELLING
003 - wipe SAMPLE OF TRANSFORMER HOUSING PAD AFTER 1/4" SCABBELED OFF OF HOUSING PAD
004 - wipe SAMPLE OF TRANSFORMER HOUSING PAD AFTER 1/4" SCABBELED OFF OF HOUSING PAD
005 - Soil SAMPLE TAKEN OF THE SOUTHEAST CORNER OF PIT

9-17-90

Neil phillips & willie Bolden meet @ 9:00 @ EG&G went to site finished excavation of soils & leveled area out met w/ Mary Sikemore & recovered pit drummed up contaminated clothing.

9-18-90

Net results back from samples taken on 9-10-90 results are as follows:

WP 001 - 1250 ug/wipe
WP 002 - 197 ug/wipe
WP 003 - <10 ug/wipe
WP 004 - <10 ug/wipe
SL 005 - 40.4 mg/kg

Wipe sample over 100 cm² area
Results are of Aroclor 1260
Results faxed to Mary Sikemore of EG&G

enroserv
MIDWEST, INC.

4977 Northcutt
Dayton, OH 454
(513) 277-026
(513) 277-7986 F

May 7, 1990

Mr. Richard Blauvelt
Senior Waste Management Specialist
E. G. & G. Mound Applied Technologies
1 Mound Ave.
Miamisburg, Ohio 45343

Dear Mr. Blauvelt:

Re: Cost estimate to perform PCB Transformer Area Clean-up and Containerization Services. Reference ENROSERV Project No. 90-111.

Enroserv Midwest, Inc. (ENROSERV) is pleased to submit an estimate for the above referenced services. The purpose of this correspondence is to provide a cost estimate to perform the following services.

- Transfer remaining liquid from the PCB Transformer into 17E drums.
- Using pneumatic breakers, remove and containerize the visibly stained concrete from inside and around the dyked area.
- Obtain 1 soil sample from the area just below where the initial spill occurred. Obtain priority turn around analysis for PCB's from a local laboratory.

ENROSERV's cost estimate to perform the above referenced services is $1,800.00. This estimate is for budgetary purposes only, actual services will be invoiced according to ENROSERV's Rate Schedule previously submitted.

ENROSERV provides the following list of companies who perform transformer removal and disposal services. These vendors are provided for E. G. & G's convenience and can be contacted directly by E. G. & G's representative(s).

Company	Phone
Cecos	800-274-5738
Transtec Environmental	216-477-6888
Aptus	316-251-6380
S. D. Myers	216-633-2666
Ensco	412-941-0100

ENROSERV appreciates the opportunity to perform these services. Our crew will arrive at the site at 8:00 a.m. May 8, 1990. We presently anticipate (1) 8 Hour day will be required. E. G. & G. will be notified by site personnel if our services will require additional time. If you have any questions or require any additional information please feel free to contact me at (513) 277-0267.

Sincerely,

Richard A. Grant
Administrator, Project Development

RAG/lb

enroserv
MIDWEST, INC.

4977 Northcutt P
Dayton, OH 4541
(513) 277-0267
(513) 277-7986 Fa

June 15, 1990

Mr. Richard Blauvelt
Senior Waste Management Specialist
EG & G Mound Applied Technologies
1 Mound Avenue
Miamisburg, Ohio 45343

Dear Mr. Blauvelt:

Re: Cost Estimate to Perform Concrete Removal and Containerizing PCB Contaminated Material
Enroserv Midwest, Inc. Project No. ICM-90-111

Enroserv Midwest, Inc. (ENROSERV) is pleased to submit an estimate for the above referenced services. The purpose of this correspondence is to provide a cost estimate to perform the following services:

- Using pneumatic jackhammers, remove and containerize a 2' x 2' L shaped section of the concrete pad. This is approximately 20 cubic feet of material.

- Remove and containerize the top six inches of gravel and soil directly under the concrete that is to be removed.

- Obtain two samples of the remaining concrete and two samples of the underlying soil after the above mentioned material removal takes place obtain priority turn around analysis for PCBs from a local laboratory

ENROSERV's cost estimate to perform the above referenced services for $5,600.00. This estimate is for budgetary purposes only, actual services will be invoiced according to ENROSERV's rate schedule.

ENROSERV appreciates the opportunity to perform these services. We presently anticipate three, eight hour days will be required. EG &G will be notified by site personnel if our services will require additional time. If you have any questions, please contact me at (513) 277-0267.

Sincerely,

Scott R Schurman

Scott R. Schurman
Technical Project Administrator

SRS/cb

pc: Project File ICM-90-111

ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
RICK GRANT	EGG-MOUND	27 / 4 / 90	1 of 1

CONTENTS OF SHIPMENT SAMPLES FROM EGG MOUND 90-111

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
OD-01		1								✓	WIPE
OD-02		1								✓	WIPE
ID-01		1								✓	WIPE
ID-02		1								✓	WIPE
BG-01		1								✓	WIPE
EG-BL-1		1								✓	WIPE
EGG-001-TR * OIL		1								✓	OIL

* NOTE: THIS SAMPLE IS EXPECTED TO HAVE 1000 PPM OR GREATER

ENROSERV P.O.# 2679-111

PCB ANALYSIS

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S), OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

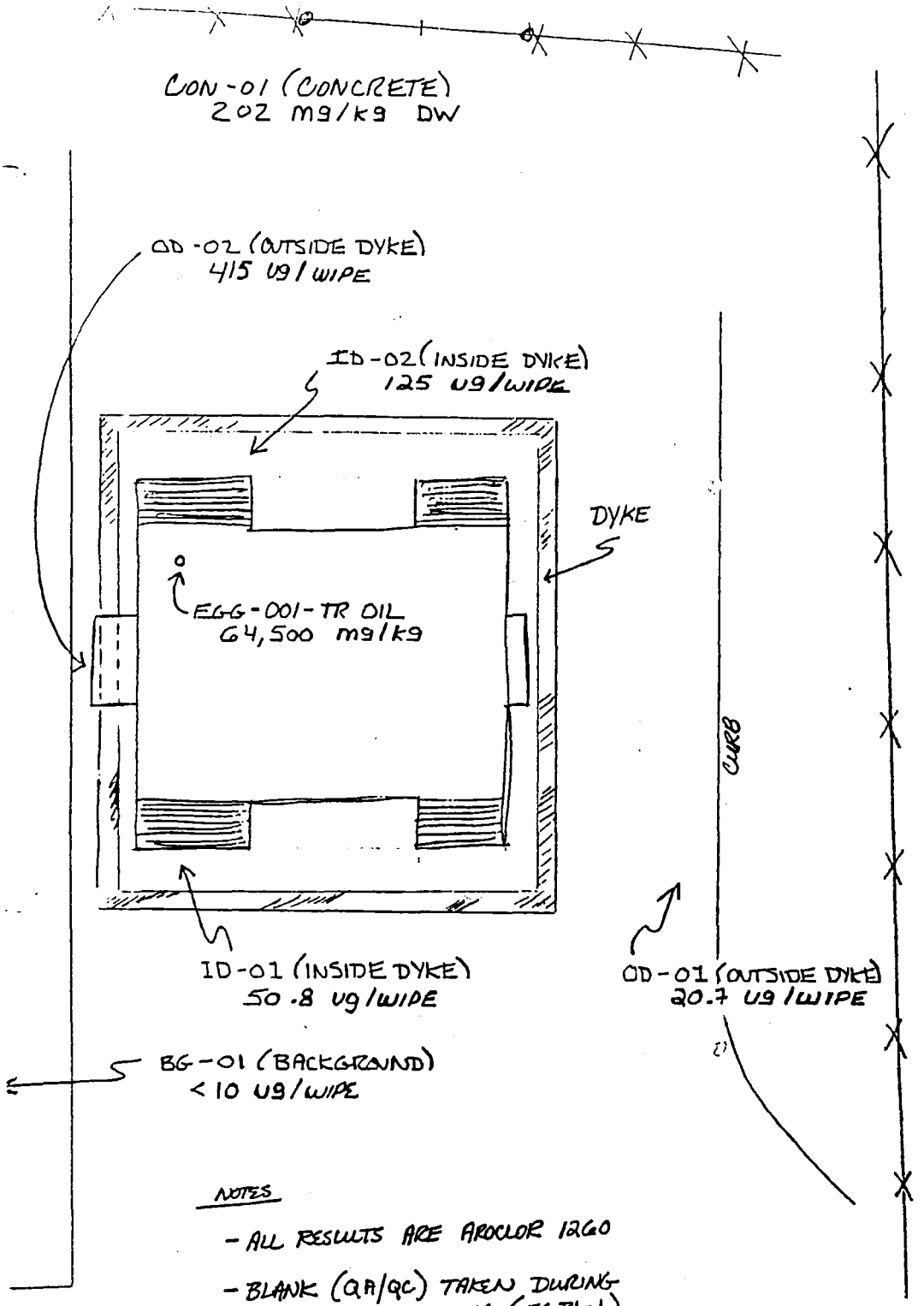
_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Steven Brown ☐ SEALED ☐ UNSEALED	05/01/90	11:16 A.M.	Dolly Randolph ☐ SEALED ☒ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-9263 (Rev. 1-83 5-85)



NOTES

- ALL RESULTS ARE AROCLOR 1260
- BLANK (QA/QC) TAKEN DURING COURSE OF SAMPLING (EGBL-1) WAS < 10 ug/WIPE
- APPROXIMATE AREA OF WIPE SAMPLES IS 100 cm^2.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
Dayton, OH 45439
Tel: (513) 294-6856
Fax: (513) 294-7816

Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Rick Grant
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

05-07-90

DATE RECEIVED: 05-01-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
29687	OD-01	04-27-90

PCBs-M 8080-SOIL/WIPE

Aroclor 1016	<10.	ug/Wipe
Aroclor 1221	<10.	ug/Wipe
Aroclor 1232	<10.	ug/Wipe
Aroclor 1242	<10.	ug/Wipe
Aroclor 1248	<10.	ug/Wipe
Aroclor 1254	<10.	ug/Wipe
Aroclor 1260	20.7	ug/Wipe
PCB Standard: Aroclor 1242	98	Percent
PCB Standard: Aroclor 1260	98	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
29688	OD-02	04-27-90

PCBs-M 8080-SOIL/WIPE

Aroclor 1016	<100.	ug/Wipe
Aroclor 1221	<100.	ug/Wipe
Aroclor 1232	<100.	ug/Wipe
Aroclor 1242	<100.	ug/Wipe
Aroclor 1248	<100.	ug/Wipe
Aroclor 1254	<100.	ug/Wipe
Aroclor 1260	415.	ug/Wipe
PCB Standard: Aroclor 1242	103	Percent
PCB Standard: Aroclor 1260	101	Percent

John Andrejcio
Project Manager

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
Dayton, OH 45439
Tel: (513) 294-6856
Fax: (513) 294-7816

Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Rick Grant
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

05-07-90

DATE RECEIVED: 05-01-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
29689	ID-02	04-27-90

PCBs-M 8080-SOIL/WIPE

Aroclor 1016	<10.	ug/Wipe
Aroclor 1221	<10.	ug/Wipe
Aroclor 1232	<10.	ug/Wipe
Aroclor 1242	<10.	ug/Wipe
Aroclor 1248	<10.	ug/Wipe
Aroclor 1254	<10.	ug/Wipe
Aroclor 1260	125.	ug/Wipe
PCB Standard: Aroclor 1242	98	Percent
PCB Standard: Aroclor 1260	98	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
29690	ID-01	04-27-90

PCBs-M 8080-SOIL/WIPE

Aroclor 1016	<10.	ug/Wipe
Aroclor 1221	<10.	ug/Wipe
Aroclor 1232	<10.	ug/Wipe
Aroclor 1242	<10.	ug/Wipe
Aroclor 1248	<10.	ug/Wipe
Aroclor 1254	<10.	ug/Wipe
Aroclor 1260	50.8	ug/Wipe
PCB Standard: Aroclor 1242	103	Percent
PCB Standard: Aroclor 1260	101	Percent

John Andrejcio
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
Dayton, OH 45439
Tel: (513) 294-6856
Fax: (513) 294-7816

Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Rick Grant
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

05-07-90

DATE RECEIVED: 05-01-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
29691	BG-01	04-27-90

PCBs-M 8080-SOIL/WIPE

Aroclor 1016	<10.	ug/Wipe
Aroclor 1221	<10.	ug/Wipe
Aroclor 1232	<10.	ug/Wipe
Aroclor 1242	<10.	ug/Wipe
Aroclor 1248	<10.	ug/Wipe
Aroclor 1254	<10.	ug/Wipe
Aroclor 1260	<10.	ug/Wipe
PCB Standard: Aroclor 1242	103	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
29692	EGBL-1	04-27-90

PCBs-M 8080-SOIL/WIPE

Aroclor 1016	<10.	ug/Wipe
Aroclor 1221	<10.	ug/Wipe
Aroclor 1232	<10.	ug/Wipe
Aroclor 1242	<10.	ug/Wipe
Aroclor 1248	<10.	ug/Wipe
Aroclor 1254	<10.	ug/Wipe
Aroclor 1260	<10.	ug/Wipe
PCB Standard: Aroclor 1242	103	Percent
PCB Standard: Aroclor 1260	101	Percent

John Andrejcio
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
Dayton, OH 45439
Tel: (513) 294-6856
Fax: (513) 294-7816

Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Rick Grant
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

05-04-90

Sample No.: 29693

PAGE 1

Sample Description: EGG-001-TR Oil

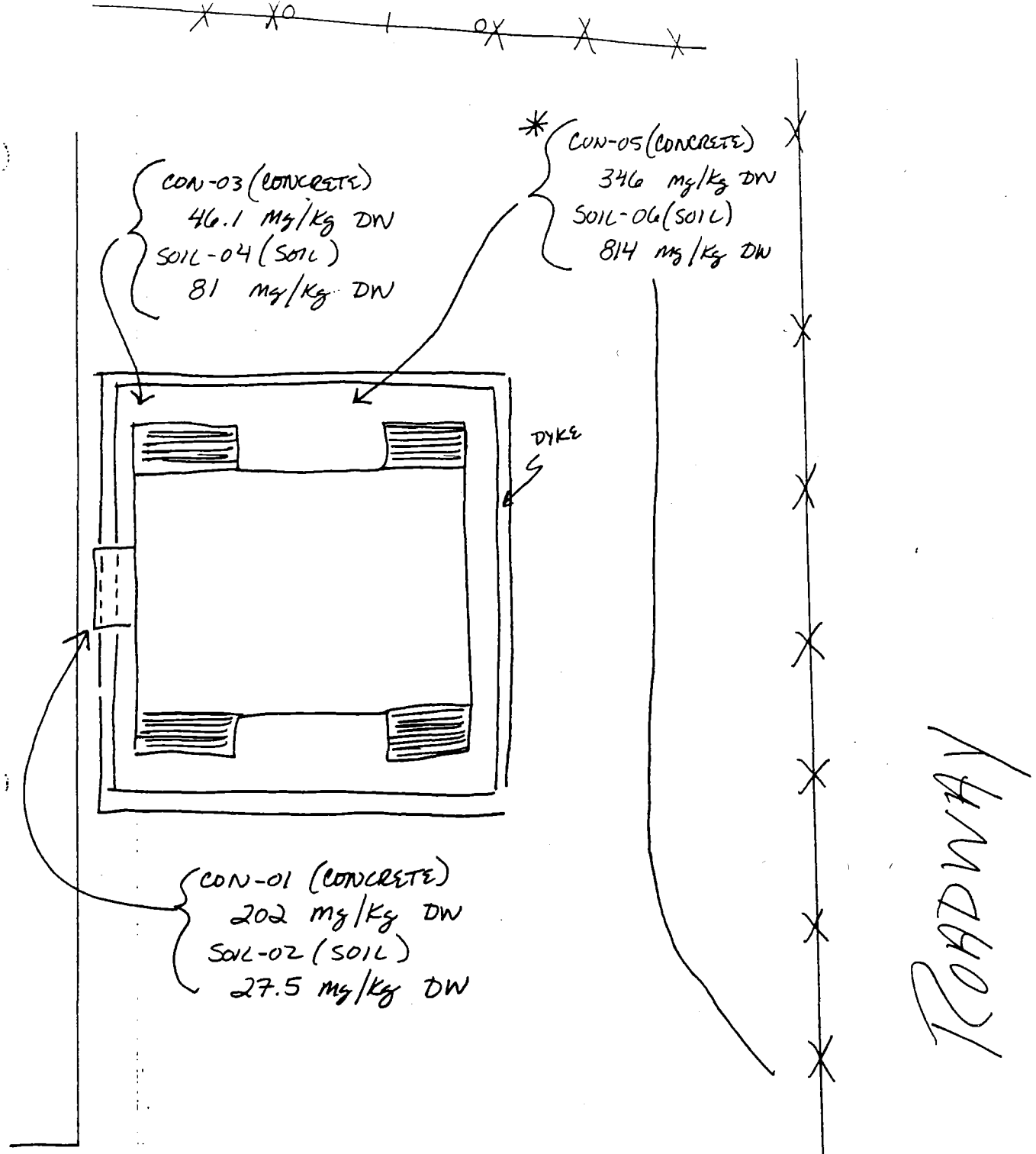
Date Taken: 04-27-90

Date Received: 05-01-90

PCBs IN OIL-ASTM D-4059

Aroclor 1016	<25,000	mg/Kg
Aroclor 1221	<25,000	mg/Kg
Aroclor 1232	<25,000	mg/Kg
Aroclor 1242	<25,000	mg/Kg
Aroclor 1248	<25,000	mg/Kg
Aroclor 1254	<25,000	mg/Kg
Aroclor 1260	64,500	mg/Kg
PCB Standard: Aroclor 1242	101	Percent
PCB Standard: Aroclor 1260	102	Percent

John Andrejcio
Project Manager



* NOTE: THIS SAMPLE CONSISTED OF PORTIONS OF THE DYKE WALL AS WELL AS THE DYKE PAD

ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

PROJECT 90-111

ACTIVITY LEADER(Print) RICK GRANT	NAME OF SURVEY OR ACTIVITY EGG - MOUND	DATE OF COLLECTION 9 (DAY) 5 (MONTH) 90 (YEAR)	SHEET 1 of 1

CONTENTS OF SHIPMENT SAMPLE (SOIL) WITH EGG

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	8 oz BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
CON-01		1					X			X	CONCRETE
SOIL-02		1					X				
CON-03		1								X	CONCRETE
SOIL-04		1					X				
CON-05		1								X	CONCRETE
SOIL-06		1					X				
	ENROSERV P.O. # 2679-111										
	PCB ANALYSES (72 HOUR TURN AROUND)										

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Blake Nathfield ☐ SEALED ☑ UNSEALED	5/10/90	12:00	Dolly Randan ☐ SEALED ☑ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA [illegible]

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ANALYTICAL REPORT

Rick Grant
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
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05-16-90

PAGE 1

DATE RECEIVED: 05-10-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31386	Con-01 (Concrete)	05-09-90

Dry Weight	92.9	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<10.8	mg/Kg DW
Aroclor 1221	<10.8	mg/Kg DW
Aroclor 1232	<10.8	mg/Kg DW
Aroclor 1242	<10.8	mg/Kg DW
Aroclor 1248	<10.8	mg/Kg DW
Aroclor 1254	<10.8	mg/Kg DW
Aroclor 1260	202.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31387	Con-03 (Concrete)	05-09-90

Dry Weight	90.5	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<2.8	mg/Kg DW
Aroclor 1221	<2.8	mg/Kg DW
Aroclor 1232	<2.8	mg/Kg DW
Aroclor 1242	<2.8	mg/Kg DW
Aroclor 1248	<2.8	mg/Kg DW
Aroclor 1254	<2.8	mg/Kg DW
Aroclor 1260	46.1	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

John Andrejcio
Project Manager

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Dayton OH 45404

05-16-90

DATE RECEIVED: 05-10-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31388	Con-05 (Concrete)	05-09-90

Dry Weight	93.0	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<21.5	mg/Kg DW
Aroclor 1221	<21.5	mg/Kg DW
Aroclor 1232	<21.5	mg/Kg DW
Aroclor 1242	<21.5	mg/Kg DW
Aroclor 1248	<21.5	mg/Kg DW
Aroclor 1254	<21.5	mg/Kg DW
Aroclor 1260	346.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31389	Soil-02 (Soil)	05-09-90

Dry Weight	94.3	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<2.1	mg/Kg DW
Aroclor 1221	<2.1	mg/Kg DW
Aroclor 1232	<2.1	mg/Kg DW
Aroclor 1242	<2.1	mg/Kg DW
Aroclor 1248	<2.1	mg/Kg DW
Aroclor 1254	<2.1	mg/Kg DW
Aroclor 1260	27.5	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

John Andrejcio
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05-16-90

DATE RECEIVED: 05-10-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31390	Soil-04 (Soil)	05-09-90

Dry Weight	94.8	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<5.3	mg/Kg DW
Aroclor 1221	<5.3	mg/Kg DW
Aroclor 1232	<5.3	mg/Kg DW
Aroclor 1242	<5.3	mg/Kg DW
Aroclor 1248	<5.3	mg/Kg DW
Aroclor 1254	<5.3	mg/Kg DW
Aroclor 1260	81.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31391	Soil-06 (Soil)	05-09-90

Dry Weight	94.7	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<52.8	mg/Kg DW
Aroclor 1221	<52.8	mg/Kg DW
Aroclor 1232	<52.8	mg/Kg DW
Aroclor 1242	<52.8	mg/Kg DW
Aroclor 1248	<52.8	mg/Kg DW
Aroclor 1254	<52.8	mg/Kg DW
Aroclor 1260	814.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

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05-16-90

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DATE RECEIVED: 05-10-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31386	Con-01 (Concrete)	05-09-90

Dry Weight	92.9	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<10.8	mg/Kg DW
Aroclor 1221	<10.8	mg/Kg DW
Aroclor 1232	<10.8	mg/Kg DW
Aroclor 1242	<10.8	mg/Kg DW
Aroclor 1248	<10.8	mg/Kg DW
Aroclor 1254	<10.8	mg/Kg DW
Aroclor 1260	202.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31387	Con-03 (Concrete)	05-09-90

Dry Weight	90.5	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<2.8	mg/Kg DW
Aroclor 1221	<2.8	mg/Kg DW
Aroclor 1232	<2.8	mg/Kg DW
Aroclor 1242	<2.8	mg/Kg DW
Aroclor 1248	<2.8	mg/Kg DW
Aroclor 1254	<2.8	mg/Kg DW
Aroclor 1260	46.1	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

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05-16-90

DATE RECEIVED: 05-10-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31388	Con-05 (Concrete)	05-09-90

Dry Weight	93.0	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<21.5	mg/Kg DW
Aroclor 1221	<21.5	mg/Kg DW
Aroclor 1232	<21.5	mg/Kg DW
Aroclor 1242	<21.5	mg/Kg DW
Aroclor 1248	<21.5	mg/Kg DW
Aroclor 1254	<21.5	mg/Kg DW
Aroclor 1260	346.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31389	Soil-02 (Soil)	05-09-90

Dry Weight	94.3	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<2.1	mg/Kg DW
Aroclor 1221	<2.1	mg/Kg DW
Aroclor 1232	<2.1	mg/Kg DW
Aroclor 1242	<2.1	mg/Kg DW
Aroclor 1248	<2.1	mg/Kg DW
Aroclor 1254	<2.1	mg/Kg DW
Aroclor 1260	27.5	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

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05-16-90

DATE RECEIVED: 05-10-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31390	Soil-04 (Soil)	05-09-90

Dry Weight	94.8	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<5.3	mg/Kg DW
Aroclor 1221	<5.3	mg/Kg DW
Aroclor 1232	<5.3	mg/Kg DW
Aroclor 1242	<5.3	mg/Kg DW
Aroclor 1248	<5.3	mg/Kg DW
Aroclor 1254	<5.3	mg/Kg DW
Aroclor 1260	81.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
31391	Soil-06 (Soil)	05-09-90

Dry Weight	94.7	%
PCBs-M 8080-SOIL/WIPE		
Aroclor 1016	<52.8	mg/Kg DW
Aroclor 1221	<52.8	mg/Kg DW
Aroclor 1232	<52.8	mg/Kg DW
Aroclor 1242	<52.8	mg/Kg DW
Aroclor 1248	<52.8	mg/Kg DW
Aroclor 1254	<52.8	mg/Kg DW
Aroclor 1260	814.	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	101	Percent

John Andrejcio
Project Manager

ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
[illegible]	[illegible]	[illegible]	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
[illegible]			[illegible]				[illegible]				
[illegible]			[illegible]								
[illegible]			[illegible]				X				
[illegible]			[illegible]				[illegible]				
										X	[illegible] ICE
										[illegible]	[illegible]
										X	[illegible]
	3-Day Turn Around Time										
	P.O. # 7013										

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF [illegible] BOX(ES)

_____ ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

[illegible] COURIER

_____ SAMPLER CONVEYED

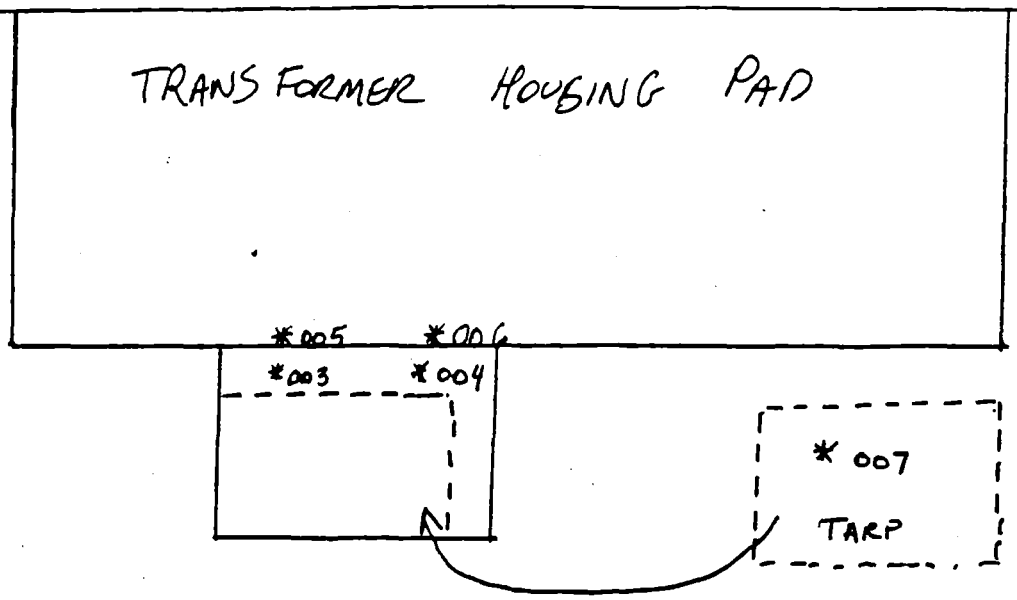
_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[illegible] ☐ SEALED ☐ UNSEALED	[illegible]	11:00	[illegible] ☐ SEALED ☒ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA 9262 (Revised 5/85)

POWER HOUSE



- SAMPLE 003 WAS A SOIL SAMPLE TAKEN 6" DEEPER IN THE SOIL AFTER 6" of SOIL AND THE 2'X2' SECTION WERE REMOVED
  RESULT 0.77 ppm Aroclor 1260
- SAMPLE 004 WAS A SOIL SAMPLE TAKEN 6" DEEPER IN THE SOIL AFTER 6" of SOIL AND THE 2'X2' SECTION WERE REMOVED
  RESULT 425 ppm Aroclor 1260
- SAMPLE 005 WAS A WIPE SAMPLE TAKEN FROM THE TRANSFORMER HOUSING PAD 12" DEEP FROM THE TOP OF THE PAD.
  RESULT < 10 micrograms / wipe
- SAMPLE 006 WAS A WIPE SAMPLE TAKEN FROM THE TRANSFORMER HOUSING PAD 12" DEEP FROM THE TOP OF THE PAD.
  RESULT 1,610 micrograms / wipe
- SAMPLE 007 WAS A WIPE SAMPLE TAKEN OF THE TARP THAT WAS COVERING CONTAMINATED CONCRETE PAD. RESULT < 10 micrograms / wipe.

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Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

07-24-90

DATE RECEIVED: 07-19-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
41258	#001	07-17-90

PCBs-M 8080-SOIL

Aroclor 1016	<48.8	mg/Kg
Aroclor 1221	<48.8	mg/Kg
Aroclor 1232	<48.8	mg/Kg
Aroclor 1242	<48.8	mg/Kg
Aroclor 1248	<48.8	mg/Kg
Aroclor 1254	<48.8	mg/Kg
Aroclor 1260	266.	mg/Kg
PCB Standard: Aroclor 1242	101	Percent
PCB Standard: Aroclor 1260	102	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
41259	#002	07-17-90

PCBs-M 8080-SOIL

Aroclor 1016	<2.37	mg/Kg
Aroclor 1221	<2.37	mg/Kg
Aroclor 1232	<2.37	mg/Kg
Aroclor 1242	<2.37	mg/Kg
Aroclor 1248	<2.37	mg/Kg
Aroclor 1254	<2.37	mg/Kg
Aroclor 1260	33.7	mg/Kg
PCB Standard: Aroclor 1242	101	Percent
PCB Standard: Aroclor 1260	102	Percent

John Andrejcio
Project Manager

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07-24-90

DATE RECEIVED: 07-19-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
41260	#003	07-18-90

PCBs-M 8080-SOIL

Aroclor 1016	<0.49	mg/Kg
Aroclor 1221	<0.49	mg/Kg
Aroclor 1232	<0.49	mg/Kg
Aroclor 1242	<0.49	mg/Kg
Aroclor 1248	<0.49	mg/Kg
Aroclor 1254	<0.49	mg/Kg
Aroclor 1260	0.77	mg/Kg
PCB Standard: Aroclor 1242	99	Percent
PCB Standard: Aroclor 1260	100	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
41261	#004	07-18-90

PCBs-M 8080-SOIL

Aroclor 1016	<48.9	mg/Kg
Aroclor 1221	<48.9	mg/Kg
Aroclor 1232	<48.9	mg/Kg
Aroclor 1242	<48.9	mg/Kg
Aroclor 1248	<48.9	mg/Kg
Aroclor 1254	<48.9	mg/Kg
Aroclor 1260	425.	mg/Kg
PCB Standard: Aroclor 1242	101	Percent
PCB Standard: Aroclor 1260	102	Percent

John Andrejcio
Project Manager

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07-24-90

DATE RECEIVED: 07-19-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
41262	#005	07-18-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	99	Percent
PCB Standard: Aroclor 1260	100	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
41263	#006	07-18-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<100.	ug/wipe
Aroclor 1221	<100.	ug/wipe
Aroclor 1232	<100.	ug/wipe
Aroclor 1242	<100.	ug/wipe
Aroclor 1248	<100.	ug/wipe
Aroclor 1254	<100.	ug/wipe
Aroclor 1260	1610.	ug/wipe
PCB Standard: Aroclor 1242	101	Percent
PCB Standard: Aroclor 1260	102	Percent

John Andrejcio
Project Manager

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07-24-90

DATE RECEIVED: 07-19-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
41264	#007	07-18-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	99	Percent
PCB Standard: Aroclor 1260	100	Percent

John Andrejcio
Project Manager

ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
			1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
								✓			
								✓			
								✓			
									✓		PCB [illegible]
								✓			
									✓		PCB [illegible]

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF 1 BOX(ES)

_____ ICE CHEST(S). OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

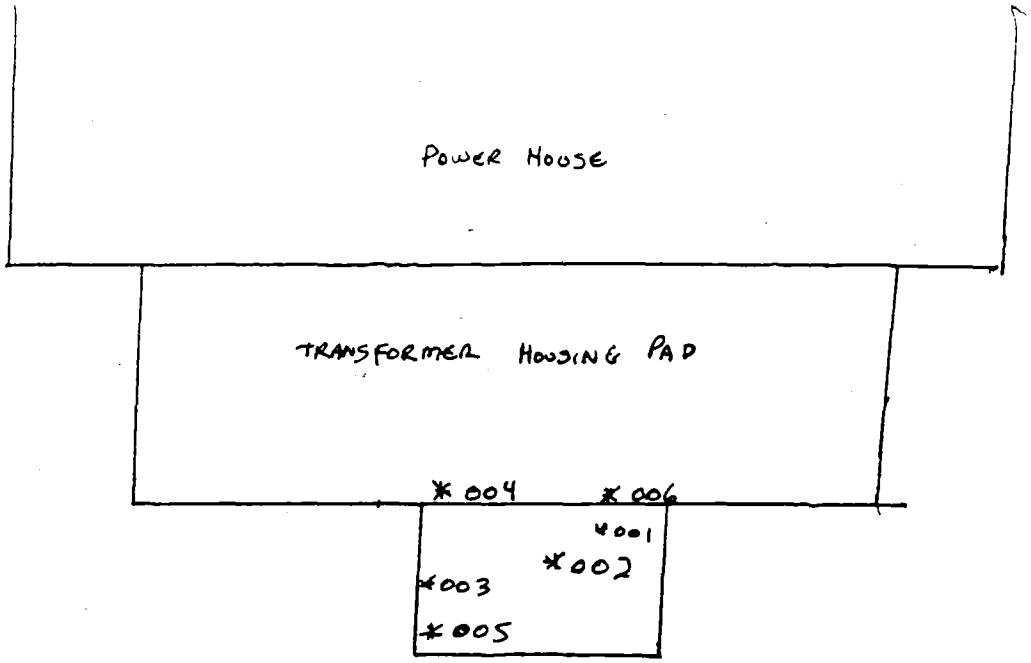
_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[illegible] SEALED ☐ UNSEALED ☑	[illegible]	[illegible]	[illegible] SEALED ☐ UNSEALED ☐	
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

7-EPA-9252(Revised 5/85)



Sample 001 - WAS A Composite Soil Sample TAKEN AFTER 6" of Soil WAS REMOVED AND AFTER REMAINING CONCRETE PAD & DYKE WAS REMOVED.

Sample 002 - WAS A Composite Soil SAMPLE TAKEN AFTER CONCRETE PAD WAS REMOVED.

Sample 003 - WAS A composite CONCRETE SAMPLE TAKEN AFTER CONCRETE PAD WAS REMOVED.

Sample 004 - WAS A WIPE SAMPLE OF THE TRANSFORMER HOUSING PAD WALL AFTER ANOTHER 1/4" of CONCRETE WAS REMOVED.

Sample 005 - WAS A Soil SAMPLE TAKEN 4" DEEPER AFTER 4" of Soil WAS REMOVED.

SAMPLE 006 - WAS A WIPE SAMPLE OF THE TRANSFORMER HOUSING PAD WALL AFTER ANOTHER 1/4" of CONCRETE WAS REMOVED.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
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Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

08-10-90

Sample No.: 43695

PAGE 1

Sample Description: #01

Date Taken: 08-02-90

Date Received: 08-06-90

Dry Weight	95.5	%
PCBs-M 8080-SOIL		
Aroclor 1016	<2.62	mg/Kg DW
Aroclor 1221	<2.62	mg/Kg DW
Aroclor 1232	<2.62	mg/Kg DW
Aroclor 1242	<2.62	mg/Kg DW
Aroclor 1248	<2.62	mg/Kg DW
Aroclor 1254	<2.62	mg/Kg DW
Aroclor 1260	21.0	mg/Kg DW
PCB Standard: Aroclor 1242	98	percent
PCB Standard: Aroclor 1260	98	percent

John Andrejcio
Project Manager

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
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Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

08-10-90

Sample No.: 43696

Sample Description: #02

Date Taken: 08-02-90

Date Received: 08-06-90

Dry Weight	96.2	%
PCBs-M 8080-SOIL		
Aroclor 1016	<0.52	mg/Kg DW
Aroclor 1221	<0.52	mg/Kg DW
Aroclor 1232	<0.52	mg/Kg DW
Aroclor 1242	<0.52	mg/Kg DW
Aroclor 1248	<0.52	mg/Kg DW
Aroclor 1254	<0.52	mg/Kg DW
Aroclor 1260	7.92	mg/Kg DW
PCB Standard: Aroclor 1242	98	percent
PCB Standard: Aroclor 1260	98	percent

John Andreicio
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

08-10-90

Sample No.: 43697

PAGE 3

Sample Description: #03

Date Taken: 08-02-90

Date Received: 08-06-90

Dry Weight	94.2	%
PCBs-M 8080-SOIL		
Aroclor 1016	<0.53	mg/Kg DW
Aroclor 1221	<0.53	mg/Kg DW
Aroclor 1232	<0.53	mg/Kg DW
Aroclor 1242	<0.53	mg/Kg DW
Aroclor 1248	<0.53	mg/Kg DW
Aroclor 1254	<0.53	mg/Kg DW
Aroclor 1260	11.6	mg/Kg DW
PCB Standard: Aroclor 1242	98	percent
PCB Standard: Aroclor 1260	98	percent

John Andrejcio
John Andrejcio
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
Dayton, OH 45439
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Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

08-10-90

Sample No.: 43698

Sample Description: #05

Date Taken: 08-02-90

Date Received: 08-06-90

Dry Weight	93.9	%
PCBs-M 8080-SOIL		
Aroclor 1016	<0.53	mg/Kg DW
Aroclor 1221	<0.53	mg/Kg DW
Aroclor 1232	<0.53	mg/Kg DW
Aroclor 1242	<0.53	mg/Kg DW
Aroclor 1248	<0.53	mg/Kg DW
Aroclor 1254	<0.53	mg/Kg DW
Aroclor 1260	<0.53	mg/Kg DW
PCB Standard: Aroclor 1242	98	percent
PCB Standard: Aroclor 1260	98	percent

John Andrejcio
Project Manager

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Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

08-10-90

Sample No.: 43699

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Sample Description: #04

Date Taken: 08-02-90

Date Received: 08-06-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<5.00	ug/wipe
Aroclor 1221	<5.00	ug/wipe
Aroclor 1232	<5.00	ug/wipe
Aroclor 1242	<5.00	ug/wipe
Aroclor 1248	<5.00	ug/wipe
Aroclor 1254	<5.00	ug/wipe
Aroclor 1260	17.7	ug/wipe
PCB Standard: Aroclor 1242	98	percent
PCB Standard: Aroclor 1260	98	percent

John Andrejcio
Project Manager

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Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

08-10-90

Sample No.: 43700

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Sample Description: #06

Date Taken: 08-02-90

Date Received: 08-06-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<5.00	ug/wipe
Aroclor 1221	<5.00	ug/wipe
Aroclor 1232	<5.00	ug/wipe
Aroclor 1242	<5.00	ug/wipe
Aroclor 1248	<5.00	ug/wipe
Aroclor 1254	<5.00	ug/wipe
Aroclor 1260	9.17	ug/wipe
PCB Standard: Aroclor 1242	98	percent
PCB Standard: Aroclor 1260	98	percent

John Andrejcio
Project Manager

ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
[illegible]	[illegible]	18 / 08 / 90	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
[illegible]		1								X	PCB wipe
[illegible]		1								X	PCB wipe
[illegible]		1								X	PCB wipe
[illegible]		1								X	PCB wipe
[illegible]		1					X				PCB soil

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S), OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Neal R. Phillips ☐ SEALED ☐ UNSEALED	9/11		[illegible] ☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EPA-[illegible]

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ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-18-90

PAGE 1

RECEIVED
SEP 19 1990

DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48681	WP-001	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<100.	ug/wipe
Aroclor 1221	<100.	ug/wipe
Aroclor 1232	<100.	ug/wipe
Aroclor 1242	<100.	ug/wipe
Aroclor 1248	<100.	ug/wipe
Aroclor 1254	<100.	ug/wipe
Aroclor 1260	1250.	ug/wipe
PCB Standard: Aroclor 1242	100	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48682	WP-002	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<50.	ug/wipe
Aroclor 1221	<50.	ug/wipe
Aroclor 1232	<50.	ug/wipe
Aroclor 1242	<50.	ug/wipe
Aroclor 1248	<50.	ug/wipe
Aroclor 1254	<50.	ug/wipe
Aroclor 1260	197.	ug/wipe
PCB Standard: Aroclor 1242	101	Percent
PCB Standard: Aroclor 1260	100	Percent

John Andrejcio
Project Manager

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ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-18-90

DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48683	WP-003	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	100	Percent
PCB Standard: Aroclor 1260	100	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48684	WP-004	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	100	Percent
PCB Standard: Aroclor 1260	100	Percent

John Andrejcio
Project Manager

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ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-18-90

PAGE 3

DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48685	SL-005	09-10-90

Dry Weight	92.7	%
PCBs-M 8080-SOIL		
Aroclor 1016	<2.7	mg/Kg DW
Aroclor 1221	<2.7	mg/Kg DW
Aroclor 1232	<2.7	mg/Kg DW
Aroclor 1242	<2.7	mg/Kg DW
Aroclor 1248	<2.7	mg/Kg DW
Aroclor 1254	<2.7	mg/Kg DW
Aroclor 1260	40.4	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	108	Percent

John Andrejcio
Project Manager

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ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-17-90

DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48681	WP-001	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<100.	ug/wipe
Aroclor 1221	<100.	ug/wipe
Aroclor 1232	<100.	ug/wipe
Aroclor 1242	<100.	ug/wipe
Aroclor 1248	<100.	ug/wipe
Aroclor 1254	<100.	ug/wipe
Aroclor 1260	1250.	ug/wipe
PCB Standard: Aroclor 1242	100	percent
PCB Standard: Aroclor 1260	101	percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48682	WP-002	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<50.	ug/wipe
Aroclor 1221	<50.	ug/wipe
Aroclor 1232	<50.	ug/wipe
Aroclor 1242	<50.	ug/wipe
Aroclor 1248	<50.	ug/wipe
Aroclor 1254	<50.	ug/wipe
Aroclor 1260	197.	ug/wipe
PCB Standard: Aroclor 1242	101	percent
PCB Standard: Aroclor 1260	100	percent

John Andrejcio
Project Manager

Preliminary Report

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
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ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-17-90

DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48683	WP-003	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	100	ug/wipe
PCB Standard: Aroclor 1260	100	ug/wipe

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48684	WP-004	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	100	percent
PCB Standard: Aroclor 1260	100	percent

John Andrejcio
Project Manager

Preliminary Report

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ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-18-90

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DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48681	WP-001	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<100.	ug/wipe
Aroclor 1221	<100.	ug/wipe
Aroclor 1232	<100.	ug/wipe
Aroclor 1242	<100.	ug/wipe
Aroclor 1248	<100.	ug/wipe
Aroclor 1254	<100.	ug/wipe
Aroclor 1260	1250.	ug/wipe
PCB Standard: Aroclor 1242	100	Percent
PCB Standard: Aroclor 1260	101	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48682	WP-002	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<50.	ug/wipe
Aroclor 1221	<50.	ug/wipe
Aroclor 1232	<50.	ug/wipe
Aroclor 1242	<50.	ug/wipe
Aroclor 1248	<50.	ug/wipe
Aroclor 1254	<50.	ug/wipe
Aroclor 1260	197.	ug/wipe
PCB Standard: Aroclor 1242	101	Percent
PCB Standard: Aroclor 1260	100	Percent

John Andrejcio
Project Manager

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ANALYTICAL REPORT

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ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-18-90

DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48683	WP-003	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	100	Percent
PCB Standard: Aroclor 1260	100	Percent

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48684	WP-004	09-10-90

PCB WIPE-NIOSH METHOD 5503

Aroclor 1016	<10.	ug/wipe
Aroclor 1221	<10.	ug/wipe
Aroclor 1232	<10.	ug/wipe
Aroclor 1242	<10.	ug/wipe
Aroclor 1248	<10.	ug/wipe
Aroclor 1254	<10.	ug/wipe
Aroclor 1260	<10.	ug/wipe
PCB Standard: Aroclor 1242	100	Percent
PCB Standard: Aroclor 1260	100	Percent

John Andrejcio
Project Manager

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ANALYTICAL REPORT

Scott Schurman
ENROSERV MIDWEST ENV. SVC.
P.O. Box 81
Dayton OH 45404

09-18-90

DATE RECEIVED: 09-12-90

SAMPLE NO.	SAMPLE DESCRIPTION	DATE TAKEN
48685	SL-005	09-10-90

Dry Weight	92.7	%
PCBs-M 8080-SOIL		
Aroclor 1016	<2.7	mg/Kg DW
Aroclor 1221	<2.7	mg/Kg DW
Aroclor 1232	<2.7	mg/Kg DW
Aroclor 1242	<2.7	mg/Kg DW
Aroclor 1248	<2.7	mg/Kg DW
Aroclor 1254	<2.7	mg/Kg DW
Aroclor 1260	40.4	mg/Kg DW
PCB Standard: Aroclor 1242	105	Percent
PCB Standard: Aroclor 1260	108	Percent

John Andrejcio
Project Manager

PO # 3267

ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
SCOTT SCHURMAN	EG&G	10 / 07 / 90	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
[illegible] 1		1								X	PCB WIPE
WI-002		1								X	PCB WIPE
WI-003		1								X	PCB WIPE
WI-004		1								X	PCB WIPE
SL-005		1					X				PCB SOIL

DESCRIPTION OF SHIPMENT

1 PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
Neal R. Phillips ☐ SEALED ☑ UNSEALED	9/11		Joyce Sarapata ☐ SEALED ☐ UNSEALED	
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY ☐ SEALED ☐ UNSEALED	DATE	TIME	RECEIVED BY ☐ SEALED ☐ UNSEALED	REASON FOR CHANGE OF CUSTODY

7-EMA-262 (Revised 5/85)

enroserv

Enroserv Midwest, Inc.
701 Crossroads Ct.
Vandalia, Ohio 45377
(513) 454-5520
(513) 454-5507 FAX

faxed 10-12-90

FAX COVER PAGE

TO: MARY SIZEMORE

COMPANY: E G + G

FAX NO. 513-847-5249

FROM: SCOTT SCHUERMAN

FAX No.: (513) 454-5507

NO. OF PAGES: 3
(including this one)

A DIVISION OF
STOUT
ENVIRONMENTAL

enroserv

October 12, 1990

Ms. Mary Sizemore
EG&G Mound Applied Technologies
1 Mound Avenue
Miamisburg, OH 45343

Dear Ms. Sizemore:

RE: Cost Estimate to Perform Soil Excavation and Sam
Activities.

Enroserv Midwest, Inc. (ENROSERV) is pleased to
estimate for the above referenced services. The purpo
correspondence is to provide a cost estimate to pe
following services:

- Using pneumatic jackhammers to remove and containerize the corner of existing concrete near the southeast end of the original s l location.
- Remove and containerize soil and clay near the Transformer Housing Pad exposing the stained area on the concrete housing pad.
- Remove the stained area on the transforme housing pad using pneumatic scabblers.
- Obtain wipe samples of the transformer housin pad and further soil sampling to verify th clean up is complete.

ENROSERV's cost estimate to perform the above
services is $4,714.50. This estimate is for budgetary p
only, actual services will be invoiced according to ENRO
schedule.

A DIVISION OF
STOUT
ENVIRONMENTAL

ENROSERV appreciates the opportunity to perform these services. We presently anticipate three, eight hour days will be required. EG&G Mound Applied Technologies will be notified by site personnel if our services will require additional time. I you have any questions, please contact me at (513) 454-5520.

Sincerely,

Scott R. Schurman

Scott R. Schurman
Technical Project Administrator

SRS/sds

pc: Project File ICM 90-111

10/31/90

0600 at shop Left 0620
mound 0700
Breifed 0730
Power house 0800 waited for digging permit
0880 got permit Talked To Mary Sizemore
started work 0930
Jackhammered a 2' by 2' Squair concreat out
apx. 1000 Scott arv. Talked To Mary
about samples, & gave John Sample Jar's
Scot Left apx 1030

1130 had dug down apx 1' from Last digging used 5 drums

called mary for more drums she was out to lunch till 1200

1200 Talked to may for more drums
& She desided not To Jack hammer any more concreate

1330 drums arrive
Filled 4 more drums
1430 Started clean up

1515 Left mound
1600 Shop & got ready for next day
1630 off

ICM90-111

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

RECEIVED
NOV 12 1990
Ans'd .....

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/02/90
Lab. No.: 9011105 001
Sample No.: 56058
Authorization: 3492

On: One (1) Water Sample Submitted November 1, 1990 for Chemical Analysis.

Sample Identification: 11-1-90 14:30

ANALYTE	RESULT	UNITS	METHOD LIMIT
Volatile Organics			
Benzene	BPQL	ug/L	5
Bromodichloromethane	BPQL	ug/L	10
Bromoform	BPQL	µg/L	10
Bromomethane	BPQL	ug/L	5
Carbon Tetrachloride	BPQL	ug/L	10
Chlorobenzene	BPQL	ug/L	5
Chloroethane	BPQL	ug/L	10
2-Chloroethylvinyl Ether	BPQL	ug/L	20
Chloroform	BPQL	ug/L	10
Chloromethane	BPQL	ug/L	10
cis-1,3-Dichloropropene	BPQL	ug/L	5
Dibromochloromethane	BPQL	ug/L	5
1,1-Dichloroethane	BPQL	ug/L	5
1,2-Dichloroethane	BPQL	ug/L	5
1,1-Dichloroethylene	BPQL	ug/L	5
1,2-Dichloropropane	BPQL	ug/L	5
Ethylbenzene	BPQL	ug/L	5
Methylene Chloride	BPQL	ug/L	10
1,1,2,2-Tetrachloroethane	BPQL	ug/L	5
Tetrachloroethylene	BPQL	ug/L	5
Toluene	BPQL	ug/L	5
trans-1,2-Dichloroethylene	BPQL	ug/L	5
trans-1'3-Dichloropropene	BPQL	ug/L	5
1,1,1-Trichloroethane	BPQL	ug/L	10
1,1,2-Trichloroethane	BPQL	ug/L	5
Trichloroethylene	BPQL	ug/L	5
Trichlorofluoromethane	BPQL	ug/L	5
Vinyl Chloride	BPQL	ug/L	10

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT No: 9011105-001

Xylene	BPQL	ug/L	10
Acetone	BPQL	ug/L	100
Acrolein	BPQL	ug/L	20
Acrylonitrile	BPQL	ug/L	200
Carbon Disulfide	BPQL	ug/L	10
Dibromomethane	BPQL	ug/L	10
Dichlorodifluoromethane	BPQL	ug/L	10
Methyl Butyl Ketone	BPQL	ug/L	100
Methyl Ethyl Ketone	BPQL	ug/L	200
Methyl Isobutyl Ketone	BPQL	ug/L	100
Stryene	BPQL	ug/L	10
1,2,3 Trichloropropane	BPQL	ug/L	20
Vinyl Acetate	BPQL	ug/L	20

.....

SURROGATE STANDARD
...1,2-dichloroethane-d4
...Fluorobenzene
...Pentafluorobenzene
PERCENT RECOVERY 102 %

.....

-- NOTES --
BPQL = Below Practical Quantitation Limits

PCB 23.6 % PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

11-6-90

arrived at mound 07:20
07:30 orientation
0800 started work
11:30 Finished diging & shoring
1200 Lunch
12:30 Back
after Lunch ask about pumpin
13:30 Sherm & Rich came
Looked at hole
Left 14:50
at Shop 15:20

11-7-90

arrived EG&G mound 07:20
dug 2" deeper
Pumped 1 drum of water
Filled 2 drums dert
11:30 Took Samples
4 dert
4 wipe
12:30 dug dert Filled 1 more drum dert & 1 water
down 5" There's about a 3" vain of blacken oil dert
down 6" still no water Lines
1330 showed Mary & her boss
we desided not to dig eny more
placed 5gal Bucket ~~in~~ with hole's for sump
1400 Took 3 water Samples
From 2 full drums & 1/4 Full drum
Left Bucket with pump in hole
1500 Left E.G&G mound
1545 Shop
1625 delivered samples to Booser More

11-8-90

arr. 0728 EG&G Mound
0800 Talked to marys Boss
about what Sample to Take & The Shoring
I was going to do
0900 Smoke Brake
1000 Finished Shorring Talked to Ron the constructior
Supper he Liked it
1015 started taking samples 2in the hole
3 off The 3 drum of water 2 That was pumped
Last night & 1 to day
1100 Talked to Mary's Boss he was pleased
cleand up Tools & Jobsite
1130 Left EG&G Mound

RECEIVED
NOV 14 1990
Ans'd .....

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/09/90
Lab. No.: 9011175 001
Sample No.: 56503
Authorization:

On: One (1) Liquid Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: #1 90-463

ANALYTE	RESULT	UNITS
PCB	98	mg/L PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/TDW
1 -Client
2 -File

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BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/09/90
Lab. No.: 9011175 002
Sample No.: 56504
Authorization:

On: One (1) Liquid Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: #2 90-466

ANALYTE	RESULT	UNITS
PCB	10	mg/L PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/TDW
1 -Client
2 -File

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BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/09/90
Lab. No.: 9011175 003
Sample No.: 56505
Authorization:

On: One (1) Liquid Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: #3 904676

ANALYTE	RESULT	UNITS
PCB	3	mg/L PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/TDW
1 -Client
2 -File

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BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 004
Sample No.: 56506
Authorization:

On: One (1) Soil Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: 001

ANALYTE	RESULT	UNITS
PCB	430	mg/Kg PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

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BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 005
Sample No.: 56507
Authorization:

On: One (1) Soil Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: 002

ANALYTE	RESULT	UNITS
PCB	21	mg/Kg PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

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BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 006
Sample No.: 56508
Authorization:

On: One (1) Soil Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: 003

ANALYTE	RESULT	UNITS
PCB	<1	mg/Kg

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

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BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 007
Sample No.: 56509
Authorization:

On: One (1) Soil Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: 004

ANALYTE	RESULT	UNITS
PCB	<1	mg/Kg

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 008
Sample No.: 56510
Authorization:

On: One (1) Wipe Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: W001

ANALYTE	RESULT	UNITS
PCB	98	ug/wipe PCB1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 009
Sample No.: 56511
Authorization:

On: One (1) Wipe Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: W002

ANALYTE	RESULT	UNITS
PCB	3800	ug/wipe PCB1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

BOWSER-MORNER, INC.

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LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 010
Sample No.: 56512
Authorization:

On: One (1) Wipe Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: W003

ANALYTE	RESULT	UNITS
PCB	460	ug/wipe PCB1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

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BOWSER-MORNER, INC.

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LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011175 011
Sample No.: 56513
Authorization:

On: One (1) Wipe Sample Submitted November 8, 1990 for Chemical Analysis.

Sample Identification: W004

ANALYTE	RESULT	UNITS
PCB	460	ug/wipe PCB1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

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ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Scott Schurman	EG&G mound	07 / 11 / 90	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
#1-90-463		1				V					Soil phase PCB
#2-90-466		1				V					24-Hour turnaround
#3-90-467		1				V				V	
001		1					X				Soil & wipe
002		1					X				samples
003		1					X				72-Hour turnaround
004		1					X				
W001		1								X	
W002		1								X	
W004		1								X	
W005		1								X	

DESCRIPTION OF SHIPMENT

_____ PIECE(S) CONSISTING OF _____ BOX(ES)

_____ ICE CHEST(S); OTHER _____

MODE OF SHIPMENT

_____ COMMERCIAL CARRIER: _____

_____ COURIER

_____ SAMPLER CONVEYED

_____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
John Romer — SEALED ☐ UNSEALED ☒			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY — SEALED ☐ UNSEALED ☐	DATE	TIME	RECEIVED BY — SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY
RELINQUISHED BY — SEALED ☐ UNSEALED ☐	DATE 7-6-90	TIME 4:25	RECEIVED BY Vicki Thompson — SEALED ☐ UNSEALED ☐	REASON FOR CHANGE OF CUSTODY

ENRO-SERV MIDWEST, INC.

A STOUT ENVIRONMENTAL COMPANY

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
SCOTT SCHURMAN	EG&G		1 of

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
#3-90-467(2)		1				X					24hr PCB ANALYSIS
#4-90-472		1				X					OIL & H_2O
#5-90-473		1				X					
A		1					X				72hr PCB - Soil
B		1					X				SAMPLES

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
____ PIECE(S) CONSISTING OF ____ BOX(ES)	____ COMMERCIAL CARRIER: ____
____ ICE CHEST(S): OTHER ____	____ COURIER
	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
John Romon — ☐ SEALED ☑ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY — ☐ SEALED ☐ UNSEALED			RECEIVED BY — ☐ SEALED ☐ UNSEALED	
RELINQUISHED BY — ☐ SEALED ☐ UNSEALED	11-8-90	2:14	RECEIVED BY — Vicki Thompson — ☐ SEALED ☐ UNSEALED	

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011193 001
Sample No.: 56589
Authorization:

On: One (1) Water Sample Submitted for Chemical Analysis
November 8, 1990.

Sample Identification: #3 90-467 (2)

ANALYTE	RESULT	UNITS
PCB	1060	ug/L PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

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BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011193 002
Sample No.: 56590
Authorization:

On: One (1) Water Sample Submitted for Chemical Analysis
November 8, 1990.

Sample Identification: #4 90-472

ANALYTE	RESULT	UNITS
PCB	146	ug/L PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

ECWiegert

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011193 003
Sample No.: 56591
Authorization:

On: One (1) Water Sample Submitted for Chemical Analysis November 8, 1990.

Sample Identification: #5 90-473

ANALYTE	RESULT	UNITS
PCB	1550	ug/L PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011193 004
Sample No.: 56592
Authorization:

On: One (1) Soil Sample Submitted for Chemical Analysis November 8, 1990.

Sample Identification: "A"

ANALYTE	RESULT	UNITS
PCB	<1	mg/Kg

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

EC Wiegert

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

BOWSER-MORNER, INC.

CORPORATE: 4518 Taylorsville Rd. • P. O. Box 51 • Dayton, Ohio 45401 • 513/236-8805

LABORATORY REPORT

To: Enro-Serv Midwest, Inc.
Attn: Mary Phillips
701 Crossroads Court
Vandalia, OH 45377

Date: 11/12/90
Lab. No.: 9011193 005
Sample No.: 56593
Authorization:

On: One (1) Soil Sample Submitted for Chemical Analysis
November 8, 1990.

Sample Identification: "B"

ANALYTE	RESULT	UNITS
PCB	530	mg/Kg PCB 1260

Respectfully Submitted,
BOWSER-MORNER, INC.
Analytical Sciences Division

ECWiegert

Eric C. Wiegert, Manager
Environmental Sciences Laboratory

ECW/ECW
1 -Client
2 -File

The above analysis was performed in accordance with procedures listed in Title 40 of the Code of Federal Regulations, Parts 136.3 and 261-Appendices II and III. In lieu of other arrangements, all samples recovered for this project will be retained at this laboratory for a period of 30 days. All reports remain the confidential property of BOWSER-MORNER, INC. and no publication or distribution may be made without our expressed written consent, except as authorized by contract.

B

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APPENDIX B

TSCA CLEANUP WASTE DISPOSAL INFORMATION

PICK UP DATE	DRUM ID	SOURCE	WASTE TYPE	AMT.	UNIT	LBS	MAN
** WASTE TYPE PCB CONTAMINATED SOIL/DEBRIS							
03/17/91	PCB	91-115	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	470.0	KGM	1034	102
03/21/91	PCB	91-116	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	46.0	KGM	101.2	102
03/21/91	PCB	91-117	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	35.0	KGM	77.0	102
03/21/91	PCB	91-118	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	51.0	KGM	112.2	102
03/21/91	PCB	91-119	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	43.0	KGM	94.6	102
03/16/91	PCB	91-120	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	424.0	KGM	932.8	102
03/21/91	PCB	91-121	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	68.0	KGM	149.6	102
03/19/91	PCB	91-122	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	415.0	KGM	913.0	102
03/17/91	PCB	91-123	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	293.0	KGM	644.6	102
03/17/91	PCB	91-124	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	434.0	KGM	954.8	102
03/17/91	PCB	91-125	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	470.0	KGM	1034	102
03/14/91	PCB	91-126	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	443.0	KGM	974.6	102
03/15/91	PCB	91-127	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	483.0	KGM	1063	102
03/17/91	PCB	91-128	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	425.0	KGM	935.0	102
03/15/91	PCB	91-129	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	450.0	KGM	990.0	102
03/13/91	PCB	91-130	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	405.0	KGM	891.0	102
03/15/91	PCB	91-131	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	550.0	KGM	1210	102
03/15/91	PCB	91-132	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	424.0	KGM	932.8	102
03/15/91	PCB	91-133	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	371.0	KGM	816.2	102
03/16/91	PCB	91-134	POWER HOUSE PCB CONTAMINATED SOIL/DEBRIS	360.0	KGM	792.0	102
** Subtotal **				6660		14652	
** WASTE TYPE PCB COMTAMINATED OIL/WATER							
03/21/91	PCB	91-152	POWER HOUSE PCB COMTAMINATED OIL/WATER	217.0	KGM	477.4	102
03/21/91	PCB	91-153	POWER HOUSE PCB COMTAMINATED OIL/WATER	210.0	KGM	462.0	102
03/19/91	PCB	91-154	POWER HOUSE PCB COMTAMINATED OIL/WATER	87.0	KGM	192.4	102

PICK UP DATE	DRUM ID	SOURCE	WASTE TYPE	AMT.	UNIT	LBS	MAN
03/18/91	PCB 91-155	POWER HOUSE	PCB COMTAMINATED OIL/WATER	222.0	KGM	488.4	102
03/17/91	PCB 91-156	POWER HOUSE	PCB COMTAMINATED OIL/WATER	226.0	KGM	497.2	102
03/19/91	PCB 91-157	POWER HOUSE	PCB COMTAMINATED OIL/WATER	200.0	KGM	440.0	102
03/16/91	PCB 91-158	POWER HOUSE	PCB COMTAMINATED OIL/WATER	234.0	KGM	514.8	102
03/17/91	PCB 91-159	POWER HOUSE	PCB COMTAMINATED OIL/WATER	198.0	KGM	435.6	102
03/21/91	PCB 91-160	POWER HOUSE	PCB COMTAMINATED OIL/WATER	232.0	KGM	510.4	102
03/21/91	PCB 91-161	POWER HOUSE	PCB COMTAMINATED OIL/WATER	225.0	KGM	495.0	102
03/18/91	PCB 91-162	POWER HOUSE	PCB COMTAMINATED OIL/WATER	211.0	KGM	464.2	102
03/20/91	PCB 91-163	POWER HOUSE	PCB COMTAMINATED OIL/WATER	215.0	KGM	473.0	102
** Subtotal **				2477		5450	
** WASTE TYPE PCB CONTAMINATED SOIL/DEBRIS							
03/21/91	PCB 91-164	POWER HOUSE	PCB CONTAMINATED SOIL/DEBRIS	46.0	KGM	101.2	102
** Subtotal **				46.0		101.2	
** WASTE TYPE PCB COMTAMINATED OIL/WATER							
03/19/91	PCB 91-165	POWER HOUSE	PCB COMTAMINATED OIL/WATER	222.0	KGM	488.4	102
03/16/91	PCB 91-166	POWER HOUSE	PCB COMTAMINATED OIL/WATER	211.0	KGM	464.2	102
03/18/91	PCB 91-167	POWER HOUSE	PCB COMTAMINATED OIL/WATER	225.0	KGM	495.0	102
03/17/91	PCB 91-168	POWER HOUSE	PCB COMTAMINATED OIL/WATER	201.0	KGM	442.2	102
03/15/91	PCB 91-169	POWER HOUSE	PCB COMTAMINATED OIL/WATER	180.0	KGM	396.0	102
03/18/91	PCB 91-170	POWER HOUSE	PCB COMTAMINATED OIL/WATER	225.0	KGM	495.0	102
03/18/91	PCB 91-171	POWER HOUSE	PCB COMTAMINATED OIL/WATER	225.0	KGM	495.0	102
03/19/91	PCB 91-172	POWER HOUSE	PCB COMTAMINATED OIL/WATER	200.0	KGM	440.0	102
03/17/91	PCB 91-173	POWER HOUSE	PCB COMTAMINATED OIL/WATER	118.0	KGM	259.6	102
03/16/91	PCB 91-174	POWER HOUSE	PCB COMTAMINATED OIL/WATER	216.0	KGM	475.2	102
03/19/91	PCB 91-175	POWER HOUSE	PCB COMTAMINATED OIL/WATER	185.0	KGM	407.0	102

YA90 ~~90~~ ~~91~~ 88 ~~89~~ ~~92~~ ~~93~~

PICK UP DATE	DRUM ID	SOURCE	WASTE TYPE	AMT.	UNIT	LBS	MAN
03/17/91	PCB 91-176	POWER HOUSE	PCB COMTAMINATED OIL/WATER	222.0	KGM	488.4	102
03/19/91	PCB 91-177	POWER HOUSE	PCB COMTAMINATED OIL/WATER	202.0	KGM	444.4	102
03/19/91	PCB 91-178	POWER HOUSE	PCB COMTAMINATED OIL/WATER	202.0	KGM	444.4	102
03/20/91	PCB 91-179	POWER HOUSE	PCB COMTAMINATED OIL/WATER	227.0	KGM	499.4	102
03/20/91	PCB 91-180	POWER HOUSE	PCB COMTAMINATED OIL/WATER	226.0	KGM	497.2	102
03/19/91	PCB 91-181	POWER HOUSE	PCB COMTAMINATED OIL/WATER	192.0	KGM	422.4	102
03/18/91	PCB 91-182	POWER HOUSE	PCB COMTAMINATED OIL/WATER	216.0	KGM	475.2	102
03/21/91	PCB 91-183	POWER HOUSE	PCB COMTAMINATED OIL/WATER	220.0	KGM	484.0	102
03/18/91	PCB 91-184	POWER HOUSE	PCB COMTAMINATED OIL/WATER	214.0	KGM	470.8	102
03/14/91	PCB 91-185	POWER HOUSE	PCB COMTAMINATED OIL/WATER	237.0	KGM	521.4	102
03/26/91	PCB 91-193	POWER HOUSE	PCB COMTAMINATED OIL/WATER	218.0	KGM	479.6	102
** Subtotal **				4584		10085	
** WASTE TYPE PCB CONTAMINATED SOIL/DEBRIS							
03/21/91	PCB 91-194	POWER HOUSE	PCB CONTAMINATED SOIL/DEBRIS	42.0	KGM	92.4	102
** Subtotal **				42.0		92.4	
** WASTE TYPE PCB CONTAMINATED CONCRETE,<50ppm,BULKED IN ROLL-OFF							
04/24/91	PCB 91-229	POWER HOUSE,SPOILS AREA	PCB CONTAMINATED CONCRETE,<50ppm,BULKED IN ROLL-OFF	2523	KGM	5550	104
** Subtotal **				2523		5550	
** WASTE TYPE PCB DECON WATER <50PPM							
05/07/91	PCB 91-242	WESTON TRAILER	PCB DECON WATER <50PPM	160.0	KGM	352.0	107
** Subtotal **				160.0		352.0	
** WASTE TYPE EMPTY PCB DRUM <50PPM							
05/07/91	PCB 91-243	WESTON TRAILER	EMPTY PCB DRUM <50PPM	25.0	KGM	55.0	107
05/28/91	PCB 91-264	BLDG 34	EMPTY PCB DRUM <50PPM	25.0	KGM	55.0	107
05/28/91	PCB 91-265	BLDG 34	EMPTY PCB DRUM <50PPM	25.0	KGM	55.0	107

OIL + H_2O
10085
320
5450

PICK UP DATE	DRUM ID	SOURCE	WASTE TYPE	AMT.	UNIT	LBS	MAN
** Subtotal **							
				75.0		165.0	
** WASTE TYPE PCB DECON WATER <50PPM							
06/04/91	PCB	91-271	BLDG 34	PCB DECON WATER <50PPM	152.5	KGM	335.5	107
** Subtotal **							
				152.5		335.5	
*** Total ***							
				16719		36783	

MANIFEST ~~92~~ 91

DRUM ID	GSX ID#	SOURCE	WASTE TYPE	LBS	DRUM SIZE
PCB90- 164	39	38 BLDG	PCB CAPACITOR #69018755 SPILL CLEAN UP	1.0	30
PCB90- 165	38	38 BLDG	PCBCLEAN UP MATERISL RAGS PLASTIC	1.0	30
PCB90- 166	40	38 BLDG	PCB CLEAN UP MATERIAL	1.0	30
PCB90- 167	36	38 BLDG	PCB CONTAIMINATED OIL 275,000 PPM	415.0	
PCB90- 168	35	38 BLDG	PCB CONTAMINATED OIL	164.0	
PCB90- 169	28	38 BLDG	PCB CONTAMINATED OIL <300,000 PPM	400.4	55
PCB90- 170	41	38 BLDG	PCB CONTAMINATED WORK MATERIALS AND CONCRETE	431.2	55
PCB90- 171	29	38 BLDG	PCB CONTAMINATED OIL	404.8	55
PCB90- 172	37	38 BLDG	PCB CONTAMINATED CONCRETE	605.0	55
PCB90- 173	31	38 BLDG	PCB CONTAMINATED OIL	231.0	55
PCB90- 174	30	38 BLDG	PCB CONTAMINATED OIL	143.0	55
PCB90- 175	34	38 BLDG	PCB CONTAMINATED CLEAN UP MATERIALS	92.4	55
PCB90- 176	32	38 BLDG	PCB CONTAMINATED OIL	385.0	55
PCB90- 177	33	38 BLDG	PCB CONTAMINATED CONCRETE	567.6	55
*** Total ***				3842.4	

OIL Debris

1563 2279

09/07/91

MANIFEST ~~92~~ 91

DRUM ID		GSX ID#	SOURCE	WASTE TYPE	LBS	DRUM SIZE
90-	266	65	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	869.0	55
90-	267	64	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	598.4	55
90-	268	63	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	787.6	55
90-	269	62	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	396.0	55
90-	270	61	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	374.0	55
90-	271	66	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	536.8	55
90-	272	60	POWER HOUSE	PCB CONTAMINATED TRASH	143.0	55
*** Total ***					3704.8	

09/07/91

MANIFEST 90

DRUM ID	GSX ID#	SOURCE	WASTE TYPE	LBS	DRUM SIZE
0	60	POWERHOUSE	PCB CONTAMINATED OIL	14.7	
0	59	POWERHOUSE	PCB CONTAMINATED GAS	5.3	
90- 290	11	POWER HOUSE	PCB CONTAMINATED CONCRETE	627.0	55
90- 291	10	POWER HOUSE	PCB CONTAMINATED CONCRETE	620.4	55
90- 292	9	POWER HOUSE	PCB CONTAMINATED CONCRETE	583.0	55
90- 293	8	POWER HOUSE	PCB CONTAMINATED CONCRETE	576.4	55
90- 294	7	POWER HOUSE	PCB CONTAMINATED CONCRETE	638.0	55
90- 295	6	POWER HOUSE	PCB CONTAMINATED CONCRETE	569.8	55
90- 296	5	POWER HOUSE	PCB CONTAMINATED CONCRETE	550.0	55
90- 297	4	POWER HOUSE	PCB CONTAMINATED CONCRETE	545.6	55
90- 298	3	POWER HOUSE	PCB CONTAMINATED CONCRETE	602.8	55
90- 299	2	POWER HOUSE	PCB CONTAMINATED CONCRETE	618.2	55
90- 300	1	POWER HOUSE	PCB CONTAMINATED CONCRETE AND CLEAN UP MATERIALS	147.4	55
*** Total ***				6098.6	

MANIFEST 92

DRUM ID	GSX ID#	SOURCE	WASTE TYPE	LBS	DRUM SIZE
PCB90- 350	42	POWER HOUSE	PCB CONTAMINATED DIRT	836.0	55
PCB90- 351	41	POWER HOUSE	PCB CONTAMINATED DIRT	831.6	55
PCB90- 352	40	POWER HOUSE	PCB CONTAMINATED WASTE	840.4	
PCB90- 353	39	POWER HOUSE	PCB CONTAMINATED WASTE	536.8	
PCB90- 354	46	POWER HOUSE	PCB CONTAMINATED WASTE	829.4	
PCB90- 355	45	POWER HOUSE	PCB CONTAMINATED WASTE	774.4	
PCB90- 356	44	POWER HOUSE	PCB CONTAMINATED WASTE	688.6	
PCB90- 357	48	POWER HOUSE	PCB CONTAMINATED WASTE AND CLEAN-UP MTL'S	479.6	
PCB90- 358	47	POWER HOUSE	PCB CONTAMINATED CLEAN UP MATERIALS	101.2	55
PCB90- 359	43	POWER HOUSE	PCB CONTAMINATED DIRT	803.0	55
PCB90- 360	37	POWER HOUSE	PCB CONTAMINATED DIRT	767.8	55
PCB90- 361	38	POWER HOUSE	PCB CONTAMINATED DIRT	699.6	55
PCB90- 369	36	POWER HOUSE	PCB CONTAMINATED DIRT	699.6	55
*** Total ***				8888.0	

MANIFEST 93

DRUM ID		GSX ID#	SOURCE	WASTE TYPE	LBS	DRUM SIZE
90-	450	66	POWER HOUSE	PCB CONTAMINATED DIRT	803.0	55
90-	451	67	POWER HOUSE	PCB CONTAMINATED DIRT	897.6	55
90-	452	68	POWER HOUSE	PCB CONTAMINATED DIRT	761.2	55
90-	453	69	POWER HOUSE	PCB CONTAMINATED DIRT	869.0	55
90-	454	70	POWER HOUSE	PCB CONTAMINATED DIRT	701.8	55
90-	455	65	POWER HOUSE	PCB CONTAMINATED DIRT	728.2	55
90-	456	64	POWER HOUSE	PCB CONTAMINATED DIRT	739.2	55
90-	457	63	POWER HOUSE	PCB CONTAMINATED DIRT	686.4	55
90-	458	62	POWER HOUSE	PCB CONTAMINATED DIRT	860.2	55
90-	463	57	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	462.0	55
90-	464	75	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	800.8	55
90-	465	76	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	908.6	55
90-	466	58	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	444.4	55
90-	467	60	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	444.4	55
90-	468	73	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	752.4	55
90-	469	74	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	378.4	55
90-	470	71	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	822.8	55
90-	471	72	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	519.2	55
90-	472	58	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	286.0	55
90-	473	56	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	501.6	55
*** Total ***					13367	

OIL 4470

2137 11 230

PICK UP DATE	DRUM ID	SOURCE	WASTE TYPE	AMT.	UNIT	LBS	MAN
03/18/91	91-182	POWER HOUSE	PCB COMTAMINATED OIL/WATER	216.0	KGM	475.2	102
03/21/91	91-183	POWER HOUSE	PCB COMTAMINATED OIL/WATER	220.0	KGM	484.0	102
03/18/91	91-184	POWER HOUSE	PCB COMTAMINATED OIL/WATER	214.0	KGM	470.8	102
03/14/91	91-185	POWER HOUSE	PCB COMTAMINATED OIL/WATER	237.0	KGM	521.4	102
03/26/91	91-193	POWER HOUSE	PCB COMTAMINATED OIL/WATER	218.0	KGM	479.6	102
03/21/91	91-194	POWER HOUSE	PCB CONTAMINATED SOIL/DEBRIS	42.0	KGM	92[illegible]	102
04/24/91	91-229	POWER HOUSE,SPOILS AREA	PCB CONTAMINATED CONCRETE,<50ppm,BULKED IN ROLL-OFF	2523	KGM	5550[illegible]	104
05/07/91	91-242	WESTON TRAILER	PCB DECON WATER <50PPM	160.0	KGM	352.0	0
06/04/91	91-271	BLDG 34	PCB DECON WATER <50PPM	152.5	KGM	335.5	0
06/08/90	90--211	POWER HOUSE	PCB CONTAMINATED TRANSFORMER SERIAL #19231	0.0		0.0	88
07/20/90	90--266	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	55.0	GAL	869.0	89
07/20/90	90--267	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	55.0	GAL	598.4	89
07/20/90	90--268	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	55.0	GAL	787.6	89
07/20/90	90--269	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	55.0	GAL	396.0	89
07/20/90	90--270	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	55.0	GAL	374.0	89
07/20/90	90--271	POWER HOUSE	PCB CONTAMINATED CONCRETE + DIRT	55.0	GAL	536.8	89
07/20/90	90--272	POWER HOUSE	PCB CONTAMINATED TRASH	55.0	GAL	143.0	89
08/03/90	90--290	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	627.0	90
08/03/90	90--291	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	620.4	90
08/03/90	90--292	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	583.0	90
08/03/90	90--293	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	576.4	90
08/03/90	90--294	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	638.0	90
08/03/90	90--295	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	569.8	90
08/03/90	90--296	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	550.0	90
08/03/90	90--297	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	545.6	90

PICK UP DATE	DRUM ID	SOURCE	WASTE TYPE	AMT.	UNIT	LBS	MAN
08/03/90	90--298	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	602.8	90
08/03/90	90--299	POWER HOUSE	PCB CONTAMINATED CONCRETE	55.0	GAL	618.2	90
08/03/90	90--300	POWER HOUSE	PCB CONTAMINATED CONCRETE AND CLEAN UP MATERIALS	55.0	GAL	147.4	90
09/07/90	90--350	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	836.0	92
09/07/90	90--351	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	831.6	92
09/07/90	90--352	POWER HOUSE	PCB CONTAMINATED WASTE	55.0	GAL	840.4	92
09/07/90	90--353	POWER HOUSE	PCB CONTAMINATED WASTE	55.0	GAL	536.8	92
09/07/90	90--354	POWER HOUSE	PCB CONTAMINATED WASTE	55.0	GAL	829.4	92
09/07/90	90--355	POWER HOUSE	PCB CONTAMINATED WASTE	55.0	GAL	774.4	92
09/07/90	90--356	POWER HOUSE	PCB CONTAMINATED WASTE	55.0	GAL	688.6	92
09/07/90	90--357	POWER HOUSE	PCB CONTAMINATED WASTE AND CLEAN-UP MTL'S	55.0	GAL	479.6	92
09/11/90	90--358	POWER HOUSE	PCB CONTAMINATED CLEAN UP MATERIALS	55.0	GAL	101.2	92
09/11/90	90--359	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	803.0	92
09/11/90	90--360	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	767.8	92
09/11/90	90--361	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	699.6	92
11/01/90	90--450	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	803.0	0
11/01/90	90--451	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	897.6	0
11/01/90	90--452	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	761.2	0
11/01/90	90--453	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	869.0	0
11/01/90	90--454	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	701.8	0
11/01/90	90--455	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	728.2	0
11/01/90	90--456	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	739.2	0
11/01/90	90--457	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	686.4	0
11/01/90	90--458	POWER HOUSE	PCB CONTAMINATED DIRT	55.0	GAL	860.2	0
11/09/90	90--463	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	55.0	GAL	462.0	0
11/09/90	90--464	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	55.0	GAL	800.8	0
11/09/90	90--465	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	55.0	GAL	908.6	0
11/09/90	90--466	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	55.0	GAL	444.4	0
11/09/90	90--467	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	55.0	GAL	444.4	0
11/09/90	90--468	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	55.0	GAL	752.4	0
11/09/90	90--469	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	55.0	GAL	378.4	0
11/09/90	90--470	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	55.0	GAL	822.8	0
11/09/90	90--471	POWER HOUSE	PCB CONTAMINATED SOIL AND DEBRIS	55.0	GAL	519.2	0
11/09/90	90--472	POWER HOUSE	PCB CONTAMINATED WATER AND OIL	55.0	GAL	286.0	0

GSX

Please print or type. Form designed for use on elite (12-pitch) typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST

Generator's US EPA ID No. OH6890008984 | Manifest Document No. 00037 | Page 1 of 5

3. Generator's Name and Mailing Address 597-10261
US DOE MOUND
P.O. BOX 66, Miamisburg, OH 45343

4. Generator's Phone 513 865-3078

5. Transporter 1 Company Name: GSX Services, Inc.
6. US EPA ID Number: MDD980554653

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
GSX Services, Inc.
P.O. Drawer C/2815 Old Greenbrier Pike, Greenbrier, TN 37073
10. US EPA ID Number: TND000645770

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone 1-800-251-1227
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone 1-800-251-1227

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) (HM)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. X WASTE FLAMMABLE LIQUID, N.O.S. (RQ EPA D001) UN 1993 FLAMMABLE LIQUID	003	DM	001	50 G	D001
b. X WASTE FLAMMABLE SOLID, N.O.S. (RQ EPA D001) UN 1325 FLAMMABLE SOLID	004	DM	010	00 P	D001
c. X WASTE FLAMMABLE LIQUID, N.O.S. (RQ EPA D001) UN 1993 FLAMMABLE LIQUID	002	DM	001	00 G	D001
d. X CORROSIVE SOLID, N.O.S. UN 1759 CORROSIVE MATERIAL	002	DM	030	00 P	NONE

J. Additional Descriptions for Materials Listed Above
11c. Also F001

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Certain containers in this shipment may be packaged under the provision DOT-E 8129.
If a spill occurs contain with an absorbant and contact Barry Fogle at 1-800-251-1227 or 615-244-8960.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the evironment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste managment method that is available to me and that I can afford.

Printed/Typed Name: LARRY M. KLINGLER | Signature: Larry M. Klingler | Date: Month 05 Day 11 Year 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald | Signature: James H. McDonald | Date: Month 05 Day 11 Year 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Thomas Young | Signature: Thomas Young | Date: Month 05 Day 11 Year 90

EPA Form 8700-22 (9-91) | TBLS-05

GSX

UNIFORM HAZARDOUS WASTE MANIFEST
Continuation Sheet

D#689 CC08984 00087 2 of 5

22. Generator's Name: US DOE Mound

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID
HWH DC
O. Transporter's Phone 1-800-251-1227
P. State Transporter's ID
HWH DC
Q. Transporter's Phone

24. Transporter Company Name: GSX Services, INC.
25. US EPA ID Number: MOD980554653
26. Transporter Company Name
27. US EPA ID Number

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	29. Containers No.	Type	30. Total Quantity	Unit Wt./Vol.	R. Waste No.
a. X WASTE FLAMMABLE LIQUID, N.O.S. (RQEPA0001, F003) UN1993 FLAMMABLE LIQUID	025	DM	01210	G	D001
b. X WASTE OXIDIZER, corrosive liquid, N.O.S. UN9193 (RQEPA0001) OXIDIZER	001	DM	00100	P	D001
c. X POISON B Solid, N.O.S. UN2811 POISON B	002	DM	00200	P	NONE
d. X WASTE Oxidizer, N.O.S. (RQEPA0001) UN1479 OXIDIZER	001	DM	00100	P	D001
e. X WASTE Corrosive Liquid N.O.S. (RQEPA0002) UN1760 CORROSIVE MATERIAL	001	DM	00100	P	D002
f. X WASTE OXIDIZER, corrosive liquid, N.O.S. (Perchloric Acid) UN9193 OXIDIZER	001	DM	00025	P	D001
g. X Hazardous Waste Solid, N.O.S. (paper contaminated with Lead) UN9189 ORM-E	001	DM	00025	P	D018
h. X HAZARDOUS Substance Solid, N.O.S. UN9188 ORM-E	001	DM	00100	P	NONE
i. X WASTE OXIDIZER, N.O.S. (Benzoyl Peroxide) UN1479 OXIDIZER	001	DM	00025	P	D003
j. X WASTE Water Reactive Solid, N.O.S. (RQEPA0003) UN2813 FLAMMABLE SOLID	001	DM	00100	P	D003

GENERATOR

31. Handling Codes for Wastes Listed Above
a. b. c. d. e. f. g.
h. i. j.

32. Special Handling Instructions and Additional Information
28.a. also F003
b. also D007, D008, D009, D011
f. also D002

TRANSPORTER

33. Transporter Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Date: Month 05 Day 11 Year 90

34. Transporter Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 3-86)

GSX

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

OH6890008984 | 00087 | 3 of 5

23. Generator's Name: US DOE Mound

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID
HWH DC
O. Transporter's Phone 1-800-251-1227
P. State Transporter's ID
HWH DC
Q. Transporter's Phone

24. Transporter 1 Company Name: GSX Services, INC
25. US EPA ID Number: MOD980554653
26. Transporter Company Name
27. US EPA ID Number

	28. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number) HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X WASTE CORROSIVE SOLID, N.O.S. (Adipoyl Chloride) UN1759 CORROSIVE MATERIAL	001	DM	00025	P	D003
b.	X WASTE FLAMMABLE LIQUID, CORROSIVE, N.O.S. UN2924 FLAMMABLE LIQUID (Bromium Powder in Hydrofluoric Acid)	001	DM	00001	G	D003
c.	X WASTE OXIDIZER/POISON liquid N.O.S. NA9199 OXIDIZER (Tetraphenylarsonium Chloride)	001	DM	00001	G	D001
d.	X WASTE CORROSIVE Liquid, N.O.S. (NAOC Methyl Anhydride) UN1760 CORROSIVE MATERIAL (RQEPAD003)	001	DM	00250	P	D003
e.	X WASTE POISON B SOLID, N.O.S. (RQEPA D007, D008, D011) UN2811 POISON B	001	CW	00400	P	D007
f.	X HAZARDOUS Substance Liquid, N.O.S. NA9188 ORM-E (RQEPA PCBs)	005	DM	00250	G	NONE
g.	X HAZARDOUS WASTE LIQUID, N.O.S. (RQEPAF001) NA9189 ORM-E	007	DM	00350	G	F001
h.	NON Regulated Material	013	DM	02700	P	NONE
i.	X WASTE FLAMMABLE SOLID, N.O.S. (RQEPAD011 F001) UN1325 FLAMMABLE SOLID	001	DM	00100	P	D001
j.	X CORROSIVE SOLID, N.O.S. UN1759 CORROSIVE MATERIAL	001	DF	00050	P	NONE

GENERATOR

27. Handling Codes for Wastes Listed Above
a. b. c. d. e. f. g.
h. i. j.

32. Special Handling Instructions and Additional Information
28. c. also D004 F. Drum #s 051090gbMTO 28 - aos date 5-4-90 wt 182kg PCB-2
e. also D008, D011 29 - aos date 5-4-90 wt. 184kg PCB 2
f. also F001 30 - 5-4-90 wt. 45kg PCB 2
31 5-4-90 wt 105kg PCB 2
32 5-4-90 wt 175kg PCB 2

TRANSPORTER

33. Transporter _____ Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Date (Month Day Year): 05 1 90

34. Transporter _____ Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date (Month Day Year)

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

UNIFORM HAZARDOUS WASTE MANIFEST

Continuation Sheet

OH6 890008984 | 00087

22. Generator's Name: US DOE Mound

L. State Manifest Document Number

M. State Generator's ID

N. State Transporter's ID: HWH DC

24. Transporter 1 Company Name: GSX Services INC

25. US EPA ID Number: MDD980554653

O. Transporter's Phone: 513-257-1227

P. State Transporter's ID: HWH DC

26. Transporter 2 Company Name

27. US EPA ID Number

Q. Transporter's Phone

23. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	29. Containers No.	Type	30. Total Quantity	Unit Wt/Vol	R. Waste No.
a. X HAZARDOUS Substance Solid, N.O.S. (RQ EPA PCBs) NA9188 ORM-E	008	DM	02000	P	NONE
b. X HAZARDOUS Waste LIQUID, N.O.S. (RQEPAF002) NA9189 ORM-E	001	DM	00050	G	F002
c. X HAZARDOUS WASTE LIQUID N.O.S (RQEPA D007) NA9189 ORM-E	003	DF	00110	G	D007
d. X HAZARDOUS Waste LIQUID N.O.S (RQEPAF007) NA9189 ORM-E	001	DF	00015	G	F007
e. NON Regulated Material	002	DF	00400	P	NONE
f. X HAZARDOUS Substance Liquid, N.O.S. NA9188 ORM-E	004	DM	00180	G	NONE
g. X WASTE Corrosive Liquid, N.O.S. (RQEPAD002) UN1760 CORROSIVE MATERIAL	006	DF	00240	G	D002
h. X HAZARDOUS Substance Liquid N.O.S. NA9188 ORM-E	002	DF	00100	G	NONE
i. X HAZARDOUS Waste Solid, N.O.S (RQEPAD011) NA9189 ORM-E	001	DF	00050	P	D011
j. X HAZARDOUS WASTE Solid, N.O.S (RQ EPA D009) NA9189 ORM-E	002	DM	00300	P	D009

GENERATOR

27. Handling Codes for Wastes Listed Above

a. b. c. d. e. f. g.

h. i. j.

32. Special Handling Instructions and Additional Information

~~35~~ - 5-4-90, 37kg, PCB 2, ~~38~~ 5-4-90, 87kg, PCB 2

~~36~~ - 5-4-90, 54kg, PCB 2 ~~40~~ 5-4-90, 55kg PCB 2

~~39~~ 5-4-90, 275kg PCB 2 ~~41~~ 5-4-90, 196kg PCB 2

38a. OSWOSbrTO -

~~33~~ cos date 5-4-90, wt 258 kg, PCB-2,

~~34~~ 5-4-90, wt 42kg, PCB-2, ~~39~~ 5-4-90, 38 kg PCB 2

TRANSPORTER

33. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name: James H. McDonald

Signature: James H. McDonald

Month Day Year: 05 11 90

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A Rev. 9-86

UNIFORM HAZARDOUS WASTE MANIFEST

[illegible]

[illegible] MOND
P.O. BOX 66 / MIAMISBURG OH 45343

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID
HWH [illegible] DC
O. Transporter's Phone
P. State Transporter's ID
HWH [illegible] DC
Q. Transporter's Phone

24. Transporter [illegible]
GSX SERVICES INC

25. US EPA ID Number
MDD980554653

26. Transporter [illegible]

27. US EPA ID Number

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

	28. US DOT Description	29. Containers No.	Type	30. Total Quantity	31. Unit Wt./Vol.	R. Waste No.
a	HAZARDOUS WASTE LIQUID N.O.S. (RQ EPA F007) NA9189 CRM-6	002	DF	00055	G	F007
b						
c						
d.						
e.						
f.						
g.						
h.						
i.						
j.						

GENERATOR

S. Handling Codes for Wastes Listed Above
a. [illegible] b. [illegible] c. [illegible] d. [illegible] e. [illegible] f. [illegible] g. [illegible]
h. [illegible] i. [illegible] j. [illegible]

32. Special Handling Instructions and Additional Information

SEE Page 1

TRANSPORTER

33. Transporter _____ Acknowledgement of Receipt of Materials

Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Month Day Year: 05 11 90

34. Transporter _____ Acknowledgement of Receipt of Materials

Printed/Typed Name
Signature
Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev. 3-86)

SO# 01-4190 ID# 00952800

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2050 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. OHD980089840 Manifest Document No. 03700

2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
~~EG&G~~ US DOE - MOUND PLANT PO BOX 66
~~P.O. BOX 3000~~/MIAMISBURG, OH. 45343

4. Generator's Phone (513) 865-3971 Attn: Anna Thompson

A. State Manifest Document Number: 90-370-FS

B. State Generator's ID

5. Transporter 1 Company Name: S. D. Myers, INc.

6. US EPA ID Number: OHD053576294

C. State Transporter's ID

D. Transporter's Phone: 216-633-2666

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
S.D. MYERS, INC.
180 South Ave.
Tallmadge, OH 44278

10. US EPA ID Number: OHD053576294

G. State Facility's ID

H. Facility's Phone: 216-633-2666

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ Hazardous Substance, Solid, N.O.S., ORM-E NA9188 (PCB'S) (Transformers drained, over 500 ~~PPM PCB~~)	X	001	TP	02340	K	
b.							
c.	R-6513-19231						
d.							

J. Additional Descriptions for Materials Listed Above
11a. PCB 1
SEE ATTACHED MANIFEST CONTINUATION SHEET FOR ADDITIONAL INFORMATION.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: LARRY M. KLINGLER
Signature: Larry M. Klingler
Month Day Year: 06 08 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David Kowell
Signature: David Kowell
Month Day Year: 06 08 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

APPROVED BY J. Scott Carper DATE 06-08-90

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: J. Scott CARPER
Signature: J. Scott Carper
Month Day Year: 06 08 90

Style F15 REV-6 LABELMASTER, Div. of AMERICAN LABELMARK CO., CHICAGO, IL 60646

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete

ORIGINAL-RETURN TO GENERATOR

GSX

Please print or type. Form designed for use on elite (12-pitch) typewriter.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CH589008984 — Manifest Document No. 00039

2. Page 1 of 4 — Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
US Dept. Of Energy Mound Plant 597-10816
MOund Plant Location, Miamisburg, OH 45343

4. Generator's Phone (513) 865-3078

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: GSX Services, Inc.

6. US EPA ID Number: MDD980554653

C. State Transporter's ID 183-HW

D. Transporter's Phone 1-800-251-1227

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services, Inc.
P.O. Drawer C/2815 Old Greenbrier Pike, Greenbrier, TN 37073

10. US EPA ID Number: TND000645770

G. State Facility's ID

H. Facility's Phone 1-800-251-1227

GENERATOR

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM			12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	HAZARDOUS WASTE LIQUID NOS NA9189 ORM-E	X	RQ	EPA F001/F003	002	DM	00110	G	F001
b.	WASTE COMBUSTIBLE LIQUID NOS NA1993 COMBUSTIBLE LIQUID	X	RQ	EPA D001	001	DM	00055	G	D001
c.	~~WASTE~~ COMBUSTIBLE LIQUID NOS NA1993 COMBUSTIBLE LIQUID	X	RQ	NONE	001	DM	00055	G	NONE
d.	NON REGULATED				008	DM	00530	G	NONE

J. Additional Descriptions for Materials Listed Above
A- F003

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Certain containers in this shipment may be packaged under the provision DOT-E 8129.
If a spill occurs contain with an absorbant and contact Barry Fogle at 1-800-251-1227 or 615-244-8960.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the evironment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste managment method that is available to me and that I can afford.

Printed/Typed Name: R. BLAUVELT — Signature: R. Blauvelt/SLK — Date: Month 07 Day 27 Year 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: BOB ROGERS — Signature: Bob Rogers — Date: Month 07 Day 27 Year 90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space
c. "Waste" crossed out. - R. Blauvelt/SLK

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: KIRAN PATEL — Signature: KPatel — Date: Month 07 Day 30 Year 90

EPA Form 8700-22 (9-91) 7-BLS-C5

GSX

Please print or type. Form designed for use on elite 12 (pica) typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator's US EPA ID No. OH6890008984 | Manifest Document No. 010089 | 22. Page 2 of 4

Information in the shaded areas is not required by Federal law.

23. Generator's Name
U.S. DEPT. OF ENERGY MOUND PLANT 597-10816
MOUND, PLANT LOCATION, MIAMISBURG, OH. 45343
(513) 865-3078

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID HWH 1183 DC
O. Transporter's Phone 1-800-251-1227
P. State Transporter's ID HWH DC
Q. Transporter's Phone

24. Transporter Company Name: GSX SERVICES INC
25. US EPA ID Number: MDD980554653
26. Transporter Company Name
27. US EPA ID Number

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	NON-REGULATED		005	DF	002	CG	NONE
b.	RQ ASBESTOS ~~ORM-E~~ ORM-C	X	001	CW	0080	LB	NONE
c.	WASTE FLAMMABLE LIQUID NOS UN1993 FLAMMABLE LIQ. RQ EPA U056	X	001	DM	0030	G	U056
d.	HAZARDOUS WASTE LIQUID NOS NA9189 ORM-E RQ EPA D011	X	001	DM	0030	G	D011
e.	HAZARDOUS SUBSTANCE SOLID NOS NA9188 ORM-E RQ PCB'S	X	007	DM	4200	P	NONE
f.	HAZARDOUS WASTE LIQUID NOS NA9189 ORM-E RQ EPA D001/D006/D011	X	001	DF	0030	G	D004
g.	WASTE CORROSIVE LIQUID NOS UN1760 CORROSIVE MATERIAL RQ EPA D002	X	007	DF	0020	G	D002
h.	HAZARDOUS WASTE SOLID NOS NA9189 ORME RQ EPA D011	X	003	DM	0089	P	D011
i.	WASTE FLAMMABLE LIQUID NOS UN1993 FLAMMABLE LIQUID RQ EPA D001/U108	X	003	DM	0165	G	D001
j.	RQ ASBESTOS ORM-C		001	DM	100	P	NONE

GENERATOR

S. Handling Codes for Wastes Listed Above
a. b. c. d. e. f. g. h. i. j.

32. Special Handling Instructions and Additional Information
E-0725906MTO-60TARU66 (7-20-90) PCB 2 65KG, 170KG, 180KG, 353KG, 272KG, 395KG, 244KG
E-0006-D011
E-U108

TRANSPORTER

33. Transporter Acknowledgement of Receipt of Materials
Printed/Typed Name: BOB ROGERS | Signature: Bob Rogers | Date: Month 07 Day 27 Year 90

34. Transporter Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

35. Discrepancy Indication Space
b. "WC" crossed out - R. Blanchett | SLK 286 "ORM-C" CORRECTED
j. "X" in HM block - R. Blanchett | SLK

EPA Form 8700-22A (Rev 9-86)

GSX

Please print or type. Form approved for use. Not required by Federal law.

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No. OH6890008984 | Manifest Document No. 00089 | 22. Page 3 of 4

23. Generator's Name
U.S DEPT. OF ENERGY MOUND PLANT 597-10816
MOUND PLANT LOCATION, MIAMISBURG, OH. 45343
(513) 865-3078

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID HWH 183 DC
O. Transporter's Phone 1-800-251-1227
P. State Transporter's ID HWH DC
Q. Transporter's Phone

24. Transporter Company Name: GSX SERVICES INC
25. US EPA ID Number: MDD980554653
26. Transporter Company Name
27. US EPA ID Number

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	WASTE FLAMMABLE LIQUID NOS UN1993	X		008	DM	00440	G	D001
	FLAMMABLE LIQUID		RQ EPA D001/F002/F003					
b.	HAZARDOUS WASTE LIQUID NOS NA9189	X		011	DM	00605	G	F002
	ORM-E		RQ EPA F002					
c.	WASTE FLAMMABLE LIQUID NOS UN1993	X		130	DM	00690	G	D001
	FLAMMABLE LIQUID		RQ EPA D001/F003					
d.	WASTE ORM-A NOS NA1693	X		002	DM	00110	G	F001
	ORMA		RQ EPA F001/F002					
e.	WASTE FLAMMABLE LIQUID N.O.S UN1993	X		015	DM	00800	G	D001
	FLAMMABLE LIQUID		RQ EPA D001/F001					
f.	WASTE FLAMMABLE LIQUID NOS UN1993	X		030	DM	00165	G	D001
	FLAMMABLE LIQUID		RQ EPA D001/F002					
g.	HAZARDOUS WASTE LIQUID N.O.S NA9189	X		002	DF	00030	G	D004
	ORM-E		RQ EPA D004/D010					
h.	WASTE OXIDIZER NOS UN1479	X		003	DM	00075	G	D001
	OXIDIZER		RQ EPA D001					
i.	CORROSIVE SOLID NOS UN1759			001	DM	00300	P	NONE
	CORROSIVE MATERIAL		RQ NONE					
j.	WASTE CORROSIVE LIQUID NOS UN1760	X		003	DM	00430	P	D002
	CORROSIVE MATERIAL		RQ EPA D002					

GENERATOR

S. Handling Codes for Wastes Listed Above
a. ___ b. ___ c. ___ d. ___ e. ___ f. ___ g. ___
h. ___ i. ___ j. ___

32. Special Handling Instructions and Additional Information
A- F002/F003 E-F001
C- F003 F-F002
D- F001 G- D010

TRANSPORTER

33. Transporter _____ Acknowledgement of Receipt of Materials
Printed/Typed Name: BOB ROGERS | Signature: Bob Rogers | Date: Month 07 Day 27 Year 90

34. Transporter _____ Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

35. Discrepancy Indication Space
J. 31. G crossed out - R. Brannett | SLK

EPA Form 8700-22A (Rev 9-86)

Please print or type. Form designed for use on elite 12 (pica) typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No. 0H6890089845 — Manifest Document No. 000089 — 22. Page 4 of 4

Information in the shaded areas is not required by Federal law.

23. Generator's Name
U.S. DEPT. OF ENERGY MOUND PLANT 597-10816
MOUND PLANT MIAMISBURG, OH 45343
(513) 865-3878

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID HWH 103 DC
O. Transporter's Phone 1-800-251-1227
P. State Transporter's ID HWH DC
Q. Transporter's Phone

24. Transporter Company Name: GSX SERVICES INC — 25. US EPA ID Number: MDA980554653
26. Transporter Company Name — 27. US EPA ID Number

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	WASTE OXIDIZER CORROSIVE LIQUID NOS NA9193 OXIDIZER RQ EPA D001/D002/D007	X	002	DM	00100	P	D001
b.	WASTE WATER REACTIVE SOLID NOS FLAMMABLE SOLID UN2813	X	001	DM	00010	P	D003
c.	Waste Corrosive Liquid, NOS Corrosive Material UN760	X	001	DM	00010	P	D002
d.	Waste Oxidizer, Corrosive Liquid, NOS Oxidizer NA9193	X	001	DM	00010	P	D001
e.							
f.							
g.							
h.							
i.							
j.							

GENERATOR

S. Handling Codes for Wastes Listed Above
a. ___ b. ___ c. ___ d. ___ e. ___ f. ___ g. ___
h. ___ i. ___ j. ___

32. Special Handling Instructions and Additional Information
A- D002 - D007 B. "Dangerous When Wet"
D - D002

TRANSPORTER

33. Transporter ____ Acknowledgement of Receipt of Materials — Date
Printed/Typed Name: Bob Rogers — Signature: Bob Rogers — Month Day Year: 07 27 90

34. Transporter ____ Acknowledgement of Receipt of Materials — Date
Printed/Typed Name — Signature — Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GSX

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

Generator's US EPA ID No. [illegible] Manifest Document No. 100090 Page 1 of 4

3. Generator's Name and Mailing Address
U.S. Department of Energy Mound Plant
P.O. Box 66, Miamisburg, OH 45343

4. Generator's Phone 513 865-3178

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: GSX Services, Inc.
6. US EPA ID Number: MND980653652
C. State Transporter's ID
D. Transporter's Phone 800-251-1227

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
GSX Services, Inc.
P.O. Drawer C, 2815 Old Greenbrier Pike, Greenbrier, TN 37073
10. US EPA ID Number: TNN000064577
G. State Facility's ID
H. Facility's Phone 1-800-251-1227

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	Waste Flammable ~~Solid~~ Liquid (DD), n.o.s. Flammable Liquid UN 1993	X	RQ D001/F003	014	DM	0400	P	D001
b.	Waste Poison B Solid, n.o.s. Poison B UN2811	X	RQ D006	002	DM	0175	P	D006
c.	Waste Flammable Solid, n.o.s. Flammable Solid UN1325	X	RQ D001	002	DM	0700	P	D001
d.	Waste ORM-A, n.o.s. ORM-A NA 1693	X	RQ F001	001	DM	0350	P	F001

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Certain containers in this shipment may be packaged under the provision DOTE 8129.
If a spill occurs contain with an absorbant and contact Barry Fogle at 1-800-251-1227

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the evironment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste managment method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: CAROL R ANDERSON
Signature: Carol R Anderson
Date: Month 08 Day 22 Year 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Date: Month 08 Day 22 Year 90

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: MARC SIMON
Signature: Marc Simon
Date: Month 08 Day 27 Year 90

EPA Form 8700-22 (9-91) TBLS-05

GSX

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

OH 6890008934 0 0070 4

23. Generator's Name: U.S. Department of Energy Mound Plant 597-1909
P.O. Box 66 Miamisburg, OH 45343

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID HWH DC
O. Transporter's Phone
P. State Transporter's ID HWH DC
Q. Transporter's Phone

24. Transporter 1 Company Name: GSX Services Inc.
25. US EPA ID Number: MOD980554653
26. Transporter ___ Company Name
27. US EPA ID Number

	HM	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X	Waste Oxidizer, n.o.s. Oxidizer UN 1479	RQ D007	001	DM	00025	P	D007
b.	X	Waste Oxidizer, n.o.s. Oxidizer UN 1479	RQ D007/D008	001	DM	00025	P	D008 D007
c.	X	Waste Oxidizer, Corrosive Liquid, n.o.s. Oxidizer NA9193	RQ D002/D001	00 5 ac 4 ac 2	DM	01350	P	D001 D002
d.	X	Waste Poison B Solid, n.o.s. Poison B UN 2811	RQ D009	002	DM	00250	P	D009
e.	X	Waste Corrosive Solid, n.o.s. Corrosive Material UN 1759	RQ D002	001	DM	00150	P	D002
f.	X	~~Hazardous~~ Substance Liquid, n.o.s. ORM-E NA9189	RQ PCB's	001	DM	00025	P	NONE
g.	X	~~Hazardous~~ Substance Solid, n.o.s. ORM-E NA9189	RQ PCB's	011	DM	06600	P	NONE ~~D002~~
h.	X	Waste Flammable Liquid, n.o.s. Flammable Liquid UN 1993	RQ PCB's	001	DM	00025	P	D005
i.	X	Hazardous Waste Liquid, n.o.s. ORM-E NA9189	RQ ~~PCB's~~ D011	001	DF	00350	P	D011
j.	X	Hazardous Waste liquid, n.o.s. ORM-E NA9189	RQ D007	005	DF	01500	P	D007

S. Handling Codes for Wastes Listed Above
a. ___ b. ___ c. ___ d. ___ e. ___ f. ___ g. ___
h. ___ i. ___ j. ___

32. Special Handling Instructions and Additional Information
f.) Drum # 6820709BMTO-60 PCB-2 080390
g.) Drum # 01-11 PCB2 080390
h.) Drum # 59 PCB2 080390

GENERATOR

33. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Date: Month 08 Day 22 Year 96

34. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

TRANSPORTER

35. Discrepancy Indication Space

FACILITY

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

Please print or type. Form designed for use on elite (12 pitch) typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.: OH6890099840 | Manifest Document No.: 00990 | 22. Page 3 of 4

Information in the shaded areas is not required by Federal law.

23. Generator's Name
U.S. Department of Energy Mound Plant 597-10909
P.O. Box 66, Miamisburg, OH 45343

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID
HWH ___ ___ DC ___
O. Transporter's Phone
P. State Transporter's ID
HWH ___ ___ DC ___
Q. Transporter's Phone

24. Transporter 1 Company Name: GSX Services, Inc.
25. US EPA ID Number: MDD980554653
26. Transporter ___ Company Name
27. US EPA ID Number

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	Waste Flammable Solid, n.o.s. Flammable Solid UN1325	X	RQ D003	001	DM	00150	P	D003
b.	Waste Poison B Liquid, n.o.s. Poison B UN2810	X	RQ D011	001	DM	00025	P	D011
c.	Non Regulated Material			007	DM	01200	P	NONE
d.	Non Regulated Material			001	DF	00150	P	NONE
e.	Poison B Liquid, n.o.s. Poison B UN2810	X		003	DM	00450	P	NONE
f.	Poison B Solid, n.o.s. Poison B UN 2811	X		004	DM	00525	P	NONE
g.	Flammable Solid, n.o.s. Flammable Solid UN1325	X		005	DM	01750	P	NONE
h.	Waste Corrosive Liquid, n.o.s. Corrosive Material UN1760	X	RQ D002	003	DM	00550	P	D002
i.	Hazardous Waste Liquid, n.o.s. ORM-E NA9189	X	RQ F002	004	DM	01400	P	F002
j.	Waste Flammable Liquid, n.o.s. Flammable Liquid UN1993	X	D003	002	DM	00050	P	D001

GENERATOR

S. Handling Codes for Wastes Listed Above
a. ___ b. ___ c. ___ d. ___ e. ___ f. ___ g. ___ h. ___ i. ___

32. Special Handling Instructions and Additional Information
b. D003
j. D003

TRANSPORTER

33. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Date: Month 08 Day 22 Year 90

34. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

Please print or type. Form designed for use on elite 12 pitch typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

21. Generator's US EPA ID No.: OH6890089840
Manifest Document No.: 0009
22. Page 4 of 4

Information in the shaded areas is not required by Federal law.

23. Generator's Name: U.S. Department of Energy Mound Plant 597-10909
P.O. Box 66, Miamisburg, OH 45343

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID
HWH DC
O. Transporter's Phone
P. State Transporter's ID
HWH DC
Q. Transporter's Phone

24. Transporter 1 Company Name: GSX, Services Inc.
25. US EPA ID Number: MOD980554653
26. Transporter ___ Company Name
27. US EPA ID Number

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	Combustible Liquid, n.o.s. Combustible Liquid NA 1993	X		002	DM	00700	P	NONE
b.	Waste Poison B Solid, n.o.s. Poison B UN 2811	X		001	DM	25	P	D003
c.	Waste Corrosive Solid, n.o.s. Corrosive Material UN 1759	X	RQ D002, D011	001	DM	00350	P	D002
d.	Waste Oxidizer, n.o.s. Oxidizer UN 1479	X	RQ D001, D007, D011	001	DM	00350	P	D001
e.	Waste Corrosive Solid, n.o.s. Corrosive Material UN 1759	X	RQ D002, D003	001	DM	00150	P	D001
f.								
g.								
h.								
i.								
j.								

GENERATOR

S. Handling Codes for Wastes Listed Above
a. ___ b. ___ c. ___ d. ___ e. ___ f. ___ g. ___
h. ___ i. ___ j. ___

32. Special Handling Instructions and Additional Information
c.) D011
e.) D003

TRANSPORTER

33. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Date (Month Day Year): 08 22 90

34. Transporter ___ Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date (Month Day Year):

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

GSX

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

Generator's US EPA ID No. [illegible] 00072 5

2. Generator's Name and Mailing Address: U.S. Dept of Energy, Mound Dev Site, Miamisburg, OH 45342

A. State Manifest Document Number: [illegible]

B. State Generator's ID

4. Generator's Phone: 513 [illegible]

5. Transporter 1 Company Name: GSX Services, Inc.

6. US EPA ID Number: MDD980724633

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: GSX Services, Inc. P.O. Drawer C 2815 Old Greenbrier Pike, Greenbrier, TN 37073

10. US EPA ID Number: TND000645770

G. State Facility's ID

H. Facility's Phone: 1-800-251-1227

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) (HM)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No.
a.	X Waste Flammable Liquid, N.O.S. Flammable Liquid UN1993 RQ D001, D019	001	DM	001501	P	D001
b.	X Waste Compressed Gas, N.O.S. Flammable Gas UN1954 RQ D001, F003	063	DM	006001	P	F003
c.	X Waste Poison B, Liquid, N.O.S. Poison B UN2810 RQ D009	001	DM	000251	P	D009
d.	X Waste Poison B, Solid, N.O.S. Poison B UN2811 RQ D009	002	DM	000751	P	D009

J. Additional Descriptions for Materials Listed Above: a) D019 b.) D001

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Certain containers in this shipment may be packaged under the provision DOT-E 8129. If a spill occurs contain with an absorbant and contact Barry Fogle at 1-800-251-1227

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the evironment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste managment method that is available to me and that I can afford.

Printed/Typed Name: LARRY M. KLINGLER — Signature: Larry M. Klingler — Date (Month Day Year): 09 27 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DAN CLARK — Signature: Dan Clark — Date (Month Day Year): 09 27 90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: KIRAN PATEL — Signature: K Patel — Date (Month Day Year): [illegible]

EPA Form 8700-22 (9-91)

GSX

UNIFORM HAZARDOUS WASTE MANIFEST
Continuation Sheet

OH6890008934 00097 2

23. Generator's Name: U.S. Dept of Energy Mound Lab Fac., Miamisburg, OH

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID: HWH 183-HW DC
O. Transporter's Phone: 1-800-251-1227
P. State Transporter's ID: HWH DC
Q. Transporter's Phone: 1-800-251-1227

24. Transporter 1 Company Name: GSX Services, Inc
25. US EPA ID Number: MOD980554653
26. Transporter Company Name
27. US EPA ID Number

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R Waste No.
a. X	Waste Poison B, Solid, N.O.S. Poison B UN2811 RQ D006	001	DM	00150	P	D006
b. X	Waste Poison B, Solid, N.O.S. Poison B UN2811 RQ D005, D006, D007, D008, D011	001	DM	00025	P	D005
c. X	Poison B, Solid, N.O.S. Poison B UN2811 NONE	004	DM	00650	P	NONE
d. X	Waste Poison B, Liquid, N.O.S. Poison B UN2810 None	001	DM	00025	P	D004
e. X	Poison B, Liquid, N.O.S. Poison B UN2810 NONE	001	DM	00250	P	NONE
f. X	Waste Poison B, Solid, N.O.S. Poison B UN2811 RQ D006, D008, D011	001	DM	00025	P	D006
g. X	Waste Oxidizer, N.O.S. Oxidizer UN1479 RQ D001, D005, D007, D011	001	DM	00150	P	D001
h. X	Waste Poison B, Solid, N.O.S. Poison B UN2811 RQ D010	001	DM	00025	P	D010
i. X	Waste Poison B, Liquid, N.O.S. Poison B UN2810 RQ D011 13, 16, 31	001	DM	00025	P	D011
j. X	Waste Poison B, Solid, N.O.S. Poison B UN2811 RQ D012, D013, D016, D031	001	DM	00015	P	D012

G E N E R A T O R

S. Handling Codes for Wastes Listed Above
a. D006, 7, 8, 11 b. c. d. e. f. D008, D011, D005, D007, D011
h. i. D013, 16, 31

32. Special Handling Instructions and Additional Information
NONE

T R A N S P O R T E R

33. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAN CLARK
Signature: [signature]
Date: Month 09 Day 27 Year 90

34. Transporter Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

F A C I L I T Y

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

DRIVER'S FORM CONFIRMATION COPY

GSX

UNIFORM HAZARDOUS WASTE MANIFEST
Continuation Sheet

046890008984 0092 3

23. Generator's Name
U. S. Dept. of Energy
Mound Lab Fac., Miamisburg, OH

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID 183-HW
HWH DC
O. Transporter's Phone 800-251-1227

24. Transporter 1 Company Name
GSX Services Inc.

25. US EPA ID Number
MDD980554653

P. State Transporter's ID
HWH DC
Q. Transporter's Phone 800-251-1227

26. Transporter Company Name

27. US EPA ID Number

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	Waste Flammable Solid, N.O.S. Flammable Solid UN1325	RQ D001	001	DM	00050	P	D001
b.	Waste Corrosive Liquid, N.O.S. Corrosive Material UN1760	RQ D002	017	DF	06100	P	D002
c.	Corrosive Solid, N.O.S. Corrosive Material UN1759	NONE	003	DM	00200	P	NONE
d.	Waste Oxidizer, Corrosive Liquid, N.O.S. Oxidizer NA9193	RQ D001, D002, D007	001	DM	00025	P	D001
e.	Waste Poison B, Liquid, N.O.S. Poison B UN2810	RQ D003	001	DM	00150	P	D003
f.	Waste Corrosive Liquid, N.O.S. Corrosive Material UN1760	[redacted] ~~NONE~~	001	DM	00025	P	[redacted]
g.	Asbestos ORM-C	RQ Asbestos	001	DM	00400	P	NONE
h.	Waste Flammable Liquid, N.O.S. Flammable Liquid UN1993	[redacted] ~~NONE~~	001	DM	00025	P	[redacted]
i.	Waste Poison B, Solid, N.O.S. Poison B UN2811	RQ D007	001	DM	00025	P	D007
j.	Waste Flammable Solid, N.O.S. Flammable Solid UN1325	RQ D007, D010	001	DM	00025	P	D007

GENERATOR

S. Handling Codes for Wastes Listed Above D002, D007
a. b. c. d. e. f. g.
h. i. ~~D001~~ j.

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
DAN CLARK	[signature]	09 23 90

34. Transporter Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

GSX

UNIFORM HAZARDOUS WASTE MANIFEST

Continuation Page

CH6890008984 0009 7 4

23. Generator's Name: U.S. Dept of Energy

L. State Manifest Document Number

M. State Generator's ID: 183-HW

N. State Transporter's ID: HWH DC

24. Transporter 1 Company Name: GSX Services, Inc

25. US EPA ID Number: MDD980554653

O. Transporter's Phone: 1800-251-1227

P. State Transporter's ID: HWH DC

26. Transporter 2 Company Name

27. US EPA ID Number

Q. Transporter's Phone: 1-800-251-1227

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	32. I.R. Waste No.
a. Waste Corrosive Liquid, N.O.S. Corrosive Material UN1760	NONE	001	DM	00025	P	D002
b. Waste Flammable Solid, N.O.S. Flammable Solid UN1325	NONE	002	DM	00175	P	D003
c. Waste Water Reactive Solid, N.O.S. (Dangerous When Wet) Flammable Solid UN2813	NONE	001	DM	00025	P	D003
d. Hazardous Substance, Solid, N.O.S. ORM-E NA 9188	RQ PCB's	013	DM	05200	P	NONE
e. Hazardous Waste, Liquid, N.O.S. ORM-E NA 9189	RQ F002	007	DM	02800	P	F002
f. Non-regulated Material, N.O.S.		019	DM	06400	P	NONE
g. Waste Flammable Liquid, N.O.S. Flammable Liquid UN1993	RQ D001	001	DM	00400	P	D001
h. Waste Flammable Liquid, N.O.S. Flammable Liquid UN1993	RQ D001, F001, D040	001	DM	00400	P	D001
i. Waste Flammable Liquid, N.O.S. Flammable Liquid UN1993	RQ D001, F003	007	DM	02550	P	F003
j. Waste Poison B, Solid, N.O.S. Poison B UN2811	RQ D011	001	DM	00200	P	D011

GENERATOR

33. Handling Codes for Wastes Listed Above

a. D003 b. c. d. e. f. g.

h. F001, D040 i. D001 j. d) Out of service 9/7/90, 4035 Kg PCB (II), 092690 MTO-36-48

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DAN CLARK

Signature

Date: Month 09 Day 25 Year 90

34. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

GENERATOR'S CONFIRMATION COPY

GSX

UNIFORM HAZARDOUS WASTE MANIFEST
Continuation Sheet

CHG89000898460 0092 5

23. Generator's Name: U.S. Dept of Energy

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID 183-[illegible] HWH DC
O. Transporter's Phone 1-800-257-1227

24. Transporter 1 Company Name: GSX Services, Inc
25. US EPA ID Number: MDD980559653

26. Transporter Company Name
27. US EPA ID Number

P. State Transporter's ID HWH DC
Q. Transporter's Phone 1-800-257-1227

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	32. Waste No.
a.	Hazardous Waste Liquid, N.O.S. ORM-E NA 9189	RQ D006, D011	003	DF	00600	P	D006
b.	Hazardous Waste Liquid, N.O.S. ORM-E NA 9189	RQ D008, D011	006	DF	02000	P	D008
c.	Hazardous Waste Liquid, N.O.S. ORM-E NA 9189	RQ D011	003	DF	00600	P	D011
d.	Waste Poison B, Liquid, N.O.S. Poison B UN 2810	RQ D011, F007	001	DF	00400	P	F007
e.	Waste Poison B, Liquid, N.O.S. Poison B UN 2810	RQ F007	007	DF	02600	P	F007
f.	Waste Corrosive Solid, N.O.S. Corrosive Material UN 1759	RQ D011	001	DM	00400	P	D011
g.	Waste Poison B, Solid, N.O.S. Poison B UN 2811	RQ D008	001	DM	00200	P	D008
h.							
i.							
j.							

GENERATOR

S. Handling Codes for Wastes Listed Above
a. D011 b. D011 c. d. D011 e. f. g.
h. i.

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
DAN CLARK	[signature]	09 27 90

34. Transporter Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

GSX

Please print or type. Form designed for use on elite (12-pitch) typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST

Generator's U.S. EPA ID No. [illegible] Manifest Document No. [illegible] Page [illegible]

3. Generator's Name and Mailing Address: US Dept of Energy, Mound Plant, Miamisburg, OH 45343

4. Generator's Phone: 513 865-3078

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: GSX Services, Inc.

6. US EPA ID Number: M D D 9 8 0 5 5 4 6 5 3

C. State Transporter's ID: 183-GSX

D. Transporter's Phone: 1-800-251-1227

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: GSX Services, Inc. P.O. Drawer C/2815 Old Greenbrier Pike, Greenbrier, TN 37073

10. US EPA ID Number: T N D 0 0 0 6 4 5 7 7 0

G. State Facility's ID

H. Facility's Phone: 1-800-251-1227

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	Waste Flammable Liquid, n.o.s. Flammable Liquid UN 1993 RQ D001, F003	023	DM	10000	P	D001
b.	X	Poison B Solid, n.o.s. Poison B UN 2811	004	DM	01000	P	None
c.	X	Waste Flammable Liquid, n.o.s. Flammable Liquid UN 1993 RQ D001 F002	001	DM	00250	P	D001
d.	X	Waste Flammable Liquid, n.o.s. Flammable Liquid UN 1993 RQ D001, D019, D022, D035, D036, D039, D040, F003	001	DM	00250 ~~00400~~	P	D001

J. Additional Descriptions for Materials Listed Above
a) F003
c) F002
d) D019, D022, D035, D036, D039, D040, F003

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Certain containers in this shipment may be packaged under the provision DOT-E 8129. If a spill occurs contain with an absorbant and contact Barry Fogle at 1-800-251-1227 or 615-244-8960.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the evironment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste managment method that is available to me and that I can afford.

Printed/Typed Name: MARY E. SIZEMORE — Signature: Mary E. Sizemore — Date: Month 11 Day 29 Year 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: James H. McDonald — Signature: James H. McDonald — Date: Month 11 Day 29 Year 90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Marc Simon — Signature: Marc Simon — Date: Month 12 Day 21 Year 90

EPA Form 8700-22 (9-91)

UNIFORM HAZARDOUS WASTE MANIFEST

Continuation Sheet OH6890090945 2 of 6

23. Generator's Name
U.S. Dept. of Energy
Mound Plant, Miamisburg, OH 45343
(513) 865-3078

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID 183-HW
HWH DC
O. Transporter's Phone 1-800-251-1227

24. Transporter 1 Company Name: GSX Services, Inc.
25. US EPA ID Number: MDD980554653

26. Transporter Company Name
27. US EPA ID Number
P. State Transporter's ID
HWH DC
Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X Waste Poison B Solid, n.o.s. Poison B UN 2811 RQ D008 D011	001	DM	001	50 P	D008
b.	X Waste Oxidizer, n.o.s. Oxidizer UN1479 RQ D001, D007, D008, D011	001	DM	00025	P	D001
c.	X Waste Water Reactive Solid, n.o.s. Flammable Solid / Dangerous ~~when Wet~~ UN 2813	001	DM	00025	P	D003
d.	X Corrosive Solid, n.o.s. Corrosive Material UN 1759	001	DM	00025	P	None
e.	X Waste Flammable Solid, n.o.s. Flammable Solid UN1325	002	DM	00050	P	D003
f.	X Waste Oxidizer, n.o.s. Oxidizer UN1479 RQ D001, D004	001	DM	00025	P	D001
g.	X Waste Poison B Solid, n.o.s. Poison B UN2811 RQ D009	001	DM	001	50 P	D009
h.	X Waste Corrosive Solid, n.o.s. Corrosive Material UN1759	001	DM	00025	P	D003
i.	X Waste Oxidizer, Corrosive Liquid, n.o.s. Oxidizer NA9193 RQ D001, D002, D007	001	DM	00025	P	D001
j.	X Flammable Solid, n.o.s. Flammable Solid UN1325	002	DM	00050	P	None

GENERATOR

S. Handling Codes for Wastes Listed Above
a. b. c. d. e. f. g.
h. i.

32. Special Handling Instructions and Additional Information
a) D011 i) D002, D007
b.) D007, D008, D011
f.) D004

TRANSPORTER

33. Transporter _____ Acknowledgement of Receipt of Materials — Date
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Month Day Year: 1 1 2 9 9 0

34. Transporter _____ Acknowledgement of Receipt of Materials — Date
Printed/Typed Name
Signature
Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

UNIFORM HAZARDOUS WASTE MANIFEST
(Continuation Sheet)

Manifest Document No. OH6890089840009 3 of 6

23. Generator's Name: U.S. Dept. of Energy Mound Plant

L. State Manifest Document Number

M. State Generator's ID

N. State Transporter's ID: 183-HW

24. Transporter 1 Company Name: GSX Services, Inc.

25. US EPA ID Number: MDD980554653

O. Transporter's Phone: 1-800-251-1227

P. State Transporter's ID

26. Transporter ___ Company Name

27. US EPA ID Number

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	Poison B Liquid, n.o.s. Poison B UN2810	X	001	DM	00150	P	None
b.	Waste Poison B Liquid, n.o.s. Poison B UN 2810	X	001	DM	00025	P	D003
c.	Waste Poison B Solid, n.o.s. Poison B UN2811 RQ D003	X	001	DM	00250	P	D003
d.	Waste Poison B Solid, n.o.s. Poison B UN2811 RQ D003, D009	X	001	DM	00025	P	D003
e.	Waste Poison B Liquid, n.o.s. Poison B UN2810 RQ D009	X	001	DM	00025	P	D009
f.	Waste Poison B Solid, n.o.s. Poison B UN 2811 RQ D006	X	001	DM	00025	P	D006
g.	Waste Corrosive Liquid, n.o.s. Corrosive Material UN1760 RQ D002	X	001	DM	00150	P	D002
h.	Waste Oxidizer, n.o.s. Oxidizer UN 1479	X	002	DM	00050	P	D001
i.	Waste Oxidizer, n.o.s. Oxidizer UN1479 RQ D001, D007	X	001	DM	00025	P	D001
j.	Waste Poison B Solid, n.o.s. Poison B UN 2811	X	001	DM	00025	P	D003

GENERATOR

S. Handling Codes for Wastes Listed Above: a. b. c. d. e. f. g. h. i. j.

32. Special Handling Instructions and Additional Information

d) D009

i) D007

TRANSPORTER

33. Transporter ___ Acknowledgement of Receipt of Materials

Printed/Typed Name: James H. McDonald

Signature: James H. McDonald

Date: Month 11 Day 29 Year 90

34. Transporter ___ Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GSX

UNIFORM HAZARDOUS WASTE MANIFEST
Continuation Sheet

OH6890002984 | 000093 | 4 of 6

23. Generator's Name
U.S. Dept. of Energy
Mound Plant

L. State Manifest Document Number
M. State Generator's ID
N. State Transporter's ID 183-HW
HWH DC
O. Transporter's Phone 1-800-251-1227
P. State Transporter's ID
HWH DC
Q. Transporter's Phone

24. Transporter 1 Company Name: GSX Services, Inc.
25. US EPA ID Number: MDD980554653
26. Transporter Company Name
27. US EPA ID Number

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	32. EPA/State Waste No.
a. X Waste Oxidizer, n.o.s. Oxidizer UN1479 RQ D001, D009	001	DM	00025	P	D001
b. Non-Regulated Material	014	DM	05325	P	None
c. X Waste Flammable Liquid, n.o.s. Flammable Liquid UN1993 RQ D001, D003	001	DM	00150	P	D001
d. X Waste Organic Peroxide Solid, n.o.s. Organic Peroxide NA9187	001	DM	00025	P	D001
e. X Waste Organic Peroxide, Liquid, n.o.s. Organic Peroxide NA9183 RQ D001, D003	001	DM	00250	P	D001
f. X Waste Flammable Liquid, n.o.s. Flammable Liquid UN1993 RQ D001, F001	001	DM	00450	P	D001
g. X Waste Flammable Liquid, n.o.s. Flammable Liquid UN1993 RQ D001, F003, D040	001	DM	00450	P	D001
h. X Waste Flammable Liquid, n.o.s. Flammable Liquid UN1993 RQ D001, F001, D040	001	DM	00450	P	D001
i. X Hazardous Substance Liquid, n.o.s. ORM-E NA9188 RQ PCBs	005	DM	01000	kg	None
j. X Waste Flammable Liquid, n.o.s. Flammable Liquid UN1993 RQ D001	001	DM	00450	P	D001

GENERATOR

S. Handling Codes for Wastes Listed Above
a. b. c. d. e. f. g. h. i. j.

32. Special Handling Instructions and Additional Information
a) D009 e) D003 h) F001, D040
c) D003 f) F001 i) 112690 gb MTO 56-60, out of service 110990, PCB2
d) D003 g) F003, D040

TRANSPORTER

33. Transporter ____ Acknowledgement of Receipt of Materials
Printed/Typed Name: James H. McDonald
Signature: James H. McDonald
Date: Month 1 Day 1 Year 29 90

34. Transporter ____ Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

OH6890008984 00093 5 of 6

23. Generator's Name: U.S. Dept. of Energy Mound Plant

L. State Manifest Document Number

M. State Generator's ID

N. State Transporter's ID: 183-HW HWH DC

24. Transporter 1 Company Name: GSX Services, Inc.

25. US EPA ID Number: MDD980554653

O. Transporter's Phone: 1-800-251-1227

P. State Transporter's ID: HWH DC

26. Transporter ___ Company Name

27. US EPA ID Number

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	Hazardous Substance Solid, n.o.s. ORM-E NA9188 RQ PCB5	X	015	DM	5250 ~~5675~~ kg	P	None
b.	Hazardous Waste Liquid, n.o.s. ORM-E NA9189 RQ F002	X	007	DM	03150	P	F002
c.	Waste Poison B Solid, n.o.s. Poison B UN 2811 RQ D005	X	001	DM	00025	P	D005
d.	Hazardous Substance Solid, n.o.s. ORM-E NA9188	X	003	DM	00925	P	None
e.	Hazardous Waste Solid, n.o.s. ORM-E NA9189 RQ F003	X	002	DM	00900	P	F003
f.	Waste Corrosive Liquid, n.o.s. Corrosive Material UN 1760 RQ D002	X	005 ~~004~~	DF	02200	P	D002
g.	Waste Corrosive Liquid, n.o.s. Corrosive Material UN 1760 RQ D002, D006, D007, D008	X	003	DF	00750	P	D002
h.	Hazardous Waste Solid, n.o.s. ORM-E NA9189 RQ D006, D007, D008	X	001	DM	00300	P	D006
i.	Waste Corrosive Liquid, n.o.s. Corrosive Material UN 1760 RQ D002, D006, D007	X	001	DF	00300	P	D002
j.	Waste Poison B Solid, n.o.s. Poison B UN 2811 RQ D011	X	001	DM	00450		D011

GENERATOR

S. Handling Codes for Wastes Listed Above

a. b. c. d. e. f. g. h. i. j.

32. Special Handling Instructions and Additional Information

a) 112690 gb MTO 62-70, out of service 110190, PCB 2
112690 gb MTO 71-76, out of service 110990, PCB 2
g.) D006, D007, D008
h) D007, D008
i) D006, D007

TRANSPORTER

33. Transporter ___ Acknowledgement of Receipt of Materials

Printed/Typed Name: James H. McDonald

Signature: James H. McDonald

Date: Month Day Year 1 1 2 5 9 0

34. Transporter ___ Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-86)

GENERATOR'S CONFIRMATION COPY

GSX

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

CHI 890029240 CC095 | 6 of 6

23. Generator's Name: U.S. Dept. of Energy Mound Plant

L. State Manifest Document Number:

M. State Generator's ID:

N. State Transporter's ID: 1838-HW HWH DC

24. Transporter 1 Company Name: GSX Services, Inc.

25. US EPA ID Number: MDD980554653

O. Transporter's Phone: 1-800-255-1227

26. Transporter Company Name

27. US EPA ID Number

P. State Transporter's ID: HWH DC

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	X Waste Poison B Liquid, n.o.s. Poison B UN 2810 RQ D006, D007	004	DF	01500	P	D006
b.	Non-Regulated Material	005	DF	01250	P	None
c.	X Hazardous Waste Solid, n.o.s. ORM-E NA 9189 RQ F002	001	DM	00450	P	F002
d.	X Hazardous Substance Liquid, n.o.s. ORM-E NA 9188	004	DF	11150	P	None
e.						
f.						
g.						
h.						
i.						
j.						

GENERATOR

S. Handling Codes for Wastes Listed Above

a. b. c. d. e. f. g. h. i.

32. Special Handling Instructions and Additional Information

a) D007

TRANSPORTER

33. Transporter Acknowledgement of Receipt of Materials

Printed/Typed Name: James H. McDonald

Signature: James H. McDonald

Date: Month 1 Day 2 Year 9 9 0

34. Transporter Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

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C

Cardinal®

APPENDIX C

ANALYTICAL PROCEDURE (PCB SCREENING)

Instructions for L2000 PCB Analyzer

The L2000 PCB analyzer provides accurate analysis of PCB concentration in oil by testing for the total amount of chlorine that is present in the sample. The L2000 reads out directly in parts per million PCB and utilizes three different settings to increase precision for different types of PCB.

The instrument posesses three different settings for analysis. The "1242" setting should be used when a sample is suspected of being contaminated with Aroclor 1242 or when the Aroclor being tested for is unknown. "1242" is the most conservative setting and will result in some false positives on oils containing 1260, but will not give false negative results on any samples.

The "1260" setting is used when a sample contains Aroclor 1260, but not the associated trichlorobenzene. This usually occurs only in samples that have been exposed to air so that the trichlorobenzene may evaporate.

The "Askarel" setting is used for samples that contain Aroclor 1260 and associated trichlorobenzene. This accounts for the majority of contaminated transformer oil samples and therefore this setting will usually supply the most accurate results, keep in mind, however, that if a 1242 contaiminated sample is tested on the "Askarel" setting, a false negative will result if the sample contains between 50 and 120 ppm 1242.

Using the L2000

Preparation

The electrode must be filled with Orion filling solution before it is operational.

1) Fill the electrode up to the hole in the side of the epoxy body by placing the nozzle of the filling solution in the hole and squeezing the bottle.

2) Drain the electrode while holding it upright over the waste beaker. Grasp the epoxy body firmly in one hand and push down on the white cap which is connected to the cord. The solution will then drain out of the bottom of the electrode.

3) Refill the electrode and check to make sure that the liquid is making contact between the black cone and the plastic shell at the bottom of the electrode. If it is not making contact at all points, drain the electrode again and refill.

4) Plug the electrode into the back of the L2000, place it in a vial of rinse solution and turn the instrument on. Switch the analytical knob to "mV" and wait a few minutes until the reading stabilizes.

Preparing the sample

Before an oil sample can be analyzed with the L2000, the PCB must be chemically converted to chloride.

1) Remove the cap from a black-capped tube and add oil up to the 5 ml line using a polyethylene pipette. Replace the cap tightly on the tube.

2) Break the bottom ampule in the tube. Shake the tube well for ten seconds.

3) Break the top ampule in the tube. Shake the tube vigorously for 10 seconds and intermittently for one minute.

4) Using the 5 mL pipette, add five milliliters of extract solution to the black-capped tube. Tighten the cap securely and shake vigorously until the foam and dark color disappear. Vent the tube by partially unscrewing the black cap. Retighten the cap and shake again for ten seconds. Stand the tube upside-down on the flat top of the cap and allow to settle for two minutes.

5) Place a filter funnel in one of the 20 mL glass vials marked with the sample number. Position the black-capped test tube directly over the top of the funnel and open the dispenser nozzle. Dispense the solution by carefully squeezing the sides of the tube. Stop as soon as the first drop of oil appears. Allow the solution to pass through the funnel, but remove the funnel before any oil can get through. The sample is now ready for analysis.

Instructions for Soil Analysis with the Dexsil L2000 PCB Test Kit

INSTRUCTIONS

1) Using the stainless steel spatula and the portable electronic balance supplied with the kit , weigh out ten grams of the soil sample into the empty, white-capped test tube. The empty tube can be tared by placing it on the balance and pressing the on/tare button.

2) Remove the black cap from the glass vial containing the extraction solvent and pour the entire contents of the vial into the tube containing the soil. Replace the white cap on the plastic test tube tightly and shake the tube vigorously for one minute. Break up any lumps of soil by squeezing the sides of the test tube during the shaking process. Allow the tube to settle upright for two minutes.

3) Remove the drying column from its foil pouch by poking the end of the column through the foil. Pull the plunger completely out of the 10 cc syringe. Attach the end of the blue drying column to the tip of the syringe by sliding it over the collar on the tip of the syringe. This is a tight fit and the drying column may have to be carefully worked onto the syringe. Make sure that it is seated tightly.

4) Remove the black cap from the plastic test tube that contains two

period of two minutes.

7) Place a polyethylene filter funnel in one of the glass analysis vials marked with the sample number. Keeping the tube vertical and upside down, open the dispenser nozzle on the black cap and dispense the analysis fluid through the polypropylene filter into the glass vial. Stop when the first drop of extraction solvent drips through the dispensing nozzle. Allow the solution to cool for five minutes and proceed to the "Analysis" section of Dexsil's instruction manual for the L2000 Test Kit. Proceed with the analysis in the same way that you would an oil analysis. Set the instrument to "1242" to assure that no false negatives will result.

D

Cardinal®

APPENDIX D

ONSITE PCB ANALYTICAL RESULTS

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE MOUND ANALYSIS PCB

ANALYST McGeehan SAMPLER: Lauda, Marta L. Lewyckyj

INSTRUMENT MANUFACTURER Dexsil MODEL NO. ~~L2000~~ P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/13/91 - 1105

ACCEPTANCE CODE _____ (2) _____

CALIBRATION SOLUTION TYPE 50ppm Chloride CONCENTRATION 50 PPM INSTRUMENT SETTING - TIME 1105

CALIBRATION SOLUTION TYPE Chloride CONCENTRATION 50 PPM INSTRUMENT SETTING - TIME 1205

COMMENTS Analyzer has recalibration indicator light; recalibrate ~ every hour; no change on recalibrations

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	1105	Soil	10	11.1	7.7	4.7
MND20-0019-0001	1205	Soil	10.1	5.3	3.7	2.3
MND20-0019-0002	1210	SOIL	10	12.4	8.7	5.2
MND20-0019-0003	1215	SOIL	9.9	8.6	6.1	3.7
MND20-0019-0004	1220	SOIL	10	9.1	6.4	3.9
MND20-0019-0005	1305	SOIL	9.9	3.5	2.5	1.5
MND20-0019-0005 DUP	1310	SOIL	9.9	3.4	2.4	1.4

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K Gene McGeehan 3/13/91 _____

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 031491, 0810

ACCEPTANCE CODE _____ (2) _____

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.8 TIME 0810

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.2 TIME ~~0~~1542

COMMENTS _____

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	0830	SOIL	10.1	11.4	8.0	4.8
MND20-0019-0006	0100 1300	SOIL	10.0	8.8	6.1	3.7
MND20-0019-0007	0104 1304	SOIL	10.1	5.9	4.2	2.6
MND20-0019-0008	0107 1307	SOIL	9.9	6.1	4.3	2.6
MND20-0019-0009	0109 1309	SOIL	10.1	5.7	4.0	2.4
MND20-0019-0010	0111 1311	SOIL	10.0	7.0	4.9	2.9
MND20-0019-0011	0113 1313	SOIL	9.9	5.7	4.1	2.4
MND20-0019-0012	0115 1315	SOIL	10.1	4.1	2.9	1.8
MND20-0019-0012DUP	0117 1317	SOIL	9.9	4.4	3.1	1.9
10ppm cal	3:45	SOIL	10.0	10.1	7.1	4.3
MND20 0019-0013	3:47	SOIL	9.9	~~[illegible]~~ 9.0	6.3	3.8
MND20 0019-0014	4:22	SOIL	9.9	2.9	2.0	1.2
MND20 0019-0015	4:24	SOIL	10.0	21.7	15.2	9.2
50ppm C1	4:13	Liquid	—	cal. setting	2.2	—
10ppm cal	4:15	Soil	10.0	11.3	7.9	4.8

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K Lynn McGeehan 3/14/91 _____

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawler

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/14/91 6:05

ACCEPTANCE CODE _____ (2) _____

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.3 TIME 6:05

CALIBRATION SOLUTION TYPE _____ CONCENTRATION _____ PPM INSTRUMENT SETTING _____ TIME _____

COMMENTS _____

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
MND20 0019 - 0014 Rep	6:10	SOIL	10.0	3.2	2.3	1.4
MND20 0019 - 0015 Rp	6:12	SOIL	9.9	23.6	16.5	10.0
10 ppm cal	6:08	SOIL	10.1	8.5	5.9	3.6
MND20 0019 - 0016	6:14	SOIL 4-5'	10.0	9.6	6.7	4.1
MND20 0019 - 0017	6:16	SOIL	10.1	6.2	4.3	2.6
MND20 0019 - 0018	6:18	SOIL 3-4'	10.0	5.6	3.9	2.4
MND20 0019 - 0019	6:20	SOIL 4-5'	10.0	4.0	2.8	1.7

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kim Duhan 3/14/91 _____

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/15/91 10:42

ACCEPTANCE CODE (2) 3/15/91 11:00

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.7 TIME 10:42

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.1 TIME 11:00

COMMENTS Recalibrate light came on during reading of #26; Recalibrated analyzer and reread numbers 26 and 26 duplicate

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS 1242	1260	ASKAREL
10ppm cal	10:44	SOIL	10.0	10.1	7.1	4.3
MND20-0019-0020	10:48	SOIL	10.0	4.5	3.1	1.9
MND20-0019-0021	10:50	SOIL	10.0	115.9	81.1	49.0
MND20-0019-0022	10:51	SOIL	10.0	36.5	25.6	15.4
MND20-0019-0023	10:53	SOIL	10.0	39.6	27.8	16.8
MND20-0019-0024	10:55	SOIL	10.0	4.5	3.2	1.9
MND20-0019-0025	10:56	SOIL	10.1	6.6	4.6	2.8
MND20-0019-0026	10:58	SOIL	10.1	6.2	4.4	2.6
MND20-0019-0026Rep		SOIL	10.0	4.7	3.3	2.0
MND20-0019-0026	11:02	SOIL	10.1	5.9	4.1	2.5
MND20-0019-0026Rep	11:04	SOIL	10.0	4.9	3.4	2.1

Reread

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K. McGeehan 3/15/91 — FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/15/91 2:21

ACCEPTANCE CODE _____ (2) _____

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.5 TIME 2:21

CALIBRATION SOLUTION TYPE _____ CONCENTRATION _____ PPM INSTRUMENT SETTING _____ TIME _____

COMMENTS _____

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS			
				1242	1260	ASKAREL	
10ppm cal	2:25	SOIL	10.0	9.3	6.5	4.0	
MND20-0019-0027	2:26	SOIL clear	10.0	5.4	3.8	2.3	colorless
MND20-0019-0028	2:28	SOIL pale yellow	10.0	4.2	2.9	1.8	pale yellow
MND20-0019-0029	2:30	SOIL	10.0	5.7	4.0	2.5	pale yellow
MND20-0019-0029Rep	2:31	SOIL	10.0	5.2	3.6	2.2	"
MND20-0019-0030	2:33	SOIL	10.0	5.0	3.5	2.2	"

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K A McGeehan 3/15/91 _____

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/15/91 4:22

ACCEPTANCE CODE (2) 3/15/91 4:40

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.5 TIME 4:22

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.5 TIME 4:40

COMMENTS Reading for # 31, 33, 36, 36 REP off scale on first reading; Put aside, call Debbie Lavigne at Dexsil - use "high range" button; samples still off scale

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS 1242	RESULTS 1260	RESULTS ASKAREL	
10ppm cal	4:24	SOIL	10.0	8.4	5.9	3.6	
MND20-0019-0031	—	SOIL	10.0	—	—	—	dark yellow
MND20-0019-0032	4:27	SOIL	10.0	6.5	4.6	2.8	colorless
MND20-0019-0033	—	SOIL	10.0	—	—	—	dark greenish brown
MND20-0019-0034	4:30	SOIL	10.0	5.7	4.0	2.4	v. pale yellow
MND20-0019-0035	4:32	SOIL	10.0	6.0	4.2	2.5	" "
MND20-0019-0036	—	OIL	5ml	—	—	—	
MND20-0019-0036 REP	—	OIL	5ml	—	—	—	
MND20-0019-0031	4:42	SOIL	10.0	>2000	183.8	111.0	
MND20-0019-0033	4:44	SOIL	10.0	>2000	>2000	>2000	*
MND20-0019-0036	4:46	OIL	5ml	>2000	>2000	>2000	
MND20-0019-0036 REP	4:48	OIL	5ml	>2000	>2000	>2000	

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly A McGeehan 3/15/90 — FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

* called Dexsil - readings are correct

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McQuehan SAMPLER

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/16/91 8:16

ACCEPTANCE CODE (2)

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 1.9 TIME 8:16

CALIBRATION SOLUTION TYPE CONCENTRATION PPM INSTRUMENT SETTING TIME

COMMENTS

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS			
				1242	1260	ASKAREL	
10 ppm Cal	8:18	SOIL	10.0	8.0	5.6	3.4	
MND20-009-0037	8:20	SOIL	10.0	51.2	35.9	21.7	dark yellow
MND20-009-0038	8:22	SOIL	10.0	18.1	12.7	7.7	med. yellow

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K. McQuehan 3/16/91
FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/16/91 4:27

ACCEPTANCE CODE (2)

CALIBRATION SOLUTION TYPE Cl- CONCENTRATION 50 PPM INSTRUMENT SETTING 2.5 TIME 4:27

CALIBRATION SOLUTION TYPE CONCENTRATION PPM INSTRUMENT SETTING TIME

COMMENTS Recalibrate to 50ppm between sample 41 and 41 Ref
4:43 setting = 2.0

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	~~SAMPLE TYPE (OIL OR SOIL)~~ WEIGHT	~~SAMPLE WEIGHT (GRAMS)~~ TYPE	RESULTS 1242	1260	ASKAREL	
* 10ppm cal	4:28	10.0	SOIL	8.5	5.9	3.5	
MND20-0019-0039	4:31	10.0		6.4	4.6	2.8	
MND20-0019-0040	4:32	10.0		24.3	16.9	10.3	
MND20-0019-0041	4:34	10.0		5.9	4.1	2.4	
MND20-0019-0042	4:35	10.0		5.2	3.6	2.2	
MND20-0019-0043	4:37	10.0		5.9	4.1	2.5	
MND20-0019-0044	4:38	10.0		10.4	7.2	4.4	
MND20-0019-0045	4:39	10.0		6.0	4.2	2.5	
MND20-0019-0046	4:41	10.0		5.7	4.0	2.4	** before Recalib
MND20-0019-0046 REP	4:46	10.0		5.9	4.1	2.5	
MND20-0019-0047	4:48	10.0		7.7	5.4	3.2	
MND20-0019-0048	4:49	10.0		8.6	6.0	3.7	
MND20-0019-0049	4:51	10.0		19.3	13.5	8.1	
MND20-0019-0050	4:29	10.0		5.5	3.9	2.3	
46				5.6	3.9	2.4	** after Recalibrat

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

* Same as previous sample

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/17/91 8:18

ACCEPTANCE CODE (2) 3/17/91 8:29

CALIBRATION SOLUTION TYPE Cl CONCENTRATION 50 PPM INSTRUMENT SETTING 2.4 TIME 8:18

CALIBRATION SOLUTION TYPE Cl CONCENTRATION 50 PPM INSTRUMENT SETTING 2.1 TIME 8:29

COMMENTS * not enough supernatant fluid -- material won't settle. Used 20g soil in 2 test tubes with 2 containers of extract solvent to yield 5ml fluid

	SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS 1242	1260	ASKAREL	
1	10ppm cal	8:20	SOIL	10.0	7.6	5.3	3.2	not within ± 20%
MND20	0019-0051*	8:22	SOIL	20.0	3.2	2.3	1.4	
MND20	0019-0052	8:23	SOIL	10.0	3.9	2.8	1.7	
MND20	0019-0052 Rep	8:25	SOIL	10.0	4.3	3.0	1.9	
MND20	0019-0053	8:26	SOIL	10.0	4.4	3.1	1.9	
NOTICED BUBBLES AT CONE IN ELECTRODE; RECALIBRATE, RERUN								
	10ppm cal	8:30	SOIL	10.0	8.3	5.9	3.5	
	51	8:32		10	4.5	3.2	1.9	
	52	8:33		20	4.9	3.5	2.1	
	53 Rep	8:35		10	5.7	4.0	2.4	
	53	8:37		10	4.8	3.4	2.0	
	5							
Final Calibration, 50ppm Cl⁻ : Setting = 2.0								

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly J McDeb / FORM COMPLETED BY/DATE — TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

1 Same sample as last 2 batches

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/17/91 10:47

ACCEPTANCE CODE (2) 3/17/91 11:05

CALIBRATION SOLUTION TYPE Cl⁻ CONCENTRATION 50 PPM INSTRUMENT SETTING 2.5 TIME 10:47

CALIBRATION SOLUTION TYPE Cl⁻ CONCENTRATION 50 PPM INSTRUMENT SETTING 1.9 TIME 11:05

COMMENTS The 10ppm calibration is the same fluid obtained 3/16/91 AM at 8:18

	SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
					1242	1260	ASKAREL
1	10ppm cal	10:48	SOIL	10.0	9.3	6.5	3.9
MND20	0019-0054	10:50	SOIL	10.0	3.2	2.2	1.4
MND20	0019-0055	10:51	SOIL	10.0	4.9	3.4	2.1
MND20	0019-0056	10:53	SOIL	10.0	5.3	3.7	2.2
MND20	0019-0057	10:54	SOIL	10.0	6.8	4.8	2.8
MND20	0019-0058	10:56	SOIL	10.0	5.6	4.0	2.4
MND20	0019-0059	10:57	SOIL	10.0	18.4	12.9	7.8
MND20	0019-0059REP	10:59	SOIL	10.0	20.4	14.3	8.6
MND20	0019-0060	11:00	SOIL	10.0	6.8	4.8	2.9
MND20	0019-0061	11:01	SOIL	10.0	8.1	5.6	3.3
MND20	0019-0062	11:03	SOIL	10.0	7.5	5.2	3.2

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly McGeehan 3/17/91 — FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

1 Same sample as lost 3 batches

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/17/91 2:51

ACCEPTANCE CODE _____ (2) _____

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.5 TIME 2:51

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.0 TIME 3:01

COMMENTS Sample #'s 63 and 65 did not separate properly; will be analyzed in next batch

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	2:53	SOIL	10.0	9.9	7.0	4.2
MND20-0019-0063	~~2:54~~	SOIL	10.0	~~4.4~~	~~3.1~~	~~1.9~~
MND20-0019-0064	2:54	SOIL	10.0	4.4	3.1	1.9
MND20-0019-0065	—	SOIL	10.0	—	—	—
MND20-0019-0066	2:56	SOIL	10.0	3.2	2.3	1.4
MND20-0019-0067	2:57	SOIL	10.0	18.0	12.6	7.6
MND20-0019-0067REP	2:59	SOIL	10.0	22.5	15.8	9.5

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

FORM COMPLETED BY/DATE _____ TECHNICAL REVIEWER/DATE _____

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawler

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/17/91 3:51

ACCEPTANCE CODE _____ (2) _____

CALIBRATION SOLUTION TYPE Cl⁻ CONCENTRATION 50 PPM INSTRUMENT SETTING 3.0 TIME 3:51

CALIBRATION SOLUTION TYPE Cl⁻ CONCENTRATION 50 PPM INSTRUMENT SETTING 2.2 TIME 4:01

COMMENTS _____

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	3:54	SOIL	10.0	12.2	8.5	5.1
MND20-0019-0003	3:55	SOIL	10.0	5.0	3.5	2.1
MND20-0019-0005	3:57	SOIL	10.0	5.7	4.0	2.4
MND20-0019-0008	3:59	SOIL	10.0	27.4	19.1	11.5
MND20-0019-0009	4:00	SOIL	10.0	10.4	7.3	4.4

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly McGeehan _____ FORM COMPLETED BY/DATE _____ TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/18/91 9:00

ACCEPTANCE CODE (2) 3/18/91 10:34

(3) 3/18/91 10:51

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.0 TIME 9:00

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.0 TIME 10:34

COMMENTS C1 50 ppm 1.1 10:51

Couldn't calibrate analyzer with old 10ppm standard; Waited until new standard arrived and calibrated correctly:

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	10:36	SOIL	10.0	9.3	6.5	3.9
MND20-0019-0063	10:37	SOIL	10.0	6.5	4.5	2.7
MND20-0019-0065	10:39	SOIL	10.0	5.2	3.6	2.2
MND20-0019-0068	10:40	SOIL	10.0	31.4	22.0	13.3
MND20-0019-0069	10:42	SOIL	10.0	7.9	5.6	3.4
MND-20-0019-0070	10:43	SOIL	10.0	21.5	15.0	9.1
MND-20-0019-0071	10:45	SOIL	10.0	13.2	9.2	5.6
MND-20-0019-0072	10:46	SOIL	10.0	4.8	3.4	2.0
MND-20-0019-0073	10:48	SOIL	10.0	5.3	3.6	2.2
MND20-0019-0073 REP	10:49	SOIL	10.0	6.5	4.6	2.8

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly A. McGeehan 3/18/91

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCP

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/18/91 2:16

ACCEPTANCE CODE (2) 3/18/91 2:31

3/18/91 2:52

3/18/91 2:57

CALIBRATION SOLUTION TYPE Cl CONCENTRATION 50 PPM INSTRUMENT SETTING 2.2 TIME 2:16

CALIBRATION SOLUTION TYPE Cl CONCENTRATION 50 PPM INSTRUMENT SETTING 1.4 TIME 2:31

COMMENTS These samples were run again using a new 10ppm standard. Replicate did not work out on 3 tries; all samples are reruns.

50 ppm cal 2:57 setting = 1.6

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	2:17	SOIL	10.0	9.6	6.8	4.1
~~MND20-0019-0038~~	—	—	—	—	—	—
MND20-0019-0039	2:19	SOIL	10.0	4.4	3.1	1.8
MND20-0019-0040	2:20	SOIL	10.0	21.3	14.9	9.0
MND20-0019-0041	2:21	SOIL	10.0	6.1	4.3	2.6
MND20-0019-0042	2:23	SOIL	10.0	7.0	4.9	3.0
MND20-0019-0043	2:24	SOIL	10.0	6.8	4.8	2.9
MND20-0019-0044	2:26	SOIL	10.0	11.6	8.1	4.9
MND20-0019-0045	2:27	SOIL	10.0	7.3	5.1	3.1
MND20-0019-0046	2:28	SOIL	10.0	5.3	3.7	2.3
MND20-0019-0046 REP	2:30	SOIL	10.0	7.5	5.3	3.2
10ppm cal	2:32	SOIL	10.0	10.6	7.4	4.4
50ppm cal	setting = ~~2.0~~ at 2:52					
10ppm cal	2:53	SOIL	10.0	11.4	7.9	4.8
46	2:54	—	—	4.5	3.2	1.9
46 REP	2:55			7.5	5.2	3.2

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

[signature] (J McGeehan) 3/18/91 FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE _____ ANALYSIS _____

ANALYST _____ SAMPLER _____

INSTRUMENT MANUFACTURER _____ MODEL NO. _____

SERIAL NO. _____ CALIBRATION DATE/TIME (1) 3/18/91

ACCEPTANCE CODE _____ (2) _____

CALIBRATION SOLUTION TYPE _____ CONCENTRATION _____ PPM INSTRUMENT SETTING _____ TIME _____

CALIBRATION SOLUTION TYPE _____ CONCENTRATION _____ PPM INSTRUMENT SETTING _____ TIME _____

COMMENTS _____

cont'd from previous page

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
46	2:59			5.2	3.7	2.2
46REP	3:03			7.9	5.5	3.3

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

_____ FORM COMPLETED BY/DATE

_____ TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/19/91 9:27

ACCEPTANCE CODE (2) 3/19/91 9:42

(3) 3/19/91 9:45

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.4 TIME 9:27

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.2 TIME 9:42

COMMENTS Analyzer will not calibrate; 10ppm standard > ±20%
* Sample 55 run after recalibration; recalib. light flashed during first measurement

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS 1242	1260	ASKAREL
10ppm cal	9:28	SOIL	10.0	14.1	9.8	5.9
MND20-0019-0047	9:30	SOIL	10.0	7.1	5.0	3.0
MND20-0019-0048	9:31	SOIL	10.0	5.4	3.7	2.3
MND20-0019-0049	9:34	SOIL	10.0	14.0	9.8	5.9
MND20-0019-0050	9:35	SOIL	10.0	5.7	4.0	2.4
MND20-0019-0051	9:36	SOIL	10.0	6.2	4.3	2.4
MND20-0019-0052	9:37	SOIL	10.0	5.5	3.8	2.3
MND20-0019-0053	9:38	SOIL	10.0	6.4	4.5	2.7
MND20-0019-0054	9:39	SOIL	10.0	4.6	3.2	2.0
MND20-0019-0055	9:40	SOIL	10.0	5.8	4.0	2.4
MND20-0019-0055RP	9:44	SOIL	10.0	4.0	2.8	1.7
MND20-0019-0055	9:43	SOIL	10.0	6.3	4.4	2.7 *
(3) 50ppm	C1-	Instr. Setting =	2.0	time = 9:45		

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly A McGeehan 3/19/91

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

*

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawler

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/18/91 2:07

ACCEPTANCE CODE (2) 3/19/91 2:22

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING ~~2.1~~ TIME ~~2:07~~

CALIBRATION SOLUTION TYPE CONCENTRATION PPM INSTRUMENT SETTING TIME 2:22

COMMENTS Analyzer calibrated to 10ppm standard (10ppm Aroclor 1242 in soil)

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS 1242	1260	ASKAREL	
10ppm cal	2:09	SOIL	10.0	10.8	7.0	4.2	setting 1
MND20-0019-0056	2:10	SOIL	10.0	2.1	1.5	0.9	
MND20-0019-0057	2:12	SOIL	10.0	2.9	2.1	1.2	
MND20-0019-0058	2:13	SOIL	10.0	2.6	1.8	1.1	
MND20-0019-0059	2:15	SOIL	10.0	11.8	8.2	5.0	
MND20-0019-0060	2:16	SOIL	10.0	3.5	2.4	1.5	
MND20-0019-0061	2:17	SOIL	10.0	4.5	3.2	1.9	
MND20-0019-0062	2:19	SOIL	10.0	2.9	2.0	1.3	
MND20-0019-0064	2:20	SOIL	10.0	3.0	2.1	1.3	
MND20-0019-0066	2:25	SOIL	10.0	2.4	1.7	1.0	
MND20-0019-0067	2:26	SOIL	10.0	7.2	5.0	3.1	
~~MND20-0019-0067 RD~~		~~SOIL~~	~~10.0~~				
50ppm	2:22	46.9					
10ppm	2:24	SOIL	10.0	10.8	7.5	4.6	setting = 0

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly McGeehan 3/19/91

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PL3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/18/91

ACCEPTANCE CODE (2)

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.1 TIME 1650

1.9 1655

CALIBRATION SOLUTION TYPE CONCENTRATION PPM INSTRUMENT SETTING 2.1 TIME 17.01

2.5 17.12

COMMENTS

Analyzer would not calibrate; shut down 5:45

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm C1		SOIL	10.0			
MND20-0019-0074		SOIL	10.0			
MND20-0019-0075		SOIL	10.0			
MND20-0019-0076		SOIL	10.0			
MND20-0019-0077		SOIL	10.0			
MND-20-0019-0078		SOIL	10.0			

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawler

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/19/91 9:14

ACCEPTANCE CODE (2) 3/19/91 9:24

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.6 TIME 9:14

CALIBRATION SOLUTION TYPE C1 CONCENTRATION 50 PPM INSTRUMENT SETTING 2.4 TIME 9:24

COMMENTS Analyzer did not calibrate properly * 10ppm > ± 2ppm (20%)

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	9:15	SOIL	10.0	12.2	8.5	5.2 *
MND20-0019-0074	9:17	SOIL	10.0	3.4	2.3	1.4
MND20-0019-0075	9:19	SOIL	10.0	2.6	1.9	1.1
MND20-0019-0076	9:20	SOIL	10.0	4.5	3.1	1.9
MND20-0019-0077	9:21	SOIL	10.0	3.5	2.4	1.5
MND20-0019-0078	9:23	SOIL	10.0	3.8	2.7	1.6

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly J McGeehan 3/19/91

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/19/91 3:59

ACCEPTANCE CODE (2) 3/19/91 4:10

CALIBRATION SOLUTION TYPE Aroclor 1242 ~~10~~ Cl in Soil CONCENTRATION 10 PPM INSTRUMENT SETTING 3.1 TIME 3:59

CALIBRATION SOLUTION TYPE Aroclor 1242 Cl in Soil CONCENTRATION 10 PPM INSTRUMENT SETTING 0.9 TIME 4:10

COMMENTS

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS 1242	1260	ASKAREL
10 ppm cal	3:59	SOIL	10.0	10.0	7.0	4.3
MND 20-0019-0079	4:00	SOIL	10.0	24.6	17.3	10.4
MND 20-0019-0080	4:02	SOIL	10.0	5.1	3.6	2.2
MND 20-0019-0081	4:03	SOIL	10.0	11.9	8.3	5.0
MND 20-0019-0082	4:04	SOIL	10.0	5.5	3.9	2.3
MND 20-0019-0083	4:06	SOIL	10.0	6.3	4.4	2.7
MND 20-0019-0084	4:07	SOIL	10.0	6.2	4.3	2.6
MND 20-0019-0084REP	4:09	SOIL	10.0	5.2	3.7	2.2
50 ppm		soln. cal.	—	~~[illegible]~~	48.2	

3.1

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kimberly McGeehan 3/19/91 — FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnaForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST _____ SAMPLER _____

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/19/91 1747

ACCEPTANCE CODE _____ (2) 3/19/91 1807

CALIBRATION SOLUTION TYPE Aroclor 1242 in Soil CONCENTRATION 10 PPM INSTRUMENT SETTING 1.5 TIME 1747

CALIBRATION SOLUTION TYPE Aroclor 1242 in Soil CONCENTRATION 10 PPM INSTRUMENT SETTING Ø TIME 1807

COMMENTS _____

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	1747	SOIL	10.0	10.0		
MND20-0019-0085	1752	SOIL	10.1	2.2	1.5	0.9
MND20-0019-0086	1756	SOIL	10.1	4.5	3.1	1.9
MND20-0019-0087	1757	SOIL	10.0	3.8	2.7	1.6
MND20-0019-0088	1759	SOIL	10.1	4.7	3.3	2.0
MND20-0019-0089	1801	SOIL	10.1	5.1	3.6	2.2
MND20-0019-0090	1802	SOIL	10.0	5.4	3.8	2.3
MND20-0019-0091	1805	SOIL	10.0	5.5	3.9	2.3
				READINGS		
50 PPM		50 RAL Solu.		49.2		

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

FORM COMPLETED BY/DATE _____ TECHNICAL REVIEWER/DATE _____

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PI.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/20/91 8:32

ACCEPTANCE CODE (2) 3/20/91

CALIBRATION SOLUTION TYPE Aroclor 1242 in soil CONCENTRATION 10 PPM INSTRUMENT SETTING 2.7 TIME 8:32

CALIBRATION SOLUTION TYPE Aroclor 1242 in soil CONCENTRATION 10 PPM INSTRUMENT SETTING 1.0 TIME 8:40

COMMENTS

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	8:32	SOIL	10.0	10.0		
MND20-0019-0092	8:34	SOIL	10.0	7.7	5.4	3.2
MND20-0019-0093	8:35	SOIL	10.0	8.4	5.9	3.6
MND20-0019-0094	8:37	SOIL	10.0	6.3	4.4	2.7
MND20-0019-0095	8:38	SOIL	10.0	6.1	4.3	2.6
50ppm	8:33	soln.	cal. = 57.1			
50ppm	8:41	soln.	cal. = 49.3			

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

[illegible] 3/20/91

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/20/91 11:43

ACCEPTANCE CODE (2) 3/20/91 11:48

CALIBRATION SOLUTION TYPE AROCLOR 1242 in soil CONCENTRATION 10 PPM INSTRUMENT SETTING 2.9 TIME 11:43

CALIBRATION SOLUTION TYPE AROCLOR 1242 in soil CONCENTRATION 10 PPM INSTRUMENT SETTING 2.0 TIME 11:48

COMMENTS

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	11:43	SOIL	10.0	10.0	6.9	4.2
MND20-009-0046	11:47	SOIL	10.0	9.3	6.4	3.8
50ppm	11:45	Cal. soln.	54.4			
50ppm	11:49	Cal. soln.	50.0			

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K. McGeehan 3/20/91 — FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER L. Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. PL3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/20/91 2:52

ACCEPTANCE CODE (2) 3/20/91 3:04

CALIBRATION SOLUTION TYPE Aroclor 1242 in Soil CONCENTRATION 10 PPM INSTRUMENT SETTING 2.2 TIME 2:52

CALIBRATION SOLUTION TYPE Aroclor 1242 in Soil CONCENTRATION 10 PPM INSTRUMENT SETTING 0.5 TIME 3:04

COMMENTS

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	2:52	SOIL	10.0	10.0		
MND20-0019-0097	2:56	SOIL	10.0	7.9	5.5	3.3
MND20-0019-0098	2:57	SOIL	10.0	6.6	4.6	2.8
MND20-0019-0099	2:58	SOIL	10.0	5.2	3.6	2.1
MND20-0019-0100	3:00	SOIL	10.0	5.5	3.8	2.3
MND20-0019-0101	3:01	SOIL	10.0	5.2	3.6	2.2
MND20-0019-0101 RDP	3:02	SOIL	10.0	6.0	4.2	2.5
50ppm cal	2:54	soln.	50.0			
50ppm cal	3:05	soln.	44.2			

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K A McGeehan

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/20/91 4:55

ACCEPTANCE CODE (2) 3/20/91 5:03

CALIBRATION SOLUTION TYPE in dirt AROCLOR 1242 CONCENTRATION 10 PPM INSTRUMENT SETTING 0.5 TIME 4:55

CALIBRATION SOLUTION TYPE in dirt AROCLOR 1242 CONCENTRATION 10 PPM INSTRUMENT SETTING 0 TIME 5:03

reading = 10.7

COMMENTS

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	4:55	SOIL	10.0	10.0		
MND20-0019-0102	4:57	SOIL	10.0	3.5	2.5	1.5
MND20-0019-0103	4:59	SOIL	10.0	4.2	2.9	1.7
MND20-0019-0104	5:00	SOIL	10.0	4.2	2.9	1.7
MND20-0019-0105	5:01	SOIL	10.0	4.9	3.1	1.8
50ppm	4:56	soln.	42.2			
50ppm	5:04	soln.	39.5			

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

[illegible] 3/20/91

FORM COMPLETED BY/DATE

TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER Lawlor

INSTRUMENT MANUFACTURER Dexsil MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/21/91 8:48

ACCEPTANCE CODE (2) 3/21/91

CALIBRATION SOLUTION TYPE in dirt Aroclor 1242 CONCENTRATION 10 PPM INSTRUMENT SETTING 1.3 TIME 8:48

CALIBRATION SOLUTION TYPE in dirt Aroclor 1242 CONCENTRATION 10 PPM INSTRUMENT SETTING 0 TIME 8:55

Reading - 11.2

COMMENTS

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10ppm cal	8:48	SOIL	10.0	10.0		
MND20-0019-0106	8:51	Concrete	10.0	22.8	15.4	9.3
MND20-0019-0107	8:52	Concrete	10.0	29.5	20.7	12.5
MND20-0019-0108	8:54	Concrete	10.0	9.0	6.3	3.8
50ppm	8:49	soln	47.2			
50ppm	8:56	soln	42.0			

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

K. McGeehan

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

PCB ANALYSIS OF OIL OR SOIL SAMPLES USING A PORTABLE INSTRUMENT

FACILITY CODE Mound ANALYSIS PCB

ANALYST McGeehan SAMPLER Lewycky

INSTRUMENT MANUFACTURER _____ MODEL NO. P1.3-0073

SERIAL NO. L2000 CALIBRATION DATE/TIME (1) 3/20/91 2:19

ACCEPTANCE CODE _____ (2) 3/20/91

CALIBRATION SOLUTION TYPE Aroclor 1242 in dirt CONCENTRATION 10 PPM INSTRUMENT SETTING 2.5 TIME 2:19

CALIBRATION SOLUTION TYPE Aroclor 1242 in dirt CONCENTRATION 10 PPM INSTRUMENT SETTING 1.2 TIME 2:23

COMMENTS _____

SAMPLE NUMBER	TIME OF ANALYSIS (HH:MM)	SAMPLE TYPE (OIL OR SOIL)	SAMPLE WEIGHT (GRAMS)	RESULTS		
				1242	1260	ASKAREL
10 ppm cal	2:19	SOIL	10.0	10.0		
MND20-0019-0109	2:22	SOIL	10.0	5.3	3.7	2.3
50 ppm cal	2:21	SOLN.	50.6			
50 ppm cal	2:24	SOLN.	45.5			

ACCEPTANCE CODES: A-ACCEPTABLE U-UNACCEPTABLE N-NOT DETERMINED

Kim Dutan 3/20/91 _____

FORM COMPLETED BY/DATE TECHNICAL REVIEWER/DATE

MOUND/AnalForm 1/21/91

Figure 7.2. PCB analysis form.

E

Cardinal®

APPENDIX E

LABORATORY ANALYTICAL RESULTS

APPENDIX E-1

PCB ANALYTICAL RESULTS FOR SOIL SAMPLES

Roy F. Weston, Inc. - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/18/91 RFW LOT # :9103L959

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0040	001	S	91DL0705	03/16/91	03/18/91	03/19/91
MND20-0019-0050	002	S	91DL0705	03/16/91	03/18/91	03/19/91
MND20-0019-0050	002 MS	S	91DL0705	03/16/91	03/18/91	03/19/91
MND20-0019-0050	002 MSD	S	91DL0705	03/16/91	03/18/91	03/19/91
MND20-0019-0010	003	S	91DL0705	03/14/91	03/18/91	03/19/91
MND20-0019-0014	004	S	91DL0705	03/14/91	03/18/91	03/19/91
MND20-0019-0020	005	S	91DL0705	03/15/91	03/18/91	03/19/91
MND20-0019-0030	006	S	91DL0705	03/15/91	03/18/91	03/19/91
MND20-0019-0033	007	S	91DL0705	03/15/91	03/18/91	03/19/91
MND20-0019-0036	008	OI	91DL0706	03/15/91	03/18/91	03/19/91
MND20-0019-0036	008 MS	OI	91DL0706	03/15/91	03/18/91	03/19/91
MND20-0019-0036	008 MSD	OI	91DL0706	03/15/91	03/18/91	03/19/91

LAB QC:

PBLK	MB1	S	91DL0705	N/A	03/18/91	03/19/91
PBLK	MB1 BS	S	91DL0705	N/A	03/18/91	03/19/91
PBLK	MB1 BSD	S	91DL0705	N/A	03/18/91	03/19/91
PBLK	MB1	OI	91DL0706	N/A	03/18/91	03/19/91
PBLK	MB1 BS	OI	91DL0706	N/A	03/18/91	03/19/91
PBLK	MB1 BSD	OI	91DL0706	N/A	03/18/91	03/19/91

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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L959

Client: LANL-MOUND ~~PLANT, OHIO~~
Work Order: 2744-40-07-1417.3 | 20 Fr
Date Rec'd.: 3-18-91 Date Due: ~~4/17/91~~
RFW Contact: SUSAN WILSON
Client Contact/Phone: (505) 255-1445

Refrigerator#									
#/Type Container	1								
Volume	125mL			RADIATION					
Preservative	—			SCREENING					
ANALYSES REQUESTED →	RCB			TH 232	PU 238			DEXSIL-1260 / FIELD SCREENING RESULTS	

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	RCB		TH 232	PU 238				
001	MND20-0019-0040	S	3-16-91	X		0.6	7	pCi/g		16.9	PPM
002	MND20-0019-0050	S	3-16-91	X		0.4	0	pCi/g		3.9	PPM

~~QC/Del~~ =
QC = Special
Del = Rush
TAT = ~~3~~ 2 days

PCB = Del Lab L375

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, Wi - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: 48 hour TURNAROUND

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-16-91	1700					
	[illegible]	[illegible]	3/18/91	9:30 am					
RADSCAN	[illegible]	Charles Pyle	3-18-91	9:45 am					
SMEARS	Charles Pyle	[illegible]	3-18-91	11:45 AM					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered (Y)
NOTES:
2 Ambient or Chilled (Y)
NOTES:
3 Received Broken/Leaking (Improperly Sealed) Y (N)
NOTES:
4 Properly Preserved (Y) N
NOTES:
5 Received Within Holding Times (Y) N
NOTES:

COC Tape Was:
1 Present on Outer Package (Y) N
2 Unbroken on Outer Package (Y) N
3 Present on Sample (Y) N
4 Unbroken on Sample (Y) N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples (Y) N

Discrepancies Between Sample Labels and COC Record? Y (N)
NOTES:

RFW 21-21-001/A-12/88

7-115

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L959 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/20/91 08:34 Page: 1

Sample Information													
Cust ID:	MND20-0019-0 040		MND20-0019-0 050		MND20-0019-0 050		MND20-0019-0 050		MND20-0019-0 010		MND20-0019-0 014	
RFW#:	001		002		002 MS		002 MSD		003		004	
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
D.F.:	250		0.500		0.500		0.500		2.50		0.500	
Units:	ug/g		ug/g		ug/g		ug/g		ug/g		ug/g	
Aroclor-1016	71	U	0.15	U	0.15	U	0.15	U	0.75	U	0.14	U
Aroclor-1221	71	U	0.15	U	0.15	U	0.15	U	0.75	U	0.14	U
Aroclor-1232	71	U	0.15	U	0.15	U	0.15	U	0.75	U	0.14	U
Aroclor-1242	71	U	0.15	U	0.15	U	0.15	U	0.75	U	0.14	U
Aroclor-1248	71	U	0.15	U	0.15	U	0.15	U	0.75	U	0.14	U
Aroclor-1254	140	U	0.29	U	97	%	94	%	1.5	U	0.29	U
Aroclor-1260	190		0.032	J	0.29	U	0.29	U	3.0		0.035	J

Sample Information													
Cust ID:	MND20-0019-0 020		MND20-0019-0 030		MND20-0019-0 033		PBLK		PBLK BS		PBLK BSD	
RFW#:	005		006		007		91DL0705-MB1		91DL0705-MB1		91DL0705-MB1	
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
D.F.:	0.500		0.500		500		0.500		0.500		0.500	
Units:	ug/g		ug/g		ug/g		ug/g		ug/g		ug/g	
Aroclor-1016	0.13	U	0.13	U	140	U	0.12	U	0.12	U	0.12	U
Aroclor-1221	0.13	U	0.13	U	140	U	0.12	U	0.12	U	0.12	U
Aroclor-1232	0.13	U	0.13	U	140	U	0.12	U	0.12	U	0.12	U
Aroclor-1242	0.13	U	0.13	U	140	U	0.12	U	0.12	U	0.12	U
Aroclor-1248	0.13	U	0.13	U	140	U	0.12	U	0.12	U	0.12	U
Aroclor-1254	0.13	J	0.059	J	290	U	0.24	U	103	%	103	%
Aroclor-1260	0.26	U	0.26	U	310		0.24	U	0.24	U	0.24	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Roy F. Weston, Inc - Lionville Laboratory
s by GC

RFW Batch Number: 9103L959 Client: LANL-MOUND Work Order: 2744-40-07-1417

Report Date: 03/ 01 08:33
Page: 1

	Cust ID:	MND20-0019-0 036		MND20-0019-0 036		MND20-0019-0 036		PBLK		PBLK BS		PBLK BSD	
Sample Information	RFW#:	008		008 MS		008 MSD		91DL0706-MB1		91DL0706-MB1		91DL0706-MB1	
	Matrix:	OIL		OIL		OIL		OIL		OIL		OIL	
	D.F.:	500		500		500		5.00		5.00		5.00	
	Units:	ug/g		ug/g		ug/g		ug/g		ug/g		ug/g	
Aroclor-1016		6000	U	6000	U	6000	U	3.0	U	3.0	U	3.0	U
Aroclor-1221		6000	U	6000	U	6000	U	3.0	U	3.0	U	3.0	U
Aroclor-1232		6000	U	6000	U	6000	U	3.0	U	3.0	U	3.0	U
Aroclor-1242		6000	U	6000	U	6000	U	3.0	U	3.0	U	3.0	U
Aroclor-1248		6000	U	6000	U	6000	U	3.0	U	3.0	U	3.0	U
Aroclor-1254		12000	U	D	%	D	%	6.0	U	107	%	97	%
Aroclor-1260		22000		22000		20000		6.0	U	6.0	U	6.0	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-Mound
RFW #: 9103L959
W.O. #: 2744-40-07-1417

SAMPLES RECEIVED: 03/18/91

NARRATIVE

This set of samples consisted of one oil and seven soil samples. The samples were collected on March 14 thru 16, 1991.

Samples were extracted on March 18, 1991 and analyzed for PCB target compounds on March 19, 1991. Samples were extracted and analyzed following WESTON Analytics modified SW846 Method 8080 and reported according to WESTON Analytics modified Tier II Method.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered During their analysis:

1. Method Blanks were free of contamination.
2. Method Blank Spikes were within laboratory limits.
3. Initial calibration criteria was met for all runs.
4. Continuing calibration criteria was met for all runs.

Steph O Weyer 3-21-91

J. Michael Taylor
Project Director
Lionville Analytical Laboratory

Date

03/20/91
9103L959.MND

WESTON Analytics - Dedicated Lab

CLIENT: LANL-MOUND
RFW # : 9103L959
W.O.# : 2744-40-07-1417

DATA QUALIFIER

1. The following qualifiers are used on the data summary:

   U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

   J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

   BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

   BSD - Indicates blank spike duplicate.

   MS - Indicates matrix spike.

   MSD - Indicates matrix spike duplicate.

   DL - Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

   NA - Not applicable.

   DF - Dilution factor.

   NR - Not required.

   I - Interference.

Roy F. Weston, Inc. - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/19/91 RFW LOT # :9103L974

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0060	001	S	91DL0708	03/17/91	03/19/91	03/20/91
MND20-0019-0065	002	S	91DL0708	03/17/91	03/19/91	03/20/91
MND20-0019-0065	002 MS	S	91DL0708	03/17/91	03/19/91	03/20/91
MND20-0019-0065	002 MSD	S	91DL0708	03/17/91	03/19/91	03/20/91
MND20-0019-0070	003	S	91DL0708	03/17/91	03/19/91	03/20/91
LAB QC:						
PBLK	MB1	S	91DL0708	N/A	03/19/91	03/20/91
PBLK	MB1 BS	S	91DL0708	N/A	03/19/91	03/20/91
PBLK	MB1 BSD	S	91DL0708	N/A	03/19/91	03/20/91

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CHAIN OF CUSTODY

2

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L974

LANLHOUSAC

Client: MOUND PLANT, OHIO
Work Order: 2744-40-07-1417
Date Rec'd.: 3/19/91 Date Due: 3/21/91
RFW Contact: SUSAN WILSON
Client Contact/Phone: (505) 255-1445

Refrigerator#		60/6								DEXSIL + 1260	
#/Type Container		1								FIELD SCREENING RESULTS	
Volume		125mL			RADIATION						
Preservative		—			SCREENING						
ANALYSES REQUESTED		PCB			TH 232	PU 238					
WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB							
001	MND20-0019-0060	S	3/17/91	X		0.7	0	pCi/g		4.8	PPM
2	MND20-0019-0065	S	↓	X		0.7	3	pCi/g		3.6	PPM
3	MND20-0019-0070	S	↓	X		0.6	5	pCi/g		15.0	PPM
			PCB=Dell Lab 13745								
	QC=Special										
	DQ=Tier II										
	TAT=2day.										

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: 48 HOUR TURNAROUND

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]		3-18-91	1800					
	[illegible]	[illegible]	3/19/91	9:30am					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L974 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/21/91 08:14 Page: 1

Sample Information												
Cust ID:	MND20-0019-0 060		MND20-0019-0 065		MND20-0019-0 065		MND20-0019-0 065		MND20-0019-0 070		PBLK	
RFW#:	001		002		002 MS		002 MSD		003		91DL0708-MB1	
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
D.F.:	0.500		5.00		5.00		5.00		0.500		0.500	
Units:	ug/g		ug/g		ug/g		ug/g		ug/g		ug/g	
		fl		fl		fl		fl		fl		fl
Aroclor-1016	0.13	U	1.3	U	1.3	U	1.3	U	0.13	U	0.12	U
Aroclor-1221	0.13	U	1.3	U	1.3	U	1.3	U	0.13	U	0.12	U
Aroclor-1232	0.13	U	1.3	U	1.3	U	1.3	U	0.13	U	0.12	U
Aroclor-1242	0.13	U	1.3	U	1.3	U	1.3	U	0.13	U	0.12	U
Aroclor-1248	0.13	U	1.3	U	1.3	U	1.3	U	0.13	U	0.12	U
Aroclor-1254	0.26	U	2.7	U	D	%	D	%	0.26	U	0.24	U
Aroclor-1260	0.037	J	5.2		5.4		5.1		0.055	J	0.24	U

Sample Information				
Cust ID:	PBLK BS		PBLK BSD	
RFW#:	91DL0708-MB1		91DL0708-MB1	
Matrix:	SOIL		SOIL	
D.F.:	0.500		0.500	
Units:	ug/g		ug/g	
		fl		fl
Aroclor-1016	0.12	U	0.12	U
Aroclor-1221	0.12	U	0.12	U
Aroclor-1232	0.12	U	0.12	U
Aroclor-1242	0.12	U	0.12	U
Aroclor-1248	0.12	U	0.12	U
Aroclor-1254	103	%	101	%
Aroclor-1260	0.24	U	0.24	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-Mound
RFW #: 9103L974
W.O. #: 2744-40-07-1417

SAMPLES RECEIVED: 03/19/91

NARRATIVE

This set of samples consisted of three soil samples. The samples were collected on March 17, 1991.

Samples were extracted on March 19, 1991 and analyzed for PCB target compounds on March 20, 1991. Samples were extracted and analyzed following WESTON Analytics modified SW846 Method 8080 and reported according to WESTON Analytics modified Tier II Method.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered During their analysis:

1. Method Blank was free of contamination.
2. Method Blank Spikes were within laboratory limits.
3. Initial calibration criteria was met for all runs.
4. Continuing calibration criteria was met for all runs.

Stephen D Weber 3-21-91

J. Michael Taylor Date
Project Director
Lionville Analytical Laboratory

03/21/91
9103L974.MND

WESTON Analytics - Dedicated Lab

CLIENT: LANL-MOUND
RFW # : 9103L974
W.O.# : 2744-40-07-1417

DATA QUALIFIER

1. The following qualifiers are used on the data summary:

   U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

   J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

   BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

   BSD - Indicates blank spike duplicate.

   MS - Indicates matrix spike.

   MSD - Indicates matrix spike duplicate.

   DL - Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

   NA - Not applicable.

   DF - Dilution factor.

   NR - Not required.

   I - Interference.

Roy F. Weston, Inc. - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/20/91 RFW LOT # :9103L992

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0080	001	S	91DL0712	03/19/91	03/20/91	03/21/91
MND20-0019-0090	002	S	91DL0712	03/19/91	03/20/91	03/21/91
MND20-0019-0093	003	S	91DL0712	03/19/91	03/20/91	03/21/91
MND20-0019-0094	004	S	91DL0712	03/19/91	03/20/91	03/21/91
MND20-0019-0095	005	S	91DL0712	03/19/91	03/20/91	03/22/91
MND20-0019-0095	005 MS	S	91DL0712	03/19/91	03/20/91	03/22/91
MND20-0019-0095	005 MSD	S	91DL0712	03/19/91	03/20/91	03/22/91
LAB QC:						
PBLK	MB1	S	91DL0712	N/A	03/20/91	03/22/91
PBLK	MB1 BS	S	91DL0712	N/A	03/20/91	03/22/91
PBLK	MB1 BSD	S	91DL0712	N/A	03/20/91	03/22/91

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QC Summary	N/A
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CHAIN OF CUSTODY

2

WESTON Analytics Use Only
91031992

Custody Transfer Record/Lab Work Request

WESTON (1)

LANKHOUSER

Client: MOUND PLANT, OHIO
Work Order: 2744-40.07-1417
Date Rec'd.: 3/20/91 Date Due: ~~[illegible]~~ 3/22
RFW Contact: SUSAN WILSON
Client Contact/Phone: (505) 255-1445

Refrigerator#											
#/Type Container	1										
Volume	125ml			RADIATION							
Preservative	—			SCREENING							
ANALYSES REQUESTED →	PCB			TH 232	PU 238				DEX SIL-1260 Field Screening Results		

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	pcb								
1	MND20-0019-0080	S	3-19-91	X			0.6	0.0	pCi/g		3.6	PPM
2	MND20-0019-0090	S	3-19-91	X			0.7	0.0	pCi/g			PPM
	~~MND20-0019-0092~~											
3	MND20 0019-0093	S	3-19-91	X			0.1	0.0	pCi/g			PPM
4	MND20-0019-0094	S	3-19-91	X			0.5	0.0	pCi/g			PPM
5	MND20-0019-0095	S	3-19-91	X			0.5	0.0	pCi/g			PPM
						pcb =						
	GC special							17	75			
	Deliver II											
	2 Day TAT											

Matrix: S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: 48 HOUR TURNAROUND

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-19-91	1800					
all	[illegible]	[illegible]							
RADSCEN	[illegible]	[illegible]	3-20-91	9:45am					
STORAGE	[illegible]	[illegible]	3-20-91	10:30am					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

7 115

DATA SUMMARY

Roy F. Weston, In[illegible] - Lionville Laboratory
[illegible]s by GC

RFW Batch Number: 9103L992 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/[illegible]/91 08:41 Page: 1

Sample Information													
Cust ID:	MND20-0019-0 080		MND20-0019-0 090		MND20-0019-0 093		MND20-0019-0 094		MND20-0019-0 095		MND20-0019-0 095 005 MS	
RFW#:	001		002		003		004		005			
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
D.F.:	0.500		0.500		1.00		0.500		0.500		0.500	
Units:	ug/g		ug/g		ug/g		ug/g		ug/g		ug/g	
Aroclor-1016	0.13	U	0.13	U	0.28	U	0.15	U	0.14	U	0.14	U
Aroclor-1221	0.13	U	0.13	U	0.28	U	0.15	U	0.14	U	0.14	U
Aroclor-1232	0.13	U	0.13	U	0.28	U	0.15	U	0.14	U	0.14	U
Aroclor-1242	0.13	U	0.13	U	0.28	U	0.15	U	0.14	U	0.14	U
Aroclor-1248	0.13	U	0.13	U	0.28	U	0.15	U	0.14	U	0.14	U
Aroclor-1254	0.26	U	0.26	U	0.55	U	0.30	U	0.28	U	93	%
Aroclor-1260	0.18	J	0.32		0.97		0.30	U	0.28	U	0.28	U

Sample Information								
Cust ID:	MND20-0019-0 095 005 MSD		PBLK		PBLK BS		PBLK BSD	
RFW#:			91DL0712-MB1		91DL0712-MB1		91DL0712-MB1	
Matrix:	SOIL		SOIL		SOIL		SOIL	
D.F.:	0.500		0.500		0.500		0.500	
Units:	ug/g		ug/g		ug/g		ug/g	
Aroclor-1016	0.14	U	0.12	U	0.12	U	0.12	U
Aroclor-1221	0.14	U	0.12	U	0.12	U	0.12	U
Aroclor-1232	0.14	U	0.12	U	0.12	U	0.12	U
Aroclor-1242	0.14	U	0.12	U	0.12	U	0.12	U
Aroclor-1248	0.14	U	0.12	U	0.12	U	0.12	U
Aroclor-1254	93	%	0.24	U	89	%	90	%
Aroclor-1260	0.28	U	0.24	U	0.24	U	0.24	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-Mound
RFW #: 9103L992
W.O. #: 2744-40-07-1417

SAMPLES RECEIVED: 03/20/91

NARRATIVE

This set of samples consisted of five soil samples. The samples were collected on March 19, 1991.

Samples were extracted on March 20, 1991 and analyzed for PCB target compounds on March 21 and 22, 1991. Samples were extracted and analyzed following WESTON Analytics modified SW846 Method 8080 and reported according to WESTON Analytics modified Tier II Method.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered During their analysis:

1. Method Blank was free of contamination.
2. Method Blank Spikes were within laboratory limits.
3. Initial calibration criteria was met for all runs.
4. Continuing calibration criteria was met for all runs.

Stephen D Weston 3-22-91

J. Michael Taylor Date
Project Director
Lionville Analytical Laboratory

03/22/91
9103L992.MND

WESTON Analytics - Dedicated Lab

CLIENT: LANL-MOUND
RFW # : 9103L992
W.O.# : 2744-40-07-1417

DATA QUALIFIER

1. The following qualifiers are used on the data summary:

   U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

   J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

   BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

   BSD - Indicates blank spike duplicate.

   MS - Indicates matrix spike.

   MSD - Indicates matrix spike duplicate.

   DL - Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

   NA - Not applicable.

   DF - Dilution factor.

   NR - Not required.

   I - Interference.

WESTON ANALYTICS
INORGANIC METHODOLOGY SUMMARY

METALS

EPA	206.2	:	As		
EPA	200.7	:	Sb		
EPA	239.1	:	Pb		
EPA	270.1	:	Se		
EPA	279.2	:	Tl		
EPA	245.1	:	Hg		
EPA	200.72	:	Ag	Co	Mn
			Al	Cr	Na
			Ba	Cu	Ni
			Be	Fe	V
			Ca	K	Zn
			Cd	Mg	

Total Cyanide : EPA 335.2

Total Recoverable Phenolics : EPA 420.1

Other :

MF

WESTON

MATRIX SPIKE SOLUTION
SOURCE: INORGANIC VENTURES LABORATORY

ELEMENTS	STOCK CONCENTRATION (ppb)	STOCK CONCENTRATION (ppb)
Aluminum	200,000	2,000
Antimony	50,000	500
Arsenic	4,000	40
Barium	200,000	2,000
Beryllium	5,000	50
Cadmium	5,000	50
Calcium	300,000	30,000
Chromium	2,000	200
Cobalt	5,000	500
Copper	2,500	250
Iron	10,000	1,000
Lead	200	20
Magnesium	250,000	25,000
Manganese	5,000	500
Mercury	10	1.0
Nickel	5,000	500
Potassium	250,000	25,000
Selenium	100	10
Silver	500	50
Sodium	250,000	25,000
Thallium	500	50
Vanadium	5,000	500
Zinc	1,000	500
Cyanide	1,000	100

* 1 mL of stock concentration is used for water matrix spike, final volume digestate 100 mL.

* 2 mLs of stock concentration is used for soil matrix spike, final volume digestate 200 mL.

ANALYTICAL SPIKES

ELEMENTS	SOURCE	STOCK	VOLUME ADDED TO 1 mLs	FINAL CONCENTRATION (ppb)
Arsenic	Aldrich	2 ppm	10 uL	20
Selenium	Aldrich	2 ppm	10 uL	10
Lead	Aldrich	2 ppm	10 uL	10
Thallium	Mallinckrodt	2 ppm	10 uL	20

USEPA CONTRACT LABORATORY PROGRAM
DATA QUALIFIER DESCRIPTIONS
INORGANIC ANALYSIS SOW NO. 787

CONCENTRATION QUALIFIERS:

B = INDICATES THAT THE REPORTED VALUE IS LESS THAN THE CRDL BUT GREATER THAN THE IDL.

U = INDICATES THAT THE ANALYTE WAS ANALYZED FOR BUT NOT DETECTED.

QUALIFIERS:

E = THE REPORTED VALUE IS ESTIMATED BECAUSE OF THE PRESENCE OF INTERFERENCE.

M = DUPLICATE INJECTION PRECISION NOT MET.

N = SPIKED SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS.

S = THE REPORTED VALUE WAS DETERMINED BY THE METHOD OF STANDARD ADDITIONS (MSA).

W = POST DIGESTION SPIKE FOR FURNACE AA ANALYSIS IS OUT OF CONTROL LIMITS (85-125%) WHILE SAMPLE ABSORBANCE IS LESS THAN 50% OF SPIKE ABSORBANCE.

***** = DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS.

+ = CORRELATION COEFFICIENT FOR THE MSA IS LESS THAN 0.995.

METHOD:

P = ICP
A = FLAME AA
F = FURNACE AA
CV = MANUAL COLD VAPOR AA.
AV = AUTOMATED COLD VAPOR AA.
AS = SEMI-AUTOMATED SPECTROPHOTOMETRIC
C = MANUAL SPECTROPHOTOMETRIC
T = TITRIMETRIC
NR = NOT REQUIRED

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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L012

(LANLMOCLP) LANL-MOUND

Client: MOUND PLANT, OHIO
Work Order: 2744-40-07-1417
Date Rec'd.: 3/21/91 Date Due: 4/20/91
RFW Contact: SUSAN WILSON
Client Contact/Phone: (505) 255-1445

Refrigerator#	3/6	1	3	5	1					
#/Type Container	1	1	1	1	2					
Volume	125mL	125mL	250mL	250mL	40mL		RADIATION			
Preservative	—	—	—	—	—		SCREENING			
ANALYSES REQUESTED	PCB	VOA	METALS + CN	REST PCB + BNA	VOA		TH 232	PU 238		
WA Use Only Lab ID / Client ID/Description / Matrix / Date Collected	01 PCB	06344	METALS 06345	06006 06345	06344					
001 MND20-0019-0094	S	3-19-91		X	X	X			0.5	6	PCi/g
2 MND20-0019-0092A	S	3-19-91		X	X	X			0.8	8	PCi/g
3 MND20-0019-0099	S	3-20-91	X								PCi/g
4 MND20-0019-0100	S	3-20-91	X	X	X	X					PCi/g
5 MND20-0019-0102	S	3-20-91	X	X	X	X					
6 MND20-0019-0104	S	3-20-91	X	X	X	X					
7 MND20-0019-0094 Trip blank	W	3-19-91					X				
8 MND20-0019-0094 Field blank	W	3-19-91					X				

QC/Dal = CLP
TAT = 30 day

PCB = Dal La OL375

☆ See Steve Wesson for special instructions

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions:
TCL VOA, metals, CN, P/PCB BNA
48 hour TURNAROUND on PCB only

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-21-91	1800	% Sol	[illegible]	[illegible]	3/22/91	9:55
	[illegible]	[illegible]	3/21/91	[illegible]	EXT	[illegible]	[illegible]	3/22/91	[illegible]
RADSCRN	[illegible]	Clark [illegible]	3-21-91	9:45AM	CN	[illegible]	[illegible]	3/27	16:00
PCB Storage	[illegible]	CAT	3/21/91	[illegible]	Storage	[illegible]	M. Jason	3/27	
VOA	[illegible]	[illegible]	3/22	10:00	Metals	M. Jason	Jeffrey Welsh	4/12	1000
BNA	[illegible]	[illegible]	3/26/91	950	VOA	[illegible]		4-22-91	9:18

metals return Jeffrey Welsh 4/23/91 0430

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

000002

RFW 21-21-001/A-12/88

7-115

CASE NARRATIVE

WESTON

Roy F. Weston, INC.
Lionville Laboratory

CLIENT:LANL MOUND
RFW #:91031012 METALS
W.O.#:2744-40-07

SAMPLES RECEIVED:3/21/91

METALS NARRATIVE

The set of samples consisted of (5) soil samples collected on 3/19/91.

The samples were analyzed according to criteria set forth in CLP SOW 7/87.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.

2. All ICV and CCV values were within control limits.

3. All ICB and CCB values were within control limits.

4. All preparation blank values were within control limits.

5. All LCS results were within the 80-120% control limits.

   Note: The USEPA has dropped control limits for antimony and silver due to documented difficulties in obtaining reliable results. WESTON Analytics has adopted the same policy.

6. Hg matrix spike recoveries were within the 75-125% control limit.

7. Hg duplicate analyses were within the 20% RPD control limit.

8. Pb and As sample results were calculated by the method of standard addition (MSA). All corresponding samples were flagged with an "S" according to CLP protocol.

WESTON

9. All other spike and duplicate analyses were performed on a different RFW# within the same digestion batch. Please refer to 9103L009 in digestion batch, 91L0758.

Linda R. Hayhurst

Jack R. Tuschall, Ph.D.
Laboratory Manager
WESTON Analytical Laboratories

5.23.91
Date

I. INORGANIC ANALYSES DATA PACKAGE

A. COVER PAGE

B. INORGANIC ANALYSIS SHEET (FORM 1)

C. INITIAL AND CONTINUING CALIBRATION VERIFICATION (FORM 2A)

D. CRDL STANDARD FOR AA AND ICP (FORM 2B)

E. BLANKS (FORM 3)
   1. INITIAL CALIBRATION BLANK
   2. CONTINUING CALIBRATION BLANK
   3. PREPARATION BLANK

F. ICP INTERFERENCE CHECK SAMPLE (FORM 4)

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U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

SOW No.: 7/87

EPA Sample No.	Lab Sample ID.
MND20-0019-0094	9103012001
MND20-0019-0092A	9103012002
MND20-0019-0100	9103012004
MND20-0019-0102	9103012005
MND20-0019-0104	9103012006

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 the Manager's designee, as verified by the following signature.

Lab Manager: [illegible]

Date: 5-23-91

U.S. EPA - CLP 0000008

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MND20-0019-0094

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water):SOIL Lab Sample ID:9103012001

Level (low/med): LOW Date Received:03/21/91

% Solids: 86.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1070			P
7440-36-0	Antimony	4.02	U		P
7440-38-2	Arsenic	3.13		S	F
7440-39-3	Barium	7.80	B		P
7440-41-7	Beryllium	0.212	U		P
7440-43-9	Cadmium	0.846	U		P
7440-70-2	Calcium	113000			P
7440-47-3	Chromium	0.635	U		P
7440-48-4	Cobalt	1.80	B		P
7440-50-8	Copper	6.70			P
7439-89-6	Iron	4670			P
7439-92-1	Lead	4.60		T	F
7439-95-4	Magnesium	38700			P
7439-96-5	Manganese	170			P
7439-97-6	Mercury	0.115	U		CV
7440-02-0	Nickel	3.60	B		P
7440-09-7	Potassium	213	U		P
7782-49-2	Selenium	0.216	U	W	F
7440-22-4	Silver	0.846	U		P
7440-23-5	Sodium	164	B		P
7440-28-0	Thallium	1.08	U	W	F
7440-62-2	Vanadium	11.6			P
7440-66-6	Zinc	22.2			P
	Cyanide	0.577	U		C

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MND20-0019-0092A

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water):SOIL Lab Sample ID:9103012002

Level (low/med): LOW Date Received:03/21/91

% Solids: 90.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1560			P
7440-36-0	Antimony	4.70	B		P
7440-38-2	Arsenic	4.80			F
7440-39-3	Barium	18.9	B		P
7440-41-7	Beryllium	0.219	U		P
7440-43-9	Cadmium	0.877	U		P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	1.40	B		P
7440-48-4	Cobalt	2.20	B		P
7440-50-8	Copper	8.20			P
7439-89-6	Iron	5620			P
7439-92-1	Lead	8.00			F
7439-95-4	Magnesium	49500			P
7439-96-5	Manganese	275			P
7439-97-6	Mercury	0.111	U		CV
7440-02-0	Nickel	5.00	B		P
7440-09-7	Potassium	341	B		P
7782-49-2	Selenium	0.203	U	W	F
7440-22-4	Silver	0.877	U		P
7440-23-5	Sodium	178	B		P
7440-28-0	Thallium	1.01	U	W	F
7440-62-2	Vanadium	14.1			P
7440-66-6	Zinc	25.4			P
	Cyanide	0.555	U		C

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MND20-0019-0100

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water):SOIL Lab Sample ID:9103012004

Level (low/med): LOW Date Received:03/21/91

% Solids: 78.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1500			P
7440-36-0	Antimony	4.67	U		P
7440-38-2	Arsenic	5.30		S	F
7440-39-3	Barium	11.5	B		P
7440-41-7	Beryllium	0.246	U		P
7440-43-9	Cadmium	0.982	U		P
7440-70-2	Calcium	118000			P
7440-47-3	Chromium	0.860	B		P
7440-48-4	Cobalt	2.70	B		P
7440-50-8	Copper	6.70			P
7439-89-6	Iron	6250			P
7439-92-1	Lead	6.70			F
7439-95-4	Magnesium	42700			P
7439-96-5	Manganese	222			P
7439-97-6	Mercury	0.127	U		CV
7440-02-0	Nickel	5.90	B		P
7440-09-7	Potassium	281	B		P
7782-49-2	Selenium	0.251	U	W	F
7440-22-4	Silver	0.982	U		P
7440-23-5	Sodium	206	B		P
7440-28-0	Thallium	1.26	U	W	F
7440-62-2	Vanadium	13.2			P
7440-66-6	Zinc	30.3			P
	Cyanide	0.634	U		C

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MND20-0019-0102

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water):SOIL Lab Sample ID:9103012005

Level (low/med): LOW Date Received:03/21/91

% Solids: 92.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1540			P
7440-36-0	Antimony	4.60	B		P
7440-38-2	Arsenic	4.80			F
7440-39-3	Barium	23.3	B		P
7440-41-7	Beryllium	0.204	U		P
7440-43-9	Cadmium	0.814	U		P
7440-70-2	Calcium	156000			P
7440-47-3	Chromium	5.40			P
7440-48-4	Cobalt	2.00	B		P
7440-50-8	Copper	7.00			P
7439-89-6	Iron	5020			P
7439-92-1	Lead	8.00			F
7439-95-4	Magnesium	49700			P
7439-96-5	Manganese	265			P
7439-97-6	Mercury	0.108	U		CV
7440-02-0	Nickel	4.50	B		P
7440-09-7	Potassium	383	B		P
7782-49-2	Selenium	0.214	U	W	F
7440-22-4	Silver	0.814	U		P
7440-23-5	Sodium	201	B		P
7440-28-0	Thallium	1.07	U	W	F
7440-62-2	Vanadium	14.7			P
7440-66-6	Zinc	26.2			P
	Cyanide	0.542	U		C

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MND20-0019-0104

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water):SOIL Lab Sample ID:9103012006

Level (low/med): LOW Date Received:03/21/91

% Solids: 80.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1130			P
7440-36-0	Antimony	4.57	U		P
7440-38-2	Arsenic	4.40		S	F
7440-39-3	Barium	19.4	B		P
7440-41-7	Beryllium	0.241	U		P
7440-43-9	Cadmium	0.963	U		P
7440-70-2	Calcium	110000			P
7440-47-3	Chromium	0.722	U		P
7440-48-4	Cobalt	1.90	B		P
7440-50-8	Copper	6.70			P
7439-89-6	Iron	5260			P
7439-92-1	Lead	6.00			F
7439-95-4	Magnesium	39900			P
7439-96-5	Manganese	174			P
7439-97-6	Mercury	0.124	U		CV
7440-02-0	Nickel	5.10	B		P
7440-09-7	Potassium	271	B		P
7782-49-2	Selenium	0.233	U	W	F
7440-22-4	Silver	0.963	U		P
7440-23-5	Sodium	206	B		P
7440-28-0	Thallium	1.17	U	W	F
7440-62-2	Vanadium	12.2			P
7440-66-6	Zinc	23.8			P
	Cyanide	0.620	U		C

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	5000.0	5238.40	104.8	5000.0	5267.50	105.4	5176.20	103.5	P
Antimony	3000.0	3042.00	101.4	3000.0	3005.80	100.2	3015.20	100.5	P
Arsenic	40.0	37.40	93.5	40.0	38.40	96.0	37.50	93.8	F
Barium	5000.0	5091.30	101.8	5000.0	5071.40	101.4	5015.40	100.3	P
Beryllium	250.0	252.50	101.0	250.0	251.20	100.5	250.70	100.3	P
Cadmium	250.0	232.90	93.2	250.0	234.90	94.0	233.70	93.5	P
Calcium	25000.0	25996.40	104.0	25000.0	26020.80	104.1	26412.10	105.6	P
Chromium	500.0	495.80	99.2	500.0	493.10	98.6	489.30	97.9	P
Cobalt	2500.0	2490.80	99.6	2500.0	2476.80	99.1	2473.90	99.0	P
Copper	1250.0	1240.60	99.2	1250.0	1237.00	99.0	1228.00	98.2	P
Iron	5000.0	5030.10	100.6	5000.0	5051.70	101.0	4988.90	99.8	P
Lead	40.0	41.00	102.5	40.0	41.40	103.5	42.30	105.7	F
Magnesium	25000.0	25441.20	101.8	25000.0	25426.30	101.7	25342.00	101.4	P
Manganese	750.0	745.70	99.4	750.0	742.20	99.0	736.90	98.3	P
Mercury	5.0	4.95	99.0	5.0	4.82	96.4	4.82	96.4	CV
Nickel	2000.0	1984.20	99.2	2000.0	1980.30	99.0	1963.30	98.2	P
Potassium	25000.0	25327.10	101.3	25000.0	25572.40	102.3	24713.80	98.9	P
Selenium	40.0	41.50	103.8	40.0	41.30	103.3	41.20	103.0	F
Silver	500.0	502.20	100.4	500.0	503.00	100.6	504.80	101.0	P
Sodium	25000.0	25546.40	102.2	25000.0	25544.70	102.2	25157.80	100.6	P
Thallium	40.0	39.90	99.7	40.0	39.60	99.0	41.20	103.0	F
Vanadium	2500.0	2516.90	100.7	2500.0	2505.20	100.2	2506.00	100.2	P
Zinc	1000.0	1011.10	101.1	1000.0	1009.60	101.0	1000.50	100.0	P
Cyanide	100.0	97.52	97.5	100.0	96.93	96.9	98.70	98.7	C

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0	5207.60	104.2			P
Antimony				3000.0	3016.30	100.5			P
Arsenic	40.0	38.90	97.3	40.0	38.70	96.8	38.90	97.3	F
Barium				5000.0	5056.30	101.1			P
Beryllium				250.0	251.80	100.7			P
Cadmium				250.0	239.30	95.7			P
Calcium				25000.0	26485.40	105.9			P
Chromium				500.0	489.00	97.8			P
Cobalt				2500.0	2476.50	99.1			P
Copper				1250.0	1235.20	98.8			P
Iron				5000.0	5022.40	100.4			P
Lead	40.0	41.20	103.0	40.0	42.50	106.3	42.10	105.2	F
Magnesium				25000.0	25514.10	102.1			P
Manganese				750.0	738.50	98.5			P
Mercury				5.0	4.82	96.4	4.95	99.0	CV
Nickel				2000.0	1977.70	98.9			P
Potassium				25000.0	24448.10	97.8			P
Selenium				40.0	39.70	99.3	39.70	99.3	F
Silver				500.0	511.10	102.2			P
Sodium				25000.0	25419.80	101.7			P
Thallium				40.0	40.40	101.0	42.40	106.0	F
Vanadium				2500.0	2510.70	100.4			P
Zinc				1000.0	1010.50	101.1			P
Cyanide	100.0	100.20	100.2	100.0	101.40	101.4	100.80	100.8	C

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0					
Antimony				3000.0					
Arsenic	40.0	42.80	107.0	40.0	35.90	89.8	37.90	94.8	F
Barium				5000.0					
Beryllium				250.0					
Cadmium				250.0					
Calcium				25000.0					
Chromium				500.0					
Cobalt				2500.0					
Copper				1250.0					
Iron				5000.0					
Lead	40.0	42.00	105.0	40.0	36.90	92.2	41.00	102.5	F
Magnesium				25000.0					
Manganese				750.0					
Mercury				5.0	4.94	98.8			CV
Nickel				2000.0					
Potassium				25000.0					
Selenium				40.0	40.70	101.7	40.30	100.7	F
Silver				500.0					
Sodium				25000.0					
Thallium				40.0	39.50	98.8	40.90	102.3	F
Vanadium				2500.0					
Zinc				1000.0					
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	36.90	92.3	40.90	102.3	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	42.50	106.3	39.50	98.8	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				40.0	40.90	102.3	42.20	105.5	F
Silver									
Sodium									
Thallium				40.0	41.40	103.5	44.10	110.3	F
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	41.50	103.8	41.20	103.0	F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	36.70	91.8	39.90	99.8	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				40.0	42.00	105.0	41.70	104.2	F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	43.80	109.5			F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	40.90	102.3	41.50	103.8	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	41.70	104.3	42.20	105.5	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	41.50	103.8			F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0					
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0					
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				40.0					
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0					
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0					
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				40.0					
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0					
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0					
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0					
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0					
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0					
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

AA CRDL Standard Source: IV

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0	216.40	108.2	268.20	134.1
Antimony				120.0	59.50	49.6	52.50	43.8
Arsenic	10.0	10.60	106.0					
Barium				400.0	97.00	48.5	95.90	47.9
Beryllium				10.0	4.80	48.0	4.90	49.0
Cadmium				10.0	5.60	56.0	4.90	49.0
Calcium				10000.0	607.30	60.7	703.00	70.3
Chromium				20.0	8.70	43.5	8.70	43.5
Cobalt				100.0	47.40	47.4	48.90	48.9
Copper				50.0	26.40	52.8	27.40	54.8
Iron				200.0	153.60	76.8	174.50	87.3
Lead	3.0	-0.90	30.0					
Magnesium				10000.0	589.10	58.9	700.90	70.1
Manganese				30.0	14.00	46.7	13.60	45.3
Mercury								
Nickel				80.0	43.00	53.8	37.00	46.3
Potassium				10000.0	388.40	38.8	1144.70	114.5
Selenium	5.0	4.30	86.0					
Silver				20.0	10.40	52.0	10.40	52.0
Sodium				10000.0	463.80	46.4	469.80	47.0
Thallium	10.0	9.80	98.0					
Vanadium				100.0	45.70	45.7	48.40	48.4
Zinc				40.0	21.20	53.0	21.80	54.5

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

AA CRDL Standard Source: IV

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0				
Antimony				120.0				
Arsenic	10.0	-1.80	18.0					
Barium				400.0				
Beryllium				10.0				
Cadmium				10.0				
Calcium				10000.0				
Chromium				20.0				
Cobalt				100.0				
Copper				50.0				
Iron				200.0				
Lead	3.0	2.30	76.7					
Magnesium				10000.0				
Manganese				30.0				
Mercury								
Nickel				80.0				
Potassium				10000.0				
Selenium								
Silver				20.0				
Sodium				10000.0				
Thallium								
Vanadium				100.0				
Zinc				40.0				

U.S. EPA - CLP

3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum	77.0	U	77.0	U	77.0	U	77.0	U	15.400	U	P
Antimony	19.0	U	19.0	U	19.0	U	19.0	U	3.800	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Barium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Calcium	92.0	U	92.0	U	115.5	B	92.0	U	18.400	U	P
Chromium	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cobalt	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Copper	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
Iron	37.0	U	37.0	U	37.0	U	37.0	U	7.400	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Magnesium	84.0	U	84.0	U	84.0	U	84.0	U	16.800	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
Potassium	1007.0	U	1007.0	U	1007.0	U	1007.0	U	201.400	U	P
Selenium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Silver	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Sodium	71.0	U	71.0	U	77.3	B	71.0	U	14.200	U	P
Thallium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	F
Vanadium	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
Zinc	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cyanide	10.0	U	10.0	U	10.0	U	10.0	U	0.500	U	C

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3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum											
Antimony											
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	2.0	U	2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury			0.2	U	0.2	U			0.100	U	CV
Nickel											
Potassium											
Selenium			1.0	U	1.0	U	1.0	U			F
Silver											
Sodium											
Thallium			5.0	U	5.0	U	5.0	U			F
Vanadium											
Zinc											
Cyanide			10.0	U							C

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3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum											
Antimony											
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	2.0	U	2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			1.0	U	1.0	U	1.0	U			F
Silver											
Sodium											
Thallium			5.0	U	5.0	U					F
Vanadium											
Zinc											
Cyanide											

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3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum											
Antimony											
Arsenic			2.0	U	2.0	U					F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			1.0	U							F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

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3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

ICP ID Number: ICP61 ICS Source: IV

Concentration Units: UG/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	507020	497420	508182	510203.6	102.6	508033	506297.0	101.8
Antimony			-16	-24.0		-6	-16.0	
Arsenic								
Barium		518	20	524.0	101.2	20	521.3	100.6
Beryllium		486	0	478.0	98.4	0	478.7	98.5
Cadmium		990	-1	976.1	98.6	-2	977.3	98.7
Calcium	486400	482440	476165	480325.2	99.6	489597	489702.4	101.5
Chromium		471	1	464.9	98.7	1	462.1	98.1
Cobalt		480	7	468.2	97.5	5	470.0	97.9
Copper		474	-17	466.0	98.3	-16	465.5	98.2
Iron	189880	187220	183061	184320.3	98.5	184296	183692.9	98.1
Lead								
Magnesium	483500	476880	478211	481767.3	101.0	482562	482157.6	101.1
Manganese			24	495.4		26	495.0	
Mercury								
Nickel		915	-5	899.5	98.3	-4	904.4	98.8
Potassium			163	81.8		41	-430.0	
Selenium								
Silver		1075	0	1029.7	95.8	-3	1030.6	95.9
Sodium			17	36.1		28	49.4	
Thallium								
Vanadium		460	7	486.0	105.7	9	490.8	106.7
Zinc		973	-7	953.8	98.0	-5	955.9	98.2
Cyanide								

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MND20-0019-0092A

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water): SOIL Level:LOW

% Solids for sample: 90.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide	75-125	5.1820		0.5550	U	5.55	92.8		C

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

MND20-0019-0094

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water): SOIL Level:LOW

% Solids for sample: 86.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

MND20-0019-0092A

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Matrix (soil/water): SOIL Level:LOW

% Solids for sample: 90.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide	0.6	0.5550	U	0.5550	U			C

Comments:

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LABORATORY CONTROL SAMPLE

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Solid LCS Source: IV

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				1000.0	1065.00		800.0	1200.0	106.5
Antimony				600.0	351.30		480.0	720.0	58.5
Arsenic				6.0	5.90		4.8	7.2	99.0
Barium				1000.0	1040.20		800.0	1200.0	104.0
Beryllium				50.0	50.70		40.0	60.0	101.4
Cadmium				50.0	48.40		40.0	60.0	96.9
Calcium				5000.0	5283.40		4000.0	6000.0	105.7
Chromium				100.0	100.10		80.0	120.0	100.1
Cobalt				500.0	506.10		400.0	600.0	101.2
Copper				250.0	249.50		200.0	300.0	99.8
Iron				1000.0	1019.70		800.0	1200.0	102.0
Lead									
Magnesium				5000.0	5236.90		4000.0	6000.0	104.7
Manganese				150.0	151.50		120.0	180.0	101.0
Mercury				12.7	13.01		10.2	15.2	102.5
Nickel				400.0	403.20		320.0	480.0	100.8
Potassium				5000.0	5143.10		4000.0	6000.0	102.9
Selenium				6.0	6.30		4.8	7.2	105.3
Silver				100.0	100.60		80.0	120.0	100.6
Sodium				5000.0	5231.20		4000.0	6000.0	104.6
Thallium									
Vanadium				500.0	512.10		400.0	600.0	102.4
Zinc				200.0	203.60		160.0	240.0	101.8
Cyanide									

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LABORATORY CONTROL SAMPLE

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Solid LCS Source: IV

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				1000.0	1073.10		800.0	1200.0	107.3
Antimony				600.0	353.60		480.0	720.0	58.9
Arsenic				6.0	6.00		4.8	7.2	99.7
Barium				1000.0	1046.00		800.0	1200.0	104.6
Beryllium				50.0	51.00		40.0	60.0	102.0
Cadmium				50.0	49.60		40.0	60.0	99.1
Calcium				5000.0	5333.10		4000.0	6000.0	106.7
Chromium				100.0	100.80		80.0	120.0	100.8
Cobalt				500.0	509.70		400.0	600.0	101.9
Copper				250.0	251.70		200.0	300.0	100.7
Iron				1000.0	1022.40		800.0	1200.0	102.2
Lead									
Magnesium				5000.0	5286.90		4000.0	6000.0	105.7
Manganese				150.0	152.40		120.0	180.0	101.6
Mercury				12.7	11.97		10.2	15.2	94.3
Nickel				400.0	405.40		320.0	480.0	101.3
Potassium				5000.0	5188.10		4000.0	6000.0	103.8
Selenium				6.0	6.60		4.8	7.2	109.3
Silver				100.0	101.90		80.0	120.0	101.9
Sodium				5000.0	5237.30		4000.0	6000.0	104.7
Thallium									
Vanadium				500.0	516.80		400.0	600.0	103.4
Zinc				200.0	203.30		160.0	240.0	101.7
Cyanide									

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8

STANDARD ADDITION RESULTS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

Concentration Units: ug/L

EPA Sample No.	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
MND20-0019-0094	AS	2	9.100	10.	18.700	20.	31.000	30.	43.200	14.5	0.9984	
MND20-0019-0100	AS	2	11.500	10.	24.900	20.	36.000	30.	46.500	21.2	0.9983	
MND20-0019-0104	AS	2	10.700	10.	23.000	20.	35.600	30.	45.700	18.9	0.9988	
MND20-0019-0094	PB	2	9.500	10.	11.500	20.	28.400	30.	26.200	26.4	0.8849	+
MND20-0019-0094	PB	2	8.500	10.	19.600	20.	18.700	30.	35.700	21.1	0.9711	+

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HOLDING TIMES

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
MND20-0019-0094	SOIL	03/21/91	04/16/91	26	03/26/91	5
MND20-0019-0092A	SOIL	03/21/91	04/16/91	26	03/26/91	5
MND20-0019-0100	SOIL	03/21/91	04/16/91	26	03/27/91	6
MND20-0019-0102	SOIL	03/21/91	04/16/91	26	03/27/91	6
MND20-0019-0104	SOIL	03/21/91	04/16/91	26	03/27/91	6

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11
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

ICP ID Number: ICP61 Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.2		200.0	77.0	P
Antimony	206.8		60.0	19.0	P
Arsenic					
Barium	493.4		200.0	5.0	P
Beryllium	313.0		5.0	1.0	P
Cadmium	228.8		5.0	4.0	P
Calcium	317.9		5000.0	92.0	P
Chromium	267.7		10.0	3.0	P
Cobalt	228.6		50.0	4.0	P
Copper	324.7		25.0	7.0	P
Iron	259.9		100.0	37.0	P
Lead					
Magnesium	279.0		5000.0	84.0	P
Manganese	257.6		15.0	2.0	P
Mercury					
Nickel	231.6		40.0	7.0	P
Potassium	766.4		5000.0	1007.0	P
Selenium					
Silver	328.0		10.0	4.0	P
Sodium	588.9		5000.0	71.0	P
Thallium					
Vanadium	292.4		50.0	8.0	P
Zinc	213.8		20.0	3.0	P

Comments:

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11
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA1

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	193.7		10.0	2.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.0		5.0	1.0	F
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

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11
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA2

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	193.7		10.0	2.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.0		5.0	1.0	F
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA3

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA6

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	193.7		10.0	2.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.0		5.0	1.0	F
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

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ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP012

ICP ID Number: ICP61 Date: 01/26/91

Analyte	Wave-length (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	As
Aluminum	308.20		-0.0016000			
Antimony	206.80		-0.0011280	0.0002000		
Arsenic	193.70	0.0060000		0.0010000		
Barium	493.40					
Beryllium	313.00					
Cadmium	228.80					-0.0005000
Calcium	317.90					
Chromium	267.70			0.0004000		
Cobalt	228.60					
Copper	324.70		0.0006500	-0.0001000		
Iron	259.90					
Lead	283.30	0.0007000		0.0003000	0.0007000	
Magnesium	279.00					
Manganese	257.60			-0.0007000		
Mercury						
Nickel	231.60					
Potassium	766.40					
Selenium	196.00		0.0014000			
Silver	328.00			-0.0003300		
Sodium	588.90					
Thallium	276.60			0.0030000	0.0080000	
Vanadium	292.40			0.0008000		
Zinc	213.80		0.0002000	0.0002000		

Comments:

FORM XII (PART 1) - IN

U.S. EPA - CLP

13

ICP LINEAR RANGES (QUARTERLY)

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP012

ICP ID Number: ICP61 Date: 05/04/91

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	3.30	1000000.0	
Antimony	3.30	60000.0	
Arsenic	3.30		NR
Barium	3.30	200000.0	
Beryllium	3.30	50000.0	
Cadmium	3.30	25000.0	
Calcium	3.30	500000.0	
Chromium	3.30	50000.0	
Cobalt	3.30	200000.0	
Copper	3.30	12500.0	
Iron	3.30	500000.0	
Lead	3.30		NR
Magnesium	3.30	1000000.0	
Manganese	3.30	100000.0	
Mercury			NR
Nickel	3.30	200000.0	
Potassium	3.30	1000000.0	
Selenium	3.30		NR
Silver	3.30	10000.0	
Sodium	3.30	1000000.0	
Thallium	3.30		NR
Vanadium	3.30	50000.0	
Zinc	3.30	150000.0	

Comments:

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0109	002	S	91LVB269	03/21/91	N/A	03/27/91
MND20-0019-W14	014	W	91LVK058	03/21/91	N/A	03/28/91
MND20-0019-W14	014 MS	W	91LVK058	03/21/91	N/A	03/28/91
MND20-0019-W14	014 MSD	W	91LVK058	03/21/91	N/A	03/28/91
MND20-0019-0109 TB	015	W	91LVK058	03/21/91	N/A	03/28/91

LAB QC:

VBLK	MB1	S	91LVB269	N/A	N/A	03/27/91
VBLK	MB1	W	91LVK058	N/A	N/A	03/28/91

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Chain Of Custody.....
Data Summary.....

I. Case Narrative.....

II. QC Summary.....
- A. Surrogate % Recovery Summary (Form 2)
- B. Matrix Spike (Form 3)
- C. Reagent Blank Summary (Form 4)
- D. GC/MS Tuning and Calibration Standard (Form 5)

III. Sample Data Package.....
- A. Sample Data in order of RFW sample number
  - 1. Tabulated Results (Form 1)
  - 2. Tentatively identified compound (form 1E)
  - 3. Raw Data in order:
    - a. Reconstructed Ion Chromatogram(s)
    - b. Quantitation Report(s)
    - c. HSL Mass Spectra
    - d. TIC Mass Spectra
    - e. GC/MS Library Search for TIC

IV. Standards Data Package.....
- A. Initial Calibration Data:
  - 1. Form 6
  - 2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
- B. Continuing Calibration Data
  - 1. Form 7
  - 2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
- C. Internal Standard Summary (Form 8)

V. Raw QC Data Package.....
- A. GC/MS Tuning and Calibration Standard: DFTPP
  - 1. Bar Graph
  - 2. Mass Listing
- B. Blank Data
  - 1. Tabulated Results (Form 1)
  - 2. TIC Results (Form 1B)
  - 3. Raw Data
    - a. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
    - b. HSL Spectra
    - c. TIC Spectra
    - d. GC/MS Library Search for TIC
- C. Matrix Spike Data
  - 1. Tabulated Results (Form 1)
  - 2. Raw Data
    - a. Reconstructed Ion Chromatogram(s)
    - b. Quantitation Report(s)

VI. Addition Documentation.....
- A. Extraction Record

0000001

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L033

LANLHOOCLP

Client: LANL ~~DOE~~ MOUND

Work Order: 2744-40-07-1417

Date Rec'd. 3/22/91 Date Due ~~48 hrs~~ 4/21/91

RFW Contact: Susan Wilson

Client Contact/Phone: 505-255-1445

Refrigerator#	5	1	5	3	5	1	1		
#/Type Container	1/G	1/G	1/G	1/G	1/AG	2/G	2/G		
Volume	125ml	125ml	250ml	250ml	950ml	40ml	40ml		
Preservative	—	—	—	—	—	—	—		
ANALYSES REQUESTED	PCB	TCL VOA	TCL P/PCB BNA	TCL Metal CN	PCB	TCL VOA	VOA		

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	062414	062414		PCB	062414	062414		
001	MND20-0019-0107	S	3-21-91	X								
2	MND20-0019-0109	S		X	X	X	X					
3	MND20-0019-W1	W						X				
4	MND20-0019-W2	W						X				
5	MND20-0019-W3	W						X				
6	MND20-0019-W4	W						X				
7	MND20-0019-W7	W						X				
8	MND20-0019-W8	W						X				
9	MND20-0019-W9	W		QC	Dal=CLP			X				
10	MND20-0019-W10	W			TAT=30 Day			X				
11	MND20-0019-W11	W						X				
12	MND20-0019-W12	W		PCB=Dallas Lab 1375				X				
13	MND20-0019-W13	W						X				
14	MND20-0019-W14	W						X	X			
15	MND20-0019-0109 Trip blank	W								X		

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: (PCB 48 hr. turnaround)

☆ See Steve Wesson for special instructions

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-21-91	1800					
	[illegible]	[illegible]	3-22-91	9:30am					
CAD SERN	[illegible]	[illegible]	3-21-91	9:45am					
ACB	[illegible]	[illegible]	3-21-91	11:30am					
ALL OTHER SAMPLES	[illegible]	[illegible]	3-21-91	2:04pm					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21 21 001/A 12 88

7 115

Ref + Cool n/a

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 04/29/91 11:02

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 1a

Sample Information	Cust ID:	MND20-0019-0 109		MND20-0019-W 14		MND20-0019-W 14		MND20-0019-W 14		MND20-0019-0 109 TB		VBLK	
	RFW#:	002		014		014 MS		014 MSD		015		91LVB269-MB1	
	Matrix:	SOIL		WATER		WATER		WATER		WATER		SOIL	
	D.F.:	1.02		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/L		ug/L		ug/L		ug/L		ug/Kg	
Surrogate Recovery	Toluene-d8	100	%	104	%	102	%	101	%	101	%	99	%
	Bromofluorobenzene	87	%	100	%	101	%	99	%	100	%	93	%
	1,2-Dichloroethane-d4	110	%	103	%	103	%	99	%	104	%	104	%
			fl		fl		fl		fl		fl		fl
Chloromethane		12	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		12	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		12	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		12	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		57	B	4	JB	16	B	16	B	9	B	9	
Acetone		34	B	13	B	13	B	14	B	12	B	6	J
Carbon Disulfide		6	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		6	U	5	U	113	%	112	%	5	U	5	U
1,1-Dichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		6	U	5	U	5	U	5	U	5	U	5	U
Chloroform		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		12	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		6	U	5	U	5	U	5	U	5	U	5	U
Vinyl Acetate		12	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		6	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		6	U	5	U	109	%	115	%	5	U	5	U
Dibromochloromethane		6	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
Benzene		6	U	5	U	103	%	108	%	5	U	5	U
Trans-1,3-Dichloropropene		6	U	5	U	5	U	5	U	5	U	5	U
Bromoform		6	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		12	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		12	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		6	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		6	U	5	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

000047

RFW Batch Number: 9103L033 Client: LANL-MOU20 Work Order: 2744-40-07-1417 Page: 1b

Cust ID:	MND20-0019-0 109	MND20-0019-W 14	MND20-0019-W 14	MND20-0019-W 14	MND20-0019-0 109 TB	VBLK
RFW#:	002	014	014 MS	014 MSD	015	91LVB269-MB1
Toluene	6 U	5 U	106 %	108 %	5 U	5 U
Chlorobenzene	6 U	5 U	109 %	109 %	5 U	5 U
Ethylbenzene	6 U	5 U	5 U	5 U	5 U	5 U
Styrene	6 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	6 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

000005

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/29/91 11:02 Page: 2a

Cust ID: VBLK

Sample Information		
	RFW#:	91LVK058-MB1
	Matrix:	WATER
	D.F.:	1.00
	Units:	ug/L

Surrogate Recovery	Toluene-d8	100	%
	Bromofluorobenzene	98	%
	1,2-Dichloroethane-d4	107	%

Chloromethane	10	U
Bromomethane	10	U
Vinyl Chloride	10	U
Chloroethane	10	U
Methylene Chloride	14	
Acetone	22	
Carbon Disulfide	5	U
1,1-Dichloroethene	5	U
1,1-Dichloroethane	5	U
1,2-Dichloroethene (total)	5	U
Chloroform	5	U
1,2-Dichloroethane	5	U
2-Butanone	10	U
1,1,1-Trichloroethane	5	U
Carbon Tetrachloride	5	U
Vinyl Acetate	10	U
Bromodichloromethane	5	U
1,2-Dichloropropane	5	U
cis-1,3-Dichloropropene	5	U
Trichloroethene	5	U
Dibromochloromethane	5	U
1,1,2-Trichloroethane	5	U
Benzene	5	U
Trans-1,3-Dichloropropene	5	U
Bromoform	5	U
4-Methyl-2-pentanone	10	U
2-Hexanone	10	U
Tetrachloroethene	5	U
1,1,2,2-Tetrachloroethane	5	U

*= Outside of EPA CLP QC limits.

Cust ID: VBLK

RFW#: 91LVK058-MB1

Toluene	5	U
Chlorobenzene	5	U
Ethylbenzene	5	U
Styrene	5	U
Xylene (total)	5	U

*= Outside of EPA CLP QC limits.

000007

0000000

CASE NARRATIVE

ROY F. WESTON INC.
LIONVILLE LABORATORY

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-22-91
RFW #: 9103L033, GC/MS VOLATILE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of two (2) water samples and one (1) soil sample collected on 03-21-91.

The samples were analyzed according to criteria set forth in CLP SOW 02/88 (Rev. 05/89) for Client Specified target compounds on 03-27,28-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were not detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

   Matrix spike and spike duplicate soil samples are associated with RFW lot 9103L012.

4. The laboratory blanks contained the common contaminants methylene chloride and acetone at levels less than 3x the CRQL.

5. Internal standard area and retention time criteria were met for samples and blanks.

Linda A. Hayhurst 5.17.91

Jack R.Tuschall, Ph.D. Date
Laboratory Manager
Lionville Analytical Laboratory

WESTON

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

Roy F. Weston, Inc. - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0109	002	S	91LE0407	03/21/91	03/26/91	04/16/91
MND20-0019-0109	002 MS	S	91LE0407	03/21/91	03/26/91	04/16/91
MND20-0019-0109	002 MSD	S	91LE0407	03/21/91	03/26/91	04/16/91

LAB QC:

SBLK	MB1	S	91LE0407	N/A	03/26/91	04/15/91
SBLK	MB1 BS	S	91LE0407	N/A	03/26/91	04/15/91

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Chain Of Custody..... 001
Data Summary..... 003

I. Case Narrative..... 006

II. QC Summary..... 009
A. Surrogate % Recovery Summary (Form 2)
B. Matrix Spike (Form 3)
C. Reagent Blank Summary (Form 4)
D. GC/MS Tuning and Calibration Standard (Form 5)

III. Sample Data Package..... 019
A. Sample Data in order of RFW sample number
1. Tabulated Results (Form 1)
2. Tentatively identified compound (form 1E)
3. Raw Data in order:
a. Reconstructed Ion Chromatogram(s)
b. Quantitation Report(s)
c. HSL Mass Spectra
d. TIC Mass Spectra
e. GC/MS Library Search for TIC

IV. Standards Data Package..... 061
A. Initial Calibration Data:
1. Form 6
2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)

B. Continuing Calibration Data
1. Form 7
2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)

C. Internal Standard Summary (Form 8)

V. Raw QC Data Package..... 169
A. GC/MS Tuning and Calibration Standard: DFTPP
1. Bar Graph
2. Mass Listing

B. Blank Data
1. Tabulated Results (Form 1)
2. TIC Results (Form 1B)
3. Raw Data
a. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
b. HSL Spectra
c. TIC Spectra
d. GC/MS Library Search for TIC

C. Matrix Spike Data
1. Tabulated Results (Form 1)
2. Raw Data
a. Reconstructed Ion Chromatogram(s)
b. Quantitation Report(s)

VI. Addition Documentation..... 220
A. Extraction Record

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

(16)

WESTON Analytics Use Only
9103L033

LANL MOUCLP

Client: LANL ~~DOE~~ MOUND

Work Order: 2744-40-07-1417

Date Rec'd.: 3/22/91 Date Due: ~~48 hrs~~ 4/1/91

RFW Contact: Susan Wilson

Client Contact/Phone: 505-255-1445

Refrigerator#	5	1	5	3	5	1	1		
#/Type Container	1/G	1/G	1/G	1/G	1/AG	2/G	2/G		
Volume	125ml	125ml	125ml	250ml	950ml	40ml	40ml		
Preservative	—	—	—	—	—	—	—		
ANALYSES REQUESTED	PCB	TCL VOA	TCL P/PCB BNA	TCL Metal CN	PCB	TCL VOA	VOA		
	DPCB	D6241H	D6041H D6251H	Metals TCLP	DPCB	D6241H	D6241H		

M/A Use Only Lab ID	Client ID/Description	Matrix	Date Collected	DPCB	D6241H	D6041H D6251H	Metals TCLP	DPCB	D6241H	D6241H		
001	MND20-0019-0107	S	3-21-91	X								
2	MND20-0019-0109	S		X	X	X	X					
3	MND20-0019-W1	W						X				
4	MND20-0019-W2	W						X				
5	MND20-0019-W3	W						X				
6	MND20-0019-W4	W						X				
7	MND20-0019-W7	W						X				
8	MND20-0019-W8	W						X				
9	MND20-0019-W9	W		QC Del = CLP				X				
10	MND20-0019-W10	W		TAT = 30 day				X				
11	MND20-0019-W11	W						X				
12	MND20-0019-W12	W		PCB = 12 Lab 1375				X				
13	MND20-0019-W13	W						X				
14	MND20-0019-W14	W						X	X			
15	MND20-0019-0109 Trip blank	W								X		

000002

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
WI - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

Special Instructions: PCB 48 hr. turnaround

☆ See Steve Wesson for special instructions

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]		3-21-91	1800					
	[illegible]	[illegible]	3/22/91	9:30am					
RAD SCAN	[illegible]	Charles Pyle	3-21-91	9:45am					
PCB	Charles Pyle	[illegible]	3-21-91	11:30am					
ALL OTHER Sample	Charles Pyle	[illegible]	3-21-91	2:04pm					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

7-115

Ref = Cool ice

DATA SUMMARY

Roy F. Weston, Inc. Lionville Laboratory
Semivolatiles by GC/MS, HSL List

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/25/91 15:03 Page: 1a

Sample Information	Cust ID:	MND20-0019-0109		MND20-0019-0109		MND20-0019-0109		SBLK		SBLK BS	
	RFW#:	002		002 MS		002 MSD		91LE0407-MB1		91LE0407-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.11		1.11		1.11		1.11		1.11	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	50	%	70	%	51	%	65	%	49	%
	2-Fluorobiphenyl	58	%	81	%	69	%	60	%	45	%
	p-Terphenyl-d14	83	%	77	%	76	%	64	%	52	%
	Phenol-d5	45	%	63	%	47	%	65	%	53	%
	2-Fluorophenol	46	%	63	%	46	%	66	%	57	%
	2,4,6-Tribromophenol	57	%	69	%	63	%	38	%	36	%
Phenol		440	U	60	%	48	%	370	U	52	%
bis(2-Chloroethyl)ether		440	U	440	U	440	U	370	U	370	U
2-Chlorophenol		440	U	65	%	51	%	370	U	49	%
1,3-Dichlorobenzene		440	U	440	U	440	U	370	U	370	U
1,4-Dichlorobenzene		440	U	66	%	50	%	370	U	47	%
Benzyl alcohol		440	U	440	U	440	U	370	U	370	U
1,2-Dichlorobenzene		440	U	440	U	440	U	370	U	370	U
2-Methylphenol		440	U	440	U	440	U	370	U	370	U
bis(2-Chloroisopropyl)ether		440	U	440	U	440	U	370	U	370	U
4-Methylphenol		440	U	440	U	440	U	370	U	370	U
N-Nitroso-Di-n-propylamine		440	U	61	%	50	%	370	U	42	%
Hexachloroethane		440	U	440	U	440	U	370	U	370	U
Nitrobenzene		440	U	440	U	440	U	370	U	370	U
Isophorone		440	U	440	U	440	U	370	U	370	U
2-Nitrophenol		440	U	440	U	440	U	370	U	370	U
2,4-Dimethylphenol		440	U	440	U	440	U	370	U	370	U
Benzoic acid		2200	U	2200	U	2200	U	1800	U	1800	U
bis(2-Chloroethoxy)methane		440	U	440	U	440	U	370	U	370	U
2,4-Dichlorophenol		440	U	440	U	440	U	370	U	370	U
1,2,4-Trichlorobenzene		440	U	74	%	57	%	370	U	45	%
Naphthalene		440	U	440	U	440	U	370	U	370	U
4-Chloroaniline		440	U	440	U	440	U	370	U	370	U
Hexachlorobutadiene		440	U	440	U	440	U	370	U	370	U
4-Chloro-3-methylphenol		440	U	61	%	53	%	370	U	35	%
2-Methylnaphthalene		440	U	440	U	440	U	370	U	370	U
Hexachlorocyclopentadiene		440	U	440	U	440	U	370	U	370	U

*= Outside of EPA CLP QC limits.

000004

Cust ID:	MND20-0019-0109		MND20-0019-0109		MND20-0019-0109		SBLK		SBLK BS	
RFW#:	002		002 MS		002 MSD		91LE0407-MB1		91LE0407-MB1	
2,4,6-Trichlorophenol	440	U	440	U	440	U	370	U	370	U
2,4,5-Trichlorophenol	2200	U	2200	U	2200	U	1800	U	1800	U
2-Chloronaphthalene	440	U	440	U	440	U	370	U	370	U
2-Nitroaniline	2200	U	2200	U	2200	U	1800	U	1800	U
Dimethylphthalate	440	U	440	U	440	U	370	U	370	U
Acenaphthylene	440	U	440	U	440	U	370	U	370	U
2,6-Dinitrotoluene	440	U	440	U	440	U	370	U	370	U
3-Nitroaniline	2200	U	2200	U	2200	U	1800	U	1800	U
Acenaphthene	54	J	82	%	78	%	370	U	50	%
2,4-Dinitrophenol	2200	U	2200	U	2200	U	1800	U	1800	U
4-Nitrophenol	2200	U	39	%	40	%	1800	U	29	%
Dibenzofuran	440	U	440	U	440	U	370	U	370	U
2,4-Dinitrotoluene	440	U	70	%	64	%	370	U	45	%
Diethylphthalate	440	U	440	U	440	U	370	U	370	U
4-Chlorophenyl-phenylether	440	U	440	U	440	U	370	U	370	U
Fluorene	440	U	440	U	440	U	370	U	370	U
4-Nitroaniline	2200	U	2200	U	2200	U	1800	U	1800	U
4,6-Dinitro-2-methylphenol	2200	U	2200	U	2200	U	1800	U	1800	U
N-Nitrosodiphenylamine (1)	440	U	440	U	440	U	370	U	370	U
4-Bromophenyl-phenylether	440	U	440	U	440	U	370	U	370	U
Hexachlorobenzene	440	U	440	U	440	U	370	U	370	U
Pentachlorophenol	2200	U	69	%	60	%	1800	U	33	%
Phenanthrene	280	J	150	J	160	J	370	U	370	U
Anthracene	55	J	440	U	440	U	370	U	370	U
Di-n-Butylphthalate	440	U	440	U	45	J	370	U	370	U
Fluoranthene	360	J	230	J	210	J	370	U	370	U
Pyrene	310	J	62	%	66	%	370	U	48	%
Butylbenzylphthalate	440	U	440	U	440	U	370	U	370	U
3,3'-Dichlorobenzidine	880	U	880	U	870	U	740	U	740	U
Benzo(a)anthracene	120	J	95	J	91	J	370	U	370	U
Chrysene	170	J	110	J	100	J	370	U	370	U
bis(2-Ethylhexyl)phthalate	76	J	72	J	49	J	370	U	210	J
Di-n-Octyl phthalate	440	U	440	U	440	U	370	U	370	U
Benzo(b)fluoranthene	130	J	100	J	70	J	370	U	370	U
Benzo(k)fluoranthene	97	J	110	J	83	J	370	U	370	U
Benzo(a)pyrene	110	J	110	J	80	J	370	U	370	U
Indeno(1,2,3-cd)pyrene	74	J	73	J	52	J	370	U	370	U
Dibenzo(a,h)anthracene	440	U	440	U	440	U	370	U	370	U
Benzo(g,h,i)perylene	93	J	80	J	440	U	370	U	370	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL MOUND **SAMPLES RECEIVED:** 03-22-91
RFW #: 9103L033, SEMIVOLATILE
W.O. #: 2744-40-07

NARRATIVE

One (1) soil sample was collected on 03-21-91.

The samples were extracted on 03-26-91 and analyzed according to criteria set forth in SW 846 Method 8270 for TCL Semivolatile target compounds on 04-15,16-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

4. All blank spike recoveries were within EPA QC limits.

5. Internal standard area and retention time criteria were met for all samples and blanks.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

5-28-91
Date

WESTON SM

GLOSSARY OF BNA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

A = Aldol Condensation Product.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

Roy F. Weston, Inc. - Lionville Laboratory
PEST/PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0109	002	S	91LE0407	03/21/91	03/26/91	05/02/91
MND20-0019-0109	002 MS	S	91LE0407	03/21/91	03/26/91	05/02/91
MND20-0019-0109	002 MSD	S	91LE0407	03/21/91	03/26/91	05/02/91

LAB QC:

PBLK	MB2	S	91LE0407	N/A	03/26/91	05/03/91
PBLK	MB2 BS	S	91LE0407	N/A	03/26/91	05/03/91

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II. QC Summary..... 8
A. Surrogate % Recovery Summary, Forms 2
B. Matrix Spike/Matrix Spike Duplicate, Forms 3
C. Method Blank Summary, Forms 4

III. Sample Data Package..... 13
A. Sample Data in order of RFW number
1. Tabulated Results, Forms 1
2. Raw Data in order by:
a. 2250/2401 Column
b. SP2100 Column

IV. Standards Data Package..... 21
A. Pesticide/PCB standards:
1. Forms 8
2. Form 9
3. Form 10 (if applicable)
4. Instrument Conditions
5. Chromatograms:
a. 2250/2401 Column
b. SP2100 Column

V. Raw QC Data Package..... 219
A. Blank Data
1. Tabulated Results, Forms 1
2. Raw Data:
a. 2250/2401 Column
b. SP2100 Column

B. Matrix Spike Data
1. Tabulated Results, Forms 1
2. Raw Data
a. 2250/2401 Column
b. SP2100 Column

C. Matrix Spike Duplicate Data
1. Tabulated Results, Forms 1
2. Raw Data
a. 2250/2401 Column
b. SP2100 Column

0000001

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

(16)

WESTON Analytics Use Only
9103L033

LANLHOOCLP

LANL ~~DOE~~ MOUND
Client
Work Order 2744-40-07-14117
Date Rec'd. 3/22/91 Date Due ~~48 hrs~~ 4/1/91
RFW Contact Susan Wilson
Client Contact/Phone 505-255-1445

Refrigerator#	5	1	5	3	5	1	1		
#/Type Container	1/G	1/G	1/G	1/G	1/AG	2/G	2/G		
Volume	125ml	125ml	125ml	250ml	950ml	40ml	40ml		
Preservative	—	—	—	—	—	—	—		
ANALYSES REQUESTED	PCB	TCL VOA	TCL P/PCB BNA	TCL Metal CN	PCB	TCL VOA	VOA		
	0PCB	0624H	0608H 0625H	TCLP	0PCB	0624H	0624H		

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected								
001	MND20-0019-0107	S	3-21-91	X							
2	MND20-0019-0109	S		X	X	X	X				
3	MND20-0019-W1	W						X			
4	MND20-0019-W2	W						X			
5	MND20-0019-W3	W						X			
6	MND20-0019-W4	W						X			
7	MND20-0019-W7	W						X			
8	MND20-0019-W8	W						X			
9	MND20-0019-W9	W		QC/Del=CLP				X			
10	MND20-0019-W10	W		TAT=30day				X			
11	MND20-0019-W11	W						X			
12	MND20-0019-W12	W		PCB=Dellabolz			75	X			
13	MND20-0019-W13	W						X			
14	MND20-0019-W14	W						X	X		
15	MND20-0019-0109 Trip blank	W								X	

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
WI - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

Special Instructions: PCB 48 hr. turnaround

☆ See Steve Wesson for special instructions

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]		3-21-91	1800					
	[illegible]	[illegible]	3-22-91	9:30am					
RAD SCRN	[illegible]	Charles [illegible]	3-21-91	9:45am					
PCB	Charles [illegible]	[illegible]	3-21-91	11:30am					
ALL OTHER Samples	Charles [illegible]	[illegible]	3-21-91	2:04pm					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y (N)
NOTES:

4 Properly Preserved
(Y) N
NOTES:

5 Received Within Holding Times
(Y) N
NOTES:

COC Tape Was:
1 Present on Outer Package (Y) N
2 Unbroken on Outer Package (Y) N
3 Present on Sample (Y) N
4 Unbroken on Sample (Y) N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples (Y) N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21 001/A-12/88

7-115

Ref. Cool Ice

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
Pesticide/PCBs by GC, CLP List

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/13/91 19:28 Page: 1

Sample Information	Cust ID:	MND20-0019-0109	MND20-0019-0109	MND20-0019-0109	PBLK	PBLK BS
	RFW#:	002	002 MS	002 MSD	91LE0407-MB2	91LE0407-MB2
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	2.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg

Surrogate: Di-n-butylchlorendate	57 %	66 %	75 %	87 %	71 %
	fl	fl	fl	fl	fl
Alpha-BHC	9.5 U	9.5 U	9.5 U	8.0 U	16 U
Beta-BHC	9.5 U	9.5 U	9.5 U	8.0 U	16 U
Delta-BHC	9.5 U	9.5 U	9.5 U	8.0 U	16 U
gamma-BHC (Lindane)	9.5 U	68 %	76 %	8.0 U	52 %
Heptachlor	9.5 U	76 %	92 %	8.0 U	58 %
Aldrin	9.5 U	77 %	88 %	8.0 U	55 %
Heptachlor epoxide	9.5 U	9.5 U	9.5 U	8.0 U	16 U
Endosulfan I	9.5 U	9.5 U	9.5 U	8.0 U	16 U
Dieldrin	19 U	72 %	82 %	16 U	55 %
4,4'-DDE	19 U	19 U	19 U	16 U	32 U
Endrin	19 U	88 %	101 %	16 U	67 %
Endosulfan II	19 U	19 U	19 U	16 U	32 U
4,4'-DDD	19 U	19 U	19 U	16 U	32 U
Endosulfan sulfate	19 U	19 U	19 U	16 U	32 U
4,4'-DDT	19 U	121 %	125 %	16 U	78 %
Methoxychlor	95 U	95 U	95 U	80 U	160 U
Endrin ketone	19 U	19 U	19 U	16 U	32 U
alpha-Chlordane	95 U	95 U	95 U	80 U	160 U
gamma-Chlordane	95 U	95 U	95 U	80 U	160 U
Toxaphene	190 U	190 U	190 U	160 U	320 U
Aroclor-1016	95 U	95 U	95 U	80 U	160 U
Aroclor-1221	95 U	95 U	95 U	80 U	160 U
Aroclor-1232	95 U	95 U	95 U	80 U	160 U
Aroclor-1242	95 U	95 U	95 U	80 U	160 U
Aroclor-1248	95 U	95 U	95 U	80 U	160 U
Aroclor-1254	190 U	190 U	190 U	160 U	320 U
Aroclor-1260	690	730	730	160 U	320 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

I. CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL MOUND **SAMPLES RECEIVED:** 03-22-91
RFW #: 9103L033, PEST/PCB
W.O. #: 2744-40-07

NARRATIVE

One (1) soil sample was collected on 03-21-91.

The sample and its associated QC samples were extracted on 03-26-91 and analyzed according to criteria set forth in the Contract Laboratory Program for Pesticide and PCB target compounds on 05-02,03-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Linearity and breakdown criteria were met for the primary column.

2. Continuing calibration criteria were met on both primary columns for all compounds in standards analyzed prior to sample extracts. Continuing calibration criteria were met on both confirmation columns for all compounds which required confirmation or quantitation.

3. Retention time criteria were exceeded for several compounds. Larger retention time criteria were used for evaluation of the accompanying data.

4. All surrogate recoveries were within EPA QC limits.

5. All matrix spike recoveries were within EPA QC limits.

6. All blank spike recoveries were within EPA QC limits.

7. The blank spike sample required a two-fold dilution to obtain spike recoveries within the linear range of the instrument.

5-21-91
Date

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

WESTON

GLOSSARY OF PEST/PCB DATA

DATA QUALIFIERS

U - Indicates that the compounds was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E - Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I - Interference.

ABBREVIATIONS

BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD - Indicates blank spike duplicate.

MS - Indicates matrix spike.

MSD - Indicates matrix spike duplicate.

DL - Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA - Not applicable.

DF - Dilution factor.

NR - Not required.

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0109						
SILVER, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
SILVER, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
SILVER, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
ALUMINUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
ALUMINUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
ALUMINUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
ARSENIC, TOTAL	002	S	91L0773	03/21/91	04/16/91	04/26/91
ARSENIC, TOTAL	002 REP	S	91L0773	03/21/91	04/16/91	04/26/91
ARSENIC, TOTAL	002 MS	S	91L0773	03/21/91	04/16/91	04/26/91
BARIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
BARIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
BARIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
BERYLLIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
BERYLLIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
BERYLLIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
CALCIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
CALCIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
CALCIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
CADMIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
CADMIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
CADMIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
COBALT, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
COBALT, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
COBALT, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
CHROMIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
CHROMIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
CHROMIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
COPPER, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
COPPER, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
COPPER, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
IRON, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
IRON, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
IRON, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
MERCURY, TOTAL	002	S	91C103B	03/21/91	04/17/91	04/19/91
POTASSIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
POTASSIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
POTASSIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MAGNESIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
MAGNESIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
MAGNESIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
MANGANESE, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
MANGANESE, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
MANGANESE, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
SODIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
SODIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
SODIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
NICKEL, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
NICKEL, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
NICKEL, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
LEAD, TOTAL	002	S	91L0773	03/21/91	04/16/91	04/27/91
LEAD, TOTAL	002 REP	S	91L0773	03/21/91	04/16/91	04/27/91
LEAD, TOTAL	002 MS	S	91L0773	03/21/91	04/16/91	04/27/91
ANTIMONY, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
ANTIMONY, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
ANTIMONY, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
SELENIUM, TOTAL	002	S	91L0773	03/21/91	04/16/91	04/26/91
SELENIUM, TOTAL	002 REP	S	91L0773	03/21/91	04/16/91	04/26/91
SELENIUM, TOTAL	002 MS	S	91L0773	03/21/91	04/16/91	04/26/91
THALLIUM, TOTAL	002	S	91L0773	03/21/91	04/16/91	04/26/91
THALLIUM, TOTAL	002 REP	S	91L0773	03/21/91	04/16/91	04/26/91
THALLIUM, TOTAL	002 MS	S	91L0773	03/21/91	04/16/91	04/26/91
VANADIUM, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
VANADIUM, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
VANADIUM, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91
ZINC, TOTAL	002	S	91L0774	03/21/91	04/16/91	04/23/91
ZINC, TOTAL	002 REP	S	91L0774	03/21/91	04/16/91	04/23/91
ZINC, TOTAL	002 MS	S	91L0774	03/21/91	04/16/91	04/23/91

LAB QC:

SILVER LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
ALUMINUM LABORTORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
BARIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
BERYLLIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
CALCIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
CADMIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
COBALT LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
COPPER LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
IRON LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
POTASSIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
MAGNESIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
MANGANESE LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
SODIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
NICKEL LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
ANTIMONY LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
VANADIUM LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
ZINC LABORATORY	LC1 BS	S	91L0774	N/A	04/16/91	04/23/91
SILVER LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
ALUMINUM LABORTORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
BARIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
BERYLLIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
CALCIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
CADMIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
COBALT LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
CHROMIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
COPPER LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
IRON LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
POTASSIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
MAGNESIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
MANGANESE LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
SODIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
NICKEL LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
ANTIMONY LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
VANADIUM LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
ZINC LABORATORY	LC2 BS	S	91L0774	N/A	04/16/91	04/23/91
SILVER, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
ALUMINUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
BARIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
BERYLLIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
CALCIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
CADMIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
COBALT, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
CHROMIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
COPPER, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
IRON, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
POTASSIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MAGNESIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
MANGANESE, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
SODIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
NICKEL, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
ANTIMONY, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
VANADIUM, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
ZINC, TOTAL	MB1	S	91L0774	N/A	04/16/91	04/23/91
ARSENIC LABORATORY	LC1 BS	S	91L0773	N/A	04/16/91	04/26/91
LEAD LABORATORY	LC1 BS	S	91L0773	N/A	04/16/91	04/27/91
SELENIUM LABORATORY	LC1 BS	S	91L0773	N/A	04/16/91	04/26/91
THALLIUM LABORATORY	LC1 BS	S	91L0773	N/A	04/16/91	04/26/91
ARSENIC LABORATORY	LC2 BS	S	91L0773	N/A	04/16/91	04/26/91
LEAD LABORATORY	LC2 BS	S	91L0773	N/A	04/16/91	04/27/91
SELENIUM LABORATORY	LC2 BS	S	91L0773	N/A	04/16/91	04/26/91
THALLIUM LABORATORY	LC2 BS	S	91L0773	N/A	04/16/91	04/26/91
ARSENIC, TOTAL	MB1	S	91L0773	N/A	04/16/91	04/26/91
LEAD, TOTAL	MB1	S	91L0773	N/A	04/16/91	04/27/91
SELENIUM, TOTAL	MB1	S	91L0773	N/A	04/16/91	04/26/91
THALLIUM, TOTAL	MB1	S	91L0773	N/A	04/16/91	04/26/91
MERCURY LABORATORY	LC1 BS	S	91C103B	N/A	04/17/91	04/19/91
MERCURY LABORATORY	LC2 BS	S	91C103B	N/A	04/17/91	04/19/91
MERCURY, TOTAL	MB1	S	91C103B	N/A	04/17/91	04/19/91

WESTON ANALYTICS
INORGANIC METHODOLOGY SUMMARY

METALS

EPA	206.2	:	As		
EPA	200.7	:	Sb		
EPA	239.1	:	Pb		
EPA	270.1	:	Se		
EPA	279.2	:	Tl		
EPA	245.1	:	Hg		
EPA	200.72	:	Ag	Co	Mn
			Al	Cr	Na
			Ba	Cu	Ni
			Be	Fe	V
			Ca	K	Zn
			Cd	Mg	

Total Cyanide : EPA 335.2

Total Recoverable Phenolics : EPA 420.1

Other :

MF

WESTON

MATRIX SPIKE SOLUTION
SOURCE: INORGANIC VENTURES LABORATORY

ELEMENTS	STOCK CONCENTRATION (ppb)	STOCK CONCENTRATION (ppb)
Aluminum	200,000	2,000
Antimony	50,000	500
Arsenic	4,000	40
Barium	200,000	2,000
Beryllium	5,000	50
Cadmium	5,000	50
Calcium	300,000	30,000
Chromium	2,000	200
Cobalt	5,000	500
Copper	2,500	250
Iron	10,000	1,000
Lead	200	20
Magnesium	250,000	25,000
Manganese	5,000	500
Mercury	10	1.0
Nickel	5,000	500
Potassium	250,000	25,000
Selenium	100	10
Silver	500	50
Sodium	250,000	25,000
Thallium	500	50
Vanadium	5,000	500
Zinc	1,000	500
Cyanide	1,000	100

* 1 mL of stock concentration is used for water matrix spike, final volume digestate 100 mL.

* 2 mLs of stock concentration is used for soil matrix spike, final volume digestate 200 mL.

ANALYTICAL SPIKES

ELEMENTS	SOURCE	STOCK	VOLUME ADDED TO 1 mLs	FINAL CONCENTRATION (ppb)
Arsenic	Aldrich	2 ppm	10 uL	20
Selenium	Aldrich	2 ppm	10 uL	10
Lead	Aldrich	2 ppm	10 uL	10
Thallium	Mallinckrodt	2 ppm	10 uL	20

WESTON

USEPA CONTRACT LABORATORY PROGRAM
DATA QUALIFIER DESCRIPTIONS
INORGANIC ANALYSIS SOW NO. 787

CONCENTRATION QUALIFIERS:

B = INDICATES THAT THE REPORTED VALUE IS LESS THAN THE CRDL BUT GREATER THAN THE IDL.

U = INDICATES THAT THE ANALYTE WAS ANALYZED FOR BUT NOT DETECTED.

QUALIFIERS:

E = THE REPORTED VALUE IS ESTIMATED BECAUSE OF THE PRESENCE OF INTERFERENCE.

M = DUPLICATE INJECTION PRECISION NOT MET.

N = SPIKED SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS.

S = THE REPORTED VALUE WAS DETERMINED BY THE METHOD OF STANDARD ADDITIONS (MSA).

W = POST DIGESTION SPIKE FOR FURNACE AA ANALYSIS IS OUT OF CONTROL LIMITS (85-125%) WHILE SAMPLE ABSORBANCE IS LESS THAN 50% OF SPIKE ABSORBANCE.

* = DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS.

+ = CORRELATION COEFFICIENT FOR THE MSA IS LESS THAN 0.995.

METHOD:

P = ICP
A = FLAME AA
F = FURNACE AA
CV = MANUAL COLD VAPOR AA.
AV = AUTOMATED COLD VAPOR AA.
AS = SEMI-AUTOMATED SPECTROPHOTOMETRIC
C = MANUAL SPECTROPHOTOMETRIC
T = TITRIMETRIC
NR = NOT REQUIRED

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- D. CRDL STANDARD FOR AA AND ICP (FORM 2B)
- E. BLANKS (FORM 3)
- F. ICP INTERFERENCE CHECK SAMPLE (FORM 4)
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- I. DUPLICATES (FORM 6)
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- K. STANDARD ADDITION RESULTS (FORM 8)
- L. ICP SERIAL DILUTIONS (FORM 9)
- M. HOLDING TIMES (FORM 10)
- N. INSTRUMENT DETECTION LIMITS (QUARTERLY) (FORM 11)
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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L033

LANLMOUCLP

LANL ~~DOE~~ MOUND
Client
Work Order 2744-40-07-1417
Date Rec'd. 3/22/91 Date Due ~~48 hrs~~ 4/21/91
RFW Contact Susan Wilson
Client Contact/Phone 505-255-1445

Refrigerator#	5	1	5	3	5	1	1		
#/Type Container	1/G	1/G	1/G	1/G	1/AG	2/G	2/G		
Volume	125ml	125ml	250ml	250ml	950ml	40ml	40ml		
Preservative	—	—	—	—	—	—	—		
ANALYSES REQUESTED	PCB	TCL VOA	TCL P/PCB BNA	TCL Metal CN	PCB	TCL VOA	VOA		

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	TCL VOA	TCL P/PCB BNA	TCL Metal CN	PCB	TCL VOA	VOA		
001	MND20-0019-0107	S	3-21-91	X								
2	MND20-0019-0109	S		X	X	X	X					
3	MND20-0019-W1	W						X				
4	MND20-0019-W2	W						X				
5	MND20-0019-W3	W						X				
6	MND20-0019-W4	W						X				
7	MND20-0019-W7	W						X				
8	MND20-0019-W8	W						X				
9	MND20-0019-W9	W		QC Del = CLP				X				
10	MND20-0019-W10	W		TAT = 30 day				X				
11	MND20-0019-W11	W						X				
12	MND20-0019-W12	W		PCB = Del Lab L375				X				
13	MND20-0019-W13	W						X				
14	MND20-0019-W14	W						X	X			
15	MND20-0019-0109 Trip blank	W								X		

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
WI - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

Special Instructions: PCB 48 hr. turnaround

★ See Steve Wesson for special instructions

Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-21-91	1800
	[illegible]	[illegible]	3-22-91	9:30am
RAD SCRN	[illegible]	Charles [illegible]	3-21-91	9:45am
ACB	Charles [illegible]	[illegible]	3-21-91	11:30am
ALL OTHER	Charles [illegible]	[illegible]	3-21-91	2:04pm
ECMSUCC	[illegible]	[illegible]	3-25	9:45

Item/Reason	Relinquished by	Received by	Date	Time
b. SOL	[illegible]	[illegible]	3-21-91	
BNA 002	[illegible]	[illegible]	3-21-91	9:50
Storage	[illegible]	[illegible]	3-21-91	
GFO	[illegible]	[illegible]	3-21-91	10:[illegible]
CN	[illegible]	[illegible]	3-27	16:00
Metals	[illegible]	[illegible]	4/16	1000
VOA	[illegible]		4-22-91	8:17

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

Ref. Cool Ice

RFW 21-21-001/A-12/88

7-115

0000002

2A

CASE NARRATIVE

WESTON

Roy F. Weston, INC.
Lionville Laboratory

CLIENT: LANL-MOUND
RFW #: 9103L033
W.O.#: 2744-40-07

SAMPLES RECEIVED: 3/22/91

METALS NARRATIVE

The set of samples consisted of (1) soil sample collected on 3/21/91.

The samples were analyzed according to criteria set forth in CLP SOW 7/87.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.

2. All ICV and CCV values were within control limits.

3. All ICB and CCB values were within control limits.

4. All preparation blank values were within control limits.

5. All LCS results were within the 80-120% control limits.

Note: The USEPA has dropped control limits for antimony and silver due to documented difficulties in obtaining reliable results. WESTON Analytics has adopted the same policy.

6. All matrix spike recoveries were within the 75-125% control limits with the exception of As, Pb, Mn, Ag, and Tl. All corresponding samples were flagged with an "N" according to CLP protocol.

WESTON

7. All duplicate analyses were within the 20% RPD control limits with the exception of Ca and Mn. All corresponding samples were flagged with an "*" according to CLP protocol.

Linda A. Shyhut

Jack R. Tuschall, Ph.D.
Laboratory Manager
WESTON Analytical Laboratories

5.16.91
Date

I. INORGANIC ANALYSES DATA PACKAGE

A. COVER PAGE

B. INORGANIC ANALYSIS SHEET (FORM 1)

C. INITIAL AND CONTINUING CALIBRATION VERIFICATION (FORM 2A)

D. CRDL STANDARD FOR AA AND ICP (FORM 2B)

E. BLANKS (FORM 3)
   1. INITIAL CALIBRATION BLANK
   2. CONTINUING CALIBRATION BLANK
   3. PREPARATION BLANK

F. ICP INTERFERENCE CHECK SAMPLE (FORM 4)

G. SPIKE SAMPLE RECOVERY (FORM 5A)

H. POST DIGEST SPIKE SAMPLE RECOVERY (FORM 5B)

I. DUPLICATES (FORM 6)

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O. ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY) (FORM 12)

P. ICP LINEAR RANGE (QUARTERLY) (FORM 13)

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

SOW No.: 7/87

EPA Sample No.	Lab Sample ID.
MND20-0019-0109	9103033002
MND20-0019-0109 D	9103033002 R
MND20-0019-0109 S	9103033002 S

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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 the Manager's designee, as verified by the following signature.

Lab Manager: [signature]

Date: 5/6/91

U.S. EPA - CLP 0000007

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MND20-0019-0109

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Matrix (soil/water):SOIL Lab Sample ID:9103033002

Level (low/med): LOW Date Received:03/22/91

% Solids: 85.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2260			P
7440-36-0	Antimony	4.08	U		P
7440-38-2	Arsenic	5.60		N	F
7440-39-3	Barium	23.0	B		P
7440-41-7	Beryllium	0.214	U		P
7440-43-9	Cadmium	0.858	U		P
7440-70-2	Calcium	124000		*	P
7440-47-3	Chromium	5.10			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	8.20			P
7439-89-6	Iron	6860			P
7439-92-1	Lead	10.0		WN	F
7439-95-4	Magnesium	36800			P
7439-96-5	Manganese	264		*N	P
7439-97-6	Mercury	0.117	U		CV
7440-02-0	Nickel	5.20	B		P
7440-09-7	Potassium	417	B		P
7782-49-2	Selenium	0.183	U	WN	F
7440-22-4	Silver	0.858	U	N	P
7440-23-5	Sodium	92.4	B		P
7440-28-0	Thallium	0.916	U	WN	F
7440-62-2	Vanadium	8.90	B		P
7440-66-6	Zinc	29.3			P
	Cyanide	0.587	U		C

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	5000.0	5114.30	102.3	5000.0	5112.20	102.2	5056.10	101.1	P
Antimony	3000.0	2934.10	97.8	3000.0	2927.10	97.6	2893.30	96.4	P
Arsenic	40.0	37.40		40.0			38.40	96.0	F
Barium	5000.0	4890.30	97.8	5000.0	4874.50	97.5	4822.80	96.5	P
Beryllium	250.0	252.00	100.8	250.0	247.90	99.2	243.60	97.4	P
Cadmium	250.0	259.70	103.9	250.0	243.10	97.2	235.40	94.2	P
Calcium	25000.0	24783.70	99.1	25000.0	24525.40	98.1	24073.10	96.3	P
Chromium	500.0	493.40	98.7	500.0	488.50	97.7	482.20	96.4	P
Cobalt	2500.0	2487.40	99.5	2500.0	2442.80	97.7	2401.70	96.1	P
Copper	1250.0	1237.00	99.0	1250.0	1232.50	98.6	1215.30	97.2	P
Iron	5000.0	5024.10	100.5	5000.0	5021.30	100.4	4907.30	98.1	P
Lead	40.0	42.00	105.0	40.0	36.90	92.2	41.00	102.5	F
Magnesium	25000.0	24250.10	97.0	25000.0	24026.10	96.1	23408.30	93.6	P
Manganese	750.0	744.10	99.2	750.0	734.20	97.9	722.40	96.3	P
Mercury	5.0	4.95	99.0	5.0	4.82	96.4	4.82	96.4	CV
Nickel	2000.0	1974.10	98.7	2000.0	1954.70	97.7	1916.80	95.8	P
Potassium	25000.0	23739.00	95.0	25000.0	24201.80	96.8	23646.50	94.6	P
Selenium	40.0	41.50	103.8	40.0	41.30	103.3	41.20	103.0	F
Silver	500.0	490.40	98.1	500.0	484.30	96.9	475.40	95.1	P
Sodium	25000.0	24639.40	98.6	25000.0	24780.60	99.1	24158.90	96.6	P
Thallium	40.0	39.90	99.7	40.0	39.60	99.0	41.20	103.0	F
Vanadium	2500.0	2493.70	99.7	2500.0	2445.60	97.8	2408.00	96.3	P
Zinc	1000.0	1009.10	100.9	1000.0	1005.10	100.5	987.90	98.8	P
Cyanide	100.0	100.17	100.2	100.0	101.38	101.4	100.78	100.8	C

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0	5045.10	100.9	5078.30	101.6	P
Antimony				3000.0	2853.70	95.1	2857.20	95.2	P
Arsenic	40.0	38.90	97.3	40.0	37.50	93.8	38.70	96.7	F
Barium				5000.0	4813.80	96.3	4803.50	96.1	P
Beryllium				250.0	243.10	97.2	244.60	97.8	P
Cadmium				250.0	246.00	98.4	256.90	102.8	P
Calcium				25000.0	24064.70	96.3	24360.60	97.4	P
Chromium				500.0	477.70	95.5	474.50	94.9	P
Cobalt				2500.0	2397.60	95.9	2415.50	96.6	P
Copper				1250.0	1214.20	97.1	1221.70	97.7	P
Iron				5000.0	4867.80	97.4	4878.60	97.6	P
Lead	40.0	41.00	102.5	40.0	42.10	105.2	42.50	106.3	F
Magnesium				25000.0	23366.80	93.5	23472.40	93.9	P
Manganese				750.0	720.80	96.1	723.20	96.4	P
Mercury				5.0	4.82	96.4	4.95	99.0	CV
Nickel				2000.0	1895.80	94.8	1908.30	95.4	P
Potassium				25000.0	23391.90	93.6	23553.90	94.2	P
Selenium				40.0	39.70	99.3	39.70	99.3	F
Silver				500.0	482.70	96.5	483.10	96.6	P
Sodium				25000.0	24075.80	96.3	23827.80	95.3	P
Thallium				40.0	40.40	101.0	42.40	106.0	F
Vanadium				2500.0	2418.80	96.8	2445.90	97.8	P
Zinc				1000.0	985.50	98.6	984.60	98.5	P
Cyanide				100.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0					
Antimony				3000.0					
Arsenic				40.0	38.90	97.2	35.90	89.7	F
Barium				5000.0					
Beryllium				250.0					
Cadmium				250.0					
Calcium				25000.0					
Chromium				500.0					
Cobalt				2500.0					
Copper				1250.0					
Iron				5000.0					
Lead	40.0			40.0	39.50	98.8	36.70	91.7	F
Magnesium				25000.0					
Manganese				750.0					
Mercury				5.0	4.94	98.8			CV
Nickel				2000.0					
Potassium				25000.0					
Selenium				40.0	40.70	101.7	40.30	100.7	F
Silver				500.0					
Sodium				25000.0					
Thallium				40.0	39.50	98.8	40.90	102.3	F
Vanadium				2500.0					
Zinc				1000.0					
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0					
Antimony				3000.0					
Arsenic				40.0	37.90	94.8	36.90	92.3	F
Barium				5000.0					
Beryllium				250.0					
Cadmium				250.0					
Calcium				25000.0					
Chromium				500.0					
Cobalt				2500.0					
Copper				1250.0					
Iron				5000.0					
Lead				40.0	39.90	99.7	40.90	102.3	F
Magnesium				25000.0					
Manganese				750.0					
Mercury				5.0					
Nickel				2000.0					
Potassium				25000.0					
Selenium				40.0	40.90	102.3	42.20	105.5	F
Silver				500.0					
Sodium				25000.0					
Thallium				40.0	41.40	103.5	44.10	110.3	F
Vanadium				2500.0					
Zinc				1000.0					
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic				40.0	40.90	102.3			F
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	41.50	103.8	41.70	104.2	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium				40.0	42.00	105.0	41.70	104.2	F
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	42.20	105.5	41.50	97.5	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	41.60	104.0	39.00	97.5	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Initial Calibration Source: IV

Continuing Calibration Source: IV

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead				40.0	38.60	96.5	38.70	96.5	F
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

AA CRDL Standard Source: IV

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				200.0	535.60	267.8	493.60	246.8
Antimony				120.0	129.30	107.8	115.30	96.1
Arsenic	10.0	10.60	106.0					
Barium				200.0	202.20	101.1	200.50	100.2
Beryllium				10.0	10.10	101.0	10.10	101.0
Cadmium				10.0	9.70	97.0	9.20	92.0
Calcium				1000.0	1267.10	126.7	1233.10	123.3
Chromium				20.0	21.30	106.5	18.50	92.5
Cobalt				100.0	103.10	103.1	102.80	102.8
Copper				50.0	53.30	106.6	53.30	106.6
Iron				200.0	323.30	161.6	300.30	150.2
Lead	3.0	2.30	76.7					
Magnesium				1000.0	1250.00	125.0	1158.60	115.9
Manganese				30.0	31.00	103.3	29.90	99.7
Mercury								
Nickel				80.0	80.80	101.0	82.80	103.5
Potassium				1000.0	-23.00	2.3	208.20	20.8
Selenium	5.0	4.30	86.0					
Silver				20.0	20.80	104.0	19.30	96.5
Sodium				1000.0	990.70	99.1	806.00	80.6
Thallium	10.0	9.80	98.0					
Vanadium				100.0	91.80	91.8	84.80	84.8
Zinc				40.0	41.00	102.5	43.10	107.8

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

AA CRDL Standard Source: IV

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				200.0				
Antimony				120.0				
Arsenic								
Barium				200.0				
Beryllium				10.0				
Cadmium				10.0				
Calcium				1000.0				
Chromium				20.0				
Cobalt				100.0				
Copper				50.0				
Iron				200.0				
Lead	3.0	7.10	236.7					
Magnesium				1000.0				
Manganese				30.0				
Mercury								
Nickel				80.0				
Potassium				1000.0				
Selenium								
Silver				20.0				
Sodium				1000.0				
Thallium								
Vanadium				100.0				
Zinc				40.0				

U.S. EPA - CLP

3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum	77.0	U	77.0	U	77.0	U	77.0	U	15.400	U	P
Antimony	19.0	U	19.0	U	19.0	U	19.0	U	3.800	U	P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Barium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Calcium	92.0	U	92.0	U	92.0	U	92.0	U	18.400	U	P
Chromium	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cobalt	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Copper	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
Iron	37.0	U	37.0	U	37.0	U	37.0	U	7.400	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.520	B	F
Magnesium	84.0	U	84.0	U	84.0	U	84.0	U	16.800	U	P
Manganese	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	7.0	U	7.0	U	7.0	U	7.0	U	1.400	U	P
Potassium	1007.0	U	1007.0	U	1007.0	U	1007.0	U	201.400	U	P
Selenium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Silver	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Sodium	71.0	U	71.0	U	71.0	U	71.0	U	14.200	U	P
Thallium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	F
Vanadium	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
Zinc	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cyanide	10.0	U	10.0	U	10.0	U	[illegible]		0.500	U	C

U.S. EPA - CLP

3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum					77.0	U					P
Antimony					19.0	U					P
Arsenic	2.0	U	2.0	U	2.0	U	2.0	U			F
Barium					5.0	U					P
Beryllium					1.0	U					P
Cadmium					4.0	U					P
Calcium					92.0	U					P
Chromium					3.0	U					P
Cobalt					4.0	U					P
Copper					7.0	U					P
Iron					37.0	U					P
Lead	2.0	U	2.0	U	2.0	U	2.0	U			F
Magnesium					84.0	U					P
Manganese					2.0	U					P
Mercury			0.2	U	0.2	U					CV
Nickel					7.0	U					P
Potassium					1007.0	U					P
Selenium			1.0	U	1.0	U	1.0	U			F
Silver					4.0	U					P
Sodium					71.0	U					P
Thallium			5.0	U	5.0	U	5.0	U			F
Vanadium					8.0	U					P
Zinc					3.0	U					P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank		M
Aluminum											
Antimony											
Arsenic			2.0	U	2.0	U					F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			1.0	U	1.0	U	1.0	U			F
Silver											
Sodium											
Thallium			5.0	U	5.0	U					F
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			1.0	U							F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank		M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			2.0	U	2.0	U	2.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): mg/kg

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank		M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			2.0	U							F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

ICP ID Number: ICP61 ICS Source: IV

Concentration Units: UG/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	507020	497420	500375	504574.8	101.4	489880	498949.9	100.3
Antimony			-15	1.7		-55	-50.0	
Arsenic								
Barium		518	19	518.4	100.1	18	511.8	98.8
Beryllium		486	0	482.5	99.3	0	477.3	98.2
Cadmium		990	-1	992.8	100.3	-2	987.9	99.8
Calcium	486400	482440	467552	472031.3	97.8	456777	468442.9	97.1
Chromium		471	0	473.0	100.4	-2	458.9	97.4
Cobalt		480	7	473.6	98.7	8	467.9	97.5
Copper		474	-19	471.4	99.5	-17	470.6	99.3
Iron	189880	187220	185934	187821.4	100.3	180103	183391.1	98.0
Lead								
Magnesium	483500	476880	467683	473050.8	99.2	453900	462812.9	97.1
Manganese			-21	454.5		-19	451.9	
Mercury								
Nickel		915	-14	904.0	98.8	-6	890.1	97.3
Potassium			-990	-740.0		-420	-490.0	
Selenium								
Silver		1075	8	1057.3	98.4	3	1075.5	100.0
Sodium			-220	-210.0		-400	-350.0	
Thallium								
Vanadium		460	-38	440.1	95.7	-48	433.2	94.2
Zinc		973	-13	970.4	99.7	-12	954.5	98.1
Cyanide								

0000025

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MND20-0019-0109

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Matrix (soil/water): SOIL Level:LOW

% Solids for sample: 85.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									
Antimony	75-125	73.0000		19.0000	U	94.20	77.5		P
Arsenic	75-125	9.3000		5.6000		6.40	57.6	N	F
Barium	75-125	367.2000		23.0000	B	376.60	91.4		P
Beryllium	75-125	8.4000		0.1700	B	9.40	89.2		P
Cadmium	75-125	7.8000		4.0000	U	9.40	82.8		P
Calcium									
Chromium	75-125	37.3000		5.1000		37.70	85.3		P
Cobalt	75-125	83.2000		3.1000	B	94.20	88.4		P
Copper	75-125	50.1000		8.2000		47.10	89.0		P
Iron									
Lead	75-125	9.4000		10.0000		3.20	16.0	N	F
Magnesium									
Manganese	75-125	402.1001		263.8000		94.20	146.9	N	P
Mercury									
Nickel	75-125	83.3000		5.2000	B	94.20	88.5		P
Potassium									
Selenium	75-125	0.6900	B	1.0000	U	1.60	43.0		F
Silver	75-125	6.6000		4.0000	U	9.40	69.6	N	P
Sodium									
Thallium	75-125	5.0000		5.0000	U	8.00	61.8	N	F
Vanadium	75-125	94.4000		8.9000	B	94.20	90.8		P
Zinc	75-125	116.0000		29.3000		94.20	92.1		P
Cyanide									

Comments:

0000026

U.S. EPA - CLP

5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MND20-0019-0109

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Matrix (soil/water): Level:

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese	75-125	3356.00		1229.70		2400.0	88.6		P
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

FORM V (PART 2) - IN

U.S. EPA - CLP 0000027

6
DUPLICATES

EPA SAMPLE NO.

MND20-0019-0109

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Matrix (soil/water): SOIL Level:LOW

% Solids for sample: 85.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2256.1000		2176.1000		3.6		P
Antimony	12.1	4.0755	U	3.8266	U			P
Arsenic	1.8	5.6000		4.8000		16.2		F
Barium	40.3	23.0000	B	22.4000	B	2.5		P
Beryllium	1.0	0.2145	U	0.2014	U			P
Cadmium	1.0	0.8580	U	0.8056	U			P
Calcium		123758.3000		96240.1900		25.0	*	P
Chromium	2.0	5.1000		5.4000		5.5		P
Cobalt	10.1	3.1000	B	2.5000	B	21.9		P
Copper	5.0	8.2000		8.3000		1.5		P
Iron		6864.3010		6609.0000		3.8		P
Lead	0.5	10.0000		2.2000		125.7		F
Magnesium		36776.8000		34549.9000		6.2		P
Manganese		263.8000		211.6000		22.0	*	P
Mercury								
Nickel	8.1	5.2000	B	5.7000	B	8.2		P
Potassium	1007.0	416.8999	B	382.1001	B	8.7		P
Selenium	0.9	0.1832	U	0.1770	U			P
Silver	2.0	0.8580	U	0.8056	U			P
Sodium	1007.0	92.4000	B	84.0000	B	9.5		P
Thallium	1.8	0.9160	U	0.8850	U			P
Vanadium	10.1	8.9000	B	7.9000	B	12.3		P
Zinc		29.3000		30.0000		2.2		P
Cyanide								

Comments:

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Solid LCS Source: IV

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				1000.0	1058.10		800.0	1200.0	105.8
Antimony				600.0	345.20		480.0	720.0	57.5
Arsenic				6.0	5.80		4.8	7.2	96.7
Barium				1000.0	1033.50		800.0	1200.0	103.3
Beryllium				50.0	50.70		40.0	60.0	101.5
Cadmium				50.0	50.20		40.0	60.0	100.4
Calcium				5000.0	5107.20		4000.0	6000.0	102.1
Chromium				100.0	101.50		80.0	120.0	101.5
Cobalt				500.0	506.00		400.0	600.0	101.2
Copper				250.0	254.30		200.0	300.0	101.7
Iron				1000.0	1031.00		800.0	1200.0	103.1
Lead				6.0	6.60		4.8	7.2	110.0
Magnesium				5000.0	5106.10		4000.0	6000.0	102.1
Manganese				150.0	152.40		120.0	180.0	101.6
Mercury				12.7	11.97		10.2	15.2	94.3
Nickel				400.0	406.50		320.0	480.0	101.6
Potassium				5000.0	5081.00		4000.0	6000.0	101.6
Selenium				6.0	6.00		4.8	7.2	100.7
Silver				100.0	92.70		80.0	120.0	92.7
Sodium				5000.0	5227.10		4000.0	6000.0	104.5
Thallium				6.0	6.10		4.8	7.2	102.0
Vanadium				500.0	506.40		400.0	600.0	101.3
Zinc				200.0	207.90		160.0	240.0	104.0
Cyanide				10.0	9.70		7.8	11.6	97.0

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Solid LCS Source: IV

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				1000.0	1058.00		800.0	1200.0	105.8
Antimony				600.0	350.80		480.0	720.0	58.5
Arsenic				6.0	5.80		4.8	7.2	97.0
Barium				1000.0	1038.40		800.0	1200.0	103.8
Beryllium				50.0	50.70		40.0	60.0	101.3
Cadmium				50.0	49.50		40.0	60.0	98.9
Calcium				5000.0	5117.20		4000.0	6000.0	102.3
Chromium				100.0	101.50		80.0	120.0	101.5
Cobalt				500.0	504.70		400.0	600.0	100.9
Copper				250.0	253.90		200.0	300.0	101.6
Iron				1000.0	1029.00		800.0	1200.0	102.9
Lead				6.0	6.40		4.8	7.2	107.0
Magnesium				5000.0	5106.40		4000.0	6000.0	102.1
Manganese				150.0	151.90		120.0	180.0	101.3
Mercury				12.7	13.66		10.2	15.2	107.6
Nickel				400.0	407.90		320.0	480.0	102.0
Potassium				5000.0	5159.60		4000.0	6000.0	103.2
Selenium				6.0	6.10		4.8	7.2	101.3
Silver				100.0	92.00		80.0	120.0	92.0
Sodium				5000.0	5230.00		4000.0	6000.0	104.6
Thallium				6.0	6.20		4.8	7.2	103.0
Vanadium				500.0	505.40		400.0	600.0	101.1
Zinc				200.0	208.00		160.0	240.0	104.0
Cyanide				10.0	9.80		7.8	11.8	98.0

FORM VII - IN

U.S. EPA - CLP

8

STANDARD ADDITION RESULTS

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Concentration Units: ug/L

	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q

FORM VIII - IN

U.S. EPA - CLP

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MND20-0019-0109

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	10518.10		10116.00		3.8		P
Antimony	19.00	U	95.00	U			P
Arsenic	48.80						
Barium	107.20	B	102.00	B	4.9		P
Beryllium	1.00	U	5.00	U			P
Cadmium	4.00	U	20.00	U			P
Calcium	576961.40		574494.40		0.4		P
Chromium	24.00		15.00	U	45.8		P
Cobalt	14.50	B	20.00	U	100.0		P
Copper	38.20		59.00	B	54.5		P
Iron	32001.20		33335.00		4.2		P
Lead	135.20						
Magnesium	171453.80		168733.50		1.6		P
Manganese	1229.70		1232.50		0.2		P
Mercury	0.20	U					
Nickel	24.30	B	35.00	U	100.0		P
Potassium	1943.50	B	5035.00	U	100.0		P
Selenium	6.40						
Silver	4.00	U	20.00	U			P
Sodium	430.60	B	355.00	U	100.0		P
Thallium	11.10						
Vanadium	41.40	B	40.00	U	100.0		P
Zinc	136.70		157.00		14.9		P

U.S. EPA - CLP

10
HOLDING TIMES

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
MND20-0019-0109	SOIL	03/22/91	04/17/91	26	03/27/91	5

FORM X - IN

U.S. EPA - CLP

11

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

ICP ID Number: ICP61 Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.2		200.0	77.0	P
Antimony	206.8		60.0	19.0	P
Arsenic					
Barium	493.4		200.0	5.0	P
Beryllium	313.0		5.0	1.0	P
Cadmium	228.8		5.0	4.0	P
Calcium	317.9		5000.0	92.0	P
Chromium	267.7		10.0	3.0	P
Cobalt	228.6		50.0	4.0	P
Copper	324.7		25.0	7.0	P
Iron	259.9		100.0	37.0	P
Lead					
Magnesium	279.0		5000.0	84.0	P
Manganese	257.6		15.0	2.0	P
Mercury					
Nickel	231.6		40.0	7.0	P
Potassium	766.4		5000.0	1007.0	P
Selenium					
Silver	328.0		10.0	4.0	P
Sodium	588.9		5000.0	71.0	P
Thallium					
Vanadium	292.4		50.0	8.0	P
Zinc	213.8		20.0	3.0	P

Comments:

U.S. EPA - CLP

11

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA1

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	193.7		10.0	2.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.0		5.0	1.0	F
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

FORM XI - IN

U.S. EPA - CLP

11

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA2

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	193.7		10.0	2.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.0		5.0	1.0	F
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

FORM XI - IN

U.S. EPA - CLP

11

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA3

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

FORM XI - IN

U.S. EPA - CLP 0000037

11

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

ICP ID Number: Date: 04/28/91

Flame AA ID Number:

Furnace AA ID Number: AA6

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum					
Antimony					
Arsenic	193.7		10.0	2.0	F
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	283.3		5.0	2.0	F
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium	196.0		5.0	1.0	F
Silver					
Sodium					
Thallium	276.8		10.0	5.0	F
Vanadium					
Zinc					

Comments:

FORM XI - IN

U.S. EPA - CLP 0000038

12A

ICP INTERELEMENT CORRECTION FACTORS (QUARTERLY)

Lab Name: Contract: 2744-40-07

Lab Code: WESTON Case No: LANL SAS No.: SDG No.: CLP033

ICP ID Number: ICP61 Date: 01/26/91

Analyte	Wave-length (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	As
Aluminum	308.20		-0.0016000			
Antimony	206.80		-0.0011280	0.0002000		
Arsenic	193.70	0.0060000		0.0010000		
Barium	493.40					
Beryllium	313.00					
Cadmium	228.80					-0.0005000
Calcium	317.90					
Chromium	267.70			0.0004000		
Cobalt	228.60					
Copper	324.70		0.0006500	-0.0001000		
Iron	259.90					
Lead	283.30	0.0007000		0.0003000	0.0007000	
Magnesium	279.00					
Manganese	257.60			-0.0007000		
Mercury						
Nickel	231.60					
Potassium	766.40					
Selenium	196.00		0.0014000			
Silver	328.00			-0.0003300		
Sodium	588.90					
Thallium	276.60			0.0030000	0.0080000	
Vanadium	292.40			0.0008000		
Zinc	213.80		0.0002000	0.0002000		

Comments:

FORM XII (PART 1) - IN

13

ICP LINEAR RANGES (QUARTERLY)

Lab Name: Contract:2744-40-07

Lab Code:WESTON Case No:LANL SAS No.: SDG No.:CLP033

ICP ID Number: ICP61 Date: 05/04/91

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum	3.30	1000000.0	
Antimony	3.30	60000.0	
Arsenic	3.30		NR
Barium	3.30	200000.0	
Beryllium	3.30	50000.0	
Cadmium	3.30	25000.0	
Calcium	3.30	500000.0	
Chromium	3.30	50000.0	
Cobalt	3.30	200000.0	
Copper	3.30	12500.0	
Iron	3.30	500000.0	
Lead	3.30		NR
Magnesium	3.30	1000000.0	
Manganese	3.30	100000.0	
Mercury			NR
Nickel	3.30	200000.0	
Potassium	3.30	1000000.0	
Selenium	3.30		NR
Silver	3.30	10000.0	
Sodium	3.30	1000000.0	
Thallium	3.30		NR
Vanadium	3.30	50000.0	
Zinc	3.30	150000.0	

Comments:

APPENDIX E-2

PCB AND TCL VOA ANALYTICAL RESULTS FOR WATER SAMPLES

Roy F. Weston, Inc. - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0107	001	S	91DL0717	03/21/91	03/22/91	03/25/91
MND20-0019-0107	001 MS	S	91DL0717	03/21/91	03/22/91	03/25/91
MND20-0019-0107	001 MSD	S	91DL0717	03/21/91	03/22/91	03/25/91
MND20-0019-0109	002	S	91DL0717	03/21/91	03/22/91	03/24/91
MND20-0019-W1	003	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W2	004	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W3	005	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W4	006	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W7	007	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W8	008	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W9	009	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W10	010	W	91DL0718	03/21/91	03/22/91	03/25/91
MND20-0019-W11	011	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W12	012	W	91DL0718	03/21/91	03/22/91	03/24/91
MND20-0019-W13	013	W	91DL0718	03/21/91	03/22/91	03/25/91
MND20-0019-W14	014	W	91DL0718	03/21/91	03/22/91	03/25/91

LAB QC:

PBLK	MB1	S	91DL0717	N/A	03/22/91	03/25/91
PBLK	MB1 BS	S	91DL0717	N/A	03/22/91	03/25/91
PBLK	MB1 BSD	S	91DL0717	N/A	03/22/91	03/25/91
PBLK	MB1	W	91DL0718	N/A	03/22/91	03/25/91
PBLK	MB1 BS	W	91DL0718	N/A	03/22/91	03/25/91
PBLK	MB1 BSD	W	91DL0718	N/A	03/22/91	03/25/91

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CHAIN OF CUSTODY

(16)

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L033

LANL MOOCLP

Client: ~~DOE~~ LANL MOUND

Work Order: 2744-40-07-1417

Date Rec'd. 3/22/91 Date Due ~~48 hrs~~ 4/1/91

RFW Contact: Susan Wilson

Client Contact/Phone: 505-255-1445

Refrigerator#	4	1	5	3	5	1	1		
#/Type Container	1/G	1/G	1/G	1/G	1/AG	2/G	2/G		
Volume	125ml	125ml	250ml	250ml	950ml	40ml	40ml		
Preservative	—	—	—	—	—	—	—		
ANALYSES REQUESTED	PCB	TCL VOA	TCL P/PCB BNA	TCL Metal CN	PCB	TCL VOA	VOA		

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	062411	060511 062511	CN	PCB	062411	062411		
001	MND20-0019-0107	S	3-21-91	X								
2	MND20-0019-0109	S		X	X	X	X					
3	MND20-0019-W1	W						X				
4	MND20-0019-W2	W						X				
5	MND20-0019-W3	W						X				
6	MND20-0019-W4	W						X				
7	MND20-0019-W7	W						X				
8	MND20-0019-W8	W						X				
9	MND20-0019-W9	W		QC Del = CLP				X				
10	MND20-0019-W10	W		TAT = 30 day				X				
11	MND20-0019-W11	W						X				
12	MND20-0019-W12	W		PCB = Del lab 1275				X				
13	MND20-0019-W13	W						X				
14	MND20-0019-W14	W						X	X			
15	MND20-0019-0109 Trip blank	W								X		

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: PCB 48 hr. turnaround

☆ See Steve Wesson for special instructions

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-21-91	1800					
	[illegible]	[illegible]	3-22-91	9:30am					
EAD SIRN	[illegible]	Charles Tyler	3-21-91	9:45am					
PCB	Charles Tyler	[illegible]	3-21-91	11:30am					
ALL OTHER Samples	Charles Tyler	[illegible]	3-21-91	2:04pm					

WESTON Analytics Use Only

Samples Were:
1 Shipped by Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21 21 001/A 12/88

7-115

Ref + Cool n/a

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/25/91 12:23 Page: 1

Sample Information						
Cust ID:	MND20-0019-0 107	MND20-0019-0 107	MND20-0019-0 107	MND20-0019-0 109	PBLK	PBLK BS
RFW#:	001	001 MS	001 MSD	002	91DL0717-MB1	91DL0717-MB1
Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
D.F.:	50.0	50.0	50.0	1.00	0.500	0.500
Units:	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g
Aroclor-1016	12 U	12 U	12 U	0.28 U	0.12 U	0.12 U
Aroclor-1221	12 U	12 U	12 U	0.28 U	0.12 U	0.12 U
Aroclor-1232	12 U	12 U	12 U	0.28 U	0.12 U	0.12 U
Aroclor-1242	12 U	12 U	12 U	0.28 U	0.12 U	0.12 U
Aroclor-1248	12 U	12 U	12 U	0.28 U	0.12 U	0.12 U
Aroclor-1254	24 U	D %	D %	0.56 U	0.24 U	89 %
Aroclor-1260	37	32	37	0.86	0.24 U	0.24 U

Sample Information		
Cust ID:	PBLK BSD	
RFW#:	91DL0717-MB1	
Matrix:	SOIL	
D.F.:	0.500	
Units:	ug/g	
Aroclor-1016	0.12	U
Aroclor-1221	0.12	U
Aroclor-1232	0.12	U
Aroclor-1242	0.12	U
Aroclor-1248	0.12	U
Aroclor-1254	91	%
Aroclor-1260	0.24	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Roy F. Weston, I[illegible] - Lionville Laboratory
[illegible]s by GC

Report Date: 03/[illegible]/91 15:44

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 1

	Cust ID:	MND20-0019-W		MND20-0019-W		MND20-0019-W		MND20-0019-W		MND20-0019-W		MND20-0019-W							
		1		2		3		4		7		8							
Sample	RFW#:	003		004		005		006		007		008							
Information	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER							
	D.F.:	1000		500		1.00		2.00		10.0		2000							
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L							
			fl		fl		fl		fl		fl		fl						
Aroclor-1016		520	U	260	U	0.52	U	1.0	U	5.0	U	1000	U						
Aroclor-1221		520	U	260	U	0.52	U	1.0	U	5.0	U	1000	U						
Aroclor-1232		520	U	260	U	0.52	U	1.0	U	5.0	U	1000	U						
Aroclor-1242		520	U	260	U	0.52	U	1.0	U	5.0	U	1000	U						
Aroclor-1248		520	U	260	U	0.52	U	1.0	U	5.0	U	1000	U						
Aroclor-1254		1000	U	520	U	1.0	U	2.1	U	10	U	2100	U						
Aroclor-1260		6200		1600		1.2		9.5		29		7400							

	Cust ID:	MND20-0019-W		MND20-0019-W		MND20-0019-W		MND20-0019-W		MND20-0019-W		MND20-0019-W							
		9		10		11		12		13		14							
Sample	RFW#:	009		010		011		012		013		014							
Information	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER							
	D.F.:	500		2.00		1.00		1.00		2.00		1.00							
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L							
			fl		fl		fl		fl		fl		fl						
Aroclor-1016		260	U	1.0	U	0.52	U	0.52	U	1.0	U	0.52	U						
Aroclor-1221		260	U	1.0	U	0.52	U	0.52	U	1.0	U	0.52	U						
Aroclor-1232		260	U	1.0	U	0.52	U	0.52	U	1.0	U	0.52	U						
Aroclor-1242		260	U	1.0	U	0.52	U	0.52	U	1.0	U	0.52	U						
Aroclor-1248		260	U	1.0	U	0.52	U	0.52	U	1.0	U	0.52	U						
Aroclor-1254		520	U	2.1	U	1.0	U	1.0	U	2.1	U	1.0	U						
Aroclor-1260		1900		6.2		2.5		4.3		6.1		2.9							

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/25/91 15:44 Page: 2

	Cust ID:	PBLK	PBLK BS	PBLK BSD
Sample Information	RFW#:	91DL0718-MB1	91DL0718-MB1	91DL0718-MB1
	Matrix:	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L

Aroclor-1016	0.50	U	0.50	U	0.50	U							
Aroclor-1221	0.50	U	0.50	U	0.50	U							
Aroclor-1232	0.50	U	0.50	U	0.50	U							
Aroclor-1242	0.50	U	0.50	U	0.50	U							
Aroclor-1248	0.50	U	0.50	U	0.50	U							
Aroclor-1254	1.0	U	91	%	88	%							
Aroclor-1260	1.0	U	1.0	U	1.0	U							

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-Mound
RFW #: 9103L033
W.O. #: 2744-40-07-1417

SAMPLES RECEIVED: 03/22/91

NARRATIVE

This set of samples consisted of two soil samples and twelve water samples. The samples were collected on March 21, 1991.

Samples were extracted on March 22, 1991 and analyzed for PCB target compounds on March 24 and 25, 1991. Samples were extracted and analyzed following WESTON Analytics modified SW846 Method 8080 and reported according to WESTON Analytics modified Tier II Method.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered During their analysis:

1. Method Blank was free of contamination.
2. Method Blank Spikes were within laboratory limits.
3. Initial calibration criteria was met for all runs.
4. Continuing calibration criteria was met for all runs.

Stephen D Weston 4-2-91

J. Michael Taylor
Project Director
Lionville Analytical Laboratory

Date

03/26/91
9103L033.MND

CLIENT: LANL-MOUND
RFW # : 9103L033
W.O.# : 2744-40-07-1417

DATA QUALIFIER

1. The following qualifiers are used on the data summary:

   U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

   J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

   BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

   BSD - Indicates blank spike duplicate.

   MS - Indicates matrix spike.

   MSD - Indicates matrix spike duplicate.

   DL - Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

   NA - Not applicable.

   DF - Dilution factor.

   NR - Not required.

   I - Interference.

Roy F. Weston, Inc. - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/25/91 RFW LOT # :9103L049

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-W5	001	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W6	002	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W15	003	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W16	004	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W17	005	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W18	006	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W19	007	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W20	008	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W21	009	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W31	010	W	91DL0719	03/22/91	03/23/91	03/26/91
MND20-0019-W32	011	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W33	012	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W22	014	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W23	015	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W24	016	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W25	017	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W26	018	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W28	019	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W30	020	W	91DL0720	03/22/91	03/23/91	03/26/91
MND20-0019-W27	021	W	91DL0720	03/22/91	03/23/91	03/26/91
MND29-0019-W29	022	W	91DL0720	03/22/91	03/23/91	03/26/91
LAB QC:						
PBLK	MB1	W	91DL0719	N/A	03/23/91	03/26/91
PBLK	MB1 BS	W	91DL0719	N/A	03/23/91	03/26/91
PBLK	MB1 BSD	W	91DL0719	N/A	03/23/91	03/26/91
PBLK	MB1	W	91DL0720	N/A	03/23/91	03/26/91
PBLK	MB1 BS	W	91DL0720	N/A	03/23/91	03/26/91
PBLK	MB1 BSD	W	91DL0720	N/A	03/23/91	03/26/91

WESTON

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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L049

LANL DOE Mound
Client

Work Order 2744-40-07-1417

Date Rec'd. 3/23/91 Date Due ~~48-hr~~ 4/24/91 4/22/91

RFW Contact Susan Wilson

Client Contact/Phone 505/255-1445

Refrigerator#										
#/Type Container	1/AG	2/G								
Containers/Volume	950ml	40ml								
Preservative	—	—								
ANALYSES REQUESTED ➡	PCB	TCL VOA								

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	VOA							
001	MND20-0019-W5	W	3/22/91	X								
2	MND20-0019-W6	W		X								
3	MND20-0019-W15	W		X								
4	MND20-0019-W16	W		X								
5	MND20-0019-W17	W		X								
6	MND20-0019-W18	W		X								
7	MND20-0019-W19	W		X								
8	MND20-0019-W20	W		X								
9	MND20-0019-W21	W		X								
10	MND20-0019-W31	W		X								
11	MND20-0019-W32	W		X								
12	MND20-0019-W33	W		X								
13	MND20-0019-W31 TRIP	W			X							

Revision #2 3/28/91
QC=CLP
Del=Std
per P Beale

Revision #1 3/25/91
VOA=7 day std from collection
Std pkg for VOA only
PCB=Red Lab
1375

~~QC/Del=CLP~~
TAT=30day

30day TAT for PCB only

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
F - Fish
X - Other

Special Instructions: PCB 48 HR TURNAROUND

* See Steve Wesson For Special Instructions

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
Red Scream	[illegible]	[illegible]	3-22-91	1130					
MI	[illegible]	[illegible]	3/23/91	14:20					
GC MS VOA	[illegible]	[illegible]	3/25	1600					
VOA	[illegible]	[illegible]	4/1	1120					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-5/88

C# 356

R# 4388

7-115

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L049

Client: DOE - Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/23/91 Date Due: ~~48 HRS~~ 4/22/91
RFW Contact: Susan Wilson
Client Contact/Phone: 505/255-1445

Refrigerator#										
#/Type Container	1/AG	2/G								
Containers/Volume	950ml	40ml								
Preservative	—	—								
ANALYSES REQUESTED ➡	PCB	TCL VOA								

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	00034H							
014	MND20-0019-W22	W	3/22/91	X	X							
15	MND20-0019-W23	W		X								
16	MND20-0019-W24	W		X								
17	MND20-0019-W25	W		X								
18	MND20-0019-W26	W		X								
19	MND20-0019-W28	W		X								
20	MND20-0019-W30	W		X	X							
21	MND20-0019-W27	W		X								
22	MND20-0019-W29	W		X								

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
F - Fish
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
Bad Screen	[illegible]	J Barnes	3/22/91	11:23					
All	J Barnes	[illegible]	3/23/91	14:30					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-5/88

MND20-0019-W27 } Rec'd PCB but not on COC.
MND20-0019-W29

7-115

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L049 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/27/91 08:15 Page: 1

Sample Information													
Cust ID:	MND20-0019-W 5		MND20-0019-W 6		MND20-0019-W 15		MND20-0019-W 16		MND20-0019-W 17		MND20-0019-W 18		
RFW#:	001		002		003		004		005		006		
Matrix:	WATER		WATER		WATER		WATER		WATER		WATER		
D.F.:	20.0		200		2.00		1.00		1.00		100		
Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		
Aroclor-1016	10	U	100	U	1.0	U	0.52	U	0.52	U	52	U	
Aroclor-1221	10	U	100	U	1.0	U	0.52	U	0.52	U	52	U	
Aroclor-1232	10	U	100	U	1.0	U	0.52	U	0.52	U	52	U	
Aroclor-1242	10	U	100	U	1.0	U	0.52	U	0.52	U	52	U	
Aroclor-1248	10	U	100	U	1.0	U	0.52	U	0.52	U	52	U	
Aroclor-1254	21	U	210	U	2.1	U	1.0	U	1.0	U	100	U	
Aroclor-1260	86		600		10		2.0		0.56	J	440		

Sample Information													
Cust ID:	MND20-0019-W 19		MND20-0019-W 20		MND20-0019-W 21		MND20-0019-W 31		MND20-0019-W 32		MND20-0019-W 33		
RFW#:	007		008		009		010		011		012		
Matrix:	WATER		WATER		WATER		WATER		WATER		WATER		
D.F.:	20.0		10.0		1.00		1.00		1.00		2.00		
Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		
Aroclor-1016	10	U	5.2	U	0.52	U	0.52	U	0.52	U	1.0	U	
Aroclor-1221	10	U	5.2	U	0.52	U	0.52	U	0.52	U	1.0	U	
Aroclor-1232	10	U	5.2	U	0.52	U	0.52	U	0.52	U	1.0	U	
Aroclor-1242	10	U	5.2	U	0.52	U	0.52	U	0.52	U	1.0	U	
Aroclor-1248	10	U	5.2	U	0.52	U	0.52	U	0.52	U	1.0	U	
Aroclor-1254	21	U	10	U	1.0	U	1.0	U	1.0	U	2.1	U	
Aroclor-1260	56		33		1.3		0.81	J	0.19	J	7.0		

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

	Cust ID:	MND20-0019-W 22		MND20-0019-W 23		MND20-0019-W 24		MND20-0019-W 25		MND20-0019-W 26		MND20-0019-W 28	
Sample Information	RFW#:	014		015		016		017		018		019	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		20.0		1.00		10.0		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
			fl		fl		fl		fl		fl		fl
Aroclor-1016		0.52	U	10	U	0.52	U	5.2	U	0.52	U	0.52	U
Aroclor-1221		0.52	U	10	U	0.52	U	5.2	U	0.52	U	0.52	U
Aroclor-1232		0.52	U	10	U	0.52	U	5.2	U	0.52	U	0.52	U
Aroclor-1242		0.52	U	10	U	0.52	U	5.2	U	0.52	U	0.52	U
Aroclor-1248		0.52	U	10	U	0.52	U	5.2	U	0.52	U	0.52	U
Aroclor-1254		1.0	U	21	U	1.0	U	10	U	1.0	U	1.0	U
Aroclor-1260		1.5		74		0.54	J	36		0.57	J	0.17	J

	Cust ID:	MND20-0019-W 30		MND20-0019-W 27		MND29-0019-W 29		PBLK		PBLK BS		PBLK BSD	
Sample Information	RFW#:	020		021		022		91DL0719-MB1		91DL0719-MB1		91DL0719-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		20.0		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
			fl		fl		fl		fl		fl		fl
Aroclor-1016		0.52	U	10	U	0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1221		0.52	U	10	U	0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1232		0.52	U	10	U	0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1242		0.52	U	10	U	0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1248		0.52	U	10	U	0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1254		1.0	U	21	U	1.0	U	1.0	U	91	%	89	%
Aroclor-1260		1.9		82		0.98		1.0	U	1.0	U	1.0	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L049 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/27/91 08:15 Page: 3

Cust ID:	PBLK	PBLK BS	PBLK BSD
Sample Information RFW#:	91DL0720-MB1	91DL0720-MB1	91DL0720-MB1
Matrix:	WATER	WATER	WATER
D.F.:	1.00	1.00	1.00
Units:	ug/L	ug/L	ug/L
Aroclor-1016	0.50 U	0.50 U	0.50 U
Aroclor-1221	0.50 U	0.50 U	0.50 U
Aroclor-1232	0.50 U	0.50 U	0.50 U
Aroclor-1242	0.50 U	0.50 U	0.50 U
Aroclor-1248	0.50 U	0.50 U	0.50 U
Aroclor-1254	1.0 U	85 %	83 %
Aroclor-1260	1.0 U	1.0 U	1.0 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-Mound
RFW #: 9103L049
W.O. #: 2744-40-07-1417

SAMPLES RECEIVED: 03/25/91

NARRATIVE

This set of samples consisted of twenty one water samples. The samples were collected on March 22, 1991.

Samples were extracted on March 23, 1991 and analyzed for PCB target compounds on March 26, 1991. Samples were extracted and analyzed following WESTON Analytics modified SW846 Method 8080 and reported according to WESTON Analytics modified Tier II Method.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered During their analysis:

1. Method Blanks were free of contamination.
2. Method Blank Spikes were within laboratory limits.
3. Initial calibration criteria was met for all runs.
4. Continuing calibration criteria was met for all runs.

J. Michael Taylor — Date 4-3-91
Project Director
Lionville Analytical Laboratory

03/28/91
9103L049.MND

Roy F. Weston, Inc. - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/28/91 RFW LOT # :9103L095

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-W34	001	W	91DL0727	03/27/91	03/29/91	03/29/91
MND20-0021-0001	002	S	91DL0726	03/27/91	03/27/91	03/29/91
MND20-0021-0001	002 MS	S	91DL0726	03/27/91	03/27/91	03/29/91
MND20-0021-0001	002 MSD	S	91DL0726	03/27/91	03/27/91	03/29/91
MND20-0020-0001	003	S	91DL0726	03/27/91	03/27/91	03/29/91
MND20-0020-0002	004	S	91DL0726	03/27/91	03/27/91	03/29/91

LAB QC:

PBLK	MB1	W	91DL0727	N/A	03/29/91	03/30/91
PBLK	MB1 BS	W	91DL0727	N/A	03/29/91	03/30/91
PBLK	MB1 BSD	W	91DL0727	N/A	03/29/91	03/30/91
PBLK	MB1	S	91DL0726	N/A	03/27/91	03/30/91
PBLK	MB1 BS	S	91DL0726	N/A	03/27/91	03/30/91
PBLK	MB1 BSD	S	91DL0726	N/A	03/27/91	03/30/91

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QC Summary	N/A
Sample Data	09
Standards Data	16A
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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
91C3L095

LANL MOUND/DOE

Client: LANL MOUND/DOE

Work Order: 2744-40-07-1417 3/30/91

Date Rec'd. 3/28/91 Date Due: SAD TAT

RFW Contact: SUSAN WILSON

Client Contact/Phone: 505-255-1445

Refrigerator#												
#/Type Container				1AG	1CG							
Volume				950ml	120ml							
Preservative				ICE 4°C	ICE 4°C							
ANALYSES REQUESTED →				PCBs	PCBs							
WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	DPCB	DPCB							
01	MND20-0019-W34 / DRUM WATER	WATER	27MAR91	X								
2	MND20-0021-0001 / SOIL BORING	SOIL	27MAR91		X							
3	MND20-0020-0001 / SOIL BORING	SOIL	27MAR91		X							
4	MND20-0020-0002 / SOIL BORING	SOIL	27MAR91		X							
			PCB= Dodlab L375									
						QC=Special						
						Lvl=Tier II						
						TAT=2 days.						

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: SEE STEVE WESSON FOR SPECIAL INSTRUCTIONS.
* SAMPLE #MND20-0019-W34 ON 72 HR TAT *

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	T Hartfield	[illegible]	27MAR91	1500					
	[illegible]	[illegible]	3/28/91	9:20 AM					
	[illegible]	[illegible]	3/28	1610					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L095 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/01/91 15:09 Page: 1

Sample Information	Cust ID:	MND20-0019-W34		PBLK		PBLK BS		PBLK BSD	
	RFW#:	001		91DL0727-MB1		91DL0727-MB1		91DL0727-MB1	
	Matrix:	WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L	
Aroclor-1016		0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1221		0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1232		0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1242		0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1248		0.52	U	0.50	U	0.50	U	0.50	U
Aroclor-1254		1.0	U	1.0	U	92	%	89	%
Aroclor-1260		1.1		1.0	U	1.0	U	1.0	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Roy F. Weston, I[illegible] - Lionville Laboratory
[illegible]Bs by GC

RFW Batch Number: 9103L095 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/0[illegible]/91 15:07 Page: 1

	Cust ID:	MND20-0021-0 001	MND20-0021-0 001	MND20-0021-0 001	MND20-0020-0 001	MND20-0020-0 002	PBLK
Sample Information	RFW#:	002	002 MS	002 MSD	003	004	91DL0726-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.500	0.500	0.500	0.500	0.500	0.500
	Units:	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g

Aroclor-1016	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.12	U
Aroclor-1221	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.12	U
Aroclor-1232	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.12	U
Aroclor-1242	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.12	U
Aroclor-1248	0.14	U	0.14	U	0.14	U	0.14	U	0.14	U	0.12	U
Aroclor-1254	0.11	J	83	%	74	%	0.28	U	0.28	U	0.24	U
Aroclor-1260	0.27	U	0.27	U	0.27	U	0.28	U	0.28	U	0.24	U

	Cust ID:	PBLK BS	PBLK BSD
Sample Information	RFW#:	91DL0726-MB1	91DL0726-MB1
	Matrix:	SOIL	SOIL
	D.F.:	0.500	0.500
	Units:	ug/g	ug/g

Aroclor-1016	0.12	U	0.12	U
Aroclor-1221	0.12	U	0.12	U
Aroclor-1232	0.12	U	0.12	U
Aroclor-1242	0.12	U	0.12	U
Aroclor-1248	0.12	U	0.12	U
Aroclor-1254	90	%	88	%
Aroclor-1260	0.24	U	0.24	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

CASE NARRATIVE

WESTON

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-Mound
RFW #: 9103L095
W.O. #: 2744-40-07-1417

SAMPLES RECEIVED: 03/28/91

NARRATIVE

This set of samples consisted of three soil samples and one water sample. The samples were collected on March 27, 1991.

Samples were extracted on March 27 and 29, 1991 and analyzed for PCB target compounds on March 29 and 30, 1991. Samples were extracted and analyzed following WESTON Analytics modified SW846 Method 8080 and reported according to WESTON Analytics modified Tier II Method.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered During their analysis:

1. Method Blanks were free of contamination.
2. Method Blank Spikes were within laboratory limits.
3. Initial calibration criteria was met for all runs.
4. Continuing calibration criteria was met for all runs.

Steph D. Weston 4-2-91

J. Michael Taylor Date
Project Director
Lionville Analytical Laboratory

04/01/91
9103L095.MND

WESTON Analytics - Dedicated Lab

CLIENT: LANL-MOUND
RFW # : 9103L095
W.O.# : 2744-40-07-1417

DATA QUALIFIER

1. The following qualifiers are used on the data summary:

   U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

   J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

   BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

   BSD - Indicates blank spike duplicate.

   MS - Indicates matrix spike.

   MSD - Indicates matrix spike duplicate.

   DL - Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

   NA - Not applicable.

   DF - Dilution factor.

   NR - Not required.

   I - Interference.

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/23/91 RFW LOT # :9103L049

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-W31 TRIP	013	W	91LVK058	03/22/91	N/A	03/28/91
MND20-0019-W22	014	W	91LVK058	03/22/91	N/A	03/28/91
MND20-0019-W30	020	W	91LVK058	03/22/91	N/A	03/28/91

LAB QC:

VBLK	MB1	W	91LVK058	N/A	N/A	03/28/91

ROY F. WESTON INC.
LIONVILLE LABORATORY

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-22-91
RFW #: 9103L049, GC/MS VOLATILE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of three (3) water samples collected on 03-22-91.

The samples were analyzed according to criteria set forth in SW 846 Method 8240 for TCL Volatile target compounds on 03-28-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were not detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. Matrix spike and spike duplicate samples are associated with RFW lot 9103L033.

4. The laboratory blank contained the common contaminants methylene chloride and acetone at levels less than 3x the CRQL.

Jack R.Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

5.17.91
Date

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9103L049 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/29/91 15:43 Page: 1a

	Cust ID:	MND20-0019-W 31 TRIP		MND20-0019-W 22		MND20-0019-W 30		VBLK	
Sample Information	RFW#:	013		014		020		91LVK058-MB1	
	Matrix:	WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Toluene-d8	102	%	105	%	104	%	100	%
	Bromofluorobenzene	99	%	103	%	98	%	98	%
	1,2-Dichloroethane-d4	108	%	104	%	107	%	107	%
Chloromethane		10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U
Methylene Chloride		7	B	3	JB	17	B	14	
Acetone		9	JB	7	JB	12	B	22	
Carbon Disulfide		5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	5	U	5	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U
Chloroform		5	U	5	U	5	U	5	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U
2-Butanone		10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U
Vinyl Acetate		10	U	10	U	10	U	10	U
Bromodichloromethane		5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U
Trichloroethene		5	U	5	U	5	U	5	U
Dibromochloromethane		5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U
Benzene		5	U	5	U	5	U	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U
Bromoform		5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U
Tetrachloroethene		5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

Cust ID:	MND20-0019-W 31 TRIP	MND20-0019-W 22	MND20-0019-W 30	VBLK
RFW#:	013	014	020	91LVK058-MB1
Toluene	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L049

LANLDOCLP

Client: LANL ~~DOE~~ Mound

Work Order: 2744-40-07-1A17

Date Rec'd.: 3/23/91 Date Due: ~~48 hrs 4/29/91~~ 4/22/91

RFW Contact: Susan Wilson

Client Contact/Phone: 505/255-1445

Refrigerator#									
#/Type Container	1/AG	2/G							
Containers/Volume	950ml	40ml							
Preservative	—	—							
ANALYSES REQUESTED ➡	PCB	TCL VOA							

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	VOA HT							
001	MND20-0019-W5	W	3/22/91	X								
2	MND20-0019-W6	W		X								
3	MND20-0019-W15	W		X								
4	MND20-0019-W16	W		X								
5	MND20-0019-W17	W		X								
6	MND20-0019-W18	W		X								
7	MND20-0019-W19	W		X								
8	MND20-0019-W20	W		X								
9	MND20-0019-W21	W		X								
10	MND20-0019-W31	W		X								
11	MND20-0019-W32	W		X								
12	MND20-0019-W33	W		X								
13	MND20-0019-W31 TRIP	W			X							

Revision #2 3/28/91
QC=CLP
Del=Std
per P Beatie

Revision #1 3/25/91
VOA=7 day Hold from collection
Std Pkg for PCB only
PCB=Mod Lab
1375

~~QC/Del=CLP~~
TAT=30 day

30 day TAT for PCB only

Matrix: S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, F - Fish, X - Other

Special Instructions: PCB 48 HR TURNAROUND

X See Steve Wesson for Special Instructions

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
Red Screen	[illegible]	[illegible]	3-22-91	1130					
NL	[illegible]	[illegible]	3/22/91	14:30					
SC MS/VOA	[illegible]	[illegible]	3/23	1600					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-5/88

C# 356

R# 4388

7-115

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L049

Client: DOE - Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/23/91 Date Due: ~~4/22/91~~ 4/29/91
RFW Contact: Susan Wilson
Client Contact/Phone: 505/255-1445

Refrigerator#										
#/Type Container	1/AG	2/G								
Containers/Volume	950ml	40ml								
Preservative	—	—								
ANALYSES REQUESTED ➡	PCB	TCL VOA								
	0808	0034								

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	VOA							
014	MND20-0019-W22	W	3/22/91	X	X							
15	MND20-0019-W23	W		X								
16	MND20-0019-W24	W		X								
17	MND20-0019-W25	W		X								
18	MND20-0019-W26	W		X								
19	MND20-0019-W28	W		X								
20	MND20-0019-W30	W		X	X							
21	MND20-0019-W27	W		X								
22	MND20-0019-W29	W		X								

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
F - Fish
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
Rad Screen	Kim McBeth	J Barnes	3/22/91	11:23					
All	J Barnes	OWF	3/23/91	14:30					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-5/88

MND20-0019-W27
MND20-0019-W29 } Rec'd PCB but not on COC.

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/22/91 RFW LOT # :9103L033

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0109	002	S	91LVB269	03/21/91	N/A	03/27/91
MND20-0019-W14	014	W	91LVK058	03/21/91	N/A	03/28/91
MND20-0019-W14	014 MS	W	91LVK058	03/21/91	N/A	03/28/91
MND20-0019-W14	014 MSD	W	91LVK058	03/21/91	N/A	03/28/91
MND20-0019-0109 TB	015	W	91LVK058	03/21/91	N/A	03/28/91

LAB QC:

VBLK	MB1	S	91LVB269	N/A	N/A	03/27/91
VBLK	MB1	W	91LVK058	N/A	N/A	03/28/91

INTRO:

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Chain Of Custody.....
Data Summary.....

I. Case Narrative.....

II. QC Summary.....
- A. Surrogate % Recovery Summary (Form 2)
- B. Matrix Spike (Form 3)
- C. Reagent Blank Summary (Form 4)
- D. GC/MS Tuning and Calibration Standard (Form 5)

III. Sample Data Package.....
- A. Sample Data in order of RFW sample number
  - 1. Tabulated Results (Form 1)
  - 2. Tentatively identified compound (form 1E)
  - 3. Raw Data in order:
    - a. Reconstructed Ion Chromatogram(s)
    - b. Quantitation Report(s)
    - c. HSL Mass Spectra
    - d. TIC Mass Spectra
    - e. GC/MS Library Search for TIC

IV. Standards Data Package.....
- A. Initial Calibration Data:
  - 1. Form 6
  - 2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
- B. Continuing Calibration Data
  - 1. Form 7
  - 2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
- C. Internal Standard Summary (Form 8)

V. Raw QC Data Package.....
- A. GC/MS Tuning and Calibration Standard: DFTPP
  - 1. Bar Graph
  - 2. Mass Listing
- B. Blank Data
  - 1. Tabulated Results (Form 1)
  - 2. TIC Results (Form 1B)
  - 3. Raw Data
    - a. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
    - b. HSL Spectra
    - c. TIC Spectra
    - d. GC/MS Library Search for TIC
- C. Matrix Spike Data
  - 1. Tabulated Results (Form 1)
  - 2. Raw Data
    - a. Reconstructed Ion Chromatogram(s)
    - b. Quantitation Report(s)

VI. Addition Documentation.....
- A. Extraction Record

0000001

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L033

LANLMOOCLP

Client: LANL ~~DOE~~ MOUND
Work Order: 2744-40-07-1417
Date Rec'd. 3/22/91 Date Due ~~48 hrs~~ 4/01/91
RFW Contact: Susan Wilson
Client Contact/Phone: 505-255-1445

Refrigerator#	4	1	5	3	5	1	1		
#/Type Container	1/G	1/G	1/G	1/G	1/AG	2/G	2/G		
Volume	125ml	125ml	125ml	250ml	950ml	40ml	40ml		
Preservative	—	—	—	—	—	—	—		
ANALYSES REQUESTED	PCB	TCL VOA	TCL P/PCB BNA	TCL Metal CN	PCB	TCL VOA	VOA		

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	OPCB	062417	062417	062417	OPCB	062417	062417		
001	MND20-0019-0107	S	3-21-91	X								
2	MND20-0019-0109	S		X	X	X	X					
3	MND20-0019-W1	W						X				
4	MND20-0019-W2	W						X				
5	MND20-0019-W3	W						X				
6	MND20-0019-W4	W						X				
7	MND20-0019-W7	W						X				
8	MND20-0019-W8	W						X				
9	MND20-0019-W9	W		QC/Del=CLP				X				
10	MND20-0019-W10	W		TAT=30day				X				
11	MND20-0019-W11	W						X				
12	MND20-0019-W12	W		PCB=Dr/Lab 1375				X				
13	MND20-0019-W13	W						X				
14	MND20-0019-W14	W						X	X			
15	MND20-0019-0109 Trip blank	W								X		

Matrix: W - Water, DS - Drum Solids, X - Other, S - Soil, O - Oil, DL - Drum Liquids, SE - Sediment, A - Air, F - Fish, SO - Solid, WI - Wipe, L - EP/TCLP Leachate

Special Instructions: (PCB 48 hr. turnaround)

☆ See Steve Wesson for special instructions

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-21-91	1800					
	[illegible]	[illegible]	3/22/91	9:30am					
CAD SIRN	[illegible]	Charles Tyler	3-21-91	9:45am					
AB	Charles Tyler	[illegible]	3-21-91	11:30am					
ML OTHER SAMPLES	Charles Tyler	[illegible]	3-21-91	2:04pm					

WESTON Analytics Use Only

Samples Were: 1 Shipped by Hand Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

Ref + Cool n/a

0000003

DATA SUMMARY

Roy F. Weston, I. . - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/29/91 11:02 Page: 1a

Sample Information	Cust ID:	MND20-0019-0 109		MND20-0019-W 14		MND20-0019-W 14		MND20-0019-W 14		MND20-0019-0 109 TB		VBLK	
	RFW#:	002		014		014 MS		014 MSD		015		91LVB269-MB1	
	Matrix:	SOIL		WATER		WATER		WATER		WATER		SOIL	
	D.F.:	1.02		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/L		ug/L		ug/L		ug/L		ug/Kg	
Surrogate Recovery	Toluene-d8	100	%	104	%	102	%	101	%	101	%	99	%
	Bromofluorobenzene	87	%	100	%	101	%	99	%	100	%	93	%
	1,2-Dichloroethane-d4	110	%	103	%	103	%	99	%	104	%	104	%
Chloromethane		12	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		12	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		12	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		12	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		57	B	4	JB	16	B	16	B	9	B	9	
Acetone		34	B	13	B	13	B	14	B	12	B	6	J
Carbon Disulfide		6	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		6	U	5	U	113	%	112	%	5	U	5	U
1,1-Dichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		6	U	5	U	5	U	5	U	5	U	5	U
Chloroform		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		12	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		6	U	5	U	5	U	5	U	5	U	5	U
Vinyl Acetate		12	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		6	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		6	U	5	U	109	%	115	%	5	U	5	U
Dibromochloromethane		6	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
Benzene		6	U	5	U	103	%	108	%	5	U	5	U
Trans-1,3-Dichloropropene		6	U	5	U	5	U	5	U	5	U	5	U
Bromoform		6	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		12	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		12	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		6	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		6	U	5	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 1b

Cust ID:	MND20-0019-0 109	MND20-0019-W 14	MND20-0019-W 14	MND20-0019-W 14	MND20-0019-0 109 TB	VBLK
RFW#:	002	014	014 MS	014 MSD	015	91LVB269-MB1
Toluene	6 U	5 U	106 %	108 %	5 U	5 U
Chlorobenzene	6 U	5 U	109 %	109 %	5 U	5 U
Ethylbenzene	6 U	5 U	5 U	5 U	5 U	5 U
Styrene	6 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	6 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

000005

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9103L033 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/29/91 11:02 Page: 2a

Cust ID: VBLK

Sample Information		
RFW#:	91LVK058-MB1	
Matrix:	WATER	
D.F.:	1.00	
Units:	ug/L	

Surrogate Recovery			
	Toluene-d8	100	%
	Bromofluorobenzene	98	%
	1,2-Dichloroethane-d4	107	%

==========fl==========fl==========fl==========fl==========fl==========fl

Chloromethane	10	U
Bromomethane	10	U
Vinyl Chloride	10	U
Chloroethane	10	U
Methylene Chloride	14	
Acetone	22	
Carbon Disulfide	5	U
1,1-Dichloroethene	5	U
1,1-Dichloroethane	5	U
1,2-Dichloroethene (total)	5	U
Chloroform	5	U
1,2-Dichloroethane	5	U
2-Butanone	10	U
1,1,1-Trichloroethane	5	U
Carbon Tetrachloride	5	U
Vinyl Acetate	10	U
Bromodichloromethane	5	U
1,2-Dichloropropane	5	U
cis-1,3-Dichloropropene	5	U
Trichloroethene	5	U
Dibromochloromethane	5	U
1,1,2-Trichloroethane	5	U
Benzene	5	U
Trans-1,3-Dichloropropene	5	U
Bromoform	5	U
4-Methyl-2-pentanone	10	U
2-Hexanone	10	U
Tetrachloroethene	5	U
1,1,2,2-Tetrachloroethane	5	U

*= Outside of EPA CLP QC limits.

Cust ID: VBLK

RFW#: 91LVK058-MB1

Toluene	5	U
Chlorobenzene	5	U
Ethylbenzene	5	U
Styrene	5	U
Xylene (total)	5	U

*= Outside of EPA CLP QC limits.

000007

0000000

CASE NARRATIVE

ROY F. WESTON INC.
LIONVILLE LABORATORY

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-22-91
RFW #: 9103L033, GC/MS VOLATILE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of two (2) water samples and one (1) soil sample collected on 03-21-91.

The samples were analyzed according to criteria set forth in CLP SOW 02/88 (Rev. 05/89) for Client Specified target compounds on 03-27,28-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were not detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

   Matrix spike and spike duplicate soil samples are associated with RFW lot 9103L012.

4. The laboratory blanks contained the common contaminants methylene chloride and acetone at levels less than 3x the CRQL.

5. Internal standard area and retention time criteria were met for samples and blanks.

Linda A Shyhat 5.17.91

Jack R.Tuschall, Ph.D. Date
Laboratory Manager
Lionville Analytical Laboratory

WESTON

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

APPENDIX E-3

TCL ANALYTICAL RESULTS FOR SOIL SAMPLES

Roy F. Weston, Inc. - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0099	003	S	91DL0714	03/20/91	03/21/91	03/22/91
MND20-0019-0100	004	S	91DL0714	03/20/91	03/21/91	03/22/91
MND20-0019-0102	005	S	91DL0714	03/20/91	03/21/91	03/22/91
MND20-0019-0104	006	S	91DL0714	03/20/91	03/21/91	03/22/91
MND20-0019-0104	006 MS	S	91DL0714	03/20/91	03/21/91	03/22/91
MND20-0019-0104	006 MSD	S	91DL0714	03/20/91	03/21/91	03/22/91
LAB QC:						
PBLK	MB1	S	91DL0714	N/A	03/21/91	03/22/91
PBLK	MB1 BS	S	91DL0714	N/A	03/21/91	03/22/91
PBLK	MB1 BSD	S	91DL0714	N/A	03/21/91	03/23/91

WESTON

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QC Summary	N/A
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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L012

LANLMOOCLP
LANL-Mound

Client: Mound Plant, Ohio
Work Order: 2744-40-07-1417
Date Rec'd.: 3/21/91 Date Due: 4/20/91
RFW Contact: Susan Wilson
Client Contact/Phone: (505) 255-1445

Refrigerator#	5/6	1	3	5	1				
#/Type Container	1	1	1	1	2				
Volume	125mL	125mL	250mL	250mL	40mL		RADIATION		
Preservative	—	—	—	—	—		SCREENING		
ANALYSES REQUESTED	PCB	VOA	METALS + CN	REST/ PCB + BNA	VOA		TH 232	PU 238	
	0PCB	06244	MAX 14 DAYS	06/24H	06244				

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected									
001	MND20-0019-0094	S	3-19-91		X	X	X			0.5	6	pCi/g
2	MND20-0019-0092A	S	3-19-91		X	X	X			0.8	8	pCi/g
3	MND20-0019-0099	S	3-20-91	X								pCi/g
4	MND20-0019-0100	S	3-20-91	X	X	X	X					pCi/g
5	MND20-0019-0102	S	3-20-91	X	X	X	X					
6	MND20-0019-0104	S	3-20-91	X	X	X	X					
7	MND20-0019-0094 Trip blank	W	3-19-91					X				
8	MND20-0019-0094 Field blank	W	3-19-91					X				

QC/Dal=CLP
TAT 30day

PCB=Dal Lab OL370

☆ See Steve Wesson for special instructions

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
WI - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

TCL VOA, Metals, CN, PCB BNA

Special Instructions:
48 hour TURNAROUND on PCB only

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]		3-21-91	1800					
	[illegible]	[illegible]	3/21/91	9:30am					
RADSCAN	[illegible]	Clark [illegible]	3-21-91	9:45AM					
SMEAR	Clark [illegible]	CAT	3-21-91	[illegible]					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

RFW Batch Number: 9103L012 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 03/23/91 10:30 Page: 1

Sample Information													
Cust ID:	MND20-0019-0 099		MND20-0019-0 100		MND20-0019-0 102		MND20-0019-0 104		MND20-0019-0 104 006 MS		MND20-0019-0 104 006 MSD	
RFW#:	003		004		005		006					
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
D.F.:	0.500		0.500		0.500		0.500		0.500		0.500	
Units:	ug/g		ug/g		ug/g		ug/g		ug/g		ug/g	
Aroclor-1016	0.14	U	0.15	U	0.14	U	0.14	U	0.14	U	0.14	U
Aroclor-1221	0.14	U	0.15	U	0.14	U	0.14	U	0.14	U	0.14	U
Aroclor-1232	0.14	U	0.15	U	0.14	U	0.14	U	0.14	U	0.14	U
Aroclor-1242	0.14	U	0.15	U	0.14	U	0.14	U	0.14	U	0.14	U
Aroclor-1248	0.14	U	0.15	U	0.14	U	0.14	U	0.14	U	0.14	U
Aroclor-1254	0.27	U	0.30	U	0.28	U	0.28	U	88	%	84	%
Aroclor-1260	0.27	U	0.30	U	0.28	U	0.28	U	0.28	U	0.28	U

Sample Information						
Cust ID:	PBLK		PBLK BS		PBLK BSD	
RFW#:	91DL0714-MB1		91DL0714-MB1		91DL0714-MB1	
Matrix:	SOIL		SOIL		SOIL	
D.F.:	0.500		0.500		0.500	
Units:	ug/g		ug/g		ug/g	
Aroclor-1016	0.12	U	0.12	U	0.12	U
Aroclor-1221	0.12	U	0.12	U	0.12	U
Aroclor-1232	0.12	U	0.12	U	0.12	U
Aroclor-1242	0.12	U	0.12	U	0.12	U
Aroclor-1248	0.12	U	0.12	U	0.12	U
Aroclor-1254	0.24	U	89	%	95	%
Aroclor-1260	0.24	U	0.24	U	0.24	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

4A

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-Mound
RFW #: 9103L012
W.O. #: 2744-40-07-1417

SAMPLES RECEIVED: 03/21/91

NARRATIVE

This set of samples consisted of four soil samples. The samples were collected on March 20, 1991.

Samples were extracted on March 21, 1991 and analyzed for PCB target compounds on March 22 and 23, 1991. Samples were extracted and analyzed following WESTON Analytics modified SW846 Method 8080 and reported according to WESTON Analytics modified Tier II Method.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered During their analysis:

1. Method Blank was free of contamination.
2. Method Blank Spikes were within laboratory limits.
3. Initial calibration criteria was met for all runs.
4. Continuing calibration criteria was met for all runs.

Steph D Weston 4-2-91

J. Michael Taylor Date
Project Director
Lionville Analytical Laboratory

03/23/91
9103L012.MND

WESTON Analytics - Dedicated Lab

CLIENT: LANL-MOUND
RFW # : 9103L012
W.O.# : 2744-40-07-1417

DATA QUALIFIER

1. The following qualifiers are used on the data summary:

   U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

   J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

   BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

   BSD - Indicates blank spike duplicate.

   MS - Indicates matrix spike.

   MSD - Indicates matrix spike duplicate.

   DL - Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

   NA - Not applicable.

   DF - Dilution factor.

   NR - Not required.

   I - Interference.

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0094	001	S	91LVB268	03/19/91	N/A	03/26/91
MND20-0019-0092A	002	S	91LVB268	03/19/91	N/A	03/26/91
MND20-0019-0100	004	S	91LVB268	03/20/91	N/A	03/26/91
MND20-0019-0102	005	S	91LVB268	03/20/91	N/A	03/26/91
MND20-0019-0104	006	S	91LVB268	03/20/91	N/A	03/26/91
MND20-0019-0104	006 MS	S	91LVB269	03/20/91	N/A	03/27/91
MND20-0019-0104	006 MSD	S	91LVB269	03/20/91	N/A	03/27/91
MND20-0019-0094TRIPB	007	W	91LVK058	03/19/91	N/A	03/28/91
MND20-0019-0094FIELD	008	W	91LVK058	03/19/91	N/A	03/28/91

LAB QC:

VBLK	MB1	S	91LVB268	N/A	N/A	03/26/91
VBLK	MB1	S	91LVB269	N/A	N/A	03/27/91
VBLK	MB1	W	91LVK058	N/A	N/A	03/28/91

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B. Matrix Spike (Form 3)
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D. GC/MS Tuning and Calibration Standard (Form 5)

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2. Tentatively identified compound (form 1E)
3. Raw Data in order:
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b. Quantitation Report(s)
c. HSL Mass Spectra
d. TIC Mass Spectra
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1. Form 6
2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)

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B. Blank Data
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2. TIC Results (Form 1B)
3. Raw Data
a. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
b. HSL Spectra
c. TIC Spectra
d. GC/MS Library Search for TIC

C. Matrix Spike Data
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2. Raw Data
a. Reconstructed Ion Chromatogram(s)
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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only: 91031012

(LANLHOUCLP) LANL-Hound

Client: Mound Plant, OHIO
Work Order: 2744-40-07-1417
Date Rec'd.: 3/21/91 Date Due: 4/20/91
RFW Contact: Susan Wilson
Client Contact/Phone: (505) 255-1445

Refrigerator#			1/5	1	3	5	1				
#/Type Container			1	1	1	1	2				
Volume			125mL	125mL	250mL	250mL	4Bal		RADIATION		
Preservative			—	—	—	—	—		Screening		
ANALYSES REQUESTED			PCB	VOA	METALS + CN	REST PCB + BNA	VOA		TH 232	PU 238	
WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	0PCB	06244	MHALS 6010	06244 + 06244	06244			
001	MND20-0019-0094	S	3-19-91		X	X	X		0.5	6	pCi/g
2	MND20-0019-0094A	S	3-19-91		X	X	X		0.8	8	pCi/g
3	MND20-0019-0099	S	3-20-91	X							pCi/g
4	MND20-0019-0100	S	3-20-91	X	X	X	X				pCi/g
5	MND20-0019-0102	S	3-20-91	X	X	X	X				
6	MND20-0019-0104	S	3-20-91	X	X	X	X				
7	MND20-0019-0094 Trip blank	W	3-19-91					X			
8	MND20-0019-0094 Field blank	W	3-19-91					X			

QC/DL=CLP TAT 30 day

PCB=DOD La 01375

★ See Steve Wesson for special instructions

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
WI - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

Special Instructions: TCL VOA, Metals, CN, PCB BNA

48 hour TURNAROUND on PCB only

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3-21-91	1600					
	[illegible]	[illegible]	3/21/91	9 am					
RAD SCRN	[illegible]	Clarke Rpt	3-21-91	9:45 AM					
PCB	Clarke Rpt	CAT	3-21-91	[illegible]					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

DATA SUMMARY

Roy F. Weston, I[illegible] - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 04/25/91 15:42

RFW Batch Number: 9103L012 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 1a

	Cust ID:	MND20-0019-0094		MND20-0019-092A		MND20-0019-100		MND20-0019-102		MND20-0019-104		MND20-0019-104	
Sample Information	RFW#:	001		002		004		005		006		006 MS	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	0.980		1.00		0.980		1.00		1.02		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Toluene-d8	97	%	92	%	92	%	92	%	96	%	100	%
	Bromofluorobenzene	86	%	89	%	87	%	83	%	86	%	89	%
	1,2-Dichloroethane-d4	95	%	102	%	105	%	102	%	118	%	101	%
			fl		fl		fl		fl		fl		fl
Chloromethane		11	U	11	U	12	U	11	U	13	U	12	U
Bromomethane		11	U	11	U	12	U	11	U	13	U	12	U
Vinyl Chloride		11	U	11	U	12	U	11	U	13	U	12	U
Chloroethane		11	U	11	U	12	U	11	U	13	U	12	U
Methylene Chloride		40	B	31	B	53	B	47	B	56	B	97	B
Acetone		16	B	8	JB	24	B	30	B	35	B	20	B
Carbon Disulfide		6	U	6	U	6	U	6	U	6	U	6	U
1,1-Dichloroethene		6	U	6	U	6	U	6	U	6	U	102	%
1,1-Dichloroethane		6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dichloroethene (total)		6	U	6	U	6	U	6	U	6	U	6	U
Chloroform		6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dichloroethane		6	U	6	U	6	U	6	U	6	U	6	U
2-Butanone		11	U	11	U	12	U	11	U	13	U	12	U
1,1,1-Trichloroethane		6	U	6	U	6	U	6	U	6	U	6	U
Carbon Tetrachloride		6	U	6	U	6	U	6	U	6	U	6	U
Vinyl Acetate		11	U	11	U	12	U	11	U	13	U	12	U
Bromodichloromethane		6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dichloropropane		6	U	6	U	6	U	6	U	6	U	6	U
cis-1,3-Dichloropropene		6	U	6	U	6	U	6	U	6	U	6	U
Trichloroethene		6	U	6	U	6	U	6	U	6	U	94	%
Dibromochloromethane		6	U	6	U	6	U	6	U	6	U	6	U
1,1,2-Trichloroethane		6	U	6	U	6	U	6	U	6	U	6	U
Benzene		6	U	6	U	6	U	6	U	6	U	94	%
Trans-1,3-Dichloropropene		6	U	6	U	6	U	6	U	6	U	6	U
Bromoform		6	U	6	U	6	U	6	U	6	U	6	U
4-Methyl-2-pentanone		11	U	11	U	12	U	11	U	13	U	12	U
2-Hexanone		11	U	11	U	12	U	11	U	13	U	12	U
Tetrachloroethene		6	U	6	U	6	U	6	U	6	U	6	U
1,1,2,2-Tetrachloroethane		6	U	6	U	6	U	6	U	6	U	6	U

*= Outside of EPA CLP QC limits.

000007

Cust ID:	MND20-0019-0 094	MND20-0019-0 092A	MND20-0019-0 100	MND20-0019-0 102	MND20-0019-0 104	MND20-0019-0 104
RFW#:	001	002	004	005	006	006 MS
Toluene	6 U	6 U	6 U	6 U	6 U	94 %
Chlorobenzene	6 U	6 U	6 U	6 U	6 U	90 %
Ethylbenzene	6 U	6 U	6 U	6 U	6 U	6 U
Styrene	6 U	6 U	6 U	6 U	6 U	6 U
Xylene (total)	6 U	6 U	6 U	6 U	6 U	6 U

*= Outside of EPA CLP QC limits.

000005

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9103L012 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/25/91 15:42 Page: 2a

	Cust ID:	MND20-0019-0104		MND20-0019-094TRIPB		MND20-0019-094FIELD		VBLK		VBLK		VBLK	
Sample Information	RFW#:	006 MSD		007		008		91LVB268-MB1		91LVB269-MB1		91LVK058-MB1	
	Matrix:	SOIL		WATER		WATER		SOIL		SOIL		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/L		ug/L		ug/Kg		ug/Kg		ug/L	
Surrogate Recovery	Toluene-d8	96	%	100	%	105	%	98	%	99	%	100	%
	Bromofluorobenzene	89	%	99	%	102	%	93	%	93	%	98	%
	1,2-Dichloroethane-d4	114	%	106	%	112	%	96	%	104	%	107	%
			fl		fl		fl		fl		fl		fl
Chloromethane		12	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		12	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		12	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		12	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		81	B	7	B	8	B	5		9		14	
Acetone		24	B	8	JB	7	JB	4	J	6	J	22	
Carbon Disulfide		6	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		84	%	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		6	U	5	U	5	U	5	U	5	U	5	U
Chloroform		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		12	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		6	U	5	U	5	U	5	U	5	U	5	U
Vinyl Acetate		12	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		6	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		6	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		90	%	5	U	5	U	5	U	5	U	5	U
Dibromochloromethane		6	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		6	U	5	U	5	U	5	U	5	U	5	U
Benzene		92	%	5	U	5	U	5	U	5	U	5	U
Trans-1,3-Dichloropropene		6	U	5	U	5	U	5	U	5	U	5	U
Bromoform		6	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		12	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		12	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		6	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		6	U	5	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 9103L012 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 2b

Cust ID:	MND20-0019-0 104	MND20-0019-0 094TRIPB	MND20-0019-0 094FIELD	VBLK	VBLK	VBLK
RFW#:	006 MSD	007	008	91LVB268-MB1	91LVB269-MB1	91LVK058-MB1
Toluene	88 %	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	91 %	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	6 U	5 U	5 U	5 U	5 U	5 U
Styrene	6 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	6 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

000007

CASE NARRATIVE

ROY F. WESTON INC.
LIONVILLE LABORATORY

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-21-91
RFW #: 9103L012, GC/MS VOLATILE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of two (2) water samples and five (5) soil samples collected on 03-19,20-91.

The samples were analyzed according to criteria set forth in SW 846 Method 8240 for TCL Volatile target compounds on 03-26,27,28-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

4. The laboratory blanks contained the common contaminants methylene chloride and acetone at levels less than 3x the CRQL.

5. Internal standard area and retention time criteria were met for samples and blanks.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

5/7/91
Date

WESTON SM

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

Roy F. Weston, Inc. - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0094	001	S	91LE0407	03/19/91	03/26/91	04/17/91
MND20-0019-0092A	002	S	91LE0407	03/19/91	03/26/91	04/16/91
MND20-0019-0100	004	S	91LE0407	03/20/91	03/26/91	04/16/91
MND20-0019-0102	005	S	91LE0407	03/20/91	03/26/91	04/16/91
MND20-0019-0104	006	S	91LE0407	03/20/91	03/26/91	04/17/91

LAB QC:

SBLK	MB1	S	91LE0407	N/A	03/26/91	04/15/91
SBLK	MB1 BS	S	91LE0407	N/A	03/26/91	04/15/91

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I. Case Narrative	8
II. QC Summary	10
A. Surrogate % Recovery Summary (Form 2)	
B. Matrix Spike (Form 3)	
C. Reagent Blank Summary (Form 4)	
D. GC/MS Tuning and Calibration Standard (Form 5)	
III. Sample Data Package	19
A. Sample Data in order of RFW sample number	
1. Tabulated Results (Form 1)	
2. Tentatively identified compound (form 1E)	
3. Raw Data in order:	
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b. Quantitation Report(s)	
c. HSL Mass Spectra	
d. TIC Mass Spectra	
e. GC/MS Library Search for TIC	
IV. Standards Data Package	175
A. Initial Calibration Data:	
1. Form 6	
2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)	
B. Continuing Calibration Data	
1. Form 7	
2. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)	
C. Internal Standard Summary (Form 8)	
V. Raw QC Data Package	283
A. GC/MS Tuning and Calibration Standard: DFTPP	
1. Bar Graph	
2. Mass Listing	
B. Blank Data	
1. Tabulated Results (Form 1)	
2. TIC Results (Form 1B)	
3. Raw Data	
a. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)	
b. HSL Spectra	
c. TIC Spectra	
d. GC/MS Library Search for TIC	
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1. Tabulated Results (Form 1)	
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a. Reconstructed Ion Chromatogram(s)	
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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L012 (LANLMOUCLP) LANL-MOUND

Client: MOUND PLANT, OHIO
Work Order: 2744-40-07-1417
Date Rec'd.: 3/21/91 Date Due: 4/20/91
RFW Contact: SUSAN WILSON
Client Contact/Phone: (505) 255-1445

Refrigerator#	030/5	1	3	5	1					
#/Type Container	1	1	1	1	2					
Volume	125mL	125mL	250mL	250mL	40mL		RADIATION			
Preservative	—	—	—	—	—		SCREENING			
ANALYSES REQUESTED	PCB	VOA	METALS + CN	PEST/PCB + BNA	VOA		TH 232	PU 238		
	0L.PCB	0L.24H	MASL 0000	0L06# 0L.05H	0L.24H					

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected									
001	MND20-0019-0094	S	3-19-91		X	X	X			0.5	6	PCi/g
2	MND20-0019-0092A	S	3-19-91		X	X	X			0.8	8	PCi/g
3	MND20-0019-0099	S	3-20-91	X								PCi/g
4	MND20-0019-0100	S	3-20-91	X	X	X	X					PCi/g
5	MND20-0019-0102	S	3-20-91	X	X	X	X					
6	MND20-0019-0104	S	3-20-91	X	X	X	X					
7	MND20-0019-0094 Trip blank	W	3-19-91					X				
8	MND20-0019-0094 Field blank	W	3-19-91					X				

QC Data = CLP
TAT = 30 day

PCB = Data to OLB70

☆ See Steve Wesson for special instructions

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: TCL VOA, Metals, CN, P/PCB, BNA

48 hour TURNAROUND on PCB only

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]		3-21-91	1800	90 Sol	[illegible]	[illegible]	3/22/91	9:55
	[illegible]	[illegible]	3/21/91	9:30 AM	EXT	[illegible]	[illegible]	3/22/91	12:30
RAD Scen	[illegible]	Clark [illegible]	3-21-91	9:45AM	CN	[illegible]	[illegible]	3/27	16:00
SOVOA	Clark [illegible]	CLT	3-21-91	[illegible]	Strace	[illegible]	[illegible]	3/27	
Voa	[illegible]	[illegible]	3/22	10:00	Metals	[illegible]	Jeffrey Welch	4/12	1000
BNA	[illegible]	[illegible]	3/26/91	950	VOA	[illegible]		4-22-91	9:14

metals return Jeffrey Welch 4/23/91 0930

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered (Shipped) NOTES:
2 Ambient or Chilled (Chilled) NOTES:
3 Received Broken/Leaking (Improperly Sealed) Y (N) NOTES:
4 Properly Preserved (Y) N NOTES:
5 Received Within Holding Times (Y) N NOTES:

COC Tape Was:
1 Present on Outer Package (Y) N
2 Unbroken on Outer Package (Y) N
3 Present on Sample (Y) N
4 Unbroken on Sample (Y) N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples (Y) N

Discrepancies Between Sample Labels and COC Record? Y (N)
NOTES:

DATA SUMMARY

Roy F. Weston, Inc. Lionville Laboratory
Semivolatiles by GC/MS, HSL List

RFW Batch Number: 9103L012 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/17/91 16:48 Page: 1a

	Cust ID:	MND20-0019-0 094		MND20-0019-0 092A		MND20-0019-0 100		MND20-0019-0 102		MND20-0019-0 104		SBLK	
Sample Information	RFW#:	001		002		004		005		006		91LE0407-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.11		1.11		1.11		1.11		1.11		1.11	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	55	%	60	%	81	%	63	%	53	%	65	%
	2-Fluorobiphenyl	60	%	64	%	82	%	65	%	59	%	60	%
	p-Terphenyl-d14	63	%	93	%	106	%	89	%	79	%	64	%
	Phenol-d5	54	%	50	%	64	%	54	%	49	%	65	%
	2-Fluorophenol	47	%	51	%	65	%	59	%	44	%	66	%
	2,4,6-Tribromophenol	38	%	69	%	62	%	61	%	39	%	38	%
			fl		fl		fl		fl		fl		fl
Phenol		450	U	450	U	440	U	390	U	440	U	370	U
bis(2-Chloroethyl)ether		450	U	450	U	440	U	390	U	440	U	370	U
2-Chlorophenol		450	U	450	U	440	U	390	U	440	U	370	U
1,3-Dichlorobenzene		450	U	450	U	440	U	390	U	440	U	370	U
1,4-Dichlorobenzene		450	U	450	U	440	U	390	U	440	U	370	U
Benzyl alcohol		450	U	450	U	440	U	390	U	440	U	370	U
1,2-Dichlorobenzene		450	U	450	U	440	U	390	U	440	U	370	U
2-Methylphenol		450	U	450	U	440	U	390	U	440	U	370	U
bis(2-Chloroisopropyl)ether		450	U	450	U	440	U	390	U	440	U	370	U
4-Methylphenol		450	U	450	U	440	U	390	U	440	U	370	U
N-Nitroso-Di-n-propylamine		450	U	450	U	440	U	390	U	440	U	370	U
Hexachloroethane		450	U	450	U	440	U	390	U	440	U	370	U
Nitrobenzene		450	U	450	U	440	U	390	U	440	U	370	U
Isophorone		450	U	450	U	440	U	390	U	440	U	370	U
2-Nitrophenol		450	U	450	U	440	U	390	U	440	U	370	U
2,4-Dimethylphenol		450	U	450	U	440	U	390	U	440	U	370	U
Benzoic acid		2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
bis(2-Chloroethoxy)methane		450	U	450	U	440	U	390	U	440	U	370	U
2,4-Dichlorophenol		450	U	450	U	440	U	390	U	440	U	370	U
1,2,4-Trichlorobenzene		450	U	560		440	U	390	U	440	U	370	U
Naphthalene		450	U	450	U	440	U	120	J	440	U	370	U
4-Chloroaniline		450	U	450	U	440	U	390	U	440	U	370	U
Hexachlorobutadiene		450	U	450	U	440	U	390	U	440	U	370	U
4-Chloro-3-methylphenol		450	U	450	U	440	U	390	U	440	U	370	U
2-Methylnaphthalene		450	U	450	U	440	U	390	U	440	U	370	U
Hexachlorocyclopentadiene		450	U	450	U	440	U	390	U	440	U	370	U

*= Outside of EPA CLP QC limits.

000407

Cust ID:	MND20-0019-0 094		MND20-0019-0 092A		MND20-0019-0 100		MND20-0019-0 102		MND20-0019-0 104		SBLK	
RFW#:	001		002		004		005		006		91LE0407-MB1	
2,4,6-Trichlorophenol	450	U	450	U	440	U	390	U	440	U	370	U
2,4,5-Trichlorophenol	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
2-Chloronaphthalene	450	U	450	U	440	U	390	U	440	U	370	U
2-Nitroaniline	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
Dimethylphthalate	450	U	450	U	440	U	390	U	440	U	370	U
Acenaphthylene	450	U	450	U	440	U	390	U	440	U	370	U
2,6-Dinitrotoluene	450	U	450	U	440	U	390	U	440	U	370	U
3-Nitroaniline	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
Acenaphthene	450	U	450	U	440	U	210	J	440	U	370	U
2,4-Dinitrophenol	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
4-Nitrophenol	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
Dibenzofuran	450	U	450	U	440	U	83	J	440	U	370	U
2,4-Dinitrotoluene	450	U	450	U	440	U	390	U	440	U	370	U
Diethylphthalate	450	U	450	U	440	U	390	U	440	U	370	U
4-Chlorophenyl-phenylether	450	U	450	U	440	U	390	U	440	U	370	U
Fluorene	450	U	450	U	440	U	160	J	440	U	370	U
4-Nitroaniline	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
4,6-Dinitro-2-methylphenol	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
N-Nitrosodiphenylamine (1)	450	U	450	U	440	U	390	U	440	U	370	U
4-Bromophenyl-phenylether	450	U	450	U	440	U	390	U	440	U	370	U
Hexachlorobenzene	450	U	450	U	440	U	390	U	440	U	370	U
Pentachlorophenol	2200	U	2200	U	2200	U	2000	U	2200	U	1800	U
Phenanthrene	450	U	450	U	440	U	1400		440	U	370	U
Anthracene	450	U	450	U	440	U	220	J	440	U	370	U
Di-n-Butylphthalate	450	U	450	U	440	U	390	U	440	U	370	U
Fluoranthene	450	U	59	J	440	U	1700		440	U	370	U
Pyrene	450	U	61	J	440	U	1500		440	U	370	U
Butylbenzylphthalate	450	U	450	U	440	U	390	U	440	U	370	U
3,3'-Dichlorobenzidine	890	U	890	U	890	U	780	U	870	U	740	U
Benzo(a)anthracene	450	U	450	U	440	U	640		440	U	370	U
Chrysene	450	U	450	U	440	U	760		440	U	370	U
bis(2-Ethylhexyl)phthalate	86	J	130	J	48	J	390	U	50	J	370	U
Di-n-Octyl phthalate	450	U	450	U	440	U	390	U	440	U	370	U
Benzo(b)fluoranthene	450	U	450	U	440	U	630		440	U	370	U
Benzo(k)fluoranthene	450	U	450	U	440	U	510		440	U	370	U
Benzo(a)pyrene	450	U	450	U	440	U	550		440	U	370	U
Indeno(1,2,3-cd)pyrene	450	U	450	U	440	U	350	J	440	U	370	U
Dibenzo(a,h)anthracene	450	U	450	U	440	U	120	J	440	U	370	U
Benzo(g,h,i)perylene	450	U	450	U	440	U	380	J	440	U	370	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

Roy F. Weston, Inc Lionville Laboratory
Semivolatiles by GC/MS, HSL List

RFW Batch Number: 9103L012 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/17/91 16:48 Page: 2a

Cust ID: SBLK BS

Sample Information

RFW#: 91LE0407-MB1
Matrix: SOIL
D.F.: 1.11
Units: ug/Kg

Surrogate Recovery	Nitrobenzene-d5	49	%
	2-Fluorobiphenyl	45	%
	p-Terphenyl-d14	52	%
	Phenol-d5	53	%
	2-Fluorophenol	57	%
	2,4,6-Tribromophenol	36	%

Phenol	52	%
bis(2-Chloroethyl)ether	370	U
2-Chlorophenol	49	%
1,3-Dichlorobenzene	370	U
1,4-Dichlorobenzene	47	%
Benzyl alcohol	370	U
1,2-Dichlorobenzene	370	U
2-Methylphenol	370	U
bis(2-Chloroisopropyl)ether	370	U
4-Methylphenol	370	U
N-Nitroso-Di-n-propylamine	42	%
Hexachloroethane	370	U
Nitrobenzene	370	U
Isophorone	370	U
2-Nitrophenol	370	U
2,4-Dimethylphenol	370	U
Benzoic acid	1800	U
bis(2-Chloroethoxy)methane	370	U
2,4-Dichlorophenol	370	U
1,2,4-Trichlorobenzene	45	%
Naphthalene	370	U
4-Chloroaniline	370	U
Hexachlorobutadiene	370	U
4-Chloro-3-methylphenol	35	%
2-Methylnaphthalene	370	U
Hexachlorocyclopentadiene	370	U

*= Outside of EPA CLP QC limits.

Cust ID: SBLK BS

RFW#: 91LE0407-MB1

2,4,6-Trichlorophenol	370	U
2,4,5-Trichlorophenol	1800	U
2-Chloronaphthalene	370	U
2-Nitroaniline	1800	U
Dimethylphthalate	370	U
Acenaphthylene	370	U
2,6-Dinitrotoluene	370	U
3-Nitroaniline	1800	U
Acenaphthene	50	%
2,4-Dinitrophenol	1800	U
4-Nitrophenol	29	%
Dibenzofuran	370	U
2,4-Dinitrotoluene	45	%
Diethylphthalate	370	U
4-Chlorophenyl-phenylether	370	U
Fluorene	370	U
4-Nitroaniline	1800	U
4,6-Dinitro-2-methylphenol	1800	U
N-Nitrosodiphenylamine (1)	370	U
4-Bromophenyl-phenylether	370	U
Hexachlorobenzene	370	U
Pentachlorophenol	33	%
Phenanthrene	370	U
Anthracene	370	U
Di-n-Butylphthalate	370	U
Fluoranthene	370	U
Pyrene	48	%
Butylbenzylphthalate	370	U
3,3'-Dichlorobenzidine	740	U
Benzo(a)anthracene	370	U
Chrysene	370	U
bis(2-Ethylhexyl)phthalate	210	J
Di-n-Octyl phthalate	370	U
Benzo(b)fluoranthene	370	U
Benzo(k)fluoranthene	370	U
Benzo(a)pyrene	370	U
Indeno(1,2,3-cd)pyrene	370	U
Dibenzo(a,h)anthracene	370	U
Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

CASE NARRATIVE

8A

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-21-91
RFW #: 9103L012, SEMIVOLATILE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of five (5) soil samples collected on 03-19,20-91.

The samples were extracted on 03-26-91 and analyzed according to criteria set forth in SW 846 Method 8270 for TCL Semivolatile target compounds on 04-15,16,17-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. All blank spike recoveries were within EPA QC limits.

4. Internal standard area and retention time criteria were met for all samples and blanks.

Jack R. Tuschall, Ph.D. Date
Laboratory Manager
Lionville Analytical Laboratory

WESTON SM

GLOSSARY OF BNA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

A = Aldol Condensation Product.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

Roy F. Weston, Inc. - Lionville Laboratory
PEST/PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0094	001	S	91LE0407	03/19/91	03/26/91	05/02/91
MND20-0019-0092A	002	S	91LE0407	03/19/91	03/26/91	05/03/91
MND20-0019-0100	004	S	91LE0407	03/20/91	03/26/91	05/03/91
MND20-0019-0102	005	S	91LE0407	03/20/91	03/26/91	05/03/91
MND20-0019-0104	006	S	91LE0407	03/20/91	03/26/91	05/03/91
LAB QC:						
PBLK	MB2	S	91LE0407	N/A	03/26/91	05/03/91
PBLK	MB2 BS	S	91LE0407	N/A	03/26/91	05/03/91

INTRODUCTION: PAGE

Chain Of Custody..... 1
Data Summary..... 3

I. Case Narrative..... 6

II. QC Summary..... 10
A. Surrogate % Recovery Summary, Forms 2
B. Matrix Spike/Matrix Spike Duplicate, Forms 3
C. Method Blank Summary, Forms 4

III. Sample Data Package..... 14
A. Sample Data in order of RFW number
1. Tabulated Results, Forms 1
2. Raw Data in order by:
a. 2250/2401 Column
b. SP2100 Column

IV. Standards Data Package..... 45
A. Pesticide/PCB standards:
1. Forms 8
2. Form 9
3. Form 10 (if applicable)
4. Instrument Conditions
5. Chromatograms:
a. 2250/2401 Column
b. SP2100 Column

V. Raw QC Data Package..... 238
A. Blank Data
1. Tabulated Results, Forms 1
2. Raw Data:
a. 2250/2401 Column
b. SP2100 Column

B. Matrix Spike Data
1. Tabulated Results, Forms 1
2. Raw Data
a. 2250/2401 Column
b. SP2100 Column

C. Matrix Spike Duplicate Data
1. Tabulated Results, Forms 1
2. Raw Data
a. 2250/2401 Column
b. SP2100 Column

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
91031012

LANLHOUCLP
LANL-Mound

Client: Mound Plant, Ohio
Work Order: 2744-40-07-1417
Date Rec'd.: 3/21/91 Date Due: 4/20/91
RFW Contact: Susan Wilson
Client Contact/Phone: (505) 255-1445

Refrigerator#	5/6	1	3	5	1					
#/Type Container	1	1	1	1	2					
Volume	125mL	125mL	250mL	250mL	4Bal		RADIATION			
Preservative	—	—	—	—	—		SCREENING			
ANALYSES REQUESTED	PCB	VOA	Metals + CN	Rest PCB + BNA	VOA		TH 232	PU 238		
	PCB	06:24H	Mix 30D	Dual 30D	06:24H					

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	PCB	VOA	Metals + CN	Rest PCB + BNA	VOA		TH 232	PU 238	
001	MND20-0019-0094	S	3-19-91		X	X	X			0.5	6	pCi/g
2	MND20-0019-0092A	S	3-19-91		X	X	X			0.8	8	pCi/g
3	MND20-0019-0099	S	3-20-91	X								pCi/g
4	MND20-0019-0100	S	3-20-91	X	X	X	X					pCi/g
5	MND20-0019-0102	S	3-20-91	X	X	X	X					
6	MND20-0019-0104	S	3-20-91	X	X	X	X					
7	MND20-0019-0094 Trip blank	W	3-19-91					X				
8	MND20-0019-0094 Field blank	W	3-19-91					X				

QC/DL=CLP
TAT=30day

PCB=Dodl Lab OL375

☆ See Steve Wesson for special instructions

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
WI - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

Special Instructions:
TCL VOA, Metals, CN, P/PCB BNA

48 hour TURNAROUND on PCB only

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]		3-21-91	1800					
	[illegible]	[illegible]	3/21/91	9:30am					
RADSCAN	[illegible]	Clark [illegible]	3-21-91	9:45AM					
PCB	Clark [illegible]	CAT	3-21-91	[illegible]					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered (Shipped circled)
NOTES:

2 Ambient or Chilled (Chilled circled)
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y (N circled)
NOTES:

4 Properly Preserved
(Y circled) N
NOTES:

5 Received Within Holding Times
(Y circled) N
NOTES:

COC Tape Was:
1 Present on Outer Package (Y circled) N
2 Unbroken on Outer Package (Y circled) N
3 Present on Sample (Y circled) N
4 Unbroken on Sample (Y circled) N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples (Y circled) N

Discrepancies Between Sample Labels and COC Record? Y (N circled)
NOTES:

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
Pesticide/PCBs by GC, CLP List

RFW Batch Number: 9103L012 | Client: LANL-MOUND | Work Order: 2744-40-07-1417 | Report Date: 05/13/91 21:12 | Page: 1

	Cust ID:	MND20-0019-0094	MND20-0019-092A	MND20-0019-100	MND20-0019-102	MND20-0019-104	PBLK
Sample Information	RFW#:	001	002	004	005	.006	91LE0407-MB2
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	20.0	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg

Surrogate: Di-n-butylchlorendate	66 %	95 %	67 %	39 %	57 %	87 %
	fl	fl	fl	fl	fl	fl
Alpha-BHC	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
Beta-BHC	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
Delta-BHC	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
gamma-BHC (Lindane)	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
Heptachlor	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
Aldrin	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
Heptachlor epoxide	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
Endosulfan I	9.7 U	190 U	9.6 U	8.5 U	9.4 U	8.0 U
Dieldrin	19 U	390 U	19 U	17 U	19 U	16 U
4,4'-DDE	19 U	390 U	19 U	17 U	19 U	16 U
Endrin	19 U	390 U	19 U	17 U	19 U	16 U
Endosulfan II	19 U	390 U	19 U	17 U	19 U	16 U
4,4'-DDD	19 U	390 U	19 U	17 U	19 U	16 U
Endosulfan sulfate	19 U	390 U	19 U	17 U	19 U	16 U
4,4'-DDT	19 U	390 U	19 U	17 U	19 U	16 U
Methoxychlor	97 U	1900 U	96 U	85 U	94 U	80 U
Endrin ketone	19 U	390 U	19 U	17 U	19 U	16 U
alpha-Chlordane	97 U	1900 U	96 U	85 U	94 U	80 U
gamma-Chlordane	97 U	1900 U	96 U	85 U	94 U	80 U
Toxaphene	190 U	3900 U	190 U	170 U	190 U	160 U
Aroclor-1016	97 U	1900 U	96 U	85 U	94 U	80 U
Aroclor-1221	97 U	1900 U	96 U	85 U	94 U	80 U
Aroclor-1232	97 U	1900 U	96 U	85 U	94 U	80 U
Aroclor-1242	97 U	1900 U	96 U	85 U	94 U	80 U
Aroclor-1248	97 U	1900 U	96 U	85 U	94 U	80 U
Aroclor-1254	190 U	3900 U	190 U	170 U	190 U	160 U
Aroclor-1260	52 J	4400	190 U	170 U	190 U	160 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Roy F. Weston, Inc. - Lionville Laboratory
Pesticide/PCBs by GC, CLP List

RFW Batch Number: 9103L012 | Client: LANL-MOUND | Work Order: 2744-40-07-1417 | Report Date: 05/13/91 21:12 | Page: 2

Cust ID: PBLK BS

Sample Information

RFW#: 91LE0407-MB2
Matrix: SOIL
D.F.: 2.00
Units: ug/Kg

Surrogate: Di-n-butylchlorendate	71	%
Alpha-BHC	16	U
Beta-BHC	16	U
Delta-BHC	16	U
gamma-BHC (Lindane)	52	%
Heptachlor	58	%
Aldrin	55	%
Heptachlor epoxide	16	U
Endosulfan I	16	U
Dieldrin	55	%
4,4'-DDE	32	U
Endrin	67	%
Endosulfan II	32	U
4,4'-DDD	32	U
Endosulfan sulfate	32	U
4,4'-DDT	78	%
Methoxychlor	160	U
Endrin ketone	32	U
alpha-Chlordane	160	U
gamma-Chlordane	160	U
Toxaphene	320	U
Aroclor-1016	160	U
Aroclor-1221	160	U
Aroclor-1232	160	U
Aroclor-1242	160	U
Aroclor-1248	160	U
Aroclor-1254	320	U
Aroclor-1260	320	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

I. CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL MOUND **SAMPLES RECEIVED:** 03-21-91
RFW #: 9103L012, PEST/PCB
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of five (5) soil samples collected on 03-19,20-91.

The samples were extracted on 03-26-91 and analyzed according to criteria set forth in the Contract Laboratory Program for Pesticide and PCB target compounds on 05-02,03-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Linearity and breakdown criteria were met on the primary column.

2. Continuing calibration criteria were met for all compounds on the primary column for standards analyzed prior to the sample extracts.

   For continuing calibration standards analyzed prior to the sample extracts, the 20% criteria for calibration factor was exceeded for gamma-BHC, heptachlor, aldrin, and heptachlor epoxide on SP2100 on 05-03-91 at 03:22.

3. Retention time criteria were exceeded for several compounds on the confirmation column. Larger retention time windows were used of the evaluation of accompanying data.

4. All surrogate recoveries were within EPA QC limits.

5. All blank spike recoveries were within EPA QC limits.

6. Sample MND20-0019-092A required a 20-fold dilution because it contained high levels of both target and non-target compounds.

WESTON

7. The blank spike sample required a two-fold dilution to maintain the pesticide concentrations within the linear range of the instrument.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

5.18.91
Date

WESTON

GLOSSARY OF PEST/PCB DATA

DATA QUALIFIERS

U - Indicates that the compounds was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E - Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I - Interference.

ABBREVIATIONS

BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD - Indicates blank spike duplicate.

MS - Indicates matrix spike.

MSD - Indicates matrix spike duplicate.

DL - Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA - Not applicable.

DF - Dilution factor.

NR - Not required.

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L012

LANLMOOCLP
LANL-Mound

Client: Mound Plant, OHIO
Work Order: 2744-40-07-1417
Date Rec'd.: 3/21/91 Date Due: 4/20/91
RFW Contact: Susan Wilson
Client Contact/Phone: (505) 255-1445

Refrigerator#		3/6/5	1	3	5	1				
#/Type Container		1	1	1	1	2				
Volume		125mL	125mL	250mL	250mL	40mL		RADIATION		
Preservative		—	—	—	—	—		SCREENING		
ANALYSES REQUESTED →		PCB	VOA	METALS + CN	PEST/PCB + BNA	VOA		TH 232	PU 238	
WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	0 PCB	06024H	MASLAB 400.0	06084 + 06254	06024H				
001	MND20-0019-0094	S	3-19-91		X	X	X			0.5	6	PCi/g
2	MND20-0019-0092A	S	3-19-91		X	X	X			0.8	8	PCi/g
3	MND20-0019-0099	S	3-20-91	X								PCi/g
4	MND20-0019-0100	S	3-20-91	X	X	X	X					PCi/g
5	MND20-0019-0102	S	3-20-91	X	X	X	X					
6	MND20-0019-0104	S	3-20-91	X	X	X	X					
7	MND20-0019-0094 Trip blank	W	3-19-91					X				
8.	MND20-0019-0094 Field blank	W	3-19-91					X				

QC/Del-CLP
TAT-30day

PCB=Del to OLB75

☆ See Steve Wesson for special instructions

Matrix:
S - Soil, SE - Sediment, SO - Solid
W - Water, O - Oil, A - Air, WI - Wipe
DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

TCL VOA, Metals, CN, P/PCB BNA

Special Instructions:

48 hour TURNAROUND on PCB only

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]		3-20-91	1800					
	[illegible]	[illegible]	3/21/91	9:30am					
RADSCRN	[illegible]	Clark [illegible]	3-21-91	9:45AM					
~~SCREENING~~ PCB	Clark [illegible]	CMT	3-21-91	[illegible]					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

RADIOACTIVE SAMPLE EVALUATION

I. Sample Custodian: C. Piper **RFW Batch no.:** 91036012 **Date:** 3-21-91

Package received from:

- Client: LANL Mound **Location:** Miamisburg, OH

Mode of transport: ☐ UPS ☐ Fed Ex ☐ Other _____

DOT labels: ☐ Radioactive White I ☐ Radioactive Yellow II ☐ Radioactive Yellow III ☐ Other _____

Transport Index: ~~9531112624~~ 3-21-91 9058882936 **Security Seal:** ☒ Yes ☐ No

II. Surveys:

Gamma instrument make, model, serial no.: LUDLUM MODEL 19 44415

Date of last calibration: 8-28-90 Calibr. next due: 8-28-91

Source response check:

Source type and i.d. no.: Th-228, 8644-2 Response: 170 microR/hr

Package survey: (microR/hr) max. reading: 4 Background: 3

Alpha instrument make, model, serial no.: LUDLUM MODEL 43-5

Calibration date: 11-2-90 Efficiency factor: 8.69 dpm/cpm

Source response check:

Source type and i.d. no.: Th-230, 12059 Response: 2600 cpm

III. Sample Container Measurements: GAMMA BACKGROUND = 4.0

Sample ID	Form (liq or sol)	RFW ID	Gamma microR/hr	Alpha cpm	Alpha eff. fact	Alpha dpm	nCi/g	Mass (g)	nCi
MND20 0019-0099	SOL	001	4	0			0.006		
0092A		2	4	0			0.029		
0099		3	4	0			0.003		
0100		4	4	0			0.005		
0102		5	4	0			0.022		
0104		6	4	0			0.035		
0094TB	LIQ	7	4	0			VOA		
0094FB		8	4	0			VOA		

Total Activity: _____ $\times 10^{-6}$ mCi

RFW 21-21-013/A-8/87

NOT RADIOACTIVE CSP 3-21-91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MND20-0019-0094						
SILVER, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
ALUMINUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
ARSENIC, TOTAL	001	S	91L0757	03/19/91	04/13/91	04/26/91
BARIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
BERYLLIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
CALCIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
CADMIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
COBALT, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
CHROMIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
COPPER, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
IRON, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
MERCURY, TOTAL	001	S	91C102B	03/19/91	04/16/91	04/19/91
POTASSIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
MAGNESIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
MANGANESE, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
SODIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
NICKEL, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
LEAD, TOTAL	001	S	91L0757	03/19/91	04/13/91	04/27/91
ANTIMONY, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
SELENIUM, TOTAL	001	S	91L0757	03/19/91	04/13/91	04/26/91
THALLIUM, TOTAL	001	S	91L0757	03/19/91	04/13/91	04/26/91
VANADIUM, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
ZINC, TOTAL	001	S	91L0758	03/19/91	04/13/91	04/22/91
MND20-0019-0092A						
SILVER, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
ALUMINUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
ARSENIC, TOTAL	002	S	91L0757	03/19/91	04/13/91	04/26/91
BARIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
BERYLLIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
CALCIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
CADMIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
COBALT, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
CHROMIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
COPPER, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
IRON, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	002	S	91C102B	03/19/91	04/16/91	04/19/91
POTASSIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
MAGNESIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
MANGANESE, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
SODIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
NICKEL, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
LEAD, TOTAL	002	S	91L0757	03/19/91	04/13/91	04/26/91
ANTIMONY, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
SELENIUM, TOTAL	002	S	91L0757	03/19/91	04/13/91	04/26/91
THALLIUM, TOTAL	002	S	91L0757	03/19/91	04/13/91	04/26/91
VANADIUM, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
ZINC, TOTAL	002	S	91L0758	03/19/91	04/13/91	04/22/91
MND20-0019-0100						
SILVER, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
ALUMINUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
ARSENIC, TOTAL	004	S	91L0757	03/20/91	04/13/91	04/27/91
BARIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
BERYLLIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
CALCIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
CADMIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
COBALT, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
CHROMIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
COPPER, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
IRON, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
MERCURY, TOTAL	004	S	91C102B	03/20/91	04/16/91	04/19/91
POTASSIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
MAGNESIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
MANGANESE, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
SODIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
NICKEL, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
LEAD, TOTAL	004	S	91L0757	03/20/91	04/13/91	04/26/91
ANTIMONY, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
SELENIUM, TOTAL	004	S	91L0757	03/20/91	04/13/91	04/26/91
THALLIUM, TOTAL	004	S	91L0757	03/20/91	04/13/91	04/26/91
VANADIUM, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
ZINC, TOTAL	004	S	91L0758	03/20/91	04/13/91	04/22/91
MND20-0019-0102						
SILVER, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
ARSENIC, TOTAL	005	S	91L0757	03/20/91	04/13/91	04/26/91
BARIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
BERYLLIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
CALCIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
CADMIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
COBALT, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
CHROMIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
COPPER, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
IRON, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
MERCURY, TOTAL	005	S	91C102B	03/20/91	04/16/91	04/19/91
POTASSIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
MAGNESIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
MANGANESE, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
SODIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
NICKEL, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
LEAD, TOTAL	005	S	91L0757	03/20/91	04/13/91	04/26/91
ANTIMONY, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
SELENIUM, TOTAL	005	S	91L0757	03/20/91	04/13/91	04/26/91
THALLIUM, TOTAL	005	S	91L0757	03/20/91	04/13/91	04/26/91
VANADIUM, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
ZINC, TOTAL	005	S	91L0758	03/20/91	04/13/91	04/22/91
MND20-0019-0104						
SILVER, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
ALUMINUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
ARSENIC, TOTAL	006	S	91L0757	03/20/91	04/13/91	04/27/91
BARIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
BERYLLIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
CALCIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
CADMIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
COBALT, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
CHROMIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
COPPER, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
IRON, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
MERCURY, TOTAL	006	S	91C102B	03/20/91	04/16/91	04/19/91
POTASSIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
MAGNESIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
MANGANESE, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
NICKEL, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
LEAD, TOTAL	006	S	91L0757	03/20/91	04/13/91	04/26/91
ANTIMONY, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
SELENIUM, TOTAL	006	S	91L0757	03/20/91	04/13/91	04/26/91
THALLIUM, TOTAL	006	S	91L0757	03/20/91	04/13/91	04/26/91
VANADIUM, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91
ZINC, TOTAL	006	S	91L0758	03/20/91	04/13/91	04/22/91

LAB QC:

SILVER LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
ALUMINUM LABORTORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
BARIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
BERYLLIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
CALCIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
CADMIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
COBALT LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
CHROMIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
COPPER LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
IRON LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
POTASSIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
MAGNESIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
MANGANESE LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
SODIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
NICKEL LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
ANTIMONY LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
VANADIUM LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
ZINC LABORATORY	LC1 BS	S	91L0758	N/A	04/13/91	04/22/91
SILVER LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
ALUMINUM LABORTORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
BARIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
BERYLLIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
CALCIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
CADMIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
COBALT LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
CHROMIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
COPPER LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
IRON LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
POTASSIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MAGNESIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
MANGANESE LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
SODIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
NICKEL LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
ANTIMONY LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
VANADIUM LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
ZINC LABORATORY	LC2 BS	S	91L0758	N/A	04/13/91	04/22/91
SILVER, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
ALUMINUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
BARIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
BERYLLIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
CALCIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
CADMIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
COBALT, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
CHROMIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
COPPER, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
IRON, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
POTASSIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
MAGNESIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
MANGANESE, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
SODIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
NICKEL, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
ANTIMONY, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
VANADIUM, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
ZINC, TOTAL	MB1	S	91L0758	N/A	04/13/91	04/22/91
ARSENIC LABORATORY	LC1 BS	S	91L0757	N/A	04/13/91	04/26/91
LEAD LABORATORY	LC1 BS	S	91L0757	N/A	04/13/91	04/26/91
SELENIUM LABORATORY	LC1 BS	S	91L0757	N/A	04/13/91	04/26/91
THALLIUM LABORATORY	LC1 BS	S	91L0757	N/A	04/13/91	04/26/91
ARSENIC LABORATORY	LC2 BS	S	91L0757	N/A	04/13/91	04/26/91
LEAD LABORATORY	LC2 BS	S	91L0757	N/A	04/13/91	04/26/91
SELENIUM LABORATORY	LC2 BS	S	91L0757	N/A	04/13/91	04/26/91
THALLIUM LABORATORY	LC2 BS	S	91L0757	N/A	04/13/91	04/26/91
ARSENIC, TOTAL	MB1	S	91L0757	N/A	04/13/91	04/26/91
LEAD, TOTAL	MB1	S	91L0757	N/A	04/13/91	04/27/91
SELENIUM, TOTAL	MB1	S	91L0757	N/A	04/13/91	04/26/91
THALLIUM, TOTAL	MB1	S	91L0757	N/A	04/13/91	04/26/91
MERCURY LABORATORY	LC1 BS	S	91C102B	N/A	04/16/91	04/19/91
MERCURY LABORATORY	LC2 BS	S	91C102B	N/A	04/16/91	04/19/91
MERCURY, TOTAL	MB1	S	91C102B	N/A	04/16/91	04/19/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/21/91 RFW LOT # :9103L012

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	MB2	S	91C102B	N/A	04/16/91	04/19/91

APPENDIX E-4

TCLP ANALYTICAL RESULTS FOR SOIL SAMPLES

Roy F. Weston, Inc. - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
MND20-0019-0010	019	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0024	020	W	91LVW052	04/02/91	N/A	04/05/91
MND20-0019-0035	021	W	91LVW051	04/02/91	N/A	04/04/91
MND20-0019-0046	022	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0058	023	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0069	024	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0080	025	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0089	026	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0105	027	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0105	027 MS	W	91LVW054	04/03/91	N/A	04/10/91
MND20-0019-0105	027 MSD	W	91LVW054	04/03/91	N/A	04/10/91

LAB QC:

VBLK	MB1	W	91LVW054	N/A	N/A	04/10/91
LCHBLK	LB1	W	91LVW054	N/A	N/A	04/10/91
VBLK	MB1	W	91LVW052	N/A	N/A	04/05/91
LCHBLK	LB1	W	91LVW051	N/A	N/A	04/04/91
VBLK	MB1	W	91LVW051	N/A	N/A	04/04/91

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B. Matrix Spike (Form 3)
C. Reagent Blank Summary (Form 4)
D. GC/MS Tuning and Calibration Standard (Form 5)

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c. HSL Mass Spectra
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1. Bar Graph
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B. Blank Data
1. Tabulated Results (Form 1)
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3. Raw Data
a. Reconstructed Ion Chromatogram(s) and Quantitation Report(s)
b. HSL Spectra
c. TIC Spectra
d. GC/MS Library Search for TIC

C. Matrix Spike Data
1. Tabulated Results (Form 1)
2. Raw Data
a. Reconstructed Ion Chromatogram(s)
b. Quantitation Report(s)

VI. Addition Documentation..... 138
A. Extraction Record

CHAIN OF CUSTODY

Data

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
91031070

LANLMOUCLP

Client: Lanl-Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact: Susan Wilson
Client Contact/Phone:

Refrigerator#	3	3								
#/Type Container	3/G 250 4/G	1/G								
Volume		125								
Preservative	125	none								
ANALYSES REQUESTED	TCLP	TCLV		BNA	Pest	Herb	Metal			

WA Use Only Lab ID	Client ID/Description		Matrix	Date Collected	TCLP	TCLV		BNA 0625T	Pest 0608T	Herb 0915T	Metal (RCRA TCLP)		
1001	MND20-0019-0010		S	3/25/91									
2	0024												
3	0035												
4	0046												
5	0058												
6	0069												
7	0080												
8	0089												
9	0105												
10	MND20-0019-0010	TCLP of 001	W	11/2/91				✓	✓	✓	✓		
11	0024	002											
12	0035	003											
13	0046	004											
14	0058	005											
15	0069	006											

Rex. #1 4/29/91 Changed date all on same sample

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: QC/DI=CLP
Original Submittal TAT=30day

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/26/91	9:30 am	BNA 0625 Pesticides	M. Jason	N. Leslie	4/9/91	3:30
TCLP/V	L. Compton	[illegible]	3/27/91	8:45	19,22,23-24	[illegible]	J. Young	4/10/91	12:00
BNA/Pest/Herb/Leach	T. Young	[illegible]	4/3/91	3:00	TCLVOA				
Leachates	T. Young	Weston Analytics	4/4/91	0930	Pest/Leach	T. Young	[illegible]	4/16/91	12:00
19,22-27	T. Young		4/5/91	11:00	10-18	T. Young	AWS	4/17	
19,22-26	[illegible]		4/8/91		Metals	[illegible] AWS		4/18	11:00

RFW 21-21-001/A-12/88

WESTON Analytics Use Only
Samples Were: 1 Shipped or Hand-Delivered (Y) NOTES:
2 Ambient or Chilled (Y) NOTES:
3 Received Broken/Leaking (Improperly Sealed) Y (N) NOTES:
4 Properly Preserved (Y) N NOTES:
5 Received Within Holding Times (Y) N NOTES:
COC Tape Was: 1 Present on Outer Package (Y) N 2 Unbroken on Outer Package (Y) N 3 Present on Sample (Y) N 4 Unbroken on Sample (Y) N NOTES:
COC Record Was: 1 Present Upon Receipt of Samples (Y) N
Discrepancies Between Sample Labels and COC Record? (Y) (N) NOTES: Original Lab Report

CN - not needed see note in client file

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L070

Client: Land-Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact:
Client Contact/Phone:

Refrigerator#										
#/Type Container										
Volume										
Preservative										
ANALYSES REQUESTED →	BNA	Pest	Herb	Metal	VOA					

WA Use Only Lab ID	Client ID/Description		Matrix	Date Collected	BNA 8270T	Pest 8080T	Herb 8150BT	Metal (Leachate)	VOA 8240T
016	MND20-0019-0080	TCLP of 007	W	4/2/91	✓	✓	✓	✓	
17	0089	008							
18	0105	009							
19	MND20-0019-0010	TCLP of 001		4/3/91					✓
20	0024	002		4/2/91					
21	0035	003							
22	0046	004		4/3/91					
23	0058	005							
24	0069	006							
25	0080	007							
26	0089	008							
27	0105	009							
28	Leachate Blank								

Matrix:
W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other, S - Soil, SE - Sediment, SO - Solid

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/26/91	9:30 am	Metals	K. McMahon		4/29	9:30
Leach VOA/BNA, 21	D.S.	D. [illegible]	4/3/91	1:15					
10-28 Bna	K. Sheppard		4/4/91	4:30					
Metals	M. Gason	J. Jeffrey Welch	4/19	1000					
VOA	" "		4-22-91	9:00					
metals return	J. Jeffrey Welch		4/23/91	0930					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

DATA SUMMARY

Roy F. Weston, Inc. Lionville Laboratory
Volatiles by GC/MS, TCLP Leachate

Report Date: 05/17/91 14:29

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 1a

	Cust ID:	MND20-0019-0		MND20-0019-0		MND20-0019-0		MND20-0019-0		MND20-0019-0		MND20-0019-0	
		010		024		035		046		058		069	
Sample	RFW#:	019		020		021		022		023		024	
Information	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	10.0		10.0		10.0		10.0		10.0		10.0	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
	Toluene-d8	100	%	103	%	99	%	98	%	101	%	100	%
Surrogate	Bromofluorobenzene	105	%	105	%	104	%	101	%	104	%	103	%
Recovery	1,2-Dichloroethane-d4	99	%	106	%	113	%	98	%	102	%	104	%
Vinyl Chloride		100	U	100	U	100	U	100	U	100	U	100	U
1,1-Dichloroethene		50	U	50	U	50	U	50	U	50	U	50	U
Chloroform		50	U	50	U	50	U	50	U	50	U	50	U
1,2-Dichloroethane		50	U	50	U	50	U	50	U	50	U	50	U
2-Butanone		100	U	100	U	100	U	100	U	100	U	100	U
Carbon Tetrachloride		50	U	50	U	50	U	50	U	50	U	50	U
Trichloroethene		50	U	50	U	50	U	50	U	50	U	50	U
Benzene		50	U	11	J	50	U	50	U	50	U	50	U
Tetrachloroethene		50	U	50	U	50	U	50	U	50	U	50	U
Chlorobenzene		50	U	50	U	50	U	50	U	50	U	50	U

*= Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, TCLP Leachate

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/17/91 14:29 Page: 2a

	Cust ID:	MND20-0019-0 080		MND20-0019-0 089		MND20-0019-0 105		MND20-0019-0 105		MND20-0019-0 105		VBLK	
Sample Information	RFW#:	025		026		027		027 MS		027 MSD		91LVW054-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	10.0		10.0		10.0		10.0		10.0		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Toluene-d8	100	%	98	%	100	%	100	%	100	%	101	%
	Bromofluorobenzene	102	%	102	%	102	%	102	%	102	%	106	%
	1,2-Dichloroethane-d4	104	%	105	%	105	%	107	%	109	%	99	%
			fl		fl		fl		fl		fl		fl
Vinyl Chloride		100	U	100	U	100	U	93	%	97	%	10	U
1,1-Dichloroethene		50	U	50	U	50	U	99	%	97	%	5	U
Chloroform		50	U	50	U	50	U	104	%	105	%	5	U
1,2-Dichloroethane		50	U	50	U	50	U	111	%	112	%	5	U
2-Butanone		100	U	100	U	100	U	114	%	115	%	10	U
Carbon Tetrachloride		50	U	50	U	50	U	89	%	84	%	5	U
Trichloroethene		50	U	50	U	50	U	100	%	96	%	5	U
Benzene		50	U	50	U	18	J	104	%	100	%	5	U
Tetrachloroethene		50	U	50	U	50	U	104	%	102	%	5	U
Chlorobenzene		50	U	50	U	50	U	107	%	103	%	5	U

*= Outside of EPA CLP QC limits.

Roy F. Weston, Inc Lionville Laboratory
Volatiles by GC/MS, TCLP Leachate

Report Date: 05/17/91 14:29

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 3a

	Cust ID:	VBLK		VBLK		LCHBLK		LCHBLK									
Sample Information	RFW#:	91LVW052-MB1		91LVW051-MB1		91LTV021-LB1		91LTV020-LB1									
	Matrix:	WATER		WATER		WATER		WATER									
	D.F.:	1.00		1.00		10.0		10.0									
	Units:	ug/L		ug/L		ug/L		ug/L									
Surrogate Recovery	Toluene-d8	99	%	96	%	99	%	98	%								
	Bromofluorobenzene	98	%	98	%	105	%	102	%								
	1,2-Dichloroethane-d4	101	%	104	%	110	%	112	%								
Vinyl Chloride		10	U	10	U	100	U	100	U								
1,1-Dichloroethene		5	U	5	U	50	U	50	U								
Chloroform		5	U	5	U	50	U	50	U								
1,2-Dichloroethane		5	U	5	U	50	U	50	U								
2-Butanone		10	U	10	U	100	U	100	U								
Carbon Tetrachloride		5	U	5	U	50	U	50	U								
Trichloroethene		5	U	5	U	50	U	50	U								
Benzene		5	U	5	U	50	U	50	U								
Tetrachloroethene		5	U	5	U	50	U	50	U								
Chlorobenzene		5	U	5	U	50	U	50	U								

*= Outside of EPA CLP QC limits.

000007

CASE NARRATIVE

8A

ROY F. WESTON INC.
LIONVILLE LABORATORY

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-26-91
RFW #: 9103L070, GC/MS VOLATILE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of nine (9) leachate samples generated on 04-02,03-91 from soil samples collected on 03-25-91.

The samples were analyzed according to criteria set forth in CLP SOW 02/88 (Rev. 05/89) for TCLP Volatile target compounds on 04-04,05,10-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Samples were analyzed at ten-fold dilutions due to the acidic leachate matrix. However, all TCLP regulatory limits have been achieved.

2. All surrogate recoveries were within EPA QC limits.

3. All matrix spike recoveries were within EPA QC limits.

4. Internal standard area and retention time criteria were met for all samples and blanks.

Jack R.Tuschall, Ph.D. 5.15.91
Date
Laboratory Manager
Lionville Analytical Laboratory

WESTON SM

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

Roy F. Weston, Inc. - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
MND20-0019-0010	010	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0024	011	W	91LE0443	04/02/91	04/04/91	04/19/91
MND20-0019-0035	012	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0035	012 A1	W	91LE0443	04/02/91	04/04/91	04/19/91
MND20-0019-0046	013	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0058	014	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0069	015	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0080	016	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0089	017	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0105	018	W	91LE0443	04/02/91	04/04/91	04/10/91
MND20-0019-0105	018 MS	W	91LE0443	04/02/91	04/04/91	04/11/91
MND20-0019-0105	018 MSD	W	91LE0443	04/02/91	04/04/91	04/11/91

LAB QC:

SBLK	MB1	W	91LE0443	N/A	04/04/91	04/10/91
SBLK	MB2 BS	W	91LE0443	N/A	04/04/91	04/10/91
LCHBLK	LB1	W	91LE0443	N/A	04/04/91	04/09/91

INTRO: PAGE

Chain Of Custody..... 1
Data Summary..... 4

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c. HSL Mass Spectra
d. TIC Mass Spectra
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b. HSL Spectra
c. TIC Spectra
d. GC/MS Library Search for TIC

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0000001

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
91031070

Client: Laal-Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact: Susan Wilson
Client Contact/Phone:

Refrigerator#	3	3								
#/Type Container	2/G	1/G								
Volume	250	125								
Preservative	4/G 125	None								
ANALYSES REQUESTED	TCLP	TCLV		BNA	Pest	Herb	Metal			

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	TCLP	TCLV		BNA	Pest	Herb	Metal		
001	MND20-0019-0010	S	3/25/91									
2	0024											
3	0035											
4	0046											
5	0058											
6	0069											
7	0080											
8	0089											
9	0105											
10	MND20-0019-0010 TCLP 01 001	W	11/2/91				✓	✓	✓	✓		
11	0024 002											
12	0035 003											
13	0046 004											
14	0058 005											
15	0069 006											

Kel. 1/30/91 (hanged date all on some samples)

Matrix: S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: QC/D1-CLP TAT=30 days

Original Submittal

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/27/91	9 am	BNA DIB-8 Pesticides	M. Jason	Nicole	4/4/91	3:30
TCLP/V	L. Sandquist	[illegible]	3/27/91	8:45	19,22,23-24	[illegible]	T. Young	4/4/91	12:00
BNA/Pest/Herb/Metals	T. Young	[illegible]	4/3/91	3:00	TCLP				
Lab Data	T. Young	[illegible]	4/4/91	09:30	Pesticide	T. Young	[illegible]	4/4/91	12:00
19,22-23/pesticides	T. Young		4/5/91	11:00	10-18 19-23	T. Young	Ames	4/17	
19,22-23 herb	T. Young		4/8/91		Metals	[illegible] Ames		4/18	11:00

RFW 21-21-001/A-12/88

WESTON Analytics Use Only
Samples Were: 1 Shipped or Hand-Delivered NOTES:
2 Ambient or Chilled NOTES:
3 Received Broken/Leaking (Improperly Sealed) Y N NOTES:
4 Properly Preserved Y N NOTES:
5 Received Within Holding Times Y N NOTES:
COC Tape Was: 1 Present on Outer Package Y N 2 Unbroken on Outer Package Y N 3 Present on Sample Y N 4 Unbroken on Sample Y N NOTES:
COC Record Was: 1 Present Upon Receipt of Samples Y N
Discrepancies Between Sample Labels and COC Record? Y N NOTES: original labels not CN - not needed see client note

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L070

Client: Land-Mound
Work Order: 2741-4007-1417
Date Rec'd. 3/26/91 Date Due 4/25/91
RFW Contact:
Client Contact/Phone:

Refrigerator#									
#/Type Container									
Volume									
Preservative									
ANALYSES REQUESTED →	BNA	Pest	Herb	Metals	VOA				

WA Use Only Lab ID	Client ID/Description		Matrix	Date Collected	BNA	Pest	Herb	Metals	VOA				
016	MND20-0019-0080	TCLP of 007	W	4/2/91	✓	✓	✓	✓					
17	0089	008											
18	0105	009											
19	MND20-0019-0010	TCLP of 001		4/3/91					✓				
20	0024	002		4/2/91									
21	0035	003											
22	0046	004		4/3/91									
23	0058	005											
24	0069	006											
25	0080	007											
26	0089	008											
27	0105	009											
28	Leachate Blank												

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
Wi - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/26/91	9:30 am	Metals	K. McMahon		4/29	9:30
Leach BNA, 21	D.S.	[illegible]	4/3/91	1:15					
1078 Bna	K. Sheppard		4/4/91	4:30					
Metals	M. Gibson	J. Jeffrey Walsh	4/19	10:00					
VOA	" "		4-22-91	9:10					
metals return	J. Jeffrey Walsh		4/23/91	0930					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

DATA SUMMARY

Roy F. Weston, Inc. Lionville Laboratory
Semivolatiles by GC/MS, TCLP Leachate

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/17/91 20:58 Page: 1a

	Cust ID:	MND20-0019-0 010		MND20-0019-0 024		MND20-0019-0 035		MND20-0019-0 035		MND20-0019-0 046		MND20-0019-0 058	
Sample Information	RFW#:	010		011		012		012 RE		013		014	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Nitrobenzene-d5	70	%	97	%	71	%	84	%	72	%	68	%
	2-Fluorobiphenyl	76	%	83	%	64	%	79	%	77	%	76	%
	p-Terphenyl-d14	113	%	118	%	89	%	100	%	103	%	120	%
	Phenol-d5	77	%	85	%	57	%	78	%	55	%	52	%
	2-Fluorophenol	81	%	74	%	46	%	58	%	51	%	45	%
	2,4,6-Tribromophenol	62	%	87	%	62	%	80	%	54	%	48	%
	Pyridine	100	U	100	U	100	U	100	U	100	U	100	U
	1,4-Dichlorobenzene	100	U	100	U	100	U	100	U	100	U	100	U
	2-Methylphenol	100	U	100	U	100	U	100	U	100	U	100	U
	3- and/or 4-Methylphenol	100	U	100	U	100	U	100	U	100	U	100	U
	Hexachloroethane	100	U	100	U	100	U	100	U	100	U	100	U
	Nitrobenzene	100	U	100	U	100	U	100	U	100	U	100	U
	Hexachlorobutadiene	100	U	100	U	100	U	100	U	100	U	100	U
	2,4,6-Trichlorophenol	100	U	100	U	100	U	100	U	100	U	100	U
	2,4,5-Trichlorophenol	500	U	500	U	500	U	500	U	500	U	500	U
	2,4-Dinitrotoluene	100	U	100	U	100	U	100	U	100	U	100	U
	Hexachlorobenzene	100	U	100	U	100	U	100	U	100	U	100	U
	Pentachlorophenol	500	U	500	U	500	U	500	U	500	U	500	U

*= Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
Semivolatiles by GC/MS, TCLP Leachate

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/17/91 20:58 Page: 2a

	Cust ID:	MND20-0019-0 069		MND20-0019-0 080		MND20-0019-0 089		MND20-0019-0 105		MND20-0019-0 105		MND20-0019-0 105	
Sample Information	RFW#:	015		016		017		018		018 MS		018 MSD	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Nitrobenzene-d5	77	%	62	%	62	%	80	%	77	%	82	%
	2-Fluorobiphenyl	83	%	71	%	70	%	71	%	66	%	66	%
	p-Terphenyl-d14	116	%	99	%	102	%	101	%	97	%	96	%
	Phenol-d5	63	%	68	%	67	%	74	%	80	%	71	%
	2-Fluorophenol	62	%	65	%	67	%	65	%	71	%	59	%
	2,4,6-Tribromophenol	63	%	61	%	60	%	74	%	75	%	47	%
Pyridine		100	U	100	U	100	U	100	U	29	%	33	%
1,4-Dichlorobenzene		100	U	100	U	100	U	100	U	49	%	52	%
2-Methylphenol		100	U	100	U	100	U	100	U	58	%	55	%
3- and/or 4-Methylphenol		100	U	100	U	100	U	100	U	68	%	62	%
Hexachloroethane		100	U	100	U	100	U	100	U	37	%	38	%
Nitrobenzene		100	U	100	U	100	U	100	U	71	%	77	%
Hexachlorobutadiene		100	U	100	U	100	U	100	U	31	%	33	%
2,4,6-Trichlorophenol		100	U	100	U	100	U	100	U	NS	%	NS	%
2,4,5-Trichlorophenol		500	U	500	U	500	U	500	U	65	%	57	%
2,4-Dinitrotoluene		100	U	100	U	100	U	100	U	77	%	85	%
Hexachlorobenzene		100	U	100	U	100	U	100	U	90	%	78	%
Pentachlorophenol		500	U	500	U	500	U	500	U	81	%	54	%

*= Outside of EPA CLP QC limits.

Roy F. Weston, Inc Lionville Laboratory
Semivolatiles by GC/MS, TCLP Leachate

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/17/91 20:58 Page: 3a

	Cust ID:	SBLK		SBLK BS		LCHBLK	
Sample Information	RFW#:	91LE0443-MB1		91LE0443-MB2		91LTO032-LB1	
	Matrix:	WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L	
Surrogate Recovery	Nitrobenzene-d5	85	%	80	%	79	%
	2-Fluorobiphenyl	77	%	76	%	62	%
	p-Terphenyl-d14	128	%	114	%	116	%
	Phenol-d5	73	%	83	%	79	%
	2-Fluorophenol	63	%	71	%	70	%
	2,4,6-Tribromophenol	82	%	63	%	83	%
Pyridine		10	U	27	%	100	U
1,4-Dichlorobenzene		10	U	48	%	100	U
2-Methylphenol		10	U	66	%	100	U
3- and/or 4-Methylphenol		10	U	79	%	100	U
Hexachloroethane		10	U	25	%	100	U
Nitrobenzene		10	U	74	%	100	U
Hexachlorobutadiene		10	U	18	%	100	U
2,4,6-Trichlorophenol		10	U	NS	%	100	U
2,4,5-Trichlorophenol		50	U	67	%	500	U
2,4-Dinitrotoluene		10	U	85	%	100	U
Hexachlorobenzene		10	U	82	%	100	U
Pentachlorophenol		50	U	27	%	500	U

*= Outside of EPA CLP QC limits.

000007

CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-26-91
RFW #: 9103L070, SEMIVOLATILE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of nine (9) leachate samples generated on 04-02-91 from soil samples collected on 03-25-91.

The samples were extracted on 04-04-91 and analyzed according to criteria set forth in SW 846 Method 8270 for TCLP Semivolatile target compounds on 04-09,10,11,19-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. All surrogate recoveries were within EPA QC limits.

2. All obtainable blank spike recoveries were within EPA QC limits.

3. All obtainable matrix spike recoveries were within EPA QC limits.

4. The TCLP matrix spike and blank spike samples were inadvertently spiked with the surrogate compound 2,4,6-tribromophenol rather than the spike compound 2,4,6-trichlorophenol. This resulted in surrogate recoveries for this compound at twice the expected levels and recoveries were adjusted accordingly. The spike recoveries for the compound 2,4,6-trichlorophenol are flagged NS (not spiked) and its recoveries can be evaluated relative to the spike recoveries for its chemically similar isomer 2,4,5-trichlorophenol.

5. Internal standard areas were outside QC limits for sample MND20-0019-0035. This sample was re-analyzed on 04-19-91 and reported.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

5-21-91
Date

WESTON SM

GLOSSARY OF BNA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated 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 specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

A = Aldol Condensation Product.

X = Additional qualifiers used as required are explained in the case narrative.

NQ = Result qualitatively confirmed but not able to quantify.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

Roy F. Weston, Inc. - Lionville Laboratory
PEST/PCB ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
MND20-0019-0010	010	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0024	011	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0035	012	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0046	013	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0058	014	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0069	015	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0080	016	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0089	017	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0105	018	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0105	018 MS	W	91LE0440	04/02/91	04/03/91	05/08/91
MND20-0019-0105	018 MSD	W	91LE0440	04/02/91	04/03/91	05/08/91

LAB QC:

PBLK	MB1	W	91LE0440	N/A	04/03/91	05/08/91
PBLK	MB2 BS	W	91LE0440	N/A	04/03/91	05/08/91
LCHBLK	LB1	W	91LE0440	N/A	04/03/91	05/08/91

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B. Matrix Spike/Matrix Spike Duplicate, Forms 3
C. Method Blank Summary, Forms 4

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b. SP2100 Column

IV. Standards Data Package..... 61
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5. Chromatograms:
a. 2250/2401 Column
b. SP2100 Column

V. Raw QC Data Package..... 164
A. Blank Data
1. Tabulated Results, Forms 1
2. Raw Data:
a. 2250/2401 Column
b. SP2100 Column

B. Matrix Spike Data
1. Tabulated Results, Forms 1
2. Raw Data
a. 2250/2401 Column
b. SP2100 Column

C. Matrix Spike Duplicate Data
1. Tabulated Results, Forms 1
2. Raw Data
a. 2250/2401 Column
b. SP2100 Column

0000001

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L070

Client: Lasl-Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact: Susan Wilson
Client Contact/Phone:

Refrigerator#	3	3								
#/Type Container	2/G	1/G								
Volume	250	125								
Preservative	4/G 125	none								
ANALYSES REQUESTED	TCLP	TCLV		BNA	Pest	Herbs	Metal			

WA Use Only Lab ID	Client ID/Description		Matrix	Date Collected	TCLP	TCLV							
001	MND20-0019-0010		S	3/25/91									
2	0024												
3	0035												
4	0046												
5	0058												
6	0069												
7	0080												
8	0089												
9	0105												
10	MND20-0019-0010	TCLP 001	W	4/2/91			✓	✓	✓	✓			
11	0024	002											
12	0035	003											
13	0046	004											
14	0058	005											
15	0069	006											

Kr. 4/10/91 Chipped date all on same page

Matrix: S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, Wi - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: QC/DI=CLP TAT=30 days

Original Requisition

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/27/91	9:30 am	BNA 01-8	M. Jason	[illegible]	4/9/91	3:30
TCLP/V	L. Sanchez	[illegible]	3/27/91	8:45	19,22,23-24	[illegible]	[illegible]		
BNA/Pest/Herb/Leach	T. Young	[illegible]	4/3/91	3:00	TCLP		T. Young	4/10/91	12:00
Leachates	T. Young	[illegible]	4/4/91	09:30	Pest/Leach	T. Young	[illegible]	4/10/91	12:00
19,22-27 Pest	T. Young		4/5/91	11:00	10-12 [illegible]	T. Young	AWS	4/17	
19,22-24 Pest	[illegible]		4/8/91		Metals	[illegible] Ares		4/18	11:00

RFW 21-21-001/A-12/88

WESTON Analytics Use Only
Samples Were: 1 Shipped or Hand-Delivered NOTES:
2 Ambient or Chilled NOTES:
3 Received Broken/Leaking (Improperly Sealed) Y N NOTES:
4 Properly Preserved Y N NOTES:
5 Received Within Holding Times Y N NOTES:
COC Tape Was: 1 Present on Outer Package Y N 2 Unbroken on Outer Package Y N 3 Present on Sample Y N 4 Unbroken on Sample Y N NOTES:
COC Record Was: 1 Present Upon Receipt of Samples Y N
Discrepancies Between Sample Labels and COC Record? Y N NOTES: Original Lasker PO

CN - not needed see client

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L070

Client: Land-Mound
Work Order: 2741-4007-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact:
Client Contact/Phone:

Refrigerator#										
#/Type Container										
Volume										
Preservative										
ANALYSES REQUESTED	BNA	Pest	Herb	Metals	VOA					

WA Use Only Lab ID	Client ID/Description		Matrix	Date Collected	BNA	Pest	Herb	Metals	VOA				
016	MND20-0019-0080	TOP OF 007	W	4/2/91	✓	✓	✓	✓					
017	0089	008											
018	0105	009											
019	MND20-0019-0010	TOP OF 001		4/3/91					✓				
020	0024	002		4/2/91									
021	0035	003											
022	0046	004		4/3/91									
023	0058	005											
024	0069	006											
025	0080	007											
026	0089	008											
027	0105	009											
028	Leachate Blank												

Matrix:
S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, Wi - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/26/91	9:30 am	Metals	K. McMahon		4/29	9:30
Land/MND 20,21	D.S.	[illegible]	4/3/91	1:15					
1038 BNA	K. Shepard		4/4/91	4:30					
Metals	M. Spann	Jeffrey Welch	4/19	10:00					
VOA	[illegible]		4-22-91	9:00					
[illegible] return	Jeffrey Welch		4/23/91	0930					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

DATA SUMMARY

Roy F. Weston, Inc. Lionville Laboratory
Pesticide by GC, TCLP Leachate

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 05/16/91 18:05 Page: 1

	Cust ID:	MND20-0019-0 010	MND20-0019-0 024	MND20-0019-0 035	MND20-0019-0 046	MND20-0019-0 058	MND20-0019-0 069
Sample Information	RFW#:	010	011	012	013	014	015
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate: Di-n-butylchlorendate		96 %	84 %	88 %	93 %	88 %	65 %
Heptachlor		0.11 U	0.11 U	0.10 U	0.11 U	0.10 U	0.11 U
alpha-Chlordane		1.1 U	1.1 U	1.0 U	1.1 U	1.0 U	1.1 U
gamma-Chlordane		1.1 U	1.1 U	1.0 U	1.1 U	1.0 U	1.1 U
gamma-BHC (Lindane)		0.11 U	0.11 U	0.10 U	0.11 U	0.10 U	0.11 U
Endrin		0.22 U	0.22 U	0.20 U	0.21 U	0.20 U	0.21 U
Methoxychlor		1.1 U	1.1 U	1.0 U	1.1 U	1.0 U	1.1 U
Toxaphene		2.2 U	2.2 U	2.0 U	2.1 U	2.0 U	2.1 U
Heptachlor Epoxide		0.11 U	0.11 U	0.10 U	0.11 U	0.10 U	0.11 U

	Cust ID:	MND20-0019-0 080	MND20-0019-0 089	MND20-0019-0 105	MND20-0019-0 105	MND20-0019-0 105	PBLK
Sample Information	RFW#:	016	017	018	018 MS	018 MSD	91LE0440-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate: Di-n-butylchlorendate		85 %	63 %	82 %	98 %	185 * %	68 %
Heptachlor		0.10 U	0.10 U	0.11 U	80 %	100 %	0.050 U
alpha-Chlordane		1.0 U	1.0 U	1.1 U	75 %	100 %	0.50 U
gamma-Chlordane		1.0 U	1.0 U	1.1 U	90 %	105 %	0.50 U
gamma-BHC (Lindane)		0.10 U	0.10 U	0.11 U	140 %	140 %	0.050 U
Endrin		0.20 U	0.20 U	0.23 U	110 %	115 %	0.10 U
Methoxychlor		1.0 U	1.0 U	1.1 U	103 %	110 %	0.50 U
Toxaphene		2.0 U	2.0 U	2.3 U	2.5 U	2.5 U	1.0 U
Heptachlor Epoxide		0.10 U	0.10 U	0.11 U	85 %	95 %	0.050 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Roy F. Weston, Inc. - Lionville Laboratory
Pesticide by GC, TCLP Leachate

Report Date: 05/16/91 18:05

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Page: 2

	Cust ID:	PBLK BS	LCHBLK
Sample Information	RFW#:	91LE0440-MB2	91LT0032-LB1
	Matrix:	WATER	WATER
	D.F.:	1.00	1.00
	Units:	ug/L	ug/L

Surrogate: Di-n-butylchlorendate	88	%	71	%
Heptachlor	100	%	0.11	U
alpha-Chlordane	115	%	1.1	U
gamma-Chlordane	105	%	1.1	U
gamma-BHC (Lindane)	120	%	0.11	U
Endrin	100	%	0.21	U
Methoxychlor	104	%	1.1	U
Toxaphene	1.0	U	2.1	U
Heptachlor Epoxide	90	%	0.11	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

I. CASE NARRATIVE

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL MOUND **SAMPLES RECEIVED:** 03-26-91
RFW #: 9103L070, PEST/PCB
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of nine leachate samples generated on 04-04-91 from soil samples collected on 03-25-91.

The samples were extracted on 04-03-91 and analyzed according to criteria set forth in the Contract Laboratory Program for TCLP Pesticide and PCB target compounds on 05-08-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Linearity and breakdown criteria were met for the primary column.

2. Continuing calibration criteria were exceeded for several compounds in standards analyzed prior to sample extracts on the primary column. The deviations indicated an increase in sensitivity, so the ability to detect compounds should not be impaired. Data obtained on the confirmation column was also evaluated since the associated standards met the 15% criteria. This data supported the results obtained from the primary column.

3. Retention time criteria were met for all compounds on both the primary and confirmation columns.

4. One (1) of fourteen (14) surrogate recoveries was outside EPA QC limits. The surrogate recovery form sample MND20-0019-0-105 MSD (185%) exceeded the EPA QC limit of 154%.

5. All matrix spike recoveries were within the range of 75% - 140%.

6. All blank spike recoveries were within the range 90% - 120%.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

5.21.91
Date

Roy F. Weston, Inc. - Lionville Laboratory
HBGT ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
MND20-0019-0010	010	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0024	011	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0035	012	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0046	013	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0058	014	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0069	015	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0080	016	W	91LR0444	04/02/91	04/07/91	04/13/91
MND20-0019-0089	017	W	91LR0444	04/02/91	04/07/91	04/13/91
MND20-0019-0105	018	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0105	018 MS	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0105	018 MS R1	W	91LR0403	04/02/91	04/10/91	04/15/91
MND20-0019-0105	018 MSD	W	91LE0444	04/02/91	04/04/91	04/10/91
MND20-0019-0105	018 MSD R1	W	91LR0403	04/02/91	04/10/91	04/15/91

LAB QC:

PBLK	MB1	W	91LE0444	N/A	04/04/91	04/09/91
PBLK	MB1 BS	W	91LE0444	N/A	04/04/91	04/09/91
PBLK	MB2 BS	W	91LE0444	N/A	04/04/91	04/09/91
PBLK	MB3 BS	W	91LE0444	N/A	04/04/91	04/09/91
LCHBLK	LB1	W	91LE0444	N/A	04/04/91	04/09/91
PBLK	MB1	W	91LR0444	N/A	04/07/91	04/13/91
PBLK	MB1 BS	W	91LR0444	N/A	04/07/91	04/13/91
PBLK	MB1 BSD	W	91LR0444	N/A	04/07/91	04/13/91
PBLK	MB1	W	91LR0403	N/A	04/10/91	04/15/91
PBLK	MB1 BS	W	91LR0403	N/A	04/10/91	04/15/91
PBLK	MB1 BSD	W	91LR0403	N/A	04/10/91	04/15/91

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CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L070

Client: Land-Mound (LANLMOUCLP)
Work Order: 2744-40-07-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact: Susan Wilson
Client Contact/Phone:

Refrigerator#	3	3								
#/Type Container	2/G	1/G								
Volume	250 4/G	125								
Preservative	125	NONE								
ANALYSES REQUESTED	TCLP	TCLV		BNA	Pest	Herbs	Metal			

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	TCLP	TCLV		BNA	Pest	Herbs	Metal		
001	MND20-0019-0010	S	3/25/91									
002	0024											
003	0035											
004	0046											
005	0058											
006	0069											
007	0080											
008	0089											
009	0105											
010	MND20-0019-0010 TCLP01 001	W	4/2/91				✓	✓	✓	✓		
011	0024 002											
012	0035 003											
013	0046 004											
014	0058 005											
015	0069 006											

Re: 4/15/91 Changed date all on some samples TY

Matrix: S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: QC/DU=CLP TAT=30day

Original Requisition

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/27/91	9:30 am	BNA/Pest/Herb/Metals	M. Jason	[illegible]	4/9/91	3:30
TCLP/V	L. Sampson	D. [illegible]	3/27/91	8:45	19.22.23-24	[illegible]	T. Young	4/10/91	12:00
BNA/Pest/Herb/Metals	T. Young	[illegible]	4/3/91	3:00	TCLP				
Metals	T. Young	Weston Express	4/4/91	09:30	Metals	T. Young	[illegible]	4/10/91	12:00
19.22-27 TCLP	T. Young		4/5/91	11:00	10-18 19-22	T. Young	Ares	4/17	
19.22-24 TCLP	T. Young		4/8/91		Metals	[illegible] Ares		4/18	11:00

RFW 21-21-001/A-12/88

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES: Original Lab Report

CN - not needed see note in client note

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
91031070

Client: Lord-Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact:
Client Contact/Phone:

Refrigerator#									
#/Type Container									
Volume									
Preservative									
ANALYSES REQUESTED →	BNA	Pest	Herb	Metals	VOA				

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	BNA	Pest	Herb	Metals	VOA				
016	MND20-0019-0080 TCLP of 007	W	4/2/91	✓	✓	✓	✓					
017	0089 008											
018	0105 009											
019	MND20-0019-0010 TCLP of 001		4/3/91					✓				
020	0024 002		4/2/91									
021	0035 003											
022	0046 004		4/3/91									
023	0058 005											
024	0069 006											
025	0080 007											
026	0089 008											
027	0105 009											
028	Leachate Blank											

Matrix:
S - Soil, SE - Sediment, SO - Solid
W - Water, O - Oil, A - Air, WI - Wipe
DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/26/91	9:00 am	Metals	K. McMahon		4/29	9:30
Lord [illegible] 20,21	D.S.	D. [illegible]	4/3/91	1:15					
10-18 BNA	K. Shepard		4/4/91	4:30					
Metals	M. Grason	Jeffrey Walsh	4/19	10:00					
VOA	[illegible]		4-21-91	9:10					
metals return	Jeffrey Walsh		4/23/91	0930					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES:

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

DATA SUMMARY

Roy F. Weston, Inc. - Lionville Laboratory
HERBICIDES BY GC, TCLP LEACHATE

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/22/91 13:06 Page: 1

Sample Information													
Cust ID:	MND20-0019-0 010		MND20-0019-0 024		MND20-0019-0 035		MND20-0019-0 046		MND20-0019-0 058		MND20-0019-0 069		
RFW#:	010		011		012		013		014		015		
Matrix:	WATER		WATER		WATER		WATER		WATER		WATER		
D.F.:	1.00		1.00		1.00		1.00		1.00		1.00		
Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		
2,4-D	2.3	U	2.1	U	2.2	U	2.2	U	2.1	U	2.2	U	
2,4,5-TP (Silvex)	1.1	U	1.1	U	1.1	U	1.1	U	1.0	U	1.1	U	

Sample Information													
Cust ID:	MND20-0019-0 080		MND20-0019-0 089		MND20-0019-0 105		MND20-0019-0 105		MND20-0019-0 105		MND20-0019-0 105		
RFW#:	016		017		018		018 MS		018 MS		018 MSD		
Matrix:	WATER		WATER		WATER		WATER		WATER		WATER		
D.F.:	1.00		1.00		1.00		1.00		1.00		1.00		
Units:	ug/L		ug/L		ug/L		ug/L		ug/L REPREP		ug/L		
2,4-D	2.0	U	2.0	U	2.3	U	I	%	84	%	12	%	
2,4,5-TP (Silvex)	1.0	U	1.0	U	1.1	U	I	%	73	%	I	%	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

000035

Roy F. Weston, Inc Lionville Laboratory
HERBICIDES BY GC, TCLP LEACHATE

RFW Batch Number: 9103L070 Client: LANL-MOUND Work Order: 2744-40-07-1417 Report Date: 04/22/91 13:06 Page: 2

	Cust ID:	MND20-0019-0105		PBLK		PBLK BS		PBLK BS		PBLK BS		PBLK	
Sample Information	RFW#:	018 MSD		91LE0444-MB1		91LE0444-MB1		91LE0444-MB2		91LE0444-MB3		91LR0444-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
		REPREP											
2,4-D		36	%	1.0	U	110	%	76	%	93	%	1.0	U
2,4,5-TP (Silvex)		18	%	0.50	U	119	%	104	%	90	%	0.50	U

	Cust ID:	PBLK BS		PBLK BSD		PBLK		PBLK BS		PBLK BSD		LCHBLK	
Sample Information	RFW#:	91LR0444-MB1		91LR0444-MB1		91LR0403-MB1		91LR0403-MB1		91LR0403-MB1		91LT0032-LB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
2,4-D		99	%	80	%	1.0	U	53	%	62	%	1.9	U
2,4,5-TP (Silvex)		65	%	68	%	0.50	U	76	%	78	%	0.96	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

000306

CASE NARRATIVE

307A

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: LANL-MOUND **SAMPLES RECEIVED:** 03-26-91
RFW #: 9103L070, CHLORINATED HERBICIDE
W.O. #: 2744-40-07

NARRATIVE

The set of samples consisted of nine (9) leachate samples generated on 04-02-91 from water samples collected on 03-25-91.

The samples were extracted on 04-04,07,10-91 and analyzed according to criteria set forth in Method 8150 for Chlorinated Phenoxy Acid Herbicides on 04-10,13,15-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. All blank spike recoveries were within laboratory control chart warning limits.

2. Matrix spike recovery data was either low or unobtainable for the matrix spike and spike duplicate samples in the initial extraction batch. The matrix spike and spike duplicate samples were re-extracted on 04-10-91 outside of holding time and an improvement in the spike recovery data was observed.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

5-22-91
Date

WESTON

GLOSSARY OF HERBICIDE DATA

DATA QUALIFIERS

U - Indicates that the compounds was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E - Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I - Interference.

ABBREVIATIONS

BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD - Indicates blank spike duplicate.

MS - Indicates matrix spike.

MSD - Indicates matrix spike duplicate.

DL - Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA - Not applicable.

DF - Dilution factor.

NR - Not required.

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
MND20-0019-0010						
SILVER, TCLP LEACHAT	010	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	010	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	010	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	010	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	010	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	010	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	010	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	010	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0024						
SILVER, TCLP LEACHAT	011	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	011	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	011	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	011	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	011	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	011	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	011	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	011	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0035						
SILVER, TCLP LEACHAT	012	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	012	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	012	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	012	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	012	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	012	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	012	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	012	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0046						
SILVER, TCLP LEACHAT	013	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	013	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	013	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	013	W	91L0786	04/02/91	04/17/91	04/23/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
CHROMIUM, TCLP LEACH	013	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	013	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	013	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	013	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0058						
SILVER, TCLP LEACHAT	014	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	014	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	014	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	014	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	014	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	014	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	014	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	014	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0069						
SILVER, TCLP LEACHAT	015	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	015	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	015	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	015	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	015	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	015	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	015	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	015	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0080						
SILVER, TCLP LEACHAT	016	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	016	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	016	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	016	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	016	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	016	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	016	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	016	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0089						
SILVER, TCLP LEACHAT	017	W	91L0786	04/02/91	04/17/91	04/23/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
ARSENIC, TCLP LEACHA	017	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	017	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	017	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	017	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	017	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	017	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	017	W	91L0786	04/02/91	04/17/91	04/23/91
MND20-0019-0105						
SILVER, TCLP LEACHAT	018	W	91L0786	04/02/91	04/17/91	04/23/91
SILVER, TCLP LEACHAT	018 REP	W	91L0786	04/02/91	04/17/91	04/23/91
SILVER, TCLP LEACHAT	018 MS	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	018	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	018 REP	W	91L0786	04/02/91	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	018 MS	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	018	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	018 REP	W	91L0786	04/02/91	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	018 MS	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	018	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	018 REP	W	91L0786	04/02/91	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	018 MS	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	018	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	018 REP	W	91L0786	04/02/91	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	018 MS	W	91L0786	04/02/91	04/17/91	04/23/91
MERCURY, TCLP LEACHA	018	W	91C106A	04/02/91	04/21/91	04/22/91
MERCURY, TCLP LEACHA	018 REP	W	91C106A	04/02/91	04/21/91	04/22/91
MERCURY, TCLP LEACHA	018 MS	W	91C106A	04/02/91	04/21/91	04/22/91
LEAD, TCLP LEACHATE	018	W	91L0786	04/02/91	04/17/91	04/23/91
LEAD, TCLP LEACHATE	018 REP	W	91L0786	04/02/91	04/17/91	04/23/91
LEAD, TCLP LEACHATE	018 MS	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	018	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	018 REP	W	91L0786	04/02/91	04/17/91	04/23/91
SELENIUM, TCLP LEACH	018 MS	W	91L0786	04/02/91	04/17/91	04/23/91

LAB QC:

SILVER LABORATORY	LC1 BS	W	91L0786	N/A	04/17/91	04/23/91
ARSENIC LABORATORY	LC1 BS	W	91L0786	N/A	04/17/91	04/23/91
BARIUM LABORATORY	LC1 BS	W	91L0786	N/A	04/17/91	04/23/91

Roy F. Weston, Inc. - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
LANL-MOUND

DATE RECEIVED: 03/26/91 RFW LOT # :9103L070

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	LEACH DATE	EXTR/PREP	ANALYSIS
CADMIUM LABORATORY	LC1 BS	W	91L0786	N/A	04/17/91	04/23/91
CHROMIUM LABORATORY	LC1 BS	W	91L0786	N/A	04/17/91	04/23/91
LEAD LABORATORY	LC1 BS	W	91L0786	N/A	04/17/91	04/23/91
SELENIUM LABORATORY	LC1 BS	W	91L0786	N/A	04/17/91	04/23/91
SILVER LABORATORY	LC2 BS	W	91L0786	N/A	04/17/91	04/23/91
ARSENIC LABORATORY	LC2 BS	W	91L0786	N/A	04/17/91	04/23/91
BARIUM LABORATORY	LC2 BS	W	91L0786	N/A	04/17/91	04/23/91
CADMIUM LABORATORY	LC2 BS	W	91L0786	N/A	04/17/91	04/23/91
CHROMIUM LABORATORY	LC2 BS	W	91L0786	N/A	04/17/91	04/23/91
LEAD LABORATORY	LC2 BS	W	91L0786	N/A	04/17/91	04/23/91
SELENIUM LABORATORY	LC2 BS	W	91L0786	N/A	04/17/91	04/23/91
SILVER, TCLP LEACHAT	MB1	W	91L0786	N/A	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	MB1	W	91L0786	N/A	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	MB1	W	91L0786	N/A	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	MB1	W	91L0786	N/A	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	MB1	W	91L0786	N/A	04/17/91	04/23/91
LEAD, TCLP LEACHATE	MB1	W	91L0786	N/A	04/17/91	04/23/91
SELENIUM, TCLP LEACH	MB1	W	91L0786	N/A	04/17/91	04/23/91
SILVER, TCLP LEACHAT	MB2	W	91L0786	N/A	04/17/91	04/23/91
ARSENIC, TCLP LEACHA	MB2	W	91L0786	N/A	04/17/91	04/23/91
BARIUM, TCLP LEACHAT	MB2	W	91L0786	N/A	04/17/91	04/23/91
CADMIUM, TCLP LEACHA	MB2	W	91L0786	N/A	04/17/91	04/23/91
CHROMIUM, TCLP LEACH	MB2	W	91L0786	N/A	04/17/91	04/23/91
LEAD, TCLP LEACHATE	MB2	W	91L0786	N/A	04/17/91	04/23/91
SELENIUM, TCLP LEACH	MB2	W	91L0786	N/A	04/17/91	04/23/91
MERCURY LABORATORY	LC1 BS	W	91C106A	N/A	04/21/91	04/22/91
MERCURY LABORATORY	LC2 BS	W	91C106A	N/A	04/21/91	04/22/91
MERCURY, TOTAL	MB1	W	91C106A	N/A	04/21/91	04/22/91
MERCURY, TCLP LEACHA	MB2	W	91C106A	N/A	04/21/91	04/22/91

WESTON ANALYTICS
INORGANIC METHODOLOGY SUMMARY

METALS

EPA	206.2	:	As		
EPA	200.7	:	Sb		
EPA	239.1	:	Pb		
EPA	270.1	:	Se		
EPA	279.2	:	Tl		
EPA	245.1	:	Hg		
EPA	200.72	:	Ag	Co	Mn
			Al	Cr	Na
			Ba	Cu	Ni
			Be	Fe	V
			Ca	K	Zn
			Cd	Mg	

Total Cyanide : EPA 335.2

Total Recoverable Phenolics : EPA 420.1

Other :

WESTON

MATRIX SPIKE SOLUTION
SOURCE: INORGANIC VENTURES LABORATORY

ELEMENTS	STOCK CONCENTRATION (ppb)	STOCK CONCENTRATION (ppb)
Aluminum	200,000	2,000
Antimony	50,000	500
Arsenic	4,000	40
Barium	200,000	2,000
Beryllium	5,000	50
Cadmium	5,000	50
Calcium	300,000	30,000
Chromium	2,000	200
Cobalt	5,000	500
Copper	2,500	250
Iron	10,000	1,000
Lead	200	20
Magnesium	250,000	25,000
Manganese	5,000	500
Mercury	10	1.0
Nickel	5,000	500
Potassium	250,000	25,000
Selenium	100	10
Silver	500	50
Sodium	250,000	25,000
Thallium	500	50
Vanadium	5,000	500
Zinc	1,000	500
Cyanide	1,000	100

* 1 mL of stock concentration is used for water matrix spike, final volume digestate 100 mL.

* 2 mLs of stock concentration is used for soil matrix spike, final volume digestate 200 mL.

ANALYTICAL SPIKES

ELEMENTS	SOURCE	STOCK	VOLUME ADDED TO 1 mLs	FINAL CONCENTRATION (ppb)
Arsenic	Aldrich	2 ppm	10 uL	20
Selenium	Aldrich	2 ppm	10 uL	10
Lead	Aldrich	2 ppm	10 uL	10
Thallium	Mallinckrodt	2 ppm	10 uL	20

USEPA CONTRACT LABORATORY PROGRAM
DATA QUALIFIER DESCRIPTIONS
INORGANIC ANALYSIS SOW NO. 787

CONCENTRATION QUALIFIERS:

B = INDICATES THAT THE REPORTED VALUE IS LESS THAN THE CRDL BUT GREATER THAN THE IDL.

U = INDICATES THAT THE ANALYTE WAS ANALYZED FOR BUT NOT DETECTED.

QUALIFIERS:

E = THE REPORTED VALUE IS ESTIMATED BECAUSE OF THE PRESENCE OF INTERFERENCE.

M = DUPLICATE INJECTION PRECISION NOT MET.

N = SPIKED SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS.

S = THE REPORTED VALUE WAS DETERMINED BY THE METHOD OF STANDARD ADDITIONS (MSA).

W = POST DIGESTION SPIKE FOR FURNACE AA ANALYSIS IS OUT OF CONTROL LIMITS (85-125%) WHILE SAMPLE ABSORBANCE IS LESS THAN 50% OF SPIKE ABSORBANCE.

* = DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS.

+ = CORRELATION COEFFICIENT FOR THE MSA IS LESS THAN 0.995.

METHOD:

P = ICP
A = FLAME AA
F = FURNACE AA
CV = MANUAL COLD VAPOR AA.
AV = AUTOMATED COLD VAPOR AA.
AS = SEMI-AUTOMATED SPECTROPHOTOMETRIC
C = MANUAL SPECTROPHOTOMETRIC
T = TITRIMETRIC
NR = NOT REQUIRED

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0000001

CHAIN OF CUSTODY

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L070

LANDMOUND

Client: Land-Mound
Work Order: 2744-40-07-1417
Date Rec'd.: 3/26/91 Date Due: 4/25/91
RFW Contact: Susan Wilson
Client Contact/Phone:

Refrigerator#	3	3							
#/Type Container	2/G 250	1/G							
Volume	4/G 125	125							
Preservative	125	none							
ANALYSES REQUESTED	TCLP	TCLV		BNA	Pest	Herb	Metal		
	ITCLP	ITCLV		DIOBST	OCBST	OPBST	RCRA TCL		

WA Use Only Lab ID	Client ID/Description		Matrix	Date Collected									
001	MND20-0019-0010		S	3/25/91									
2	0024												
3	0035												
4	0046												
5	0058												
6	0069												
7	0080												
8	0089												
9	0105												
10	MND20-0019-0010	TCLP of 001	W	4/2/91				✓	✓	✓	✓		
11	0024	002											
12	0035	003											
13	0046	004											
14	0058	005											
15	0069	006											

Rex. #1 4/29/91 Changed date coll. on some samples TY

Matrix:
S - Soil, SE - Sediment, SO - Solid
W - Water, O - Oil, A - Air, WI - Wipe
DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate
X - Other

Special Instructions:
QC/DI=CLP
TAT=30day
Original Submittal

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/26/91	9:30 am	BNA 018-9	M. Jason	[illegible]	4/9/91	3:30
TCLP/V	L. Compout	[illegible]	3/27/91	8:45	19,22,23-24	[illegible]	[illegible]	4/10/91	12:00
BNA/Pest/Herb/Metal	T. Hwang	[illegible]	4/3/91	3:00	TCLP		T. Hwang		
Pesticides	T. Hwang	[illegible]	4/4/91	09:30	Pesticides	T. Hwang	[illegible]	4/10/91	12:00
19,22-27	T. Hwang		4/5/91	11:00	10-18	T. Hwang	Ann	4/17	
19,22-26	T. Hwang		4/8/91		Metals	[illegible]		4/16	11:00

RFW 21-21-001/A-12/88

WESTON Analytics Use Only
Samples Were: 1 Shipped or Hand-Delivered (Y) NOTES:
2 Ambient or Chilled (Y) NOTES:
3 Received Broken/Leaking (Improperly Sealed) Y (N) NOTES:
4 Properly Preserved (Y) N NOTES:
5 Received Within Holding Times (Y) N NOTES:
COC Tape Was: 1 Present on Outer Package (Y) N 2 Unbroken on Outer Package (Y) N 3 Present on Sample (Y) N 4 Unbroken on Sample (Y) N NOTES:
COC Record Was: 1 Present Upon Receipt of Samples (Y) N
Discrepancies Between Sample Labels and COC Record? (Y) (N) NOTES: original also in PDF

CN - not needed see PDF in chem file

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9103L070

Client: Land-Mound
Work Order: 2744-40 07-1417
Date Rec'd. 3/26/91 Date Due 4/25/91
RFW Contact:
Client Contact/Phone:

Refrigerator#										
#/Type Container										
Volume										
Preservative										
ANALYSES REQUESTED	BNA	Pest	Herb	Metal	VOA					
	0025T	0025T	0025T	0025T	0024T					

WA Use Only Lab ID	Client ID/Description		Matrix	Date Collected								
016	MND20-0019-0080	TCLP 007	W	4/2/91	✓	✓	✓	✓				
17	0089	008										
18	0105	009										
19	MND20-0019-0010	TCLP 001		4/3/91					✓			
20	0024	002		4/3/91								
21	0035	003										
22	0046	004		4/3/91								
23	0058	005										
24	0069	006										
25	0080	007										
26	0089	008										
27	0105	009										
28	Leachate Blank											

Matrix:
S - Soil, SE - Sediment, SO - Solid
W - Water, O - Oil, A - Air, WI - Wipe
DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	[illegible]	[illegible]	3/26/91	9:30 am	Metals	K McMahon		4/29	9:30
Leach 18 BNA 20, 21	D.S.	[illegible]	4/3/91	1:15					
1025 BNA	K Shepard		4/4/91	4:30					
Metals	M. Gason	J. Jeffrey Welch	4/19	10:00					
VOA	[illegible]		4-21-91	9:10					
metals return	J. Jeffrey Welch		4/23/91	0930					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y N
NOTES:

4 Properly Preserved Y N
NOTES:

5 Received Within Holding Times Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

CASE NARRATIVE

WESTON

Roy F. Weston, INC.
Lionville Laboratory

CLIENT:LANL-MOUND **SAMPLES RECEIVED:3/26/91**
RFW #:9103L070
W.O.#:2744-40-07-1417

METALS NARRATIVE

The set of samples consisted of (9) leachate samples were generated 4/2/91 from samples collected on 3/25/91.

The samples were analyzed according to criteria set forth in CLP SOW 7/87.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.

2. All ICV and CCV values were within control limits.

3. All ICB and CCB values were within control limits.

4. All preparation blank values were within control limits.

5. All LCS results were within the 80-120% control limits.

Note: The USEPA has dropped control limits for antimony and silver due to documented difficulties in obtaining reliable results. WESTON Analytics has adopted the same policy.

6. The laboratory performed one matrix spike analysis per twenty TCLP samples of a similar matrix. The Federal Register suggests that the matrix spike be over 50%.

7. Duplicate analyses were performed on TCLP samples; however, they were not required.

Jack R. Tuschall, Ph.D.
Laboratory Manager
WESTON Analytical Laboratories

5/13/91
Date

DATA SUMMARY

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-010	MND20-0019-0010	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	1220		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-011	MND20-0019-0024	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	1190		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-012	MND20-0019-0035	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	478		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-013	MND20-0019-0046	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	479		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-014	MND20-0019-0058	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	354		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-015	MND20-0019-0069	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	489		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-016	MND20-0019-0080	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	350		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-017	MND20-0019-0089	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	200	u	UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-018	MND20-0019-0105	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	279		UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Mercury, TCLP Leachate	0.20	u	UG/L	0.20
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500

ROY F. WESTON INC.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK1	91L0786-MB1	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	200	u	UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500
BLANK2	91L0786-MB2	Silver, TCLP Leachate	10.0	u	UG/L	10.0
		Arsenic, TCLP Leachate	500	u	UG/L	500
		Barium, TCLP Leachate	200	u	UG/L	200
		Cadmium, TCLP Leachate	5.0	u	UG/L	5.0
		Chromium, TCLP Leachate	10.0	u	UG/L	10.0
		Lead, TCLP Leachate	90.0	u	UG/L	90.0
		Selenium, TCLP Leachate	500	u	UG/L	500
BLANK1	91C106A-MB1	Mercury, Total	0.20	u	UG/L	0.20
BLANK2	91C106A-MB2	Mercury, TCLP Leachate	0.20	u	UG/L	0.20

ROY F. WESTON INC.

INORGANICS ACCURACY REPORT 05/28/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-018	MND20-0019-0105	Silver, TCLP Leachate	2570	10.0 u	5000	51.5
		Arsenic, TCLP Leachate	5120	500 u	5000	102
		Barium, TCLP Leachate	102000	279	100000	102
		Cadmium, TCLP Leachate	1000	5.0 u	1000	100
		Chromium, TCLP Leachate	4860	10.0 u	5000	97.2
		Mercury, TCLP Leachate	187	0.20u	200	93.6
		Lead, TCLP Leachate	4980	90.0 u	5000	99.6
		Selenium, TCLP Leachate	1410	500 u	1000	141

ROY F. WESTON INC.

INORGANICS DUPLICATE SPIKE REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
LCS2	91L0786-LC2	Silver, LCS	88.0	84.7	3.8
		Arsenic, LCS	102	98.7	3.3
		Barium, LCS	98.3	95.3	3.1
		Cadmium, LCS	104	101	3.0
		Chromium, LCS	101	97.4	3.6
		Lead, LCS	101	98.5	2.8
		Selenium, LCS	108	104	3.2
LCS2	91C106A-LC2	Mercury, LCS	98.9	101	2.4

ROY F. WESTON INC.

INORGANICS PRECISION REPORT 05/10/91

CLIENT: LANL-MOUND
WORK ORDER: 2744-40-07-1417

WESTON BATCH #: 9103L070

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-018REP	MND20-0019-0105	Silver, TCLP Leachate	10.0 u	10.0 u	NC
		Arsenic, TCLP Leachate	500 u	500 u	NC
		Barium, TCLP Leachate	279	558	66.7
		Cadmium, TCLP Leachate	5.0 u	5.0 u	NC
		Chromium, TCLP Leachate	10.0 u	10.0 u	NC
		Mercury, TCLP Leachate	0.20u	0.20u	NC
		Lead, TCLP Leachate	90.0 u	90.0 u	NC
		Selenium, TCLP Leachate	500 u	500 u	NC

ROY F. WESTON INC.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/10/91

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	91L0786-LC1	Silver, LCS	440	500	UG/L	88.0
		Arsenic, LCS	10200	10000	UG/L	102
		Barium, LCS	4920	5000	UG/L	98.3
		Cadmium, LCS	261	250	UG/L	104
		Chromium, LCS	505	500	UG/L	101
		Lead, LCS	2530	2500	UG/L	101
		Selenium, LCS	10800	10000	UG/L	108
LCS2	91L0786-LC2	Silver, LCS	423	500	UG/L	84.7
		Arsenic, LCS	9870	10000	UG/L	98.7
		Barium, LCS	4760	5000	UG/L	95.3
		Cadmium, LCS	253	250	UG/L	101
		Chromium, LCS	487	500	UG/L	97.4
		Lead, LCS	2460	2500	UG/L	98.5
		Selenium, LCS	10400	10000	UG/L	104
LCS1	91C106A-LC1	Mercury, LCS	4.9	5.0	UG/L	98.9
LCS2	91C106A-LC2	Mercury, LCS	5.1	5.0	UG/L	101

APPENDIX E-5

DATA VALIDATION REPORTS

Inter-Office Memorandum

WESTON
MANAGERS DESIGNERS/CONSULTANTS

TO: Cemantha J. Davisson
Senior Project Chemist

FROM: James E. Davis, Karen Taylor DATE: 12 June 1991

PROJECT: Inorganic Data Review W.O. NO.:
LANL-Mound

SUBJECT: RFW Lots#: 9103L033

ACTION:
A validation and revalidation was performed on RFW Lot#: 9103L033. The sample set consisted of one (1) soil sample collected on 21 March 1991 and submitted to Roy F. Weston's Lionville laboratory for analysis.

An assessment of the sample data results was made according to "Evaluation of Metals Data for the Contract Laboratory Program", Revision 10, February 1991.

The analysis was conducted with good quality control and the data is acceptable with only minor qualification.

The following is a list of USEPA Region II qualifiers used in the sample results table(s).

J - Detected sample value is estimated for the analyte.

UJ - The sample detected limit is an estimated quantity for the analyte.

R - The detected or non-detected sample results is rejected for the analyte.

The justification for qualification of sample results is discussed in the report.

fn:LANL033.MEM

I. VALIDATION RESULTS

II. LANL MOUND PROJECT

Inorganic Data Review
RFW LOT#: 9103L033
12 June 1991

III. CASE SUMMARY

This case consists of one soil sample RFW Lot#: 9103L033, collected on 21 March 1991 for analysis by the EPA CLP Statement of Work Version 7/88 for inorganics. Data validation was performed according to "Evaluation of Metals Data for the Contract Laboratory Program" Revision 10 February 1991. Samples were analyzed by Roy F. Weston's Lionville laboratory on 23 April 1991.

Chain-of-Custody record show the samples were received in good condition.

Samples were analyzed according to the EPA CLP Statement of Work, Version 7/88 with revisions 2/89 and 6/89 for inorganic analyses with minor qualifications.

IV. RESULTS OF LABORATORY QUALITY CONTROL CHECKS

A. Matrix Spike

Matrix spike recoveries were between 10 and 74 percent for arsenic (57.6), lead (16.0), selenium (43.0), silver (69.6), thallium (61.8) and mercury (52.7), therefore all associated data were considered estimated "J".

"J": MND20-0019-0109 ----> As, Pb, Se, Ag, Tl and Hg.

Matrix spike recovery was between 126 and 200 percent for Manganese, therefore all associated positive data was flagged as estimated "J".

"J": MND20-0019-0109 ----> Mn.

Mercury and cyanide matrix spike and matrix spike duplicate were not performed on 9103L033 SDG, however, data is acceptable and no qualification is necessary.

B. ICP Serial Dilution

ICP serial dilution yielded a greater than 10 percent difference for Zn (14.9%) and the initial concentration was greater than 10 X IDL. The Zinc data point in sample MND20-0019-0109 was flagged as estimated "J".

"J": MND20-0019-0109 ----> Zn.

C. Interference Check Sample(ICS)

False negative for Sodium in the ICP interference check sample may indicate a negative bias in the Sodium result for sample MND20-0019-0109, therefore the data point was considered estimated and flagged "J".

"J": MND20-0019-0109 ----> Na.

D. Laboratory Control Sample(LCS)

All laboratory control sample results were within EPA (80-120%) control limits.

E. Blanks

All preparative blank values were within control limits.

F. ICP Linear Range

Calcium result for sample MND20-0019-0109 was higher than the ICP linear range for Calcium and therefore the data point was considered as estimated "J".

"J": MND20-0019-0109 ----> Ca.

G. Duplicate Sample Analysis

No qualification required due to duplicate sample analysis.

H. Initial Calibration Verification

ICV for cyanide analysis did not appear to have been distilled, however there were distilled laboratory control samples present and recoveries were within acceptable limits.

V. HOLDING TIMES

All samples were analyzed within holding times.

VI. RESULTS OF ASSOCIATED FIELD QUALITY CONTROL CHECKS

No field blanks were submitted with this case.

VII. OVERALL ASSESSMENT OF DATA

Overall the data is acceptable with qualifications due to minor problems. A table of qualified data is presented in Table A.

REPORT OF VALIDATION RESULTS

TABLE A - TABLE OF QUALIFIED DATA

RFW Lot#: 9103L033

Client ID	Analytes	Qualifier
MND20-0019-0109	As, Pb, Se, Ag, Tl, Hg	J
MND20-0019-0109	Mn, Zn, Ca, Na	J

fn:LANL033.RPT

Inter-Office Memorandum

TO: Cemantha J. Davisson
Senior Project Chemist

FROM: James E. Davis, Marybeth Puckace DATE: 07 June 1991

PROJECT: Organic Data Validation Results W.O. NO.:
LANL-Mound

SUBJECT: RFW Lots#s: 9103L033, 9103L012,

ACTION:

A validation and revalidation was performed on two sample lots; RFW Lot #9103L033 (1 soil and two waters) and RFW Lot #9103L012 (2 waters and 5 soils), collected between 19 March 1991 through 21 March 1991. The samples were submitted to Roy F. Weston's Lionville Laboratory for analyses.

The sample data results were assessed according to "Laboratory Data Functional Guidelines for Evaluating Organics Analyses: USEPA, February 1988.

The following is a list of the USEPA Region II qualifiers used in the sample results tables:

J - Detected sample value is estimated for the analyte.

UJ - The sample detected limit is an estimated quantity for the analyte.

R - The detected or non-detected sample results is rejected for the analyte.

The justification for qualification of sample results is discussed in the report.

REPORT OF DATA VALIDATION RESULTS

I REPORT OF DATA VALIDATION RESULTS

II LANL MOUND PROJECT 0.02

Volatile, Semivolatile and Pesticide/PCB Organics
RFW Lots#s: 9103L033, 9103L012
07 June 1991

III CASE SUMMARY

A validation and revalidation was performed on organic soil and water samples data from the LANL Mound Project.

In reviewing the data the USEPA "Laboratory Data Validation; Functional Guidelines for Evaluating Organic Analysis, February, 1988" was used when applicable.

The review consisted of two samples deliverable groups (SDG) RFW Lot #9103L033 and RFW Lot #9103L012. RFW Lot: #9103L033 consisted of 3 samples (1 soil and 2 waters) and RFW# 9103L012 contained 7 samples (2 waters and 5 soils). Both SDGs were collected between 19 March 1991 through 21 March 1991 and submitted to Roy F. Weston's Analytical Laboratory in Lionville, PA for analysis.

The samples were analyzed according to EPA Method 8240 including the volatile organic compounds on the Target Compound List in the CLP Program (3rd Edition of "Test Methods for Evaluating Solid Waste", U.S.EPA SW-846).

Samples in RFW Lot #9103L033 were analyzed for volatile and semivolatile organic parameters only. RFW Lot#: 9103L012 samples were analyzed for volatile, semivolatile and pesticide/PCB organics. Chain-of-Custody documents indicate that the samples were received by the laboratory in good conditions with no discrepancy between sample labels and Chain-of-Custody records.

IV HOLDING TIMES

All holding times were met for volatile, semivolatile and pesticide/PCB analyses for RFW Lot #9103L033 and RFW Lot #9103L012.

V RESULTS OF LABORATORY QUALITY CONTROL CHECKS

VOLATILE/SEMIVOLATILE

A. GC/MS Tune

GC/MS tuning and mass calibration performance was met for RFW Lot #9103L033 and RFW Lot #9103L012.

B. Calibration

The following compounds failed to meet acceptable calibration criteria and were qualified for the reasons given below.

RFW LOT #9103L033
VOLATILE

- Carbon tetrachloride was qualified 'UJ' in sample MND20-0019-0109 for continuing calibration %D > 50 but < 90: estimate (J) positive and (UJ) non-detected sample results for affected samples.

- Acetone was qualified 'J' in sample MND20-0019-W14 for continuing calibration %D > 25: estimate (J) positive results for the affected samples.

SEMIVOLATILE

- Benzoic acid was "UJ" qualified in sample MND20-0019-0109 for continuing calibration %D > 50 BUT < 90: estimated (J) positive results and (UJ) non-detected sample results for affected samples.

RFW LOT #91031012
SEMIVOLATILE

- Benzoic Acid was 'UJ' qualified in samples MND20-0019-0092A, MND20-0019-00100 and MND20-0019-0012 for continuing calibration %D > 50 but < 90.

- Pyrene was 'J' qualified in sample MND20-0019-0102 for initial calibration RSD > 30%: estimated (J) positive results for the affected samples.

C. METHOD AND TRIP BLANK CONTAMINATION

The following compounds were detected in the laboratory and trip blanks and the highest concentration found for each compound was used to qualify the associated samples:

RFW LOT 39103L033
VOLATILE

Compound	Highest Assoc. Conc.	Action Level
Methylene chloride	9	90
Acetone	12	120

Methylene chloride and acetone were qualified 'U' in the associated samples MND20-0019-0109 and MND20-0019-W14 for blank contamination.

RFW LOT #9103L012

Compound	Highest Assoc. Conc.	Action Level
Methylene chloride	5	50
Acetone	4	40

Methylene chloride and acetone were 'U' qualified in MND20-0019, MND20-0019-0092A, MND20-0019-0100 and MND20-0019-0012 for method blank contamination.

Methylene chloride and acetone were 'U' qualified in MND20-0019-0104 for trip blank contamination.

The action levels for TCL compounds were corrected for dilution factor before applying action levels to the individual samples to determine blank contamination effects. If the sample concentration was < the action level and < the CRQL, the sample result was rejected and is reported as CRQL with the "U" qualifier. If the sample result was > than the CRQL but < the action level, the detection limit was elevated to the reported found value and was qualified with a "U".

D. Surrogates Recovery

The percent surrogate recoveries met EPA QC limits for RFW Lot #91031033 and RFW Lot #91031012 for volatile and semivolatile fractions.

E. Matrix Spike/Matrix Spike Duplicate

The matrix spike and matrix spike duplicate recoveries were within EPA QC limits for volatile and semivolatile fractions in both sample lots.

F. Internal Standards

Internal Standard area count and retention time criteria were met for all samples and blanks.

G. Compound Identification

Target compounds and non-target compounds were detected in the samples, especially for the semivolatile fraction. No false positive were identified.

H. Tentatively Identified Compounds

Tentatively identified compound (TIC) were detected in the volatile and semivolatile fraction. For TIC compounds, if the concentration in the sample was less than 10X the concentration in the blank, the results was rejected (R). If the TIC was not rejected due to blank contamination, it was qualified as presumptively present (JN).

In sample MND20-0019-0092A, and sample MND20-0019-0109 semivolatile fraction had PCBs present as TIC (hexachlorobiphenyl). The PCBs TIC further confirm the presence of Arochlor in the Pesticide /PCB analysis.

I. Compound Quantitations and Reported Detected Limits

A GPC cleanup procedure was peroformed on all the semivoloatile soil samples. The CRQL's were not adjusted since the extraction lab adjusted the final volume prior to the cleanup.

REPORT OF DATA VALIDATION RESULTS

PESTICIDE/PCB

A. Instrument Performance

RFW LOT 39103L033

The laboratory demonstrated initial linearity (RSD<20%) and breakdown criteria for the primary quantitation column. Although continuing calibration criteria were not met in all cases for the quantitation column, continuing calibration was obtained for all compounds in standards prior to the analysis of the samples relevant to this case.

Retention time criteria were exceeded for several compounds and the lab used a larger retention time criteria for evaluation, however, this does not affect the useability of the data.

Linearity was established on the confirmation column in those cases where confirmation of positive hits was required.

RFW LOT 3910L012

The laboratory established initial linearity and percent breakdown criteria on the primary quantitation column. Continuing calibration criteria were met for the primary column prior to the analysis of samples in this case.

Retention time criteria were met for the primary column but a larger retention time window was used on the confirmation column, with little effect on the quality of the data.

Continuing calibration criteria (%D>20%) were exceeded for the confirmation column (5/3/91 11:31) for aldrin and DDE but no positive results were obtained an no qualification was required.

B. Method Blanks

All method blanks extracted with the samples were free of contaminants in all matrices in both lots.

C. Surrogates

Percent surrogate recovery met QC limits.

D. Matrix Spike/Matrix Spike Duplicate

Matrix spike and matrix duplicate analysis were performed with excellent recovery.

E. Compound Identification

The laboratory identified Arochlor 1260 in MND20-0019-0094, MD4ND20-0019-092A and MND20-0019-0109 and the positive results were confirmed on a second column. The Arochlor exhibit a multi-peak response pattern which made positive identification possible.

VII. OVERALL ASSESSMENT OF THE DATA

A review was completed on two lots of samples from the LANL Mound site. The analysis was carried out with good quality control and the data required only minor qualifications. A summary of the qualified data is given in Table A.

REPORT OF DATA VALIDATION RESULTS

VII. TABLE OF QUALIFIED DATA

Client ID	Compound	Conc. ug/(Kg)	Qualifier
RFW LOT 3F9103L033			
MND20-0019-0109	Carbon Tetrachloride	6	UJ
MND20-0019-W14	Acetone	13	J
MND20-0019-0109	Benzoic acid	2200	UJ
MND20-0019-0109	Methylene chloride	57	UJ
MND20-0019-0109	Acetone	34	U
MND20-0019-W14	Methylene chloride	5	U
MND20-0019-W14	Acetone	13	U
RFW LOT 39103L012			
MND20-0019-0092A	Benzoic acid	2200	UJ
MND20-0019-0100	Benzoic acid	2200	UJ
MND20-0019-0102	Benzoic acid	2200	UJ
MND20-0019-0102	Pyrene	1500	J
MND20-0019-0094	Methylene chloride	80	U
MND20-0019-0092A	Methylene chloride	31	U
MND20-0019-0100	Methylene chloride	53	U
MND20-0019-0102	Methylene chloride	47	U
MND20-0019-0094	Acetone	16	U
MND20-0019-0092A	Acetone	9	U
MND20-0019-0100	Acetone	24	U
MND20-0019-0102	Acetone	30	U
MND20-0019-0104	Methylene chloride	56	U
MND20-0019-0104	Acetone	35	U

fn:LANLORG.RPT

Inter-Office Memorandum

WESTON
MANAGERS DESIGNERS/CONSULTANTS

TO: Cemantha J. Davisson
Senior Project Chemist

FROM: James E. Davis DATE: 29 May 1991

PROJECT: PCB Data Validation Results W.O. NO.:
LANL-Mound

SUBJECT: RFW Lots #s 91031974, 9103L959,
9103L049, 9103L059,
9103L992, 9103L033.

ACTION:

A validation and revalidation was performed on 59 PCB samples (24 soils, 34 waters and 1 oil) collected between March 14,1991 through March 27,1991 and submitted to Roy F. Weston's Lionville Laboratory for analysis. The sample data results were assessed according to "Laboratory Data Validation Functional Guidelines For Evaluating Organics Analyses" USEPA, February, 1988.

The following is a summary of the deficiencies noted upon review of the PCB data for the data packages cited above, which the data user should take into account when reviewing the data.

- The project plan requested results in 48 hours and certain and QC procedures were not completed however, this does not affect the useability of the data.

- The positive results for Arochlar 1260 are true hits but the failure to establish linearity for Arochlar 1260 using a three point curve and perform confirmation analysis on the positive hits for this analyte requires that all positive values for Arochlar 1260 be estimated ("J").

The following is a list of the USEPA Region II qualifiers used in the sample results Tables:

J - Detected sample value is estimated for the analyte.

UJ - The sample detected limit is an estimated quantity for the analyte.

R - The detected or non-detected sample result is rejected for the analyte.

The justification for qualification of sample results is discussed in the report.

I. REPORT OF DATA VALIDATION RESULTS

II. LANL MOUND PROJECT 0.0.2

PCB Sample Data Review
RFW Lot#s:
9103L974 9103L959 9103L992 9103L095
9103L049 9103L012 9103L033
W.O. No. 2744-40-07-1394
29 May 29, 1991

III. CASE SUMMARY

A validation and revalidation was performed on the PCB sample data for the LANL Mound Project.

In reviewing the data the USEPA "Laboratory Data Validation; Functional Guidelines for Evaluating Organic Analysis, February, 1988" was used when applicable.

The review consisted of 59 PCB samples (24 soils, 34 waters and 1 oil) collected between March 14, 1991 through March 27, 1991 and submitted to R.F. Weston's Analytical Laboratory in Lionville, PA for analysis.

The PCB samples were analyzed according to a modification of EPA method 8080 of the 3rd Edition of " Test Methods for valuating Solid Waste, U.S. EPA SW-846". Due to the chemical composition of PCB's the choice of detection is a gas chromatograph equipped with an electron capture detector. The multipeak response pattern allowed for easy identification of specific Arochlors when compared with standards. The identification of PCB's in this review was straight forward with the primary Arochlor 1260 peak pattern being present in all samples with little interference.

IV. GENERAL COMMENTS

In RFW Lot#: 9103L959 and RFW Lot#: 9103L974 some samples were analyzed at a dilution of 500x and 5x respectively. The data user should be aware that the CRQLs for these samples are multiplied by the dilution factors used in the analysis of the sample.

Chain-of-Custody documents indicate that the samples were received by the laboratory in good condition with no discrepancy between sample labels and chain-of-custody records.

Chain-of-Custody document for the following samples are missing from the data package; RFW# 9103L959, numbers MN020-19-0010, 0014, 0020, 0030, 0033 and 0036. Sample MN020-19-0060 is missing Page 9.

V. HOLDING TIME

All holding times were met for PCB analyses.

VI. RESULTS OF LABORATORY QUALITY CONTROL CHECKS

A. Calibration

All PCB's were analyzed on a priority basis and within 48 hours as specified in the project plan. As a result of this fast turn around method certain QC procedures were not completed, however, this does not affect the useability of the data.

The laboratory demonstrated initial linearity (RSD < 20%) and continuing calibration (%D <20%) for all sample groups. However, the quantitation of the Arochlor 1260 was determined using only one concentration and not based on a curve, therefore all positive values for Arochlor 1260 have been qualified estimated ("J").

B. Method Blanks

All method blanks extracted with the samples were free of contaminants in all matrices.

C. Surrogates

The laboratory did not use any surrogate compounds prior to the extraction procedure, therefore samples which do not contain PCB maybe questionable.

D. Matrix Spike/Matrix Spike Duplicate

The lab performed matrix spike and matrix spike duplicate using Arochlor 1254 for each sample group extracted. Excellent recoveries were found in all sample groups.

E. Compound Identification

There was no confirmation analysis performed on the positive hits found in the primary analysis, however, PCBs exhibit a multipeak response pattern which makes positive identification possible. Confirmation is required but may not be necessary if the

composition of the sample matrix is well established by prior analysis or confirmed by other recognized confirmation techniques,eg., GC/MS. In light of no additional confirmation data the user should keep this in mind when using this data.

VII. Overall Assessment of Data

Sample analysis revealed positive hits for the Arochlor 1260 and the data is useable. The following is a list of comments the data user should consider when using this data.

The Arochlor 1260 was found at concentration levels within the linear range established by Arochlor 1242, 1248, and 1254 using a modified method 8080 of SW-846. Since the quantitation of Arochlor 1260 was based on a single point and not on a curve, all positive values are qualified with a "J" .

There was no confirmation analysis performed on the positive hits found in the primary analysis, but the multipeak response pattern of PCB makes positive identification possible.

VIII. TABLE OF QUALIFIED DATA

RFW Lot#	Client ID	RFW#	Matrix	Arochlor Qualified (ug/L) 1260	
9103L974	MND20-0019-0065	002	S	5.20	J
9103L095	MND20-0019-W34	001	W	1.1	J
9103L959	MND20-0019-0040	001	S	190	J
	MND20-0019-0010	003	S	3.0	J
	MND20-0019-0033	007	S	310	J
	MND20-0019-0036	008	S	22000	J
9103L033	MND20-0019-0107	001	S	37	J
	MND20-0019-0109	002	S	.86	J
	MND20-0019-W1	003	W	6200	J
	MND20-0019-W2	004	W	1600	J
	MND20-0019-W3	005	W	1.2	J
	MND20-0019-W4	006	W	9.5	J
	MND20-0019-W7	007	W	29	J
	MND20-0019-W8	008	W	7400	J
	MND20-0019-W9	009	W	1900	J
	MND20-0019-W10	010	W	6.2	J
	MND20-0019-W11	011	W	2.5	J
	MND20-0019-W12	012	W	4.3	J
	MND20-0019-W13	013	W	6.1	J
	MND20-0019-W14	014	W	2.9	J
9103L992	MND20-0019-0090	002	S	0.32	J
	MND20-0019-0093	003	S	0.97	J
9103L049	MND20-0019-W5	001	W	86	J
	MND20-0019-W6	002	W	600	J
	MND20-0019-W15	003	W	10	J
	MND20-0019-W16	004	W	2.0	J
	MND20-0019-W18	006	W	440	J
	MND20-0019-W19	007	W	56	J
	MND20-0019-W20	008	W	33	J
	MND20-0019-W21	009	W	1.3	J
	MND20-0019-W22	014	W	1.5	J
	MND20-0019-W23	015	W	74	J
	MND20-0019-W25	017	W	36	J
	MND20-0019-W30	020	W	1.9	J
	MND20-0019-W27	021	W	82	J
	MND20-0019-W29	022	W	0.98	J

Inter-Office Memorandum

WESTON
MANAGERS DESIGNERS/CONSULTANTS

TO: Cemantha J. Davisson
Senior Project Chemist

FROM: James E. Davis, Karen Taylor DATE: 17 June 1991

PROJECT: TCLP Inorganic Data Review W.O. NO.:
LANL-Mound

SUBJECT: RFW Lots#: 9103L012

ACTION:

A validation and qualification was performed on RFW Lot#: 9103L012. The sample set consisted of five (5) soil samples collected on 19 March 1991 and submitted to Roy F. Weston's Lionville laboratory for analysis.

An assessment of the sample data results was made according to "Evaluation of Metals Data for the Contract Laboratory Program", Revision 10, February 1991.

The data user should take the following into account when reviewing the data.

> Soil samples from this Lot (RFW Lot# 9103L012) were combined with another sample delivery group (SDG) RFW Lot#9103L009, a different LANL site, for the purpose of metal analysis. The SDG's were construed as CLP samples from the same client and the same site and analyzed as a single batch. The quality control checks were made on SDG Lot #9103L009. Therefore, RFW Lot# 9103L012 is missing matrix spike, duplicate, and ICP serial dilution assessments.
>
> The laboratory will perform another metals analyses of this SDG with the requisite quality control. The data from the second analysis should be combined with this package for completeness.

The following is a list of USEPA Region II qualifiers used in the sample results table (s):

J - Detected sample value is estimated for the analyte.

UJ - The sample detected limit is an estimated quantity for the analyte.

R - The detected or non-detected sample results is rejected for the analyte.

The justification for qualification of sample results is discussed in the report.

fn:LANL012.MEM

REPORT OF DATA VALIDATION RESULTS

I. REPORT OF DATA VALIDATION RESULTS

II. LANL MOUND PROJECT

RFW Lot#: 9103L012
17 June 1991

III. CASE SUMMARY

This case consisted of five (5) soil samples collected on 03/19/91 and 03/20/91 which were received by the laboratory intact and analyzed under Contract Laboratory Program Statement of Work 7/87 between analysis dates 04/19/91 and 04/26/91.

IV. HOLDING TIMES

All sample holding times were met for metals, mercury and cyanide.

V. RESULTS OF LABORATORY QUALITY CONTROL CHECKS

A. Calibration

Initial calibration verification standard does not appear to have been distilled for CN analysis, however there were two distilled laboratory control acceptable limits. No qualifications were needed for calibration criteria.

B. Blanks

Continuing calibration blanks were analyzed at the required frequency and there were no blank results above the contract required detection limit (CRDL). Results less than zero were reported as nondetects in error, however there were no negative results less than the negative contract required detection limit found. No qualification required.

C. Interference Check Sample

No qualification were needed for interference check sample criteria.

D. Laboratory Control Sample(LCS)

Lead and thallium LCS results were not reported on Form 7, however no qualifications were necessary due to laboratory control sample criteria.

E. Duplicate Sample Analysis

No laboratory duplicate was analyzed for metals and mercury for SDG No. CLP012, therefore the following analyte data points greater than the contract required detection limit were flagged as estimated "J" in all samples MND20-0019-0094, 0092A, 0100, 0102, and 0104:

"J" all samples: Al, Ca, Fe, Pb, Mg and Mn.

(Note: Cu, As and Zn in all samples were estimated for matrix spike criteria. Pb in sample MND20-0019-0094 was rejected for method of standard addition criteria.)

F. Matrix Spike Analysis

No matrix spike sample was analyzed for metals and mercury in SDG, No. CLP012 which resulted in the qualification of all positive data less than four times spiking level as estimated "J" in all samples MND20-0019-0094, 0092A, 0100, 0102 and 0104 for the following analytes:

"J" all samples: As, Ba, Cu, and Zn.

G. Furnace Atomic Absorption QC

Method of standard addition correlation coefficient was less than .990 for lead in sample MND20-0019-0094 ($r = 0.9268$), therefore the data point was rejected.

Pb "Reject": MND20-0019-0094.

H. ICP Serial Dilution

No ICP serial dilution was analyzed for SDG No. CLP012 metals, therefore all associated positive data greater than or equal to 10 X IDLs were to be flagged estimated "J" which resulted in sodium data points for all samples being considered as estimated.

"J" all samples: Na.

(Note: the following analytes would have been considered as estimated for all samples had they not been previously flagged due to matrix spike or lab duplicate criteria: Al, Ba, Ca, Fe, Mg, Mn and Zn).

REPORT OF DATA VALIDATION RESULTS

I. Sample Result Verification

The chromium result for sample MND20-0019-0104 was incorrectly reported as a nondetect when the data point should have been reported as positive.

J. CRDL Standards

CRDL standard recoveries that were less than 50 percent resulted in rejection and recoveries between 50 and 79 percent require estimation of the following analytes in the affected range of 0 to 2X true value for all samples MND20-0019-0094, 0092A, 0100, 0102, and 0104:

"Reject" all samples: Sb, Be, Cr, Co, Ni and V.
"J" all samples: Cd and Ag.

(Note: All copper results would have been considered as estimated had these data points not been previously flagged for matrix spike criteria.)

K. ICD Linear Range

Calcium data points exceeded ICP linear range of 500000 for sample MND20-0019-0094 (535000) and sample MND20-0019-0092A (5941000). these calcium results would have been flagged as estimated "J" had they not been qualified for lab duplicate criteria.

VI. No field duplicates or field blanks were associated with this sample delivery group.

VII. Overall Assessment of Data

The data submitted in this package were useable with the exception of the above qualifications. Data were qualified due to major problem with the contract required detection limit standards.

fn:LANL012.RPT

Inter-Office Memorandum

WESTON
MANAGERS DESIGNERS/CONSULTANTS

TO: Cemantha J. Davisson
Senior Project Chemist

FROM: James E. Davis, Dale Boshart DATE: 17 June 1991

PROJECT: TCLP Inorganic Data Review W.O. NO.:
LANL-Mound

SUBJECT: RFW Lots#: 9103L070

ACTION:
A validation and qualification was performed on RFW Lot#: 9103L070. The sample set consisted of nine (9) soil samples collected on 25 March 1991 and submitted to Roy F. Weston's Lionville laboratory for analysis.

An assessment of the sample data results was made according to "Evaluation of Metals Data for the Contract Laboratory Program", Revision 10, February 1991.

The analysis was conducted with good quality control and the data has been determined to be useable with only minor qualifications.

The following is a list of USEPA Region II qualifiers used in the sample results table:

J - Detected sample value is estimated for the analyte.

UJ - The sample detected limit is an estimated quantity for the analyte.

R - The detected or non-detected sample result is rejected for the analyte.

The justification for qualification of sample results is discussed in the report.

fn:LANL070.MEM

REPORT OF DATA VALIDATION RESULTS

I. REPORT OF DATA VALIDATION RESULTS

II. LANL MOUND PROJECT 0.0.2

TCLP Inorganic Data Review
RFW Lot#: 9103070
13 June 1991

III. CASE SUMMARY

A validation and qualification was performed on the nine (9) soil TCLP inorganic samples collected at the LANL Mound site on 25 March 1991.

The sample data were validated using the criteria established in WESTON's analytical methods and those outlined in "Test Methods for Evaluating Solid Wastes, SW-846, 3rd Edition, USEPA, November 1986 and "Laboratory Data/Validation Functional Guidelines For Evaluating Inorganics Analyses", July 1988.

The leachate samples and relevant QC data were generated on 02 April 1991 from soil samples and the leachates were analyzed by R.F. Weston's Analytical Laboratory between the period April 17 through April 23, 1991.

The TCLP leachate data were validated according to the protocols outlined in EPA Method 1311 of the 29 June 1990 Federal Register.

<u>General Comments</u>

Chain-of-Custody record indicates samples were received in good condition with no problems.

The samples were subjected to a TCLP extraction procedure according to Method 1311 of the 29 June 1990 Federal Register. No problems were associated with the procedure.

The TCLP extraction procedure was subjected to the EPA CLP control limits for metals as outlined in "TCLP Data Validation Checklist, Revision 1, SOP No. HW-7" and the checklist is presented as Attachment 1.

Additional data was requested from the laboratory to complete the validation and is submitted with the report.

REPORT OF DATA VALIDATION RESULTS

IV. HOLDING TIMES

The samples were analyzed within acceptable holding times.

V. RESULTS OF LABORATORY QUALITY CONTROL CHECKS

A. Calibration

Initial and continuing calibration verification recoveries were within control limits.

B. Blanks

All blanks met EPA criteria.

C. Interference Check Sample(ICS)

Met EPA criteria.

D. Laboratory Control Sample(LCS)

Met EPA criteria.

E. Laboratory Duplicate Analysis

Met EPA criteria.

F. Matrix Spike Analysis

The detection limits for Silver and Selenium have been amended to 51.5% and 141% of reported levels respectively, based on matrix spike recoveries.

G. ICP Serial Dilution

ICP serial dilution was not performed during the analysis of Silver, Arsenic, Barium, Cadmium, Chromium, Lead and Selenium. However, none of these analytes was present at greater than 50 times the laboratory reporting level and therefore no data were qualified due to the absence of this CLP QC procedure.

H. Sample Quantitation

All analytical values were computed and reported correctly by the laboratory.

VI. RESULTS OF ASSOCIATED FIELD QUALITY CONTROL CHECKS

A. Field Duplicates

Field duplicate samples were not collected and therefore an evaluation of precision for field sampling was not performed.

VII. OVERALL ASSESSMENT OF DATA

The data have been determined to be useable for qualitative and quantitative purposes. Detection limits for Silver and Selenium have been amended due to matrix spike recovery data.

REPORT OF DATA VALIDATION RESULTS

TABLE OF QUALIFIED DATA

RFW Lot#: 9103L070

The following analytes were qualified in all of the samples:

Analyte	Qualified Results (ug/L)	Initial Results (ug/L)
Silver	19.4 U	10 U
Selenium	355. U	500 U

RFW#	Client ID
010	MND20-0019-0010
011	MND20-0019-0024
012	MND20-0019-0035
013	MND20-0019-0046
014	MND20-0019-0058
015	MND20-0019-0069
016	MND20-0019-0080
017	MND20-0019-0089
018	MND20-0019-0105

Inter-Office Memorandum

WESTON
MANAGERS DESIGNERS/CONSULTANTS

TO: Cemantha J. Davisson
Senior Project Chemist

FROM: James E. Davis, Marybeth Puckacz DATE: 13 June 1991

PROJECT: TCLP Organic Data Results W.O. NO.:
LANL-Mound

SUBJECT: RFW Lots#s: 9103L070

ACTION:

A validation and revalidation was performed on Lot #9103L070 collected on 25 March 1991. The samples were submitted to Roy F. Weston's Lionville Laboratory for analyses.

The sample data results were assessed according to "Laboratory Data Functional Guidelines for Evaluating Organics Analyses: USEPA, February 1988.

The following is a list of the USEPA Region II qualifiers used in the sample results tables:

J - Detected sample value is estimated for the analyte.

UJ - The sample detected limit is an estimated quantity for the analyte.

R - The detected or non-detected sample results is rejected for the analyte.

The justification for qualification of sample results is discussed in the report.

fn:LANL070.MEM

REPORT OF DATA VALIDATION RESULTS

I. REPORT OF DATA VALIDATION RESULTS

II. LANL MOUND PROJECT 0.0.2

TCLP Organic Data Review
RFW Lot#: 9103L070
13 June 1991

III. CASE SUMMARY

A validation and revalidation was performed on the TCLP organic data from the LANL Mound Project.

The USEPA "Laboratory Data Validation; Functional Guidelines for Evaluating Organic Analyses, February, 1988" was used for reviewing the data.

The sample data package consisted of nine (9) leachate samples and the relevant QC samples. The leachate samples were generated on 02 April and 03 April 1991 from soil samples collected on 25 March 1991 and analyzed by Roy F. Weston's Analytical Laboratory in Lionville, PA.

The TCLP leachate were analyzed according to EPA CLP Statement of Work For Organics Analysis Multi-Media, February, 1988 for TCLP target compounds in the June 29, 1990 Federal Register.

General Comment

Chain-of-Custody record indicates samples were received in good condition with no problems.

The samples were subjected to a TCLP extraction procedure according to the method outlined in June 29, 1990 Federal Register with minor modifications. No problems were associated with the procedure.

IV. HOLDING TIMES

All samples in all fractions were analyzed within acceptable holding time.

V. RESULTS OF LABORATORY QUALITY CONTROL CHECKS

REPORT OF DATA VALIDATION RESULTS

A. GC/MS Tune

GC/MS tuning and mass calibration performance were met for RFW Lot#: 9103070.

B. Calibration

Volatile

The analyte 2-Butanone failed to meet acceptable initial and continuing calibration criteria (RRF < 0.05) and was rejected ('R' qualified) in all volatile samples.

Pesticide/PCB

Initial linearity and breakdown criteria were demonstrated for the primary quantitation column but was exceeded for the confirmation column. No qualification was required.

Continuing calibration was exceeded for several standards on the primary column prior to some samples analysis. No positive analytes were detected in the samples associated with these calibrations and no qualification was required.

Herbicides

Calibration was established.

C. Method Blank

Volatile/Semivolatile/Pesticide/PCB/Herbicide

No qualification required due to method blank qualification in any of the fractions.

D. Matrix Spike/Matrix Spike Duplicates

Volatile/Semivolatile/Pesticide/PCB

All recoveries were within QC limits.

Herbicides

Matrix spike and matrix spike duplicate recovery was low in the initial and the samples were reanalyzed with acceptable recovery.

No qualification required.

E. Internal Standard

Volatile/Pesticides/Herbicides/PCB

Internal Standard area and retention time criteria were met for all samples and blanks.

Semivolatile

The area for the internal standard pevylene-d12 was out of QC limits for the sample MND20-0019-0035 and the reanalyzed sample MND20-0019-0035RE. No listed compounds were associated with this internal standard and no qualification was required. The original analysis data and not the reanalyzed sample is to be used for data assessment.

F. Surrogate Recovery

Volatile/Semivolatile

All surrogate recoveries were within QC limits for volatile and semivolatile fractions.

Pesticide/PCB

The surrogate recovery for sample MND20-0019-01-05 MSD exceeded QC limits. However, no qualification was made on the matrix spike duplicate sample.

Herbicides

Surrogate recovery was within EPA QC limits.

G. Compound Identification

No positive target compounds were identified in the samples.

H. Tentatively Identified Compounds(TIC)

No TICs were found in the samples.

REPORT OF DATA VALIDATION RESULTS

I. Compound Quantitation and Reported Detection Limits

Volatile

Samples were analyzed at a ten-fold dilution and the CRQL has been adjusted upwards, however, all TCLP regulatory limits have been achieved.

IV. RESULTS OF ASSOCIATED FIELD QUALITY CONTROL CHECKS

No field blanks were associated with this case.

VII. OVERALL ASSESSMENT OF DATA

The data is acceptable with only minor qualifications.

REPORT OF DATA VALIDATION RESULTS

TABLE OF QUALIFIED DATA

RFW LOT#: 9103L070

Client ID	RFW#	Analyte	Qualifier ug/L(kg)
MND20-0019-0010	019	2-Butanone	100 R
MND20-0019-0024	020	2-Butanone	100 R
MND20-0019-0035	021	2-Butanone	100 R
MND20-0019-0046	022	2-Butanone	100 R
MND20-0019-0058	023	2-Butanone	100 R
MND20-0019-0069	024	2-Butanone	100 R
MND20-0019-0080	025	2-Butanone	100 R
MND20-0019-0089	026	2-Butanone	100 R
MND20-0019 0105	027	2-Butanone	100 R

fn:LANLTCLP.RPT

F

Cardinal®

APPENDIX F

WASTE DISPOSAL MANIFESTS

Waste Disposal Summary

DOE Mound Plant

Waste Category	Quantity	Date Shipped	Manifest No.	Disposal Method	Facility Location
PCB Soil/Debris NA 9188	6798 kg	4/12/91	00102	Incineration	Ensco Facility Arkansas
PCB Water/Oil NA 9188	7091 kg	04/12/91	00102	Incineration	Ensco Facility Arkansas
PCB Concrete Non-regulated	5550 lbs	04/24/91	00104	Landfill	Laidlaw/GSX Facility South Carolina

DOE - U.S. Department of Energy
PCB - polychlorinated biphenyl

LAIDLAW ENVIRONMENTAL SERVICES, (TS) INC.

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: OH6890009984 | Manifest Document No.: 00102

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: U.S. DEPT. OF ENERGY, P.O. BOX 66, MOUND PLANT, MIAMISBURG, OH 45343 — 597-12093

4. Generator's Phone: (513) 865-3078

5. Transporter 1 Company Name: LAIDLAW ENVIR. SERV. (TS) INC.

6. US EPA ID Number: MOD980554653

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address: LAIDLAW ENV. SERVICES (TS) INC., P.O. DRAWER C/2915 OLD GREENBRIER PIKE, GREENBRIER, TN 37073

10. US EPA ID Number: TND000645770

A. State Manifest Document Number

B. State Generator's ID

C. State Transporter's ID

D. Transporter's Phone

E. State Facility's ID

F. Facility's Phone: 1-800-251-1227

GENERATOR

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	HAZARDOUS SUBSTANCE SOLID, N.O.S PCB SOIL/DEBRIS, ORM-E, NA9188 — EPA RQ PCB	X	022	DM	0678	KG	[illegible]
b.	HAZARDOUS SUBSTANCE LIQUID, N.O.S PCB OIL/WATER, ORM-E, NA9188 — EPA RQ PCB	X	034	DM	0709	KG	[illegible]
c.							
d.							

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Certain containers in this shipment may be packaged under the provision DOT-E 8129.

EMERGENCY CONTACT 1-800-535-5053 597

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: MICHAEL ISGER | Signature: Michael Isger | Date (Month Day Year): 04 11 29 91

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Darrell Brown | Signature: Darrell Brown | Date (Month Day Year): 04 11 29 91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Date (Month Day Year)

EPA Form 8700-22 (9-91) 7-BLS-C5

Generator Name/Location: U.S. DEPT OF ENERGY, MOUND PLANT, MIAMISBURG, OH 45343

Sheet 1 of 1 Sheets

EPA ID Number: OH 6890009984 Manifest Number: 00102

Waste Profile or ARF	Category #	EPA or State Waste Code	Variance Date	Sub Category	Treatability Group (WW or NWW)	40 CFR Ref.	Specific Treatment Technology *	Legend #	Other
0891291,2,6 MTO-01 TANKS	1	NONR		PCB-2			NONR		
MTO-50-56	1	NONR		PCB-2			NONR		
MTO-16-49	1	NONR		PCB-2			NONR		

LEGEND FOR TREATMENT STANDARDS EXPRESSED AS CONCENTRATION

* PURCHASE REQUEST/BILL ~~[illegible]~~ HAS THE NOTATION THAT INCINERATION IS REQUESTED AND WILL BE PERFORMED

TABLE CCWE-CONSTITUENTS IN WASTE EXTRACT

	F001-F005 spent solvent	Concentration (in mg/l) Waste Water Containing Spent Solvents	All other Spent Solvent Wastes
Legend #	Constituent Name		
1	Acetone	0.05	0.59
2	n-butyl alcohol	5.0	5.0
3	Carbon disulfide	1.05	4.81
4	Carbon Tetrachloride	.05	.96
5	Chlorobenzene	.15	.05
6	Cresols (and cresylic acid)	2.82	.75
7	Cyclohexanone	.125	.75
8	1,2-dichlorobenzene	.65	.125
9	Ethyl acetate	.05	.75
10	Ethyl benzene	.05	.053
11	Ethyl ether	.05	.75
12	Isobutanol	5.0	5.0
13	Methanol	.25	.75
14	Methylene chloride	.20	.96
15	Methylene chloride (from the pharmaceutical industry)	0.44	.96
16	Methyl ethyl ketone	0.05	0.75
17	Methyl isobutyl ketone	0.05	0.33
18	Nitrobenzene	0.66	0.125
19	Pyridine	1.12	0.33
20	Tetrachloroethylene	0.079	0.05
21	Toluene	1.12	0.33
22	1,1,1-Trichloroethane	1.05	0.41
23	1,2,2-dichloro-1,2,2-trifluoroethane	1.05	0.96
24	Trichloroethylene	0.062	0.091
25	Trichlorofluoromethane	0.05	0.96
26	Xylene	0.05	0.15

Legend #	F010-F023 and F026-F028 dioxin Containing Waste: Constituent Name	Concentration
27	HxCDD-All Hexachlorodibenzo-p-dioxins	1 ppb
28	HxCDF-All Hexachlorodibenzofurans	1 ppb
29	PeCDD-All Pentachlorodibenzo-p-dioxins	1 ppb
30	PeCDF-All Pentachlorodibenzofurans	1 ppb
31	TCDD-All Tetrachlorodibenzo-p-dioxins	1 ppb
32	TCDF-All Tetrachlorodibenzofurans	1 ppb
33	2,4,5-Trichlorophenol	0.05 ppm
34	2,4,6-Trichlorophenol	0.05 ppm
35	2,3,4,6-Tetrachlorophenol	0.10 ppm
36	Pentachlorophenol	0.01 ppm

CALIFORNIA LIST WASTES

37	Nickel	134 mg/l
38	Thallium	130 mg/l
39	Cyanide (Liquid)	1000 mg/l

GSX

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. O.H.6.8.9.0.0.0.8.9.8.4 — Manifest Document No. 00.1.0.4

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
~~DOE~~ USDOE Mound
P.O. Box ~~32~~ Mound Rd., Miamisburg, OH 45342

4. Generator's Phone (513) 865-4715

A. State Manifest Document Number

State Generator ID

5. Transporter 1 Company Name
~~GSX~~ LAIDLAW Services, Inc.

6. US EPA ID Number M.D.D.9.8.0.5.5.4.6.5.3

C. State Transporter's ID

D. Transporter's Phone 800-251-1227

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
~~GSX Services, Inc.~~ LAIDLAW
P.O. Drawer C/Old Greenbrier Pike
Greenbrier, TN 37073

10. US EPA ID Number T.N.D.0.0.0.6.4.5.7.7.0

G. State Facility's ID

H. Facility's Phone

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	NONREGULATED MATERIALS	001	CM	0550	P LB	NONE
b.					M.P.1	
c.						
d.						

J. Additional Descriptions for Materials Listed Above
~~GSX~~ 550 gal PCB contaminated oil

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Certain containers in this shipment may be packaged under the provision DOT-E 8129. wear respiratory equipment & protective clothing. In case of spill, contain with an absorbent and contact Barry Fogle at 1-800-251-1227 or 615-244-8960.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste managment method that is available to me and that I can afford.

Printed/Typed Name: MICHAEL ISPER — Signature: Michael Isper — Date: Month 0.4 Day 2.4 Year 8.7

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: St. Clair Jackson — Signature: St. Clair Jackson — Date: Month 04 Day 24 Year 87

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date: Month Day Year

EPA Form 8700-22 (9-86) 7-BLS-C5

G

Cardinal®

APPENDIX G

NOTICE OF AVAILABILITY (DRAFT)

DRAFT

COMMUNITY RELATIONS/PUBLIC PARTICIPATION FOR REMOVAL ACTIONS NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN

(§300.415[m]) and Subpart I (§300.800 through 300.825)

I. Notification is made to EG&G Mound Public Relations by the Department of Energy/Dayton Area Office (DOE/DAO) and the Mound's Environmental restoration (ER) department that action is pending.

II. Press release and/or advertising of such action is developed through Public Relations. Advertising is preferred since it does allow for control and guarantees publication of the material.

III. Internal Review of press releases and/or advertising is conducted by DOE/DAO and ER.

IV. External review is conducted by EPA.

V. Press releases and/or advertising is submitted to appropriate newspaper in the community of general circulation. This has been determined to be the Miamisburg News and the Dayton Daily News.

A. Advertising must be placed with newspapers in a reasonable amount of time to insure publication. The Miamisburg News publishes each Wednesday and advertising must be in their hands, camera ready, no later than the Friday prior to publication. Advertising for the Dayton Daily News must be in their hands no later than Friday at noon for publication in Sunday's edition.

VI. Administrative record is place in the Public Repository at the Miamisburg Branch of the Dayton-Montgomery County Library, 35 S. Fifth Street, Miamisburg, OH.

VII. The beginning of the 30-day public comment period will begin following the publishing of the last advertisement.

A. Public comments will be addressed to:
EG&G Mound Applied Technologies
c/o Mark Becker, Public Relations
OSE-223B
P.O. Box 3000
Miamisburg, OH 45343.

B. Comments will be distributed to ER for follow up responses.

DRAFT

C. Responses will be returned to Public Relations within 15 days.

D. Review of responses will be conducted by the DOE/DAO, ER, and Public Relations.

E. Final versions of review of responses will be completed within 15 days.

F. Placement of responses to public comment will be placed in the Administrative Record in the Miamisburg Branch of the Dayton-Montgomery County Library.

G. Final reports on completion of the project/removal will be placed in the Administrative Record within 120 days.

DRAFT

NOTICE OF AVAILABILITY

Assessment activities to determine the extent of PCB contamination in the soil in and around the Powerhouse, Mound Plant, Miamisburg, Ohio, has been conducted. PCB contaminated soil has been removed from the site to be properly disposed under applicable Federal and State laws. Other soil remains on site at the Mound Plant until final analysis of any further hazardous constituents is determined.

This does not constitute a final declaration of action.

An administrative record on this action is available at the Public Repository located at the Miamisburg Branch of the Dayton-Montgomery County Library, 35 S. Fifth Street, Miamisburg, OH, 45342, during normal operating hours.

Public comment on this action will be accepted through (*30 days from this notice*) by writing to: EG&G Mound Applied Technologies, c/o Mark Becker, Public Relations Department, OSE-223B, P.O. Box 3000, Miamisburg, OH 45343. ATTN: PUBLIC COMMENT.

Response to all public comment will be included in the final document of action and will be available for public viewing at the Miamisburg Branch of the Dayton-Montgomery County Library.

UNITED STATES DEPARTMENT OF ENERGY