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**CAPE ROMANZOF LRRS
ALASKA**

**ADMINISTRATIVE RECORD
COVER SHEET**

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**United States Air Force
611th Air Support Group
611th Civil Engineer
Squadron**

Elmendorf AFB, Alaska

**Closure Monitoring Report
Landfill 2 (LF03)
Cape Romanzof LRRS, Alaska**

April 1998



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Landfill 2 (LF03)
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Prepared by

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April 1998

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DISTRIBUTION

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) retained Harding Lawson Associates (HLA) to assist the 611 Civil Engineer Squadron (611 CES) with conducting a soil and groundwater investigation, and monitoring events at Landfill 2 (LF03), Cape Romanzof Long Range Radar Site (LRRS), Alaska (Figure 1). The scope of work (SOW) was authorized under Delivery Order 0015 of Contract DACA85-94-D-0008. The USACE assigned this delivery order to HLA on June 6, 1996.

This closure monitoring report documents field activities and sample results from annual monitoring activities conducted in June 1997.

Section 2.0 of this report is the site description. Section 3.0 describes the field investigation methods and sampling program. Sections 4.0 and 5.0 describe the analytical program and the quality assurance/quality control (QA/QC) program for this project. Section 6.0 presents the analytical results, and Section 7.0 presents conclusions and recommendations.

1.1 Project Scope

The SOW for this project consists of an investigation to assess contamination previously identified at Cape Romanzof LF03. The objective of the June 1997 monitoring event was to obtain additional sediment and water analytical data to compare to baseline results for 1996, monitor the extent of contamination remaining at the site, and assess the possible occurrence of contaminant migration at concentrations exceeding U.S. Environmental Protection Agency (EPA) screening-level risk-based

concentrations (RBCs) and Alaska Department of Environmental Conservation (ADEC) water quality standards. The monitoring event was limited by the SOW to the following activities:

- Collecting groundwater samples from monitoring wells installed by the U.S. Air Force (USAF) during July 1996
- Collecting surface-water samples at three locations
- Collecting sediment samples at three locations

2.0 SITE DESCRIPTION

Site background, site history, and environmental setting of the project area are described in sections 2.1 through 2.3, respectively.

2.1 Background

Cape Romanzof LRRS is within the Yukon Delta Wildlife Refuge, approximately 540 miles west of Anchorage on a 4,900-acre peninsula that extends into the Bering Sea (Figure 1). Operations at Cape Romanzof began in 1953. It was one of the 10 original Aircraft Control and Warning sites in the Alaska Air Defense System. Emerging technologies during the subsequent 30 years allowed for several facility renovations that resulted in the station becoming a Minimally Attended Radar Site. Six station personnel presently operate and maintain the site (USAF 611 CES/CEOR, 1995).

Waste has been managed by various methods at Cape Romanzof. Until 1978, industrial wastes were applied to roads. Since then, these wastes have been accumulated and barged to off-base disposal locations. Other wastes have been disposed of in landfills, dumps, hardfills,

and incinerators. Many of the potential contamination source areas at Cape Romanzof are from spills and leaks of diesel fuel and motor gasoline, either from drums in landfills or from petroleum, oil, and lubricant tanks or pipelines (Woodward-Clyde Consultants [WCC], 1992).

2.2 Site History

The LF03 investigation site is south of the access road between the Lower Camp and the airstrip (Figure 1). The landfill covers approximately 43,800 square feet (about 1 acre) on a slope that descends to a lower plateau. The landfill received garbage, rubbish, wood, metal, plastic, construction and demolition debris, shop wastes, and incinerator ash until the mid-1970s (WCC, 1992).

During site investigations conducted in 1989 and 1990 by WCC, a large amount of exposed metal, wood, and plastic debris was visible at the landfill. Areas of sheen-covered landfill effluent and stained soil were observed. An engineered drainage pathway with flowing surface water was observed along the north side of the access road, and two drainage pathways with flowing surface water were observed adjacent to the east toe of the landfill. Several active seeps were observed on the landfill surface. Surface flow from these seeps extended for up to 100 feet across the landfill before reentering the landfill material. The water table was encountered at 2 to 3 feet beneath the base of the landfill (WCC, 1992).

During the 1989 site investigation, WCC installed and sampled four 4-inch groundwater monitoring wells (MW-1,

MW-2, MW-3, and MW-4). Groundwater, surface water, sediment, and soil were sampled and analyzed for total petroleum hydrocarbons (TPH); metals; organochloride pesticides (OCPs) and polychlorinated biphenyls (PCBs); benzene, toluene, ethylbenzene, and xylenes (BTEX); and semivolatile organic compounds (SVOCs). Contamination consisted principally of TPH in soil and sediments, and PCBs and TPH in surface water at the perimeter of the landfill. TPH in the sediment samples ranged from nondetect to 3,000 milligrams per kilogram (mg/kg). TPH was detected in one soil sample at 100,000 mg/kg. PCBs were detected in one surface-water sample collected west of the southwest corner of the landfill at 0.0027 milligrams per liter (mg/L). During the 1990 WCC site investigation, MW-1, MW-2, and MW-4 were resampled, and TPH was detected in MW-1 and MW-2.

Based on the results of the 1989 and 1990 LF03 investigations, WCC concluded:

- Surface water downgradient of LF03 was contaminated with TPH and PCBs.
- The volume of fill (soil and debris) was approximately 11,530 cubic yards.
- Contaminated soil in an area of approximately 49,900 square feet required remedial action.

During June through September 1993, 611 CES collected the debris from 200 feet around the perimeter of the landfill and placed it in the landfill. Approximately 500 cubic yards of fill was placed on the south section of the landfill to cover the debris. The stream parallel to the eastern toe of the landfill was

diverted 20 feet away from its original drainage (USAF 611 CES/CEOR, 1995).

Based on the WCC investigation recommendations, the landfill surface debris was compacted, and the landfill was capped in 1994 with an impermeable hypalon liner overlain by geotextile fabric, sandwiched between layers of sand and pit-run material (USAF 611 CES/CEOR, 1995).

2.3 Environmental Setting

Cape Romanzof lies in the maritime climatic zone. Average summer temperatures range from 39 to 53 degrees Fahrenheit (°F), and winter temperatures range from 5 to 20°F. The average annual precipitation is 25 inches (Arctic Environmental Information and Data Center [AEIDC], 1989).

Cape Romanzof is in the physiographic region known as the Yukon-Kuskokwim Coastal Lowland, a marshy, lake-dotted deltaic plain that consists of coastal deposits of interlayered alluvial and marine sediments. Thin to moderately thick (to 600 feet thick) permafrost zones may occur in this area of western Alaska in predominately fine-grained sediments (Ferrians, 1965). Permafrost has not been observed in the Cape Romanzof area (USAF 611 CES/CEOR, 1995). Ground-surface elevations at Cape Romanzof range from zero feet mean sea level (MSL) at the shore of the Bering Sea to approximately 2,300 feet MSL at the Upper Camp.

The geology of the Cape Romanzof Upper Camp consists of sand, gravel, and boulders overlying granitic bedrock of Towak Mountain. At the Lower Camp, thin to moderately thick talus (coarse-grained materials) and alluvial sequences have

been transported downslope into the steeply sloping stream valley of Fowler (Nilumat) Creek and its tributaries. The mixed talus and alluvial materials consist of large granitic boulders, rock fragments (probably cobble-sized), sand, and minor amounts of silt and clay. The talus layer is between 57 and 74 feet thick in local water wells, and is underlain by weathered granitic bedrock (WCC, 1992).

Fowler Creek is the major surface water feature at Cape Romanzof, draining a watershed of approximately 8.5 square miles into Kokechik Bay. Active springs exist northeast of LF03, indicating a shallow water table with a hydrostatic head (WCC, 1992).

Undisturbed vegetation consists of alpine/barren ground communities including mountain avens, lichens, low-growing herbs, and grasses.

3.0 FIELD INVESTIGATION

Deviations from the work plan are listed in section 3.1. Field methods are described in sections 3.2 through 3.5. The sampling program is described in section 3.6.

The 1997 monitoring event was conducted at Cape Romanzof LRRS from June 18 through 21, 1997.

3.1 Deviations From the Work Plan

The field program followed the procedures in HLA's *Work Plan, Landfill 2 (LF03) Closure Monitoring, Cape Romanzof LRRS, Alaska* (1996). Deviations from the work plan are as follows:

- Equipment rinsate blanks for groundwater and surface-water

sampling were not collected because disposable or dedicated sampling tools were used;

- Monitoring wells CMW-2 and CMW-3 were dry at the time of the site visit and were not sampled;
- The upgradient surface water and sediment sample location relocated during 1996 field activities due to dry conditions was used as the 1997 upgradient sample location.

3.2 Monitoring Wells

Seven borings were converted into monitoring wells (CMW-1 to CMW-7) (Figure 2) during 1996 field activities. Well completion details, boring logs, and observations made during well installation are presented in HLA's *Closure Monitoring Report, Landfill 2 (LF03), Cape Romanzof LRRS, Alaska* (HLA, 1997).

Water levels to estimate groundwater flow direction and gradient were measured on June 18, 1997. Average water level elevations at monitoring wells CMW-1 through CMW-5 were approximately 1.4 feet lower than observed during the 1996 monitoring event. Water levels at CMW-6 and CMW-7 remained similar to levels measured in 1996. Flow direction remained toward the southwest at a gradient of approximately 0.111 feet per foot (Figure 3), compared with a gradient of 0.125 feet per foot in 1996.

Based on materials encountered during well installations, groundwater is present under unconfined conditions. The groundwater local flow direction is consistent with surface topography.

3.3 Site Surveys

Monitoring well locations, ground surface elevations, and top-of-casing

elevations were surveyed by USAF personnel on September 9, 1996. This information was used to prepare site figures and estimate groundwater flow direction and gradient. A copy of the survey data is included as Appendix D in the 1996 baseline closure monitoring report (HLA, 1997).

3.4 Equipment Decontamination

Sediment sampling equipment was decontaminated using an Alconox wash followed by potable water and deionized water rinses. Dedicated, disposable groundwater sampling equipment was used for groundwater sampling and did not require decontamination. Decontamination procedures were in accordance with procedures specified in the work plan (HLA, 1996).

3.5 Waste Handling

Monitoring well purge water was placed in one 55-gallon drum and staged at Biocell 3 for later treatment by USAF personnel using granular activated carbon before being transferred into Biocell 3. This is consistent with disposal methods in 1996. Biocell 3 is an active bioremediation cell for contaminated soil southeast of the cold storage building at the Lower Camp.

3.6 Sampling Program

3.6.1 Groundwater Sampling

HLA purged and sampled five groundwater monitoring wells (CMW-1 and CMW-4 through CMW-7) (Figure 2). Monitoring wells CMW-2 and CMW-3 were dry at the time of the site visit. The static water level and total well depth below the top of the PVC casing were

recorded and a purge volume calculated before purging the well. The wells were purged and samples collected using dedicated disposable polytetrafluoroethylene (PTFE) bailers. Wells that recharged slowly and failed to yield water at a rate adequate for effective purging were twice bailed dry before sampling. Samples were collected in order of decreasing volatility as soon as a sufficient volume of water reentered the well. Analytical results are summarized in section 6.1. Field parameters were measured during the purging and at the time the sample was collected, and are documented on the groundwater sampling field forms included in Appendix A.

3.6.2 Surface-Water and Sediment Sampling

Three collocated surface-water locations (SW-1 through SW-3) and sediment locations (SD-1 through SD-3) were sampled at the LF03 site. The samples were collected from seeps and drainage pathways (Figure 2).

Surface-water samples were collected by direct submersion of the sample containers. The containers were filled slowly and continuously with minimal entry turbulence. The surface-water samples were collocated with the sediment samples. Sampling began at the sample location farthest downstream to minimize possible disturbances from upstream sample locations. Vials for collection of volatile organic compounds (VOCs) were filled first. Field parameters and observations made during sampling, such as odor or sheen, were recorded in the field logbook.

After the collocated surface-water sample was collected, the sediment sample was

collected from the upper 4 inches of the sediment layer using a decontaminated stainless steel hand trowel. Sample fractions for laboratory analyses of VOCs and gasoline-range organics (GRO) were collected first, then the remaining sample was placed in a stainless steel bowl, homogenized, and placed in the remaining sample containers. No odor or staining was observed at the three sample locations.

Analytical results are summarized in section 6.2 for surface water and section 6.3 for sediment.

4.0 ANALYTICAL PROGRAM

Sample numbers and requested chemical analyses are summarized in the sample record log in Appendix B.

The following laboratories were used for this project:

- Commercial Testing & Engineering Company, Environmental Laboratory Services (CT&E), in Anchorage, Alaska, analyzed groundwater, sediment, surface water, and QC samples.
- MultiChem Analytical Services (MAS) in Anchorage, Alaska, analyzed QA samples.

Sample preparation and chemical analyses were performed using methods described in *Test Methods for Evaluation of Solid Waste* (EPA, 1986); *Methods for the Determination of Organic Compounds in Drinking Water* (EPA, 1988); *Method for Determination of the Diesel-Range Organics* (ADEC, 1995a); and *Method for the Determination of Gasoline-Range Organics* (ADEC, 1995b).

The analytical methods used are as follows:

- Diesel-range organics (DRO) analyzed by gas chromatography (GC) using ADEC Method AK102.
- GRO analyzed by GC using ADEC Method AK101.
- VOCs analyzed by GC/mass spectrometry (MS) using EPA Method SW-8260.
- SVOCs analyzed by GC/MS using EPA Method SW-8270.
- PCBs/OCPs analyzed by GC using EPA Method SW-8080.
- Metals extracted (acid digestion) by EPA Method SW-3050. Analyses were as follows:
 - Arsenic - graphite furnace atomic absorption (GFAA) using EPA Method SW-7060.
 - Selenium - GFAA using EPA Method SW-7740.
 - Thallium - GFAA using EPA Method SW7841.
 - Lead - GFAA using EPA Method SW-7421.
 - Antimony, barium, beryllium, cadmium, chromium, cobalt, copper, nickel, silver, vanadium, and zinc - inductively coupled plasma using EPA Method SW-6010.

5.0 QUALITY ASSURANCE/ QUALITY CONTROL (QA/QC)

QA is an integrated program designed to achieve reliable monitoring and measurement data. QC is the routing application of procedures for obtaining prescribed standards of performance in

the monitoring and measurement process.

The QA and QC samples used in this project were collocated samples collected at the same time and location as the corresponding project samples. The QA and QC soil samples were collected at a minimum of 20 percent for each matrix and analysis to evaluate the precision of sampling and analytical procedures. Each duplicate was a blind sample (labeled with a number different than the sample being duplicated).

Water trip blanks accompanied sample shipments to each laboratory and were analyzed for VOCs by EPA Method 8260. The trip blanks were nondetect for all compounds. A GRO trip blank accompanied the sediment samples to the project laboratory. The sample result was below the detection limit. Equipment rinse blanks were not collected because dedicated water sampling equipment was used.

Duplicate groundwater samples were collected at CMW-5. Surface water duplicate samples were collected at SW-2. Collocated sediment samples were collected at SD-2. Duplicate and collocated samples were analyzed for the same constituents as the project samples.

QA/QC data were reviewed in accordance with USACE Chemical Quality Assurance for Hazardous, Toxic, and Radioactive Waste Projects. The analytical data is provided in Appendix B. Data validation results are summarized below:

Groundwater Samples

- The relative percent difference (RPD) for project, QA, and QC samples were

within allowable limits for all compounds. Bis (2-ethylhexyl) phthalate was discovered below the detection limit in the QA sample. Since it was also detected in the blank and is a common contaminant when the sample has been in contact with plastic, the presence of bis (2-ethylhexyl) phthalate is suspect.

- PCB/pesticide detection limits for samples 97RTMZ02WA, 98RMZ05WA, and 97RMZ07WA were raised due to matrix interference. Due to a high concentration of PCB in the matrix spike/matrix spike duplicate (MS/MSD) and necessary dilution, the surrogate was outside QC limits.
- DRO surrogate recovery for the method blank and sample 97RMZ03WA was outside QC limits. Low surrogate recovery for sample 97RMZ03WA may be due to matrix interference and results may be biased low. Surrogate recoveries for all other samples met QC criteria, therefore, results should not be affected.
- DRO results for samples 97RMZ01WA and 97RMZ04WA included an unknown hydrocarbon with several peaks. Samples 97RMZ02WA, 97RMZ05WA, 97RMZ06WA, and 97RMZ07WA were consistent with weathered middle distillate.
- The SVOC laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and MS/MSD were outside QC limits for hexachloroethane. The LCS/LCSD was outside QC limits for pyrene. Results for these two compounds should be considered estimated.

Surface-Water Samples

- The RPDs for project, QA, and QC samples were within allowable limits for all compounds, with the exception noted below. The PCB QA sample disagrees with the project sample (RPD of 123 percent). Barium, chromium, lead, and zinc disagree for QA/QC and project samples. Poor reproducibility may be due to non-homogeneity of samples or field sample collection procedures because the samples were collocated. Results for these compounds, for these samples should be considered estimated.
- Bis (2-ethylhexyl) phthalate was discovered below the detection limit in the QA sample. Since it was also discovered in the blank and is a common contaminant when the sample has been in contact with plastic, the presence of bis (2-ethylhexyl) phthalate is suspect.
- Pesticide detection limits for samples 97RMZ01SW, 97RMZ03SW, and 97RMZ05SW were raised due to the presence of PCBs. PCB/pesticide surrogate recoveries for samples 98RMZ03SW and 97RMZ05SW were outside QC limits because of dilution.
- The SVOC surrogate recoveries for samples 97RMZ01SW and 97RMZ05SW were outside QC limits. Results may be biased low.

Sediment Samples

- The RPDs for project, QA, and QC samples were within allowable limits for all compounds, with the exception noted below. The PCB QA and QC samples disagree with the project sample (RPD of 160 percent and 145 percent, respectively). Cadmium, vanadium, and zinc disagree for the

QA/QC and project samples. Poor reproducibility may be due to non-homogeneity of samples or field sampling procedures. Results for these compounds, for these samples should be considered estimated.

- The SVOC compound bis (2-ethylhexyl) phthalate was discovered below the detection limit in the QA sample. Since it was also discovered in the blank and is a common contaminant when the sample has been in contact with plastic, the presence of bis (2-ethylhexyl) phthalate is suspect.
- Pesticide detection limits for samples 97RMZ03SD and 97RMZ05SD were raised due to the presence of PCBs. PCB/pesticide surrogate recoveries for samples 97RMZ03SD, and 97RMZ05SD were outside QC limits because of dilution. The pesticide Beta-BHC was detected in the method blank, but was not detected in any of the associated samples. The sample results were not affected.
- The VOC surrogate recoveries for samples 97RMZ01SD, 97RMZ02SD, 97RMZ03SD, 97RMZ05SD, MS, and MSD did not meet QC criteria due to matrix interference. MS/MSD spike recoveries did not meet QC criteria due to matrix interference. Results may be biased low.
- VOC LCS/LCSD spike recoveries were outside QC limits for bromochloromethane and chloromethane. Results may be biased low for these compounds.
- GRO field surrogate (4-bromofluoromethane) recovery for 97RMZ01SD, MS, and MSD was low, possibly due to matrix interference. Sample

97RMZ05SD leaked during transit. Results may be biased low.

- DRO results for samples 97RMZ02SD, 97RMZ03SD, and 97RMZ05SD are consistent with lube oil.
- The SVOC surrogate recoveries for sample 97RMZ04SD were outside QC limits. The associated continuous calibration verification curve had low recoveries for several compounds. Results may be biased low.
- Aluminum, iron, and magnesium MS recoveries for sample 97RMZ04SD were outside QC limits. The compound of interest was greater than four times the spiking amount, therefore, results should not be affected. Selenium and antimony MS/MSD recoveries for samples 97RMZ01SD, 97RMZ02SD, 97RMZ03SD, and 97RMZ05SD were low due to matrix interference. Results should be considered estimated.

6.0 ANALYTICAL RESULTS

Potential chemicals of concern at LF03 are DRO, GRO, VOCs, SVOCs, PCBs/OCPs, and Target Analyte List metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, zinc). Table 1 presents a comparison of RBCs, maximum contaminant levels, and method reporting limits for soil and water. Cleanup levels for DRO and GRO in soil were estimated in 1996 (HLA, 1996) using the ADEC matrix score sheet. The estimated soil cleanup levels for DRO and GRO were 100 mg/kg and 50 mg/kg, respectively. Where appropriate comparisons are made to results for background monitoring locations. Background locations were established during the

1996 monitoring for surface water (SW-3), sediment (SD-3), and groundwater (CMW-1).

6.1 Groundwater Results

Five groundwater samples (97RMZ01WA through 97RMZ05WA), one QA duplicate (97RMZ06WA); and one QC duplicate (97RMZ07WA); were collected and analyzed for DRO, GRO, VOCs, SVOCs, PCBs/OCPs, and metals. The maximum DRO concentration detected in groundwater was 2.13 mg/L in sample 97RMZ02WA (CMW-4). GRO was not detected. Cleanup levels for DRO and GRO in water have not been established.

VOCs, SVOCs, and PCBs/OCPs were not detected at concentrations above RBCs.

Beryllium concentrations (0.000659 to 0.00172 mg/L) exceeded RBCs in samples 97RMZ02WA (CMW-4), 97RMZ03WA (CMW-6), and 97RMZ04WA (CMW-7). Lead concentrations (0.0153 to 0.0493 mg/L) exceeded RBCs in samples 97RMZ02WA (CMW-4), 97RMZ03WA (CMW-6), and 97RMZ04WA (CMW-7). Analytical results are summarized in Table 2. Laboratory reports are included in Appendix B.

6.2 Surface-Water Results

Three surface-water samples (97RMZ01SW through 97RMZ03SW), one QA duplicate (97RMZ04SW), and one QC duplicate (97RMZ05SW) were collected and analyzed for DRO, GRO, VOCs, SVOCs, PCBs/OCPs, and metals. DRO was detected in samples 97RMZ03SW (SW-2) and 97RMZ05SW (SW-2) at 0.205 mg/L and 0.155 mg/L, respectively. GRO was not detected. Action levels for DRO and GRO in surface water have not been established.

VOCs were not detected in the surface water samples.

SVOCs were detected at concentrations below the RBCs and MCLs. PCB Aroclor 1260 was detected above the RBC of 0.0000087 mg/L at the three surface-water sample locations with the concentration ranging from 0.000209 mg/L to 0.0550 mg/L.

Lead concentrations (0.0234 to 0.115 mg/L) exceeded RBCs in samples 97RMZ03SW (SW-2) and 97RMZ05SW (SW-2).

Results for surface-water samples were also compared to surface-water petroleum hydrocarbon standards established through ADEC Water Quality Standards, Title 18, Alaska Administrative Code, Chapter 70. The water quality standards establish criteria for total aromatic hydrocarbons (TAH) of 10 micrograms per liter ($\mu\text{g/L}$) and total aqueous hydrocarbons (TAqH) of 15 $\mu\text{g/L}$ (ADEC, 1995c). TAH is the sum of the concentrations of the following compounds: benzene, toluene, ethylbenzene, and xylene. TAqH is the sum of TAH and the concentrations of selected polynuclear aromatic hydrocarbons (PAHs). Surface water analytical results for the TAH and TAqH constituents were below reported method detection limits for the 1997 monitoring event. For the three surface-water sample locations TAH was non-detect at 5 $\mu\text{g/L}$. A comparison between surface-water results and TAqH criteria is not meaningful because of the MRLs for the PAHs.

Analytical results are summarized in Table 3. Laboratory reports are included in Appendix B.

6.3 Sediment Results

Three sediment samples (97RMZ01SD through 97RMZ03SD), one QA duplicate (97RMZ04SD), and one QC duplicate (97RMZ05SD) were collected and analyzed for DRO, GRO, VOCs, SVOCs, PCBs/OCPs, and metals. DRO was detected in all the samples at concentrations from 13.1 mg/kg (background location SD-3) to 371 mg/kg (QC sample at SD-2). GRO was not detected in any of the samples.

VOCs were not detected in the sediment samples.

SVOCs were detected in three of the sediment samples. Di-n-octylphthalate was detected in samples 97RMZ03SD (SD-2), and 97RMZ05SD (SD-2) at 0.331 mg/kg and 0.701 mg/kg, respectively. Fluoranthene was detected in sample 97RMZ05SD (SD-2) at 0.567 mg/kg. Bis (2-ethylhexyl) phthalate and hexachlorobenzene were detected in the QA sample at a concentration of 0.58 mg/kg and 0.63 mg/kg, respectively. Bis (2-ethylhexyl) phthalate was also detected in the associated laboratory blank. PCB Aroclor 1260 was detected in three sediment samples; 97RMZ03SD (SD-2) at 69.1 mg/kg; 97RMZ04SD (SD-2) at 630 mg/kg, and 97RMZ05SD (SD-2) at 437 mg/kg. Two pesticides were detected in sample 97RMZ02SD (SD-1); 4,4'-dichlorodiphenyldichloroethylene (4,4'-DDD) at 0.00115 mg/kg, and 4,4'-dichlorodiphenyltrichloroethane (4,4'-DDT) at 0.000813 mg/kg.

The following metals were detected in one or more of the sediment samples: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, silver, vanadium, and zinc.

Analytical results are summarized in Table 4. Laboratory reports are included in Appendix B.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Groundwater samples were collected from five monitoring wells installed during 1996 field activities. Two monitoring wells (CMW-2 and CMW-3) sampled in 1996 were dry during the 1997 monitoring period. Analytical results indicate beryllium and lead exceed RBCs in the three monitoring wells CMW-4, CMW-6, and CMW-7. RBC exceedances in 1996 for beryllium occurred in six of the seven monitoring wells, and for lead in monitoring wells CMW-1, CMW-4, and CMW-7. Analytical results indicate chloromethane and benzene, above respective RBCs and MCLs in CMW-1 and CMW-7 for 1996, were not above respective detection limits in 1997.

Surface-water and sediment samples were collected at three locations. Three samples were collected at SW-2 and SD-2 (project, QA, and QC samples). Two of the surface-water samples collected at SW-2 (project and QC) indicate lead concentrations above RBCs. Samples collected at all three surface-water locations, and the sediment sample at SD-2, indicate PCB Aroclor 1260 above RBCs in the surface water (0.000147 mg/L to 0.0550 mg/L) and at a concentration of 69.1 mg/kg (project sample) to 630 mg/kg (QA sample) in the sediment. In 1996, PCB Aroclor 1260 was detected in samples from SW-2 and SD-2. DRO was detected in the sediment at 181 mg/kg (project sample) to 371 mg/kg (QC sample). In 1996 DRO was detected at 754 mg/kg.

Recommendations for LF03 monitoring include the following:

- Conduct additional annual monitoring events to collect and analyze groundwater, surface water, and sediment samples to evaluate possible trends in selected contaminant concentrations.
- Collect and analyze additional sediment and surface water samples west and southwest of LF03 to delineate the extent of PCB and petroleum hydrocarbon contamination.

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TAB

Tables

TABLES

Cape Romanzof LRRS Landfill 2 Closure Monitoring Report

Table 1. Comparison of Risk-Based Concentrations, Maximum Contaminant Levels, and Method Reporting Limits for Soil and Water

Chemicals of Potential Concern	Soil MRL ^a (mg/kg)	Residential Soil RBC (mg/kg)	Water MRL (µg/L)	Tap Water RBC (µg/L)	Drinking Water MCL (µg/L)
Volatile Organic Compounds - EPA Method 8260					
* 1,1-Dichloroethene	0.01	1.1 ^c	1	0.044 ^c	7
1,1,1-Trichloroethane	0.01	2,700 ^f	1	790 ^f	200
* 1,1,2-Trichloroethane	0.01	11 ^c	1	0.19 ^c	5
* 1,1,2,2-Tetrachloroethane	0.01	3.2 ^c	1	0.052 ^c	--
* 1,2-Dichloroethane	0.01	7 ^c	1	0.12 ^c	5
* 1,2-Dichloropropane	0.01	9.4 ^c	5	0.16 ^c	5
* 1,2-Dibromo-3-chloropropane	0.01	0.46 ^c	1	0.048 ^c	--
* 1,2-Dibromoethane (EDB)	0.01	0.0075 ^c	1	0.00075 ^c	--
1,2-Dichlorobenzene	0.01	7,000 ^f	1	270 ^f	600
1,2,3-Trichlorobenzene	0.01	--	1	--	--
1,2,4-Trichlorobenzene	0.01	780 ^f	1	190 ^f	70
* 1,2,3-Trichloropropane	0.01	0.091 ^c	1	0.0015 ^c	--
1,2,4-Trimethylbenzene	0.01	3,900 ^f	1	300 ^f	--
1,3,5-Trimethylbenzene	0.01	3,900 ^f	1	300 ^f	--
1,3-Dichlorobenzene	0.01	7,000 ^f	1	540 ^f	--
1,4-Dichloro-2-butene	0.01	--	100	0.001 ^c	--
* 1,4-Dichlorobenzene	0.01	27 ^c	1	0.44 ^c	75
1,1-Dichloroethane	0.01	7,800 ^f	1	810 ^f	--
1,3-Dichloropropane	0.01	--	1	--	--
1,1-Dichloropropene	0.01	--	1	--	--
* 1,1,1,2-Tetrachloroethane	0.01	25 ^c	1	0.41 ^c	--
2-Hexone	0.01	--	50	--	--
2,2-Dichloropropane	0.01	--	1	--	--
2-Butanone	0.01	--	2	--	--
2-Chlorotoluene	0.01	--	1	--	--
4-Chlorotoluene	0.01	--	1	--	--
4-Methyl-2-pentanone	0.01	--	100	--	--
Acetone	0.01	7,800 ^f	2	3,700 ^f	--
Acrylonitrile	0.01	1.2 ^c	5	0.12 ^c	--
* Benzene	0.01	22 ^c	1	0.36 ^c	5
Bromobenzene	0.01	--	1	--	--
Bromochloromethane	0.01	--	1	--	--
* Bromodichloromethane	0.01	10 ^c	1	0.17 ^c	100 ^b
Bromoform	0.01	81 ^c	1	2.4 ^c	100 ^b
Bromomethane	0.01	110 ^f	1	8.7 ^f	--
Carbon disulfide	0.01	7,800 ^f	100	21 ^f	--
* Carbon tetrachloride	0.01	4.9 ^c	1	0.16 ^c	5
Chlorobenzene	0.01	1,600 ^f	1	39 ^f	100
Chloroethane	0.01	31,000 ^f	1	8,600 ^f	--
* Chloroform	0.01	100 ^c	1	0.15 ^c	100 ^b
Chloromethane	0.01	49 ^c	1	1.4 ^c	--
cis-1,3-Dichloropropene	0.005	--	1	--	--
cis-1,2-Dichloroethene	0.01	780 ^f	1	61 ^f	70
* Dibromochloromethane	0.01	--	1	--	--
Dibromoethane	0.01	--	1	--	--
Dichlorodifluoromethane	0.01	1,600 ^f	1	390 ^f	--
Ethylbenzene	0.01	7,800 ^f	1	1,300 ^f	700
* Hexachlorobutadiene	0.01	8.2 ^c	1	0.14 ^c	--
Isopropylbenzene	0.01	--	1	--	--
Methyl iodide	0.01	--	10	--	--
Methylene chloride	0.01	85 ^c	2	4.1 ^c	5
n-Butylbenzene	0.01	--	1	--	--
n-Propylbenzene	0.01	--	1	--	--
Naphthalene	0.01	3,100 ^f	1	1,500 ^f	--

Cape Romanzof LRRS Landfill 2 Closure Monitoring Report

Table 1. Comparison of Risk-Based Concentrations, Maximum Contaminant Levels, and Method Reporting Limits for Soil and Water (continued)

Chemicals of Potential Concern	Soil MRL ^a (mg/kg)	Residential Soil RBC (mg/kg)	Water MRL (µg/L)	Tap Water RBC (µg/L)	Drinking Water MCL (µg/L)
Volatile Organic Compounds - EPA Method 8260 (continued)					
p-Isopropyltoluene	0.01	--	1	--	--
sec-Butylbenzene	0.01	780 ^f	1	61 ^f	--
Styrene	0.01	1,600 ^c	1	16,000 ^c	100
tert-Butylbenzene	0.01	780 ^f	1	61 ^f	--
Tetrachloroethene	0.01	12 ^c	1	1.1 ^c	5
Toluene	0.01	16,000 ^f	1	750 ^f	1,000
Xylenes	0.01	160,000 ^f	1	12,000 ^f	10,000
trans-1,2-Dichloroethene	0.01	1,600 ^f	1	120 ^f	100
trans-1,3-Dichloropropene	0.005	3.7 ^f	1	0.077 ^f	--
Trichloroethene	0.01	580 ^f	1	1.6 ^c	5
Trichlorofluoromethane	0.01	23,000 ^f	1	1,300 ^f	--
Vinyl acetate	0.01	7,800 ^f	50	3,700 ^f	--
* Vinyl chloride	0.01	0.34 ^c	1	0.019 ^c	2
Semivolatile Organic Compounds - EPA Method 8270					
1,2-Dichlorobenzene	0.33	7,000 ^f	5	270 ^f	600
1,3-Dichlorobenzene	0.33	7,000 ^f	5	540 ^f	--
1,2,4-Trichlorobenzene	0.33	780 ^f	5	190 ^f	70
2,4-Dimethylphenol	0.33	1,600 ^f	5	730 ^f	--
2,4-Dichlorophenol	0.33	230 ^f	5	110 ^f	--
* 2,4,6-Trichlorophenol	0.33	5.8 ^c	5	6.1 ^c	--
2,4,5-Trichlorophenol	0.8	7,800 ^f	20	3,700 ^f	--
2,4-Dinitrophenol	0.33	160 ^f	20	73 ^f	--
2,4-Dinitrotoluene	0.33	160 ^f	5	73 ^f	--
2,6-Dinitrotoluene	0.33	78 ^f	5	37 ^f	--
2-Chloronaphthalene	0.33	--	5	--	--
2-Chlorophenol	0.33	390 ^f	5	180 ^f	--
2-Methylnaphthalene	0.33	--	5	--	--
2-Methylphenol	0.33	3,900 ^f	5	1,800 ^f	--
* 2-Nitroaniline	0.8	4.7 ^f	50	2.2 ^f	--
2-Nitrophenol	0.33	--	5	--	--
* 3,3-Dichlorobenzidine	0.33	1.4 ^c	5	0.15 ^c	--
3-Nitroaniline	0.33	230 ^f	20	110 ^f	--
4,6-Dinitro-2-methylphenol	0.8	--	20	--	--
4-Bromophenyl phenyl ether	0.33	4,500 ^f	5	2,100 ^f	--
4-Chloro-3-methylphenol	0.33	--	5	--	--
4-Chloroaniline	0.33	310 ^f	5	150 ^f	--
4-Chlorophenyl phenyl ether	0.33	--	5	--	--
4-Methylphenol	0.33	390 ^f	5	180 ^f	--
4-Nitroaniline	0.8	230 ^f	20	110 ^f	--
4-Nitrophenol	0.33	4,800 ^f	20	2,300 ^f	--
Acenaphthene	0.33	4,700 ^f	5	2,200 ^f	--
Anthracene	0.33	23,000 ^f	5	11,000 ^f	--
* Benzo(a)anthracene	0.33	0.88 ^c	5	0.092 ^c	--
* Benzo(a)pyrene	0.33	0.088 ^c	10	0.0092 ^c	0.2
* Benzo(b)fluoranthene	0.33	0.88 ^c	10	0.092 ^c	--
Benzo(g,h,i)perylene	0.33	--	5	--	--
* Benzo(k)fluoranthene	0.33	8.8 ^c	10	0.92 ^c	--
Benzoic acid	0.33	310,000 ^f	5	150,000 ^f	--
Benzyl alcohol	0.33	23,000 ^f	5	11,000 ^f	--
bis(2-Chloroethoxy)methane	0.33	--	5	--	--
* bis(2-Chloroethyl)ether	0.33	0.58 ^c	10	0.0092 ^c	--
* bis(2-Chloroisopropyl)ether	0.33	9.1 ^c	5	0.26 ^c	--
* bis(2-Ethylhexyl)phthalate	0.33	46 ^c	5	4.8 ^c	6

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Table 1. Comparison of Risk-Based Concentrations, Maximum Contaminant Levels, and Method Reporting Limits for Soil and Water (continued)

Chemicals of Potential Concern	Soil MRL ^a (mg/kg)	Residential Soil RBC (mg/kg)	Water MRL (µg/L)	Tap Water RBC (µg/L)	Drinking Water MCL (µg/L)
Semivolatile Organic Compounds - EPA Method 8270 (continued)					
Butyl benzyl phthalate	0.33	16,000 ^f	5	7,300 ^f	--
* Chrysene	0.33	88 ^c	10	9.2 ^c	--
di-n-Butylphthalate	0.33	30,000 ^f	5	4,000 ^f	--
di-n-Octyl-phthalate	0.33	1,600 ^f	5	730 ^f	--
* Dibenzo(a,h)anthracene	0.33	0.088 ^c	10	0.0092 ^c	--
Dibenzofuran	0.33	310 ^f	5	150 ^f	--
Diethylphthalate	0.33	63,000 ^f	5	29,000 ^f	--
Dimethyl phthalate	0.33	780,000 ^f	5	370,000 ^f	--
Fluoranthene	0.33	3,100 ^f	5	1,500 ^f	--
Fluorene	0.33	3,100 ^f	5	1,500 ^f	--
* Hexachlorobenzene	0.33	0.4 ^c	10	0.0066 ^c	1
* Hexachlorobutadiene	0.33	8.2 ^c	5	0.14 ^c	--
* Hexachlorocyclopentadiene	0.33	550 ^f	5	0.15 ^f	50
Hexachloroethane	0.33	46 ^c	5	0.75 ^c	--
* Indeno(1,2,3-cd)pyrene	0.33	0.88 ^c	10	0.092 ^c	--
Isophorone	0.33	670 ^c	5	71 ^c	NA
* n-Nitroso-di-n-propylamine	0.33	0.091 ^c	10	0.0096 ^c	--
n-Nitrosodiphenylamine	0.33	130 ^c	5	14 ^c	--
Naphthalene	0.33	3,100 ^f	5	1,500 ^f	--
* Nitrobenzene	0.33	39 ^f	5	3.4 ^f	--
* Pentachlorophenol	0.8	5.3 ^c	50	0.56 ^c	1
Phenanthrene	0.33	--	5	--	--
Phenol	0.33	47,000 ^f	5	22,000 ^f	--
Pyrene	0.33	2,300 ^f	5	1,100 ^f	--
Polychlorinated Biphenyls (PCBs)/ Pesticides - EPA Method 8080					
4,4'-DDD	0.0033	2.7 ^c	0.02	0.28 ^c	--
4,4'-DDE	0.0033	1.9 ^c	0.02	0.2 ^c	--
4,4'-DDT	0.0033	1.9 ^c	0.02	0.2 ^c	--
* Aldrin	0.0017	0.038 ^c	0.01	0.004 ^c	NA
Alpha BHC	0.0017	0.1 ^c	0.01	0.01 ^c	NA
Aroclor 1016	0.033	5.5 ^f	0.2	2.6 ^f	--
* Aroclor 1221	0.067	0.083 ^c	0.2	0.0087 ^c	--
* Aroclor 1232	0.033	0.083 ^c	0.2	0.0087 ^c	--
* Aroclor 1242	0.033	0.083 ^c	0.2	0.0087 ^c	--
* Aroclor 1248	0.033	0.083 ^c	0.2	0.0087 ^c	--
* Aroclor 1254	0.033	1.6 ^f	0.2	0.73 ^f	--
* Aroclor 1260	0.033	0.083 ^c	0.2	0.0087 ^c	--
Beta BHC	0.0017	0.04 ^c	0.01	0.35 ^c	--
Chlordane	0.0017	0.49 ^c	0.01	0.052 ^c	2
Delta BHC	0.0017	--	0.01	--	--
* Dieldrin	0.0033	0.04 ^c	0.02	0.0042 ^c	--
Endosulfan (I, II)	0.0033	470 ^f	0.02	220 ^f	--
Endosulfan sulfate	0.0033	--	0.02	--	--
Endrin	0.0033	23 ^f	0.02	11 ^f	2
Endrin aldehyde	0.0033	--	0.02	--	--
* Heptachlor	0.0017	0.14 ^c	0.01	0.0023 ^c	0.4
* Heptachlor epoxide	0.0017	0.07 ^c	0.01	0.0012 ^c	0.2
* Lindane	0.0017	0.49 ^c	0.01	0.05 ^c	0.2
* Methoxychlor	0.017	390 ^f	0.1	180 ^f	40
* PCBs (total)	0.1	0.083 ^c	0.2	0.0087 ^c	0.5
* Toxaphene	0.17	0.58 ^c	1	0.061 ^c	3

Cape Romanzof LRRS Landfill 2 Closure Monitoring Report

Table 1. Comparison of Risk-Based Concentrations, Maximum Contaminant Levels, and Method Reporting Limits for Soil and Water (continued)

Chemicals of Potential Concern	Soil MRL ^a (mg/kg)	Residential Soil RBC (mg/kg)	Water MRL (µg/L)	Tap Water RBC (µg/L)	Drinking Water MCL (µg/L)
Metals - EPA Method 6010 (except where noted)					
Antimony	10	31 ^f	2	15 ^f	--
* Arsenic - (Method 7060)	1	23 ^f	2	0.045 ^c	50
Barium	30	5,500 ^f	20	2,600 ^f	2,000
* Beryllium	0.5	0.15 ^f	0.01	0.016 ^f	--
Cadmium	1	39 ^f	2	18 ^f	5
Chromium (Total)	2	--	10	40,000 ^f	100
Chromium VI - (Method 7197)	2	390 ^f	10	180 ^f	100
Cobalt	2.5	4,700 ^f	0.05	2,200 ^f	--
Copper	2.5	3,100 ^f	0.05	1,500 ^f	--
* Lead - (Method 7421)	1	400 ^d	2	15 ^f	15 ^e
Nickel	2.5	1,600 ^f	0.05	730 ^f	--
Selenium - (Method 7740)	1	390 ^f	2	180 ^f	50
Silver	2	390 ^f	10	180 ^f	--
Thallium (Method 7841)	0.1	--	0.002	--	2
Vanadium	2.5	550 ^f	5	260 ^f	--
Zinc	2	23,000 ^f	2	11,000 ^f	--

- * The MRL for this chemical is higher than one or more of the regulated limits (MCL), or risk-based screening concentrations (RBC and HQ)
- Value not established
- BHC Benzene hexachloride
- DDD Dichlorodiphenyldichloroethane
- DDE Dichlorodiphenyldichloroethene
- DDT Dichlorodiphenyltrichloroethane
- EPA U S Environmental Protection Agency
- MCL Maximum contaminant levels established in the Federal Safe Drinking Water Act, PL93-523, and the State of Alaska Drinking Water Regulations, Title 18, Chapter 80
- µg/L Micrograms per liter
- mg/kg Milligrams per kilogram
- MRL Method reporting limits
- NA Toxicity value not available, risk-based concentration cannot be calculated
- RBC Carcinogenic risk-based concentration

- a Method reporting limits may be adjusted for sample weight and sample dilution. Method reporting limits are typical and attainable. Actual laboratory reporting limits may differ from those listed.
- b The 100 µg/L MCL applies to total trihalomethanes.
- c Carcinogenic effects; 10⁻⁶ RBC, from *EPA Region 3 Risk-Based Concentration Table, July - December, 1995*.
- d Based on Office of Solid Waste and Emergency Response (OSWER) Directive No. 9355.4-12, the EPA recommends a 400 mg/kg screening level for lead in soil for residential land use (EPA, 1994).
- e The EPA's action level for lead is applicable in drinking water at the point of use.
- f Noncarcinogenic effects; hazard quotient is equal to 1, from *EPA Region 3 Risk-Based Concentration Table, Third Quarter, 1994*.

Table 2. Groundwater Analytical Results^a

Analyte	EPA Method	Units	Action ^b Level	Sample Number		Location		Sample Type											
				CMW-1	Project	CMW-4	Project	CMW-6	Project	CMW-7	Project	CMW-5	Project	CMW-5	Project	QA duplicate	QC duplicate	QC trip blank	QA trip blank
DRO	AK 102	mg/L	NE	0.179	ND (0.0980)	2.13	ND (0.04)	ND (0.04)	ND (0.04)	0.125	ND (0.04)	0.399	ND (0.04)	0.41	ND (0.04)	0.415	ND (0.04)	NA	NA
GRO	AK 101	mg/L	NE	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.1)	ND (0.04)	ND (0.04)	ND (0.04)	NA	NA
SVOCs																			
bis (2-ethylhexyl) phthalate	8270	mg/L	0.0048 (RBC)	ND (0.0050) J	ND (0.0051) J	ND (0.0050) J	ND (0.0050) J	ND (0.0050) J	ND (0.0050) J	ND (0.0050) J	ND (0.0050) J	ND (0.0050) J	ND (0.0050) J	0.003 J,B	ND (0.0050) J	ND (0.0050) J	ND (0.0050) J	NA	NA
Pesticides																			
Endosulfan sulfate	8080	mg/L	0.220 (RBC) ^c	ND (0.0100)	ND (0.00980)	ND (0.0980)	ND (0.00980)	ND (0.00980)	ND (0.00980)	0.0525	ND (0.010)	ND (0.00980)	ND (0.00980)	ND (0.10)	ND (0.00980)	ND (0.00980)	ND (0.00980)	NA	NA
VOCs																			
acetone	8260	mg/L	3.7 (RBC)	0.0111	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	NA	ND (0.010)	ND (0.010)	ND (0.010)	NA	NA
Metals																			
arsenic	7060	mg/L	0.05 (MCL)	ND (0.00568)	0.00795	0.0132	0.0140	0.0140	0.0140	0.0140	0.0132	0.0140	0.0140	0.037	ND (0.00568)	ND (0.00568)	ND (0.00568)	NA	NA
barium	6010	mg/L	2 (MCL)	0.0892	0.213	0.432	0.494	0.494	0.494	0.494	0.432	0.494	0.494	0.0315	0.037	0.0219	0.0219	NA	NA
beryllium	7091	mg/L	0.00016 (RBC)	ND (0.000568)	0.000659	0.00172	0.00168	0.00168	0.00168	0.00168	0.00172	0.00168	0.00168	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	NA	NA
cadmium	7131	mg/L	0.005 (MCL)	ND (0.000568)	0.00125	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	ND (0.000568)	NA	NA
chromium	7191	mg/L	0.1 (MCL)	0.0190	0.0323	0.0749	0.0853	0.0853	0.0853	0.0853	0.0749	0.0853	0.0853	ND (0.00568)	ND (0.00568)	ND (0.00568)	ND (0.00568)	NA	NA
cobalt	6010	mg/L	2.2 (RBC)	0.0179	ND (0.0114)	0.0184	0.0328	0.0328	0.0328	0.0328	0.0184	0.0328	0.0328	ND (0.0114)	ND (0.0114)	ND (0.0114)	ND (0.0114)	NA	NA
copper	6010	mg/L	1.5 (RBC)	ND (0.114)	0.0210	0.0431	0.0358	0.0358	0.0358	0.0358	0.0431	0.0358	0.0358	ND (0.0114)	ND (0.0114)	ND (0.0114)	ND (0.0114)	NA	NA
lead	7421	mg/L	0.015 (RBC)	ND (0.00568)	0.0493	0.0153	0.0243	0.0243	0.0243	0.0243	0.0153	0.0243	0.0243	ND (0.00568)	ND (0.00568)	ND (0.00568)	ND (0.00568)	NA	NA
nickel	6010	mg/L	0.7 (RBC)	ND (0.0227)	ND (0.0227)	0.0360	0.0444	0.0444	0.0444	0.0444	0.0360	0.0444	0.0444	ND (0.0227)	ND (0.0227)	ND (0.0227)	ND (0.0227)	NA	NA
vanadium	6010	mg/L	0.26 (RBC)	0.0202	0.0427	0.0891	0.0958	0.0958	0.0958	0.0958	0.0891	0.0958	0.0958	ND (0.0114)	ND (0.0114)	ND (0.0114)	ND (0.0114)	NA	NA
zinc	6010	mg/L	11 (RBC)	0.0483	0.113	0.115	0.104	0.104	0.104	0.104	0.115	0.104	0.104	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	NA	NA

SVOCs Semivolatile organic compounds
 VOCs Volatile organic compounds

a. Analytes detected in at least one sample are shown, all others are not detected
 b. Action levels are listed in Table 1
 c. RBC for Endosulfan

Data Qualifiers
 J Indicates an analyte whose concentration is estimated

Note Concentrations which exceed action levels are highlighted with a box

DRO Diesel-range organics
 GRO Gasoline-range organics
 MCL Maximum Contaminant Level
 mg/L Milligrams per liter
 NA Not applicable
 ND Not detected at or above method reporting limit in parentheses
 PCB Polychlorinated biphenyl
 QA Quality assurance
 QC Quality control
 RBC Risk-Based Concentration

Table 3. Surface-Water Analytical Results^a

Analyte	EPA Method	Units	Action ^b Level	Sample Number Location				
				97RMZ01SW SW-3 Project	97RMZ02SW SW-1 Project	97RMZ03SW SW-2 Project	97RMZ04SW SW-2 QA duplicate	97RMZ05SW SW-2 QC duplicate
DRO	AK 102	mg/L	NE ^c	ND (0.0990)	ND (0.0980)	0.205	ND (0.25)	0.155
GRO	AK 101	mg/L	NE ^c	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.1)	ND (0.04)
SVOCs								
bis (2-ethylhexyl) phthalate	8270	mg/L	0.0048 (RBC)	ND (0.0049) J	ND (0.0050)	ND (0.0048)	0.001 JB	ND (0.0050) J
PCBs/Pesticides								
Aroclor - 1260	8080	mg/L	0.0000087 (RBC)	0.000209	0.000147	0.0459	0.011	0.0550
Metals								
arsenic	7060	mg/L	0.05 (MCL)	ND (0.00568)	ND (0.00568)	0.00977	ND (0.0050)	ND (0.00568)
barium	6010	mg/L	2 (MCL)	0.0205	ND (0.0114)	0.232 J	0.039 J	0.117 J
cadmium	7131	mg/L	0.005 (MCL)	ND (0.000568)	ND (0.000568)	0.000705	ND (0.0050)	ND (0.000568)
chromium	7191	mg/L	0.1 (MCL)	ND (0.00568)	ND (0.00568)	0.0236 J	ND (0.010) J	0.0130 J
copper	6010	mg/L	1.5 (RBC)	ND (0.0114)	ND (0.0114)	0.0169	ND (0.010)	ND (0.0114)
lead	7421	mg/L	0.015 (RBC)	ND (0.00568)	ND (0.00568)	0.0234 J	0.0038 J	0.115 J
vanadium	6010	mg/L	0.26 (RBC)	ND (0.0114)	ND (0.0114)	0.0410	ND (0.010)	0.0206
zinc	6010	mg/L	11 (RBC)	ND (0.0227)	ND (0.0227)	0.203 J	0.053 J	0.104 J

ADEC Alaska Department of Environmental Conservation

- DRO Diesel-range organics
- GRO Gasoline-range organics
- MCL Maximum Contaminant Level
- mg/L Milligrams per liter
- NA Not applicable
- ND Not detected at or above method reporting limit in parentheses
- NE Not established
- PCB Polychlorinated biphenyl
- QA Quality assurance
- QC Quality control
- RBC Risk-Based Concentration
- SVOCs Semivolatile organic compounds

a. Analytes detected in at least one sample are shown, all others are not detected.

b. Action levels are listed in Table 1.

c. A comparison to surface-water petroleum hydrocarbon standards established by ADEC is presented in section 7.0 of the report.

Data Qualifiers

J Indicates an analyte whose concentration is estimated

Note: Concentrations which exceed action levels are highlighted with a box

Table 4. Sediment Analytical Results^a

Analyte	EPA Method	Units	Sample Number Location Sample Type				
			97RMZ01SD SD-3 Project	97RMZ02SD SD-1 Project	97RMZ03SD SD-2 Project	97RMZ04SD SD-2 QA duplicate	97RMZ05SD SD-2 QC duplicate
DRO	AK 102	mg/kg	13 1	34.7	181	340	371 0
GRO	AK 101	mg/kg	ND (0 961)	ND (0 823)	ND (1 17)	ND (1 3)	ND (1 44) J
SVOCs							
di-n-Octylphthalate	8270	mg/kg	ND (0.20)	ND (0 19)	0 331	ND (4 7) J	0.701
Fluoranthene	8270	mg/kg	ND (0 20)	ND (0 19)	ND (0.21)	ND (4 7) J	0.567
Hexachlorobenzene	8270	mg/kg	ND (0 20)	ND (0 19)	ND (0 21)	0 58 J	ND (0 45)
Bis(2-ethylhexyl)phthalate	8270	mg/kg	ND (0 20)	ND (0 19)	ND (0 21)	0 63 JB	ND (0 45)
PCBs/Pesticides							
4,4'-DDD	8080	mg/kg	ND (0 000806)	0 00115	ND (0 398)	ND (3 5)	ND (2 20)
4,4'-DDT	8080	mg/kg	ND (0 000806)	0 000813	ND (0.398)	ND (3.5)	ND (2 20)
Aroclor - 1260	8080	mg/kg	ND (0 000806)	ND (0 00677)	69.1 J	630 DO J	437 J
Metals							
antimony	7041	mg/kg	ND (0 193) J	ND (0.210) J	ND (0.288) J	ND (3 6)	0.374 J
arsenic	7060	mg/kg	3 56	3 10	6 43	9 9	13 4
barium	6010	mg/kg	68 3	55 3	128	120	224
beryllium	7091	mg/kg	0.195	0.132	0 230	ND (0.36)	0 364
cadmium	7131	mg/kg	0.0846	0 0909	0 621	0 56	3 34
chromium	7191	mg/kg	13 9	8 46	15.1	23	20 2
cobalt	6010	mg/kg	6.66	4.62	9 34	8 3	17 1
copper	6010	mg/kg	9.01	15.5	14 9	17	25 7
lead	7421	mg/kg	5.25	16 6	17 5	22	26 5
nickel	6010	mg/kg	11 1	12 7	14 5	18	20 0
silver	7761	mg/kg	ND (0 0386)	ND (0.0421)	ND (0 0575)	ND (3 6)	0.0851
vanadium	6010	mg/kg	26 4	18 2	17 0	36	37.6
zinc	6010	mg/kg	30 7	26 8	169	150	426
Total Solids	2540G	percent	82 2	87 4	77 6	NA	72 4

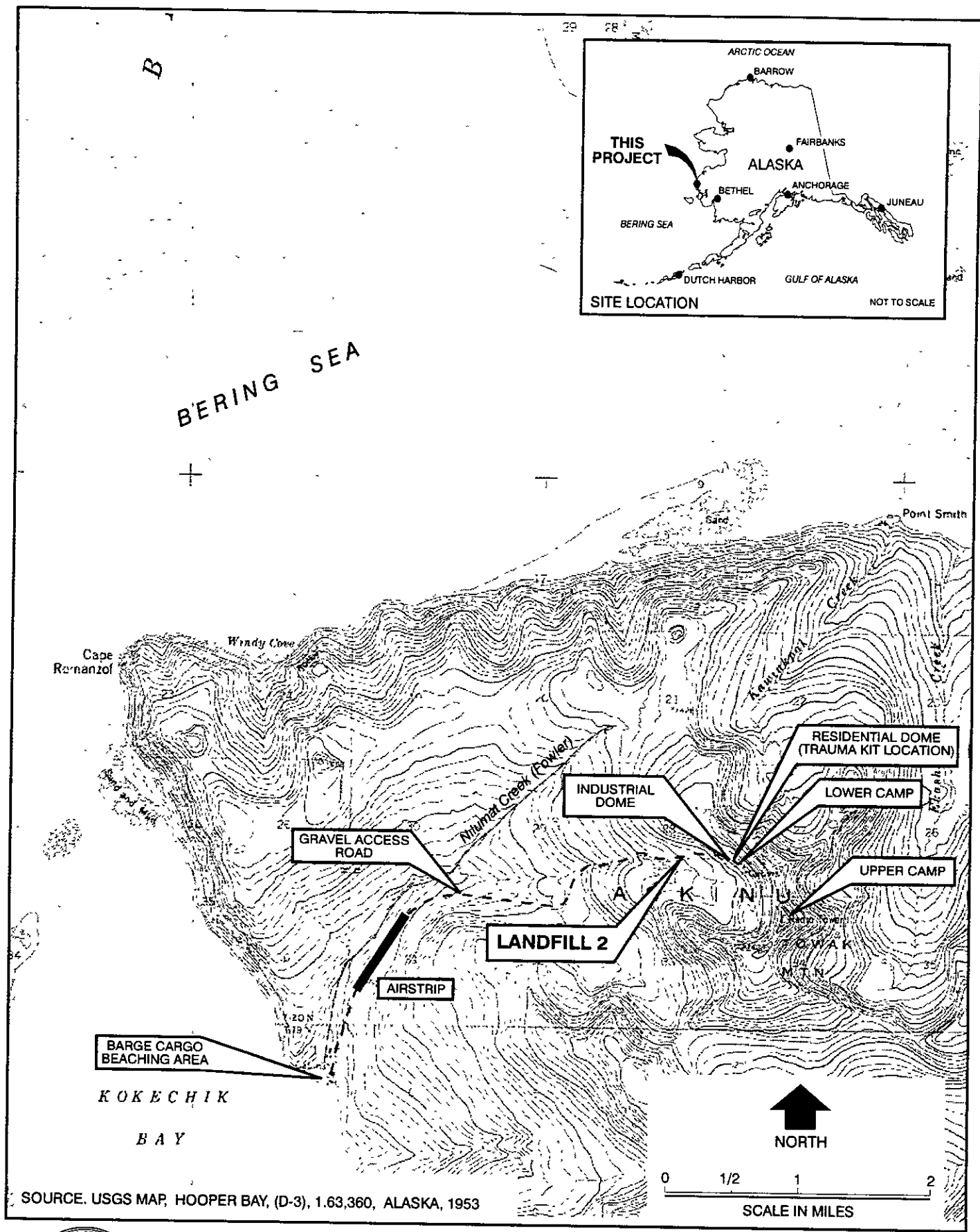
Data Qualifiers
 J Indicates an analyte whose concentration is estimated
 B Analyte found in the associated blank as well as in the sample
 DO Value from a 1,000-fold diluted analysis

NE Not established
 PCB Polychlorinated biphenyl
 QA Quality assurance
 QC Quality control
 SVOCs Semivolatile organic compounds
^a Analytes detected in at least one sample are shown, all others are not detected

TAB

Figures

FIGURES



SOURCE. USGS MAP, HOOPER BAY, (D-3), 1.63,360, ALASKA, 1953

Site Location and Vicinity Maps

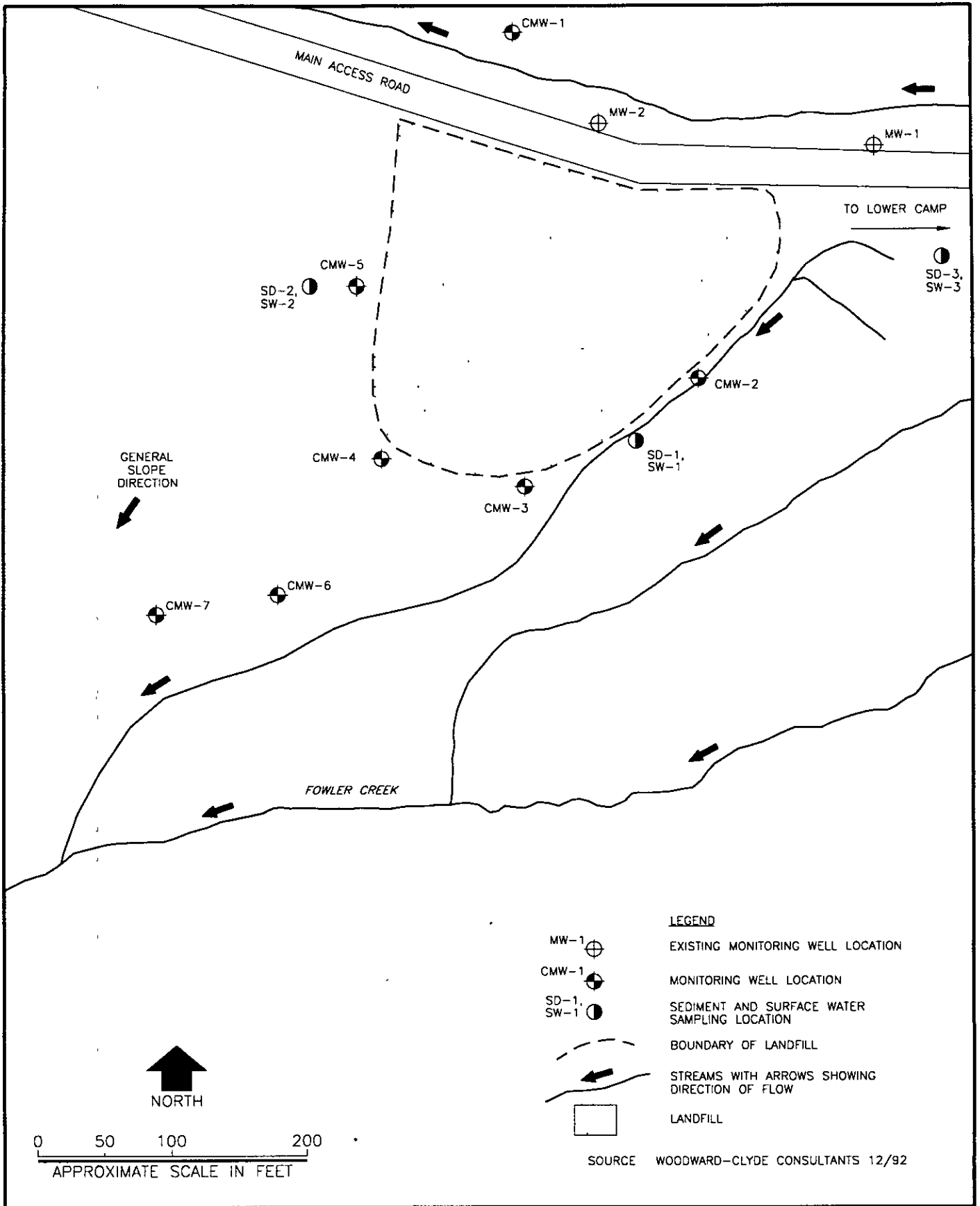
FIGURE

Landfill 2 (LF03) Closure Monitoring Report Cape Romanzof, Alaska

1



DRAWN BJ	PROJECT NUMBER 35646	APPROVED [Signature]	DATE 11/97	FILE NAME 183C
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Site Plan

FIGURE

Landfill 2 (LF03) Closure Monitoring Report
Cape Romanzof, Alaska

2

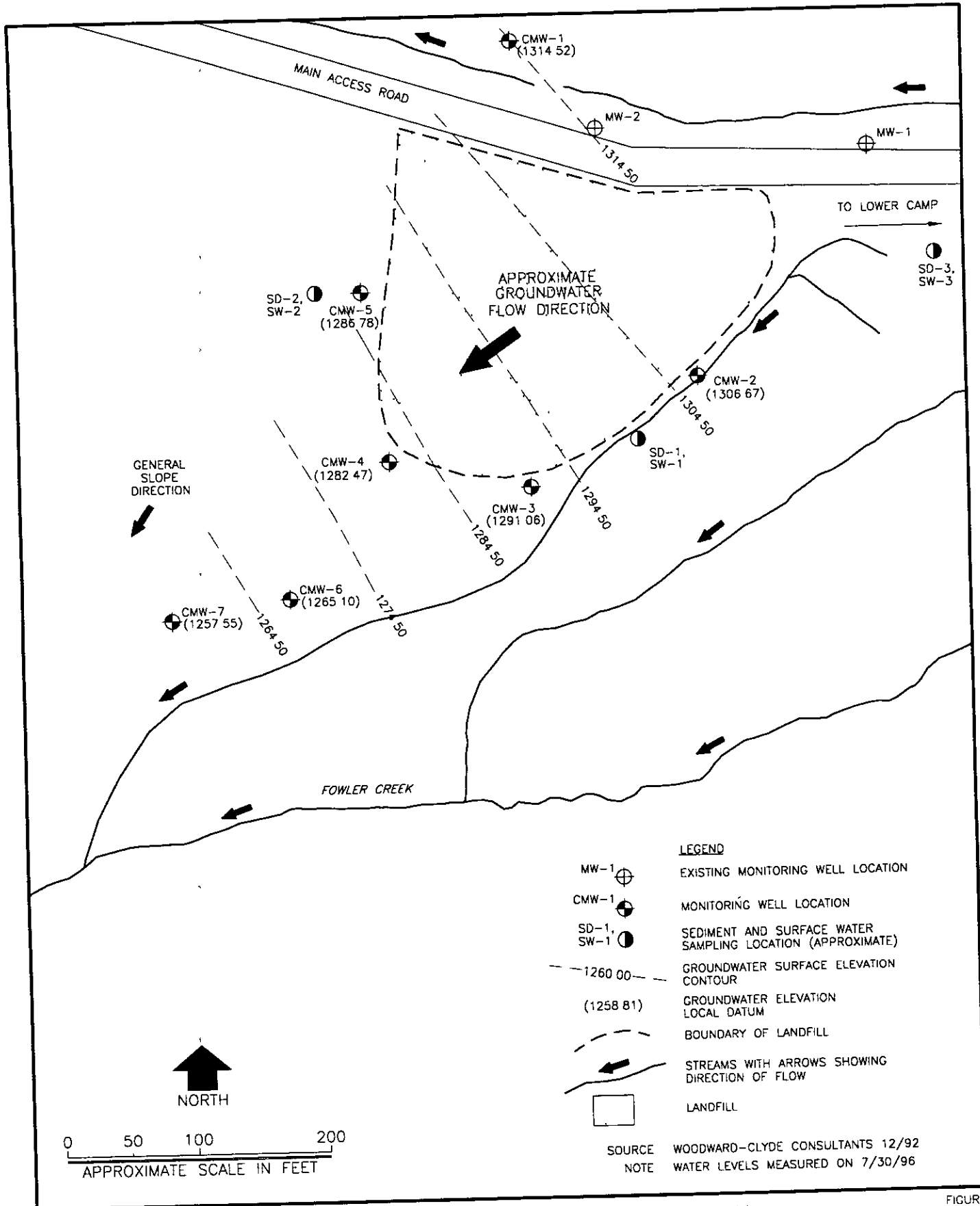
DRAWN
JP

PROJECT NUMBER
35646

APPROVED
BDJ

DATE
11/97

FILE NAME
857j



Groundwater Contour Map

FIGURE

3

Landfill 2 (LF03) Closure Monitoring Report
 Cape Romanzof, Alaska



DRAWN JP	PROJECT NUMBER 35646	APPROVED BDZ	DATE 11/97	FILE NAME 85J
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TAB

Appendix A

APPENDIX A
GROUNDWATER SAMPLING FIELD FORMS

GROUNDWATER SAMPLING DATA

70 31

Project Name and No Cape Romanzof/35646 Well No CMW-1
 Sampled By Joe McElroy/Charlie Marshall Well Type Monitoring Well
 Date 06/19/97, 06/20/97 Well Material Polyvinyl Chloride

WELL PURGING

PURGE VOLUME

Well Volume $\left[\frac{10.38}{(TD)} - \frac{9.28}{(WL)} \right] \times \left(\frac{2}{(d)} \right)^2 \times 0.0408 = 0.2$ gallons

Number of Well Volumes to be Purged (# vols) 3 Purge Volume $\frac{3}{(\# \text{ vols})} \times \frac{0.2}{(\text{well volume})} = 0.6$ gallons

PURGE METHOD

Pump Type Submersible Centrifugal Diaphragm
 Other - Type _____
 Bailer - Type Teflon-disposable

PURGE INTAKE

Depth (feet BTOC) Not applicable
 Screen interval (feet BTOC) From 4.2 To 9.2

PURGE TIME

Total Elapsed Time NA minutes

PURGE RATE

Initial _____ gpm
 Final _____ gpm
 Ave Not applicable gpm

ACTUAL PURGE VOLUME

2.0 gallons

FIELD PARAMETER MEASUREMENT

Date	6/19/97	6/19/97							
Time	1150	1400							
Purge Volume (gallons)	1.0 (dry)	1.0 (dry)							
Temperature (°Celsius)	1.4	2.0							
pH	6.33	6.07							
Field Conductivity (ms/cm)	0.091	0.051							
Turbidity (NTU)	+999	-							
Dissolved Oxygen (mg/L)	9.65	-							
REDOX (mV)	85	-126							

Observations Fuel Odor None Fuel Sheen None Other _____
 Water Level after Purging (feet BTOC) Dry
 How Purge Water was Disposed of Treated with activated carbon

WELL SAMPLING

SAMPLING METHOD

Same as Purge Method
 Other _____

SAMPLING INFORMATION

Date 6/20/97 Time 1100
 Laboratory Commercial Testing and Engineering

SAMPLING DISTRIBUTION

Sample No	Sample Type			Analyses Requested									
	Project	QA	QC	602	8015M	8100M	PCB/Pest 8080	8290	Metals	AK101	AK102	8260	8270
97RMZ01WA	X						X		X	X	X	X	X

BTOC = Below top of casing gpm = Gallons per minute TD = Total depth of casing (feet BTOC)
 D = Diameter of boring (inches) ms/cm = Millisiemens per centimeter WL = Water level depth (feet (BTOC))
 d = Diameter of well casing (inches) NTU = Nephelometric turbidity units

W0453R/Approved By BD

Harding Lawson Associates

GROUNDWATER SAMPLING DATA

Project Name and No Cape Romanzof/35646 Well No CMW-2
 Sampled By Joe McElroy/Charlie Marshall Well Type Monitoring Well
 Date 06/19/97 Well Material Polyvinyl Chloride

WELL PURGING

PURGE VOLUME

Well Volume $\left[\frac{9.83}{(TD)} - \frac{9.24}{(WL)} \right] \times \left(\frac{2}{(d)} \right)^2 \times 0.0408 = 0.1$ gallons

Number of Well Volumes to be Purged (# vols) 3 Purge Volume 3 x 0.1 = 0.3 gallons
 (# vols) (well volume)

PURGE METHOD

Pump Type Submersible Centrifugal Diaphragm
 Other - Type _____
 Bailer - Type Not applicable

PURGE INTAKE

Depth (feet BTOC) Not applicable
 Screen Interval (feet BTOC) From 4.6 To 9.6

PURGE TIME

Total Elapsed Time Not applicable minutes

PURGE RATE

Initial _____ gpm
 Final _____ gpm
 Ave Not applicable gpm

ACTUAL PURGE VOLUME

Not applicable, well dry gallons

FIELD PARAMETER MEASUREMENT

Date	Time	Purge Volume (gallons)	Temperature (°Celsius)	pH	Field Conductivity (ms/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	REDOX (mV)

Observations Fuel Odor None Fuel Sheen None Other
 Water Level after Purging (feet BTOC) Dry
 How Purge Water was Disposed of Not applicable, well dry

WELL SAMPLING

SAMPLING METHOD

Same as Purge Method
 Other _____

SAMPLING INFORMATION

Date Not applicable Time Not applicable
 Laboratory Not applicable

SAMPLING DISTRIBUTION

Sample No	Sample Type			Analyses Requested										
	Project	QA	QC	602	8015M	8100M	PCB/Pest 8080	8290	Metals	8260	8270	AK101	AK102	
No samples collected														

BTOC = Below top of casing
 D = Diameter of boring (inches)
 d = Diameter of well casing (inches)
 gpm = Gallons per minute
 ms/cm = Millisiemens per centimeter
 NTU = Nephelometric turbidity units
 TD = Total depth of casing (feet BTOC)
 WL = Water level depth (feet BTOC)

GROUNDWATER SAMPLING DATA

70. 33

Project Name and No Cape Romanzof/35646 Well No CMW-3
 Sampled By Joe McElroy/Charlie Marshall Well Type Monitoring Well
 Date 06/19/97 Well Material Polyvinyl Chloride

WELL PURGING

PURGE VOLUME

Well Volume $\left[\frac{9.45}{(TD)} - \frac{8.85}{(WL)} \right] \times 7 \left(\frac{2}{(d)} \right)^2 \times 0.0408 = 0.1$ gallons

Number of Well Volumes to be Purged (# vols) 3 Purge Volume $\frac{3}{(\# \text{ vols})} \times \frac{0.1}{(\text{well volume})} = 0.3$ gallons

PURGE METHOD

Pump Type Submersible Centrifugal Diaphragm
 Other - Type _____
 Bailer - Type Not applicable

PURGE INTAKE

Depth (feet BTOC) Not applicable
 Screen interval (feet BTOC) From 4.2 To 9.2

PURGE TIME

Total Elapsed Time Not applicable minutes

PURGE RATE

Initial _____ gpm
 Final _____ gpm
 Ave Not applicable gpm

ACTUAL PURGE VOLUME

Not applicable, well dry gallons

FIELD PARAMETER MEASUREMENT

Date															
Time															
Purge Volume (gallons)															
Temperature (°Celsius)															
pH															
Field Conductivity (ms/cm)															
Turbidity (NTU)															
Dissolved Oxygen (mg/L)															
REDOX (mV)															

Observations Fuel Odor None Fuel Sheen None Other _____
 Water Level after Purging (feet BTOC) Dry
 How Purge Water was Disposed of Not applicable, well dry

WELL SAMPLING

SAMPLING METHOD

Same as Purge Method
 Other _____

SAMPLING INFORMATION

Date Not applicable Time Not applicable
 Laboratory Not applicable

SAMPLING DISTRIBUTION

Sample No	Sample Type			Analyses Requested										
	Project	QA	QC	602	8015M	8100M	PCB/Pest 8080	8290	Metals	8260	8270	AK101	AK102	
No samples collected														

BTOC = Below top of casing gpm = Gallons per minute TD = Total depth of casing (feet BTOC)
 D = Diameter of boring (inches) ms/cm = Millisiemens per centimeter WL = Water level depth (feet (BTOC))
 d = Diameter of well casing (inches) NTU = Nephelometric turbidity units

70 34

GROUNDWATER SAMPLING DATA

Project Name and No Cape Romanzof/35646 Well No CMW-4
 Sampled By Joe McElroy/Charlie Marshall Well Type Monitoring Well
 Date 06/19/97, 06/20/97 Well Material Polyvinyl Chloride

WELL PURGING

PURGE VOLUME

Well Volume $\left[\frac{10.39}{(TD)} - \frac{6.56}{(WL)} \right] \times \left(\frac{2}{(d)} \right)^2 \times 0.0408 = 0.6$ gallons
 Number of Well Volumes to be Purged (# vols) 3 Purge Volume 3 x 0.6 = 1.8 gallons
 (# vols) (well volume)

PURGE METHOD

Pump Type Submersible Centrifugal Diaphragm
 Other - Type _____
 Bailer - Type Teflon-disposable

PURGE INTAKE

Depth (feet BTOC) Not applicable
 Screen Interval (feet BTOC) From 5.1 To 10.1

PURGE TIME

Total Elapsed Time Not applicable minutes

PURGE RATE

Initial _____ gpm
 Final _____ gpm
 Ave Not applicable gpm

ACTUAL PURGE VOLUME

3.0 gallons

FIELD PARAMETER MEASUREMENT

Date	6/19/97	6/19/97								
Time	1119	1411								
Purge Volume (gallons)	1.5 (dry)	1.5 (dry)								
Temperature (°Celsius)	1.0	0.4								
pH	6.66	6.22								
Field Conductivity (ms/cm)	0.459	0.299								
Turbidity (NTU)	+999	878								
Dissolved Oxygen (mg/L)	4.99	6.10								
REDOX (mV)	132	-110								

Observations Fuel Odor None Fuel Sheen None Other
 Water Level after Purging (feet BTOC) Dry
 How Purge Water was Disposed of Activated carbon treatment

WELL SAMPLING

SAMPLING METHOD

Same as Purge Method
 Other _____

SAMPLING INFORMATION

Date 6/20/97 Time 1130
 Laboratory Commercial Testing and Engineering

SAMPLING DISTRIBUTION

Sample No	Sample Type			Analyses Requested										
	Project	QA	QC	602	8015M	8100M	PCB/Pest 8080	8290	Metals	AK101	AK102	8260	8270	
97RMZ02WA	X						X		X	X	X	X	X	

BTOC = Below top of casing gpm = Gallons per minute TD = Total depth of casing (feet BTOC)
 D = Diameter of boning (inches) ms/cm = Millisiemens per centimeter WL = Water level depth (feet (BTOC))
 d = Diameter of well casing (inches) NTU = Nephelometric turbidity units

W0453R/Approved By [Signature]

Harding Lawson Associates

GROUNDWATER SAMPLING DATA

70 35

Project Name and No Cape Romanzof/35646 Well No CMW-5
 Sampled By Joe McElroy/Charlie Marshall Well Type Monitoring Well
 Date 06/20/97 Well Material Polyvinyl Chloride

WELL PURGING

PURGE VOLUME

Well Volume $\left[\frac{10.39}{(TD)} - \frac{5.08}{(WL)} \right] \times \left(\frac{2}{(d)} \right)^2 \times 0.0408 = 0.9$ gallons

Number of Well Volumes to be Purged (# vols) 3 Purge Volume 3 x 0.9 = 2.7 gallons
 (# vols) (well volume)

PURGE METHOD

Pump Type Submersible Centrifugal Diaphragm
Other - Type
 Bailer - Type Teflon-disposable

PURGE INTAKE

Depth (feet BTOC) Not applicable
 Screen Interval (feet BTOC) From 5.1 To 10.1

PURGE TIME

Total Elapsed Time 25 minutes

PURGE RATE

Initial gpm
 Final gpm
 Ave 0.35 gpm

ACTUAL PURGE VOLUME

7.0 gallons

FIELD PARAMETER MEASUREMENT

Date	6/19/97	6/19/97	6/19/97	6/19/97	6/19/97	6/19/97				
Time	1630	1635	1640	1645	1650	1655				
Purge Volume (gallons)	2.0	3.0	4.0	5.0	6.0	7.0				
Temperature (°Celsius)	2.5	2.3	2.2	2.2	2.2	2.1				
pH	6.77	6.45	6.19	6.01	5.80	5.66				
Field Conductivity (ms/cm)	0.037	0.037	0.036	0.036	0.037	0.037				
Turbidity (NTU)	336	422	340	280	257	206				
Dissolved Oxygen (mg/L)	2.75	3.13	3.24	3.17	3.19	2.86				
REDOX (mV)	-135	-125	-117	-110	-104	-99				

Observations Fuel Odor None Fuel Sheen None Other
 Water Level after Purging (feet BTOC) 6.98
 How Purge Water was Disposed of Activated carbon treatment

WELL SAMPLING

SAMPLING METHOD

Same as Purge Method
 Other

SAMPLING INFORMATION

Date 6/20/97 Time 1300, 1330, 1400
 Laboratory Commercial Testing and Engineering & MultiChem Analytical Services

SAMPLING DISTRIBUTION

Sample No	Sample Type			Analyses Requested									
	Project	QA	QC	602	8015M	8100M	PCB/Pest 8080	8290	Metals	8260	8270	AK101	AK102
97RMZ05WA	X						X		X	X	X	X	X
97RMZ06WA		X					X		X	X	X	X	X
97RMZ07WA			X				X		X	X	X	X	X

BTOC = Below top of casing gpm = Gallons per minute TD = Total depth of casing (feet BTOC)
 D = Diameter of boring (inches) ms/cm = Millisiemens per centimeter WL = Water level depth (feet (BTOC))
 d = Diameter of well casing (inches) NTU = Nephelometric turbidity units

W0453R/Approved By B.D.

Harding Lawson Associates

GROUNDWATER SAMPLING DATA

Project Name and No Cape Romanzof/35646 Well No CMW-6
 Sampled By Joe McElroy/Charlie Marshall Well Type Monitoring Well
 Date 06/19/97, 06/20/97 Well Material Polyvinyl Chloride

WELL PURGING

PURGE VOLUME

Well Volume $\left[\frac{15.06}{(TD)} - \frac{12.58}{(WL)} \right] \times \left(\frac{2}{(d)} \right)^2 \times 0.0408 = 0.4$ gallons

Number of Well Volumes to be Purged (# vols) 3 Purge Volume $\frac{3}{(\# \text{ vols})} \times \frac{0.40}{(\text{well volume})} = 1.2$ gallons

PURGE METHOD

Pump Type Submersible Centrifugal Diaphragm
Other - Type
 Bailer - Type Teflon-disposable

PURGE INTAKE

Depth (feet BTOC) Not applicable
 Screen Interval (feet BTOC) From 4.8 To 14.8

PURGE TIME

Total Elapsed Time 10 minutes

PURGE RATE

Initial gpm
 Final gpm
 Ave 0.8 gpm

ACTUAL PURGE VOLUME

8 gallons

FIELD PARAMETER MEASUREMENT

Date	6/19/97	6/19/97	6/19/97	6/19/97					
Time	1125	1427	1430	1435					
Purge Volume (gallons)	2.0	2.0	4.0	6.0					
Temperature (°Celsius)	0.8	0.7	0.6	0.6					
pH	6.49	6.39	6.23	6.2					
Field Conductivity (ms/cm)	0.039	0.027	0.026	0.026					
Turbidity (NTU)	+999	+999	+999	+999					
Dissolved Oxygen (mg/L)	11.72	11.84	11.92	11.63					
REDOX (mV)	114	-128	-122	-118					

Observations Fuel Odor None Fuel Sheen None Other
 Water Level after Purging (feet BTOC) 10.5
 How Purge Water was Disposed of Activated carbon treatment

WELL SAMPLING

SAMPLING METHOD

Same as Purge Method
 Other

SAMPLING INFORMATION

Date 6/20/97 Time 1200
 Laboratory Commercial Testing and Engineering

SAMPLING DISTRIBUTION

Sample No	Sample Type			Analyses Requested									
	Project	QA	QC	602	8015M	8100M	PCB/Pest 8080	8290	Metals	AK101	AK102	8260	8270
97RMZ03WA	X						X		X	X	X	X	X

BTOC = Below top of casing gpm = Gallons per minute TD = Total depth of casing (feet BTOC)
 D = Diameter of boring (inches) ms/cm = Millisiemens per centimeter WL = Water level depth (feet (BTOC))
 d = Diameter of well casing (inches) NTU = Nephelometric turbidity units

GROUNDWATER SAMPLING DATA

70 37

Project Name and No Cape Romanzof/35646 Well No CMW-7
 Sampled By Joe McElroy/Charlie Marshall Well Type Monitoring Well
 Date 06/19/97, 06/20/97 Well Material Polyvinyl Chloride

WELL PURGING

PURGE VOLUME

Well Volume $\left[\frac{14.17}{(TD)} - \frac{5.75}{(WL)} \right] \times \left(\frac{2}{(d)} \right)^2 \times 0.0408 = 1.4$ gallons

Number of Well Volumes to be Purged (# vols) 3 Purge Volume 3 x 1.4 = 4.2 gallons
 (# vols) (well volume)

PURGE METHOD

Pump Type Submersible Centrifugal Diaphragm
 Other - Type _____
 Bailor - Type Teflon-disposable

PURGE INTAKE

Depth (feet BTOC) Not applicable
 Screen Interval (feet BTOC) From 4.5 To 14.5

PURGE TIME

Total Elapsed Time Not applicable minutes

PURGE RATE

Initial _____ gpm
 Final _____ gpm
 Ave Not applicable gpm

ACTUAL PURGE VOLUME

4.5 gallons

FIELD PARAMETER MEASUREMENT

Date	6/19/97	6/19/97	6/19/97						
Time	1130	1440	1445						
Purge Volume (gallons)	2.0	3.0	4.5 (dry)						
Temperature (°Celsius)	0.3	0.2	0.2						
pH	6.15	5.97	6.16						
Field Conductivity (ms/cm)	0.125	0.160	0.169						
Turbidity (NTU)	708	+999	+999						
Dissolved Oxygen (mg/L)	7.56	8.41	9.60						
REDOX (mV)	109	-115	-117						

Observations Fuel Odor None Fuel Sheen None Other _____
 Water Level after Purging (feet BTOC) Dry
 How Purge Water was Disposed of Activated carbon, held pending results

WELL SAMPLING

SAMPLING METHOD

Same as Purge Method
 Other _____

SAMPLING INFORMATION

Date 6/20/97 Time 1230
 Laboratory Commercial Testing and Engineering

SAMPLING DISTRIBUTION

Sample No	Sample Type			Analyses Requested									
	Project	QA	QC	602	8015M	8100M	8080	8290	Metals	AK101	AK102	8260	8270
97RMZ04WA							X		X	X	X	X	X

BTOC = Below top of casing gpm = Gallons per minute TD = Total depth of casing (feet BTOC)
 D = Diameter of boring (inches) ms/cm = Millisiemens per centimeter WL = Water level depth (feet (BTOC))
 d = Diameter of well casing (inches) NTU = Nephelometric turbidity units

W0453R/Approved By BDL

Harding Lawson Associates

TAB

Appendix B

APPENDIX B
ANALYTICAL LABORATORY REPORTS

Cape Romanzof LRRS Landfill 2 (LF03) Closure Monitoring
 Contract DACA85-94-D-0008, DO 0015
 Sample Record Log

Sample Number	Sample Location	Date	Time	QA/QC			LABORATORY ANALYSIS						SHIPPING INFO		
				P	Q	QC	AK 102 (DRO)	AK 101 (GRO)	8080 (PCB/Pest)	8270 (SVOCs)	8260 (VOCs)	TAL Metals	Grain size	Lab	Cooler #
97RMZ01WA	CMW-1	6/20/97	1100	X			X	X	X	X	X	X	X	CT&E	97RMZ02
97RMZ02WA	CMW-4	6/20/97	1130	X			X	X	X	X	X	X	X	CT&E	97RMZ02
97RMZ03WA	CMW-6	6/20/97	1200	X			X	X	X	X	X	X	X	CT&E	97RMZ02
97RMZ04WA	CMW-7	6/20/97	1230	X			X	X	X	X	X	X	X	CT&E	97RMZ04
97RMZ05WA	CMW-5	6/20/97	1300	X			X	X	X	X	X	X	X	CT&E	97RMZ03
97RMZ06WA	CMW-5	6/20/97	1330		X		X	X	X	X	X	X	X	MAS	97RMZ07
97RMZ07WA	CMW-5	6/20/97	1400			X	X	X	X	X	X	X	X	CT&E	97RMZ03
97RMZ01WA	CMW-1	6/20/97	1100	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ02WA	CMW-4	6/20/97	1130	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ03WA	CMW-6	6/20/97	1200	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ04WA	CMW-7	6/20/97	1230	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ05WA	CMW-5	6/20/97	1300	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ06WA	CMW-5	6/20/97	1330		X		X	X	X	X	X	X	X	MAS	97RMZ07
97RMZ01WA	CMW-5	6/20/97	1330			X	X	X	X	X	X	X	X	MAS	97RMZ07
97RMZ07WA	CMW-5	6/20/97	1400			X	X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ08WA	TRIP	6/20/97	1430	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ09WA	TRIP	6/20/97	1500			X	X	X	X	X	X	X	X	MAS	97RMZ07
97RMZ01SW	SW3	6/20/97	1530	X			X	X	X	X	X	X	X	CT&E	97RMZ04
97RMZ02SW	SW1	6/20/97	1600	X			X	X	X	X	X	X	X	CT&E	97RMZ04
97RMZ03SW	SW2	6/20/97	1630	X			X	X	X	X	X	X	X	CT&E	97RMZ05
97RMZ04SW	SW2	6/20/97	1700		X		X	X	X	X	X	X	X	MAS	97RMZ06
97RMZ05SW	SW2	6/20/97	1730			X	X	X	X	X	X	X	X	CT&E	97RMZ05
97RMZ01SW	SW3	6/20/97	1530	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ02SW	SW1	6/20/97	1600	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ03SW	SW2	6/20/97	1630	X			X	X	X	X	X	X	X	CT&E	97RMZ01
97RMZ04SW	SW2	6/20/97	1700		X		X	X	X	X	X	X	X	MAS	97RMZ07
97RMZ05SW	SW2	6/20/97	1730			X	X	X	X	X	X	X	X	CT&E	97RMZ01

Cape Romanzof LRRS Landfill 2 (LF03) Closure Monitoring
 Contract DACA85-94-D-0008, DO 0015
 Sample Record Log

Sample Number	Sample Location	Date	Time	QA/QC			LABORATORY ANALYSIS							SHIPPING INFO		
				DR	QA	QC	AK 102 (DRO)	AK 101 (GRO)	8080 (PCB/Pest)	8270 (SVOCs)	8260 (VOCs)	TAL Metals*	Grain size	Lab	Cooler #	
97RMZ01SD	SD3	6/20/97	1515	X			X	X	X	X	X	X	X	X	CT&E	97RMZ08
97RMZ02SD	SD1	6/20/97	1545	X			X	X	X	X	X	X	X	X	CT&E	97RMZ08
97RMZ03SD	SD2	6/20/97	1615	X			X	X	X	X	X	X	X	X	CT&E	97RMZ08
97RMZ04SD	SD2	6/20/97	1645			X	X	X	X	X	X	X	X	MAS	97RMZ06	
97RMZ05SD	SD2	6/20/97	1715			X	X	X	X	X	X	X	X	CT&E	97RMZ08	
97RMZ06SD	TRIP	6/20/97	1745	X			X							CT&E	97RMZ08	

Commercial Testing & Engineering Company, Environmental Services

- CT&E Commercial Testing & Engineering Company, Environmental Services
- DRO Diesel-range organics
- GRO Gasoline-range organics
- MAS Multichem Analytical Services
- PR Project
- PCBs Polychlorinated biphenyls
- QA Quality assurance
- QC Quality control
- SVOCs Semivolatile organic compounds
- TAL Target analyte list
- VOCs Volatile organic compounds

Case Narrativ

70 42

Customer: HARLAWP

Harding Lawson & Assoc

Project: 973292

35646 C. Romanzof Landfill

973292001 PS

DRO - Unknown hydrocarbon with several peaks.

973292002 PS

DRO - Pattern consistent with highly weathered middle distillate.

8081PCB- Detection limit raised 15X due to matrix interference.

8081Pesticide - Sample detection limit raised 10X due to matrix interference

973292003 PS

DRO - Surrogate recovery below controls - possible low bias on results (no duplicate sample for re-extraction)

98669 BS1

8270 - Hexachloroethane was outside control limits in LCS.

98670 BSD

8270 - Hexachloroethane and pyrene were outside control limits in LCSD.

99883 MB

DRO - Surrogate recovery below controls.



Laboratory Analysis Report

July 23, 1997

P. Hoffman
Harding Lawson & Assoc
601 E 57th Place
Anchorage, AK 99518

Client Name: Harding Lawson & Assoc
Project ID: 35646 C. Romanzof Landfill [973292]
Printed: July 23, 1997

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

- U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
B - Indicates the analyte is found in the blank associated with the sample.
* - The analyte has exceeded allowable limits.
GT - Greater Than
D - Secondary Dilution
LT - Less Than
! - Surrogate out of range



CT&E Ref.# 973292001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Sharon Paton*

Sample Remarks:
 DRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.0892	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Cobalt	0.0179	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Copper	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Vanadium	0.0202	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Zinc	0.0483	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/24/97	06/28/97	KGF
Arsenic	0.00568 U	0.00568	mg/L	SW846-7060		06/24/97	06/27/97	WTA
Beryllium	0.000568 U	0.000568	mg/L	SW846-7091		06/24/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/24/97	06/26/97	KGF
Chromium	0.0190	0.00568	mg/L	SW846-7191		06/24/97	06/26/97	KGF
Lead	0.00568 U	0.00568	mg/L	SW846-7421		06/24/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/24/97	06/26/97	WTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/24/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/24/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.179	0.102	mg/L	AK102 DRO		06/26/97	06/28/97	WAA
Surrogates								
5a Androstane <sur>	79.4		%	AK102 DRO	(50-150)	06/26/97	06/28/97	



CT&E Ref.# 973292001
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Client PO#
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:00
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 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.000100 U	0.000100	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1221	0.000100 U	0.000100	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1232	0.000100 U	0.000100	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1242	0.000100 U	0.000100	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1248	0.000100 U	0.000100	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1254	0.000100 U	0.000100	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1260	0.000100 U	0.000100	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	79.2		%	SW846-8080	(59-122)	06/25/97	06/27/97	
Tetrachloro-m-xylene <Surr>	47.3		%	SW846-8080	(10-87)	06/25/97	06/27/97	
SW8080 Pesticides								
Chlordane	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
gamma-BHC (Lindane)	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB



CT&E Ref.# 973292001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
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 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	0.0100 U	0.0100	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	1.00 U	1.00	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	76.7		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	50.6		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973292001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973292001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	70.3		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	22.6		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	68.7		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	47.7		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	30.1		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	49.3		%	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973292002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Sharon Patten*

Sample Remarks:
 DRO - Pattern consistent with highly weathered middle distillate.
 8081PCB- Detection limit raised 15X due to matrix interference.
 8081Pesticide - Sample detection limit raised 10X due to matrix interference.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.213	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Cobalt	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Copper	0.0210	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Vanadium	0.0427	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Zinc	0.113	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/24/97	06/28/97	KGF
Arsenic	0.00795	0.00568	mg/L	SW846-7060		06/24/97	06/27/97	MTA
Beryllium	0.000659	0.000568	mg/L	SW846-7091		06/24/97	06/26/97	KGF
Cadmium	0.00125	0.000568	mg/L	SW846-7131		06/24/97	06/26/97	KGF
Chromium	0.0323	0.00568	mg/L	SW846-7191		06/24/97	06/26/97	KGF
Lead	0.0493	0.00568	mg/L	SW846-7421		06/24/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/24/97	06/26/97	MTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/24/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/24/97	06/28/97	KGF
AK102								
Diesel Range Organics	2.13	0.0990	mg/L	AK102 DRO		06/26/97	06/28/97	WAA
Surrogates								
5 α Androstane <surr>	78.2		%	AK102 DRO	(50-150)	06/26/97	06/28/97	



CT&E Ref.# 973292002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.00147 U	0.00147	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1221	0.00147 U	0.00147	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1232	0.00147 U	0.00147	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1242	0.00147 U	0.00147	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1248	0.00147 U	0.00147	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1254	0.00147 U	0.00147	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1260	0.00147 U	0.00147	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	78.8		%	SW846-8080	(59-122)	06/25/97	06/27/97	
Tetrachloro-m-xylene <Surr>	44.5		%	SW846-8080	(10-87)	06/25/97	06/27/97	
SW8080 Pesticides								
Chlordane	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
gamma-BHC (Lindane)	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB



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Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	0.0980 U	0.0980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	9.80 U	9.80	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	46		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	22		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973292002
 Client Name Harding Lawson & Assoc
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Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:30
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 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973292002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 11:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(b)Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(k)fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM

Surrogates

2,4,6-Tribromophenol <Surr>	81.9	%	SW846-8270	(10-123)	06/25/97	07/20/97
Phenol-d6 <Surr>	21.6	%	SW846-8270	(10-94)	06/25/97	07/20/97
Terphenyl-d14 <Surr>	63.7	%	SW846-8270	(33-141)	06/25/97	07/20/97
2-Fluorobiphenyl <Surr>	51.5	%	SW846-8270	(43-116)	06/25/97	07/20/97
2-Fluorophenol <Surr>	29.4	%	SW846-8270	(21-100)	06/25/97	07/20/97
Nitrobenzene-d5 <Surr>	46	%	SW846-8270	(35-114)	06/25/97	07/20/97



CT&E Ref.# 973292003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 12:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Sharon Preston*

Sample Remarks:

DRO - Surrogate recovery below controls - possible low bias on results (no duplicate sample for re-extraction).

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.432	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	0.0184	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	0.0431	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	0.0360	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	0.0891	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	0.115	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.0132	0.00568	mg/L	SW846-7060		06/25/97	06/27/97	MTA
Beryllium	0.00172	0.000568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.0749	0.00568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.0153	0.00568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/25/97	06/26/97	MTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.0980 U	0.0980	mg/L	AK102 DRO		06/26/97	06/28/97	WAA
Surrogates								
5a Androstane <surrg>	19.4		%	AK102 DRO	(50-150)	06/26/97	06/28/97	



CT&E Ref.# 973292003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 12:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1221	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1232	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1242	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1248	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1254	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1260	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	59.4		%	SW846-8080	(59-122)	06/25/97	06/27/97	
Tetrachloro-m-xylene <Surr>	41.5		%	SW846-8080	(10-87)	06/25/97	06/27/97	
SW8080 Pesticides								
Chlordane	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
gamma-BHC (Lindane)	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB



CT&E Ref.# 973292003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 12:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	0.990 U	0.990	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	64.9		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	44.4		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973292003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 12:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973292003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 12:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0051 U	0.0051	mg/L	SW846-8270	(10-123)	06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0051 U	0.0051	mg/L	SW846-8270	(10-94)	06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0051 U	0.0051	mg/L	SW846-8270	(33-141)	06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270	(43-116)	06/25/97	07/20/97	SVM
Phenanthrene	0.0051 U	0.0051	mg/L	SW846-8270	(21-100)	06/25/97	07/20/97	SVM
Anthracene	0.0051 U	0.0051	mg/L	SW846-8270	(35-114)	06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0051 U	0.0051	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	55.2		X	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	18.9		X	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	58.2		X	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	41.6		X	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	25.6		X	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	41.9		X	SW846-8270	(35-114)	06/25/97	07/20/97	

Cas Narrative

Customer: HARLAWP

Harding Lawson & Assoc

Project: 973294

35646 C. Romanzof Landfill

973294001 PS

DRO - Pattern consistent with highly weathered middle distillate

8081PCB- Detection limit raised 5X due to matrix interference

8081Pesticides- Sample detection limit raised 2X due to matrix interference.

973294002 PS

DRO - Pattern consistent with highly weathered middle distillate

8081PCB- Detection limit raised 5X due to matrix interference

8081Pesticides - Sample detection limit raised 2X due to matrix interference.

973294003 MS

8270 - Hexachloroethane recovery was out of control limits.

973294004 MS

8270 - Hexachloroethane recovery was out of control limits.

98669 BS

8270 - Hexachloroethane recovery was out of control limits.

99670 BD

8270 - Hexachloroethane and pyrene recoveries were out of control limits

99883 MB

DRO - Surrogate recovery below controls.



CT&E Environmental Services Inc.

Laboratory Division

70 60

Laboratory Analysis Report

RECEIVED

JUL 25 1997

HARDING LAWSON ASSOCIATES

July 23, 1997

P. Hoffman
Harding Lawson & Assoc
601 E 57th Place
Anchorage, AK 99518

Client Name: Harding Lawson & Assoc
Project ID: 35646 C. Romanzof Landfill [973294]
Printed: July 23, 1997

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

- U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
B - Indicates the analyte is found in the blank associated with the sample.
* - The analyte has exceeded allowable limits.
GT - Greater Than
D - Secondary Dilution
LT - Less Than
! - Surrogate out of range



70 61

CT&E Environmental Services Inc.

CT&E Ref.# 973294001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 13:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Sharon Patten*

Sample Remarks:

DRO - Pattern consistent with highly weathered middle distillate.
 8081PCB- Detection limit raised 5X due to matrix interference.
 8081Pesticides- Sample detection limit raised 2X due to matrix interference.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.0315	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	0.0227 U	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.00568 U	0.00568	mg/L	SW846-7060		06/25/97	06/27/97	MTA
Beryllium	0.000568 U	0.000568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.00568 U	0.00568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.00568 U	0.00568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/25/97	06/26/97	MTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.399	0.100	mg/L	AK102 DRO		06/26/97	06/28/97	MAA
Surrogates								
5a Androstane <sur>	75		%	AK102 DRO	(50-150)	06/26/97	06/28/97	



CT&E Ref.# 973294001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 13:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1221	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1232	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1242	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1248	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1254	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1260	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	77		%	SW846-8080	(59-122)	06/25/97	06/27/97	
Tetrachloro-m-xylene <Surr>	52.5		%	SW846-8080	(10-87)	06/25/97	06/27/97	
SW8080 Pesticides								
Chlordane	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
gamma-BHC (Lindane)	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB



CT&E Ref.# 973294001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05WA
 Matrix Water (Surface, Eff., Ground)
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 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
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 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	0.980 U	0.980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	75.2		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	53.7		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 13:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 13:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(b)Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(k)fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	74.2		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	21.5		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	71.3		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	51.9		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	29.7		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	45.6		%	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973294002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Shane Proton*

Sample Remarks:

DRO - Pattern consistent with highly weathered middle distillate.
 8081PCB- Detection limit raised 5X due to matrix interference.
 8081Pesticides - Sample detection limit raised 2X due to matrix interference.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.0291	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	0.0227 U	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.00568 U	0.00568	mg/L	SW846-7060		06/25/97	06/27/97	WTA
Beryllium	0.000568 U	0.000568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.00568 U	0.00568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.00568 U	0.00568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/25/97	06/26/97	WTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.415	0.100	mg/L	AK102 DRO		06/26/97	06/28/97	WAA
Surrogates								
5a Androstane <surr>	77.9		%	AK102 DRO	(50-150)	06/26/97	06/28/97	



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 Client Sample ID 97RMZ07WA
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 Ordered By
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Client PO#
 Printed Date/Time WK Auth. 30
 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
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 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1221	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1232	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1242	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1248	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1254	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Aroclor-1260	0.000490 U	0.000490	mg/L	SW846-8080		06/25/97	06/27/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	77.6		%	SW846-8080	(59-122)	06/25/97	06/27/97	
Tetrachloro-m-xylene <Surr>	54		%	SW846-8080	(10-87)	06/25/97	06/27/97	
SW8080 Pesticides								
Chlordane	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
gamma-BHC (Lindane)	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	0.980 U	0.980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	79.6		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	56.8		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(b)Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(k)fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	68		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	16.4		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	66.1		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	40.6		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	23.3		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	37.1		%	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973294003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Sharon Preston*

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	1.23	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	1.13	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	1.14	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	1.13	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	1.17	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	1.10	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.347	0.0568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.342	0.0568	mg/L	SW846-7060		06/25/97	06/27/97	WTA
Beryllium	0.0332	0.00568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.0306	0.00568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.651	0.0568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.339	0.0568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.340	0.0568	mg/L	SW846-7740		06/25/97	06/26/97	WTA
Silver	0.0568	0.0114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.175	0.0568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	6.18	0.100	mg/L	AK102 DRO		06/26/97	06/28/97	WAA
Surrogates								
5a Androstane <sur>	98.1		%	AK102 DRO	(50-150)	06/26/97	06/28/97	
SW8080 Pesticides								
Chlordane	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	0.0833	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	0.156	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB



CT&E Ref.# 973294003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
gamma-BHC (Lindane)	0.111	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	0.0608	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	0.101	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	0.110	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	0.106	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	0.0980	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	0.100	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	0.104	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	0.113	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	0.0971	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDD	0.121	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	0.0873	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	0.0941	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	0.108	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	0.0931	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	0.108	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	0.980 U	0.980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	75.1		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	59.4		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0194	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0162	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0460	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.0225	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0448	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.0430	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294003
 Client Name Harding Lawson & Assoc
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 Client Sample ID 97RMZ07WA MS
 Matrix Water (Surface, Eff., Ground)
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Client PO#
 Printed Date/Time 07/23/97 11:59
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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
1,3-Dichlorobenzene	0.0312	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0333	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0374	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0357	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0434	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0461	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0428	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0590	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0284	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0448	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Isophorone	0.0560	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.0478	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0474	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.0167 J	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0494	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0408	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0432	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0481	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0386	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0649	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0491	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0505	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0313	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.0696	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0670	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0509	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0804	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0855	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0514	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0810	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0731	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Acenaphthene	0.0576	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.0973	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.0321	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0682	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0829	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0862	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0715	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0703	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0833	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.0953	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitrosodiphenylamine	0.0849	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0850	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0788	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.0959	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0808	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0799	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0917	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0818	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0881	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0747	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.105	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0884	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0933	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0860	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.104	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.107	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0935	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0833	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0859	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.103	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.100	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294003
Client Name Harding Lawson & Assoc
Project Name/# 35646 C. Romanzof Landfill
Client Sample ID 97RMZ07WA MS
Matrix Water (Surface, Eff., Ground)
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PWSID

Client PO# WK Auth. 30
Printed Date/Time 07/23/97 11:59
Collected Date/Time 06/20/97 14:00
Received Date/Time 06/23/97 10:00
Technical Director: Stephen C. Ede

<u>Parameter</u>	<u>Results</u>	<u>PQL</u>	<u>Units</u>	<u>Method</u>	<u>Allowable Limits</u>	<u>Prep Date</u>	<u>Analysis Date</u>	<u>Init</u>
Surrogates								
Benzo[g,h,i]perylene	0.0956	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	86.3		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	20.7		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	62.7		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	50.5		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	27.2		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	44.3		%	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973294004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Shane Pester*

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	1.21	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	1.13	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	1.13	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	1.13	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	1.17	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	1.10	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.357	0.0568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.349	0.0568	mg/L	SW846-7060		06/25/97	06/27/97	WTA
Beryllium	0.0333	0.00568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.0307	0.00568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.656	0.0568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.333	0.0568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.333	0.0568	mg/L	SW846-7740		06/25/97	06/26/97	WTA
Silver	0.0569	0.0114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.181	0.0568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	6.28	0.100	mg/L	AK102 DR0		06/26/97	06/28/97	WAA
Surrogates								
5a Androstane <surrg>	90.5		%	AK102 DR0	(50-150)	06/26/97	06/28/97	
SW8080 Pesticides								
Chlordane	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	0.0824	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	0.122	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB



CT&E Ref.# 973294004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
gamma-BHC (Lindane)	0.107	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	0.0500	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	0.0971	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	0.109	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	0.0873	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	0.0814	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	0.0863	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	0.0941	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	0.110	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	0.0902	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDD	0.0980	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	0.0804	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	0.0843	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	0.0980	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	0.0980	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	0.0980	0.00980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	0.980 U	0.980	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	81.6		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	61.5		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0230	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0198	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0515	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.0249	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0522	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.0495	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
1,3-Dichlorobenzene	0.0383	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0388	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0421	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0425	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0496	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0412	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0477	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0682	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0369	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0578	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Isophorone	0.0650	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.0566	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0562	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.0190 J	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0624	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0507	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0529	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0551	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0502	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0668	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0592	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0589	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0435	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.0794	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0764	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0621	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0910	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0868	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0593	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0834	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0754	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Acenaphthene	0.0641	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.0986	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.0323	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0742	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0829	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0890	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0772	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0728	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0855	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.0986	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitrosodiphenylamine	0.0851	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0904	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0812	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.0999	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0847	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0807	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0939	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0848	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0881	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0776	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.104	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0924	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0960	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0958	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.107	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.105	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0921	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0872	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0866	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.113	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.108	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973294004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 11:59
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Benzo[g,h,i]perylene	0.105	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	88.1		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	23.2		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	62.4		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	61.2		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	30		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	52.3		%	SW846-8270	(35-114)	06/25/97	07/20/97	

soils

97.3294

35646

COOPER # 97RM203

Chain of Custody FORM
 Samplers: J. McElroy
 C. MARSHALL

Q1# 5552

Lab: CTE

Project Number: 97.3294
 Name/Location: C. ROYAL FORD LAUREL
 Project Manager: P. HOEFEMAN

Recorder: P. HOEFEMAN
 (Signature Required)

Yr	WK	Seq	SOURCE CODE	MATRIX	#CONTAINERS & PRES RV	Unpres H ₂ SO ₄ HNO ₃ /L-HCL /L-AMBER /L-POLY	DATE	Yr	Mo	Dy	Time	SAMPLE NUMBER OR LAB NUMBER	
												Yr	WK	Seq
X							9706201300					97RM205WA ①	
X							9706201400					97RM207WA ②	
X													

STATION-DESCRIPTION/NOTE	SAMPLE #
	97RM205WA ①
	97RM207WA ②

ANALYSIS REQUESTED	Yr	WK	Seq
EPA 601/8010			
EPA 602/8020			
EPA 624/8240			
EPA 625/8270			
ICP METALS			
EPA 8015M/TPH			
X AK102 (DR)	X		
X B270 (SVOCs)	X		
X B080 (PCB/PEST)	X		
X TAL METALS	X		

LAB NUMBER	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
				-IRPIMS -TEMP BLANK -DELIVERABLES -INCLUDED * ADDITIONAL JARS PROVIDED FOR MS MSD ANALYSIS

CHAIN OF CUSTODY RECORD			
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	DATE/TIME
<i>C. Royall Ford</i>	<i>Mica Stenbom</i>	6/23/03	1003
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED FOR LAB BY (Signature)	DATE/TIME	DATE/TIME



Laboratory Analysis Report

RECEIVED

JUL 18 1997

HARDING LAWSON ASSOCIATES

July 16, 1997

P. Hoffman
Harding Lawson & Assoc
601 E 57th Place
Anchorage, AK 99518

Client Name: Harding Lawson & Assoc
Project ID: 35646 C. Romanzof Landfill [973288]
Printed: July 16, 1997

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

- U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
B - Indicates the analyte is found in the blank associated with the sample.
* - The analyte has exceeded allowable limits.
GT - Greater Than
D - Secondary Dilution
LT - Less Than
! - Surrogate out of range



CT&E Ref.# 973288001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 11:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Stephen C Ede*

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.0111	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 11:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	94.9		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	98.5		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	96.3		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	88.2		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	88.9		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 11:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 11:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	93.5		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	97.4		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	96.5		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	82		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	89.5		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 12:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 12:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	91.4		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	97.1		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	95.3		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	81.3		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	90.2		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ04WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 12:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Stephen C Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ04WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 12:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	92.5		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	95.3		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	94.4		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	87		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	89.1		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288005
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 13:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Stephen C Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288005
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 13:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	93		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	95.2		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	97.2		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	84.3		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	88.4		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288006
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Stephen C Ede*

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288006
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ07WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 14:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	95.4		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	96.9		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	95		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	79.6		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	89.3		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288007
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ08WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 14:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Stephen C Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288007
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ08WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth 30
 Printed Date/Time 07/15/97 20:17
 Collected Date/Time 06/20/97 14:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	95.9		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	98.1		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	95.3		%	SW846 8260		07/03/97	07/03/97	



CT&E Ref.# 973288008
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ015W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:08
 Collected Date/Time 06/20/97 15:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Stephen C Ede*

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
4-Methyl-2-pentanone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288008
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ015W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/15/97 20:08
 Collected Date/Time 06/20/97 15:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans 1,4-Dichloro-2-Butene	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	95.3		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	95.7		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	95.9		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	78.6		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	90.7		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288009
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ025W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/16/97 09:58
 Collected Date/Time 06/20/97 16:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Stephen C Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
4-Methyl-2-pentanone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288009
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ025W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/16/97 09:58
 Collected Date/Time 06/20/97 16:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans 1,4-Dichloro-2-Butene	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	95.2		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	95.3		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	93.1		%	SW846 8260		07/03/97	07/03/97	
Gasoline Range Organics								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	81.9		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	88.3		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288010
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ035W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/16/97 09:57
 Collected Date/Time 06/20/97 16:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
4-Methyl-2-pentanone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288010
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ035W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/16/97 09:57
 Collected Date/Time 06/20/97 16:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans 1,4-Dichloro-2-Butene	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	95.2		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	95.5		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	93.1		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	81.6		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	87.9		%	AK101 GRO		06/25/97	06/25/97	



CT&E Ref.# 973288011
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ055W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/16/97 09:57
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Stephen C Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,1-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2,2-Tetrachloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1,2-Trichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,1-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2,3-Trichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromo-3-chloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dibromoethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,2-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,3-Dichloropropane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
1,4-Dichlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
4-Methyl-2-pentanone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Acetone	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Benzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromodichloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromoform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Bromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Carbon tetrachloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chlorobenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloroform	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Chloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromochloromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dibromomethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Dichlorodifluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM



CT&E Ref.# 973288011
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ055W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/16/97 09:57
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10.00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Ethylbenzene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Methylene chloride	0.0050 U	0.0050	mg/L	SW846 8260		07/03/97	07/03/97	SPM
P & M -Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Styrene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Tetrachloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Toluene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Trichlorofluoromethane	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Vinyl chloride	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
cis-1,3-Dichloropropene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
o-Xylene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans 1,4-Dichloro-2-Butene	0.010 U	0.010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
trans-1,2-Dichloroethene	0.0010 U	0.0010	mg/L	SW846 8260		07/03/97	07/03/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	92.8		%	SW846 8260		07/03/97	07/03/97	
Toluene-d8 <surr>	97.5		%	SW846 8260		07/03/97	07/03/97	
4-Bromofluorobenzene <Surr>	96		%	SW846 8260		07/03/97	07/03/97	
-								
Gasoline Range Organics	0.0400 U	0.0400	mg/L	AK101 GRO		06/25/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	74.9		%	AK101 GRO	(50-150)	06/25/97	06/25/97	
1,4-Difluorobenzene <Surr>	84.5		%	AK101 GRO		06/25/97	06/25/97	

97.3288

COLE # 97RMZ01

CHAIN OF CUSTODY FORM

Project Number: 35646

Name/Location: C. EMMERSON LANDFILL

Project Manager: P. WEFEMAN

Recorder: [Signature]

Samplers: J. McElroy, C. MERSHALL

Lab: Q1 + COSC, CTE

LAB NUMBER	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS	DATE	MATRIX		#CONTAINERS & PRESERV.	SAMPLE NUMBER OR LAB NUMBER	
						Water	Sediment		Yr	Seq
					970620111000					
					970620111300					
					970620120000					
					970620123000					
					970620130000					
					970620143000					
					970620153000					
					970620160000					
					970620163000					
					970620173000					

STATION DESCRIPTION / NOTES	SAMPLE #
	97RME01WA (1)
	97RME02WA (2)
	97RME03WA (3)
	97RME04WA (4)
	97RME05WA (5)
	97RME07WA (6)
	97RME08WA (7)
	97RME015W (8)
	97RME025W (9)
	97RME035W (10)
	97RME055W (11)

ANALYSIS REQUESTED
EPA 601/8010
EPA 602/8020
EPA 624/8240
EPA 625/8270
ICP METALS
EPA 8015M/TPH
AK107 (AR)
B260 (VOCs)

OF PROJECT CHAIN OF CUSTODY RECORD 0.70

RECEIVED BY: (Signature) Marka Sealmon DATE/TIME 6/23 1000

RECEIVED BY: (Signature) _____ DATE/TIME _____

RECEIVED BY: (Signature) _____ DATE/TIME _____

RECEIVED BY: (Signature) _____ DATE/TIME _____

RECEIVED FOR LAB BY: (Signature) _____ DATE/TIME _____

METHOD OF SHIPMENT: ARTIC CIRCLE / NAC / WA

MISCELLANEOUS

- IRONS

DELIVERABLES

- TEMP. BLANK

INCLUDED

Cas Narrativ**Customer: HARLAWP****Harding Lawson & Assoc****Project: 973290****35646 C. Romanzof Landfill****973290001 PS**

8081 Pesticides - Sample detection limit raised 5X due to matrix interference

8270 - Several surrogates fail QC recovery goals. Duplicate samples were not submitted for re-extraction

973290003 PS

DRO - Unknown hydrocarbon with several peaks

98669 BS

8270 - Hexachloroethane was outside control limits

98670 BD

8270 - Hexachloroethane and pyrene were outside control limits.

99883 MB

DRO - Surrogate recovery below controls.



CT&E Environmental Services Inc.

Laboratory Division

Laboratory Analysis Report

July 22, 1997

P. Hoffman
Harding Lawson & Assoc
601 E 57th Place
Anchorage, AK 99518

Client Name	Harding Lawson & Assoc
Project ID	35646 C. Romanzof Landfill [973290]
Printed	July 22, 1997

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

- U - Indicates the compound was analyzed for but not detected.
- J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
- B - Indicates the analyte is found in the blank associated with the sample.
- * - The analyte has exceeded allowable limits.
- GT - Greater Than
- D - Secondary Dilution
- LT - Less Than
- ! - Surrogate out of range



CT&E Ref.# 973290001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 10:40
 Collected Date/Time 06/20/97 15:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Stephen C Ede

Sample Remarks:

8081Pesticides - Sample detection limit raised 5X due to matrix interference.
 8270 - Several surrogates fail QC recovery goals. Duplicate samples were not submitted for re-extraction.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.0205	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Cobalt	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Copper	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Vanadium	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Zinc	0.0227 U	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/24/97	06/28/97	KGF
Arsenic	0.00568 U	0.00568	mg/L	SW846-7060		06/24/97	06/27/97	MTA
Beryllium	0.000568 U	0.000568	mg/L	SW846-7091		06/24/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/24/97	06/26/97	KGF
Chromium	0.00568 U	0.00568	mg/L	SW846-7191		06/24/97	06/26/97	KGF
Lead	0.00568 U	0.00568	mg/L	SW846-7421		06/24/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/24/97	06/26/97	MTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/24/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/24/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.0990 U	0.0990	mg/L	AK102 DRO		06/26/97	06/28/97	MAA
Surrogates								
5a Androstane <surrg>	63.9		%	AK102 DRO	(50-150)	06/26/97	06/28/97	



CT&E Ref.# 973290001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 10:40
 Collected Date/Time 06/20/97 15:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1221	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1232	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1242	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1248	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1254	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1260	0.000209	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	72.5		%	SW846-8080	(59-122)	06/25/97	06/30/97	
Tetrachloro-m-xylene <Surr>	54.7		%	SW846-8080	(10-87)	06/25/97	06/30/97	
SW8080 Pesticides								
Chlordane	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
alpha-BHC	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
beta-BHC	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
gamma-BHC (Lindane)	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
delta-BHC	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Aldrin	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor epoxide	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan I	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDE	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Dieldrin	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan II	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB



CT&E Ref.# 973290001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
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Client PO# WK Auth. 30
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 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin aldehyde	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDT	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan sulfate	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin ketone	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Methoxychlor	0.0490 U	0.0490	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Toxaphene	4.90 U	4.90	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	82.5		%	SW846 8080	(59-122)	06/25/97	07/09/97	
Tetrachloro-m-xylene <Surr>	59.5		%	SW846 8080	(10-87)	06/25/97	07/09/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.0098 U	0.0098	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.0098 U	0.0098	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973290001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 10:40
 Collected Date/Time 06/20/97 15:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.0098 U	0.0098	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.0098 U	0.0098	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.0098 U	0.0098	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.0098 U	0.0098	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973290001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 10:40
 Collected Date/Time 06/20/97 15:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
DI-n-butylphthalate	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.0098 U	0.0098	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0049 U	0.0049	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	48		X	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	9.3		X	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	71.6		X	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	31.9		X	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	6.7		X	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	23.2		X	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973290002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanof Landfill
 Client Sample ID 97RMZ02SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 16:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Cobalt	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Copper	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Vanadium	0.0114 U	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Zinc	0.0227 U	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/24/97	06/28/97	KGF
Arsenic	0.00568 U	0.00568	mg/L	SW846-7060		06/24/97	06/27/97	MTA
Beryllium	0.000568 U	0.000568	mg/L	SW846-7091		06/24/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/24/97	06/26/97	KGF
Chromium	0.00568 U	0.00568	mg/L	SW846-7191		06/24/97	06/26/97	KGF
Lead	0.00568 U	0.00568	mg/L	SW846-7421		06/24/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/24/97	06/26/97	MTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/24/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/24/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.0980 U	0.0980	mg/L	AK102 DRO		06/26/97	06/28/97	MAA
Surrogates								
5 α Androstane <surr>	83.3		%	AK102 DRO	(50-150)	06/26/97	06/28/97	
PCB's by GC ECD								
Aroclor-1016	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1221	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1232	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/30/97	LZ



CT&E Ref.# 973290002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 16:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Aroclor-1242	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1248	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1254	0.0000990 U	0.0000990	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1260	0.000147	0.0000990	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	88.3		%	SW846-8080	(59-122)	06/25/97	06/30/97	
Tetrachloro-m-xylene <Surr>	59.6		%	SW846-8080	(10-87)	06/25/97	06/30/97	
SW8080 Pesticides								
Chlordane	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
alpha-BHC	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
beta-BHC	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
gamma-BHC (Lindane)	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
delta-BHC	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Aldrin	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor epoxide	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan I	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDE	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Dieldrin	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan II	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDD	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin aldehyde	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDT	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan sulfate	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin ketone	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Methoxychlor	0.00990 U	0.00990	ug/L	SW846 8080		06/25/97	07/09/97	JLB



CT&E Ref.# 973290002
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 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 16:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Toxaphene	0.990 U	0.990	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	90.7		%	SW846 8080		06/25/97	07/09/97	
Tetrachloro-m-xylene <Surr>	64		%	SW846 8080		06/25/97	07/09/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Isophorone	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973290002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 16:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Naphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitrosodiphenylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM

CT&E Ref.# 973290002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ02SW
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 16:00
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Di-n-butylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	66		X	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	19.7		X	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	67.9		X	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	46.2		X	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	27.7		X	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	45		X	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973290003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ04WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 12:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Stephen C Ede*

Sample Remarks:
 DRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.494	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Cobalt	0.0328	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Copper	0.0358	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Nickel	0.0444	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Vanadium	0.0958	0.0114	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Zinc	0.104	0.0227	mg/L	SW846-6010		06/24/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/24/97	06/28/97	KGF
Arsenic	0.0140	0.00568	mg/L	SW846-7060		06/24/97	06/27/97	WTA
Beryllium	0.00168	0.000568	mg/L	SW846-7091		06/24/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/24/97	06/26/97	KGF
Chromium	0.0853	0.00568	mg/L	SW846-7191		06/24/97	06/26/97	KGF
Lead	0.0243	0.00568	mg/L	SW846-7421		06/24/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/24/97	06/26/97	WTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/24/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/24/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.125	0.100	mg/L	AK102 DRO		06/26/97	06/28/97	WAA
Surrogates								
5d Androstane <surr>	71.5		%	AK102 DRO	(50-150)	06/26/97	06/28/97	



CT&E Ref.# 973290003
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Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1221	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1232	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1242	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1248	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1254	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1260	0.0000980 U	0.0000980	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	48.9		%	SW846-8080	(59-122)	06/25/97	06/30/97	
Tetrachloro-m-xylene <Surr>	54.9		%	SW846-8080	(10-87)	06/25/97	06/30/97	
SW8080 Pesticides								
Chlordane	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
alpha-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
beta-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
gamma-BHC (Lindane)	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
delta-BHC	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Aldrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor epoxide	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan I	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDE	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Dieldrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan II	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB



CT&E Ref.# 973290003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ04WA
 Matrix Water (Surface, Eff., Ground)
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 PWSID

Client PO# WK Auth. 30
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 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin aldehyde	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDT	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan sulfate	0.0525	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin ketone	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Methoxychlor	0.00980 U	0.00980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Toxaphene	0.980 U	0.980	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	52.9		%	SW846 8080		06/25/97	07/09/97	
Tetrachloro-m-xylene <Surr>	58.7		%	SW846 8080		06/25/97	07/09/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973290003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ04WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 12:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973290003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ04WA
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 17:30
 Collected Date/Time 06/20/97 12:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.010 U	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	74.7		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	20.3		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	71.8		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	45.5		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	28.7		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	44.5		%	SW846-8270	(35-114)	06/25/97	07/20/97	

Case Narrative

Customer:

Project:

973293001 PS

8081PCB- Surrogate recovery is outside QC goals due to dilution
8081Pesticides - Sample detection limit raised 500X due to the presence of PCB
8081Pesticides - Calculation of surrogate recovery not possible due to dilution required for sample analysis
Surrogate recovery for sample is within in-house-generated limits on PCB run analysis lot#SHF06230630
8270 - Initial extraction was not spiked with surrogates Duplicate sample containers were not submitted.
Reextraction performed on preserved sample and neutralized Several surrogates fail recovery goals Both
extractions confirm presence of PCB

973293002 PS

8081PCB- Surrogate recovery is outside QC goals due to dilution
8081Pesticides - Sample detection limit raised 1000X due to presence of PCB

973293003 BMS

8081Pesticides - Calculation of surrogate recovery not possible due to dilution required for analysis
8081Pesticides - Calculation of target analyte recoveries not possible due to high concentration of PCB in sample
8081 PCB Pesticide MS/MD is used to evaluate extraction efficiency

973293004 BMSD

8081Pesticides - Calculation of surrogate recovery not possible due to dilution required for analysis
8081Pesticides - Calculation of target analyte recoveries not possible due to high concentration of PCB in sample

106652 LCS

8270 - This LCS is with respect to the reextraction of sample 3293- 1 First extraction surrogates were not
added Recoveries for N-nitrosodimethylamine, pyridine, benzyl alcohol, 1,2- dichlorobenzene, bis(2-
chloroisopropyl) ether, 4-methylphenol, hexachl
This should not affect the result as the sample was non detect for target analytes.

98669 BS1

8270 - Hexachloroethane was outside control limits

98670 BD1

8270 - Hexachloroethane and pyrene were outside control limits.



Laboratory Analysis Report

July 23, 1997

P. Hoffman
Harding Lawson & Assoc
601 E 57th Place
Anchorage, AK 99518

Client Name: Harding Lawson & Assoc
Project ID: 35646 C. Romanzof [973293]
Printed: July 23, 1997

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

- U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
B - Indicates the analyte is found in the blank associated with the sample.
* - The analyte has exceeded allowable limits.
GT - Greater Than
D - Secondary Dilution
LT - Less Than
! - Surrogate out of range



CT&E Ref.# 973293001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ035W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:28
 Collected Date/Time 06/20/97 16:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By

Stephen C Ede

Sample Remarks:

8081PCB- Surrogate recovery is outside QC goals due to dilution.
 8081Pesticides - Sample detection limit raised 500X due to the presence of PCB.
 8081Pesticides - Calculation of surrogate recovery not possible due to dilution required for sample analysis.
 Surrogate recovery for sample is within in-house-generated limits on PCB run analysis lot#SHF06230630.
 8270 - Initial extraction was not spiked with surrogates. Duplicate sample containers were not submitted. Rextraction performed on preserved sample and neutralized. Several surrogates fail recovery goals. Both extractions confirm presence of PCB.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.232	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	0.0169	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	0.0410	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	0.203	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.00977	0.00568	mg/L	SW846-7060		06/25/97	06/27/97	WTA
Beryllium	0.000568 U	0.000568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.000705	0.000568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.0236	0.00568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.0234	0.00568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/25/97	06/26/97	WTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.205	0.0917	mg/L	AK102 DRO		06/23/97	06/25/97	WAA
Surrogates								
5a Androstane <surr>	84.1		%	AK102 DRO	(50-150)	06/23/97	06/25/97	



CT&E Ref.# 973293001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ035W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 18:28
 Collected Date/Time 06/20/97 16:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.00229 U	0.00229	mg/L	SW846-8080		06/25/97	07/01/97	LZ
Aroclor-1221	0.00229 U	0.00229	mg/L	SW846-8080		06/25/97	07/01/97	LZ
Aroclor-1232	0.00229 U	0.00229	mg/L	SW846-8080		06/25/97	07/01/97	LZ
Aroclor-1242	0.00229 U	0.00229	mg/L	SW846-8080		06/25/97	07/01/97	LZ
Aroclor-1248	0.00229 U	0.00229	mg/L	SW846-8080		06/25/97	07/01/97	LZ
Aroclor-1254	0.00229 U	0.00229	mg/L	SW846-8080		06/25/97	07/01/97	LZ
Aroclor-1260	0.0459	0.00229	mg/L	SW846-8080		06/25/97	07/01/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	0		%	SW846-8080	(59-122)	06/25/97	07/01/97	
Tetrachloro-m-xylene <Surr>	0		%	SW846-8080	(10-87)	06/25/97	07/01/97	
SW8080 Pesticides								
Chlordane	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
gamma-BHC (Lindane)	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB



CT&E Ref.# 973293001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ035W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:28
 Collected Date/Time 06/20/97 16:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	4.59 U	4.59	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	459 U	459	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	0		%	SW846 8080	(59-122)	06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	0		%	SW846 8080	(10-87)	06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Pyridine	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Aniline	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Phenol	0.0095 U	0.0095	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2-Chlorophenol	0.0095 U	0.0095	mg/L	SW846-8270		07/17/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Benzyl alcohol	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Hexachloroethane	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Nitrobenzene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM



CT&E Ref.# 973293001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ035W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:28
 Collected Date/Time 06/20/97 16:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2-Nitrophenol	0.0095 U	0.0095	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2,4-Dimethylphenol	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Benzoic acid	0.019 U	0.019	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Naphthalene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
4-Chloroaniline	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Hexachlorobutadiene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2,4-Dichlorophenol	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2-Methylnaphthalene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.0095 U	0.0095	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2-Chloronaphthalene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2-Nitroaniline	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Dimethylphthalate	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Acenaphthylene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
3-Nitroaniline	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Acenaphthene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2,4-Dinitrophenol	0.019 U	0.019	mg/L	SW846-8270		07/17/97	07/20/97	SVM
4-Nitrophenol	0.0095 U	0.0095	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Dibenzofuran	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Diethylphthalate	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Fluorene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
4-Nitroaniline	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.0095 U	0.0095	mg/L	SW846-8270		07/17/97	07/20/97	SVM



CT&E Ref.# 973293001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ035W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:28
 Collected Date/Time 06/20/97 16:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Hexachlorobenzene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Pentachlorophenol	0.019 U	0.019	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Phenanthrene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Anthracene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Di-n-butylphthalate	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Fluoranthene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Pyrene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Azobenzene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Butylbenzylphthalate	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Benzo(a)Anthracene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Chrysene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
di-n-Octylphthalate	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Benzo[a]pyrene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.0095 U	0.0095	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0048 U	0.0048	mg/L	SW846-8270		07/17/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	53.2		%	SW846-8270	(10-123)	07/17/97	07/20/97	
Phenol-d6 <Surr>	.91		%	SW846-8270	(10-94)	07/17/97	07/20/97	
Terphenyl-d14 <Surr>	64.5		%	SW846-8270	(33-141)	07/17/97	07/20/97	
2-Fluorobiphenyl <Surr>	24.5		%	SW846-8270	(43-116)	07/17/97	07/20/97	
2-Fluorophenol <Surr>	.34		%	SW846-8270	(21-100)	07/17/97	07/20/97	
Nitrobenzene-d5 <Surr>	.76		%	SW846-8270	(35-114)	07/17/97	07/20/97	



CT&E Ref.# 973293002
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Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:28
 Collected Date/Time 06/20/97 17:30
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 Technical Director: Stephen C. Ede

Released By *Stephen C Ede*

Sample Remarks:

8081PCB- Surrogate recovery is outside QC goals due to dilution.
 8081Pesticides - Sample detection limit raised 1000X due to presence of PCB.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	0.117	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	0.0114 U	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	0.0227 U	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	0.0206	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	0.104	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.00568 U	0.00568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.00568 U	0.00568	mg/L	SW846-7060		06/25/97	06/27/97	WTA
Beryllium	0.000568 U	0.000568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.000568 U	0.000568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.0130	0.00568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.0115	0.00568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.00568 U	0.00568	mg/L	SW846-7740		06/25/97	06/26/97	WTA
Silver	0.00114 U	0.00114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.00568 U	0.00568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	0.155	0.100	mg/L	AK102 DRO		06/23/97	06/25/97	WAA
Surrogates								
5a Androstane <surrg>	99.3		%	AK102 DRO	(50-150)	06/23/97	06/25/97	



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Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:29
 Collected Date/Time 06/20/97 17:30
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 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable	Prep	Analysis	Init
					Limits	Date	Date	
Surrogates								
PCB's by GC ECD								
Aroclor-1016	0.0463 U	0.0463	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1221	0.0463 U	0.0463	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1232	0.0463 U	0.0463	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1242	0.0463 U	0.0463	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1248	0.0463 U	0.0463	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1254	0.0463 U	0.0463	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Aroclor-1260	0.0550	0.0463	mg/L	SW846-8080		06/25/97	06/30/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	0		%	SW846-8080	(59-122)	06/25/97	06/30/97	
Tetrachloro-m-xylene <Surr>	0		%	SW846-8080	(10-87)	06/25/97	06/30/97	
SW8080 Pesticides								
Chlordane	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
alpha-BHC	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
beta-BHC	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
gamma-BHC (Lindane)	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
delta-BHC	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Aldrin	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Heptachlor epoxide	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan I	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDE	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Dieldrin	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan II	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB



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Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4,4'-DDD	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin aldehyde	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
4,4'-DDT	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endosulfan sulfate	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Endrin ketone	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Methoxychlor	9.26 U	9.26	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Toxaphene	926 U	926	ug/L	SW846 8080		06/25/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	0		%	SW846 8080		06/25/97	07/08/97	
Tetrachloro-m-xylene <Surr>	0		%	SW846 8080		06/25/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



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Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Isophorone	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorocyclopentadiene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973293002
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:29
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
N-Nitrosodiphenylamine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.020 U	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)Anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(b)Fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(k)fluoranthene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)pyrene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.0099 U	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.0050 U	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	77.9		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	23.3		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	75.3		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	52.5		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	31.6		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	56.1		%	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973293003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/25/97 15:51
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By **Sample Remarks:**

8081Pesticides - Calculation of surrogate recovery not possible due to dilution required for analysis.
 8081Pesticides - Calculation of target analyte recoveries not possible due to high concentration of PCB in sample.
 8081 PCB Pesticide MS/MD is used to evaluate extraction efficiency.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	1.27	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Cobalt	1.10	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	1.11	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	1.09	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	1.16	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	1.17	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.354	0.0568	mg/L	SW846-7041		06/25/97	06/28/97	KGF
Arsenic	0.331	0.0568	mg/L	SW846-7060		06/25/97	06/27/97	WTA
Beryllium	0.0348	0.00568	mg/L	SW846-7091		06/25/97	06/26/97	KGF
Cadmium	0.0314	0.00568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.667	0.0568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.338	0.0568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.314	0.0568	mg/L	SW846-7740		06/25/97	06/26/97	WTA
Silver	0.0582	0.0114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.176	0.0568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	5.92	0.0917	mg/L	AK102 DRO		06/23/97	06/25/97	WAA
Surrogates								
5a Androstane <surrg>	106		%	AK102 DRO	(50-150)	06/23/97	06/25/97	



CT&E Ref.# 973293003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/25/97 15:51
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
SW8080 Pesticides								
Chlordane	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
alpha-BHC	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
beta-BHC	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
gamma-BHC (Lindane)	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
delta-BHC	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Aldrin	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor epoxide	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan I	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDE	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Dieldrin	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan II	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDD	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin aldehyde	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDT	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan sulfate	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin ketone	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Methoxychlor	10.0 U		10.0 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Toxaphene	1000 U		1000 ug/L	SW846 8080		06/25/97	07/09/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	0		%	SW846 8080	(59-122)	06/25/97	07/09/97	
Tetrachloro-m-xylene <Surr>	0		%	SW846 8080	(10-87)	06/25/97	07/09/97	



CT&E Ref.# 973293003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/25/97 15:51
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0224	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0187	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0517	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.0255	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0512	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.0498	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0380	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0402	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0441	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0430	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0501	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0532	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0439	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0661	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0368	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0543	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Isophorone	0.0644	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.0541	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0529	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.0177 J	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0591	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0494	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0461	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0573	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0495	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0673	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0598	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0577	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973293003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/25/97 15:51
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Hexachlorocyclopentadiene	0.0421	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,6-Trichlorophenol	0.0728	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4,5-Trichlorophenol	0.0701	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chloronaphthalene	0.0593	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitroaniline	0.0827	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dimethylphthalate	0.0842	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthylene	0.0568	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,6-Dinitrotoluene	0.0757	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3-Nitroaniline	0.0774	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Acenaphthene	0.0612	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrophenol	0.0915	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitrophenol	0.0288	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzofuran	0.0717	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dinitrotoluene	0.0755	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Diethylphthalate	0.0824	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chlorophenyl-phenylether	0.0738	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluorene	0.0698	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Nitroaniline	0.0825	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methyl-4,6-dinitrophenol	0.0940	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitrosodiphenylamine	0.0873	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Bromophenyl-phenylether	0.0904	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobenzene	0.0788	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pentachlorophenol	0.0938	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenanthrene	0.0803	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Anthracene	0.0809	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Di-n-butylphthalate	0.0903	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Fluoranthene	0.0801	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyrene	0.0910	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Azobenzene	0.0776	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Butylbenzylphthalate	0.105	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
3,3-Dichlorobenzidine	0.0989	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973293003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MS
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/25/97 15:52
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Benzo(a)Anthracene	0.0955	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0945	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.106	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.106	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[b]Fluoranthene	0.0914	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[k]fluoranthene	0.0907	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[a]pyrene	0.0895	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.110	0.010	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.107	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.103	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	87.4		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	23.5		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	64.9		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	59.1		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	32.4		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	51.2		%	SW846-8270	(35-114)	06/25/97	07/20/97	



CT&E Ref.# 973293004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 18:29
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Stephen C. Ede*

Sample Remarks:

8081Pesticides - Calculation of surrogate recovery not possible due to dilution required for analysis.
 8081Pesticides - Calculation of target analyte recoveries not possible due to high concentration of PCB in sample.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	1.25	0.0114	mg/L	SW846-6010				
Cobalt	1.11	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Copper	1.12	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Nickel	1.10	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Vanadium	1.15	0.0114	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Zinc	1.16	0.0227	mg/L	SW846-6010		06/25/97	07/01/97	EMM
Antimony	0.356	0.0568	mg/L	SW846-7041		06/25/97	07/01/97	EMM
Arsenic	0.338	0.0568	mg/L	SW846-7060		06/25/97	06/28/97	KGF
Beryllium	0.0351	0.00568	mg/L	SW846-7091		06/25/97	06/27/97	WTA
Cadmium	0.0319	0.00568	mg/L	SW846-7131		06/25/97	06/26/97	KGF
Chromium	0.674	0.0568	mg/L	SW846-7191		06/25/97	06/26/97	KGF
Lead	0.336	0.0568	mg/L	SW846-7421		06/25/97	06/26/97	KGF
Selenium	0.329	0.0568	mg/L	SW846-7740		06/25/97	06/26/97	WTA
Silver	0.0567	0.0114	mg/L	SW846-7761		06/25/97	06/26/97	KGF
Thallium	0.184	0.0568	mg/L	SW846-7841		06/25/97	06/28/97	KGF
AK102								
Diesel Range Organics	6.42	0.100	mg/L	AK102 DRO		06/23/97	06/25/97	WAA
Surrogates								
5a Androstane <sur>	110		%	AK102 DRO	(50-150)	06/23/97	06/25/97	



CT&E Ref.# 973293004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO#
 Printed Date/Time 07/23/97 18:29
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
SW8080 Pesticides								
Chlordane	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
alpha-BHC	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
beta-BHC	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
gamma-BHC (Lindane)	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
delta-BHC	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Aldrin	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Heptachlor epoxide	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan I	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDE	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Dieldrin	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan II	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDD	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin aldehyde	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
4,4'-DDT	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endosulfan sulfate	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Endrin ketone	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Methoxychlor	9.17 U	9.17	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Toxaphene	917 U	917	ug/L	SW846 8080		06/25/97	07/09/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	0		X	SW846 8080		06/25/97	07/09/97	
Tetrachloro-m-xylene <Surr>	0		X	SW846 8080		06/25/97	07/09/97	



CT&E Ref.# 973293004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:29
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.0253	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Pyridine	0.0231	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Aniline	0.0588	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Phenol	0.0283	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethyl)ether	0.0589	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Chlorophenol	0.0545	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,3-Dichlorobenzene	0.0399	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,4-Dichlorobenzene	0.0420	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzyl alcohol	0.0485	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2-Dichlorobenzene	0.0452	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylphenol (o-Cresol)	0.0552	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-chloroisopropyl)ether	0.0610	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Methylphenol (p-Cresol)	0.0470	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
N-Nitroso-di-n-propylamine	0.0708	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachloroethane	0.0381	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Nitrobenzene	0.0597	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Isophorone	0.0698	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Nitrophenol	0.0610	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dimethylphenol	0.0575	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzoic acid	0.0194 J	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Bis(2-Chloroethoxy)methane	0.0637	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
1,2,4-Trichlorobenzene	0.0541	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Naphthalene	0.0480	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloroaniline	0.0609	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Hexachlorobutadiene	0.0536	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
4-Chloro-3-methylphenol	0.0718	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2,4-Dichlorophenol	0.0647	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
2-Methylnaphthalene	0.0623	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM



CT&E Ref.# 973293004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:29
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep		Analysis	
						Date	Date	Init	
Surrogates									
Hexachlorocyclopentadiene	0.0470	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2,4,6-Trichlorophenol	0.0767	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2,4,5-Trichlorophenol	0.0738	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2-Chloronaphthalene	0.0650	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2-Nitroaniline	0.0858	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Dimethylphthalate	0.0890	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Acenaphthylene	0.0607	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2,6-Dinitrotoluene	0.0823	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
3-Nitroaniline	0.0778	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Acenaphthene	0.0672	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2,4-Dinitrophenol	0.104	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
4-Nitrophenol	0.0312	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Dibenzofuran	0.0762	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2,4-Dinitrotoluene	0.0810	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Diethylphthalate	0.0862	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
4-Chlorophenyl-phenylether	0.0761	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Fluorene	0.0746	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
4-Nitroaniline	0.0891	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
2-Methyl-4,6-dinitrophenol	0.0950	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
N-Nitrosodiphenylamine	0.0864	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
4-Bromophenyl-phenylether	0.0880	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Hexachlorobenzene	0.0800	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Pentachlorophenol	0.0954	0.020	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Phenanthrene	0.0816	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Anthracene	0.0831	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Di-n-butylphthalate	0.0938	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Fluoranthene	0.0852	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Pyrene	0.0868	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Azobenzene	0.0790	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
Butylbenzylphthalate	0.104	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	
3,3-Dichlorobenzidine	0.100	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM	



CT&E Ref.# 973293004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof
 Client Sample ID 97RMZ055W MSD
 Matrix Water (Surface, Eff., Ground)
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/23/97 18:29
 Collected Date/Time 06/20/97 17:30
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Stephen C Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Benzo(a)Anthracene	0.0949	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Chrysene	0.0954	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
bis(2-Ethylhexyl)phthalate	0.107	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
di-n-Octylphthalate	0.105	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(b)Fluoranthene	0.0959	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(k)fluoranthene	0.0833	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo(a)pyrene	0.0874	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Indeno[1,2,3-c,d] pyrene	0.110	0.0099	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Dibenzo[a,h]anthracene	0.107	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Benzo[g,h,i]perylene	0.104	0.0050	mg/L	SW846-8270		06/25/97	07/20/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	90.8		%	SW846-8270	(10-123)	06/25/97	07/20/97	
Phenol-d6 <Surr>	26.3		%	SW846-8270	(10-94)	06/25/97	07/20/97	
Terphenyl-d14 <Surr>	63.5		%	SW846-8270	(33-141)	06/25/97	07/20/97	
2-Fluorobiphenyl <Surr>	64.7		%	SW846-8270	(43-116)	06/25/97	07/20/97	
2-Fluorophenol <Surr>	36		%	SW846-8270	(21-100)	06/25/97	07/20/97	
Nitrobenzene-d5 <Surr>	58.5		%	SW846-8270	(35-114)	06/25/97	07/20/97	

70 145

Cas Narrative

Customer: HARLAWP

Harding Lawson & Assoc

Project: 973286

35646 C. Romanzof Landfill

973286001 PS

GRO-Field surrogate 4-Bromofluorobenzene had low recovery possibly due to matrix interference. Sample was run 2x for confirmation.

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA and QC REPORT FOR CORRECT % RECOVERY)

8260 - Surrogate recoveries do not meet QC criteria due to matrix interference. Confirmed by re-extraction

973286002 PS

DRO - Heavier hydrocarbons contributing to diesel range quantitation.

DRO/RRO - Possible lube oil pattern

8260 - Surrogate 1,2 Dichloroethane-d4 is outside control limits due to matrix interference.

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA and QC REPORT FOR CORRECT % RECOVERY)

973286003 PS

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time (SEE RAW DATA FOR CORRECT % RECOVERY).

DRO/RRO - Pattern consistent with lube oil.

DRO - Heavier hydrocarbons contributing to diesel range quantitation.

8081Pesticides - Unable to quantify surrogate recovery due to high dilution.

8260 - Surrogate recoveries do not meet QC criteria due to matrix interference. Confirmed by re-extraction.

8081Pesticides - Sample detection limit raised 500X due to the presence of PCB.

973286004 PS

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA and QC REPORT FOR CORRECT % RECOVERY).

DRO - Heavier hydrocarbons contributing to diesel range quantitation.

DRO/RRO - Pattern consistent with lube oil.

Ak 101 sample leaked in transit.

8081Pesticides - Unable to quantify surrogate recovery due to high dilution.

8260 - Surrogate recoveries do not meet QC criteria due to matrix interference. Confirmed by re-extraction.

8081Pesticide - Sample detection limit raised 2500X due to the presence of PCB.

973286005 PS

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA and QC REPORT FOR CORRECT % RECOVERY).

973286006 BMS

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time (SEE RAW DATA and QC REPORT FOR CORRECT % RECOVERY).

8260 - Surrogate and spike recoveries do not meet QC criteria due to matrix interference.

7000 GFAA Metals - Se and Sb recoveries were low due to matrix interference.

Case Narrativ

70 146

Customer: HARLAWP

Harding Lawson & Assoc

Project: 973286

35646 C. Romanzof Landfill

973286007 BMSD

GRO-Field surrogate 4Bromofluorobenzene had low recovery possibly due to matrix interference.

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only accept one concentration at a time (SEE RAW DATA and QC REPORT FOR CORRECT % RECOVERY)

8260 - Surrogate and spike recoveries do not meet QC criteria due to matrix interference

7000 GFAA Metals - Se and Sb recoveries were low due to matrix interference.

101068 LCS

8260 - Bromomethane and Chloroethane do not meet QC recovery criteria. Both compounds meet QC recovery criteria in the water LCS and LCSD.

101069 LCSD

8260 - Bromomethane and Chloromethane do not meet QC recovery criteria. Both compounds meet QC recovery criteria in the water LCS and LCSD.

102066 CCV

8260 - Bromomethane, 1,2-Dichloroethane, Bromoform, and 1,2-Dibromo-3-chloropropane do not meet QC criteria. This CCV was run only as a closing CCV for BTEX by 8260.

102151 CCV

8260 - Several components do not meet QC criteria and are biased high. The results should not be affected as these components were not detected in the samples.

103731 CCV

8270 - Benzo(a)pyrene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene and Dibenzo(a,h)anthracene were outside QC criteria for CCV.

99062 MB

8080 Pesticide - Beta BHC was detected in the blank. Sample results are all non detected.



70 147

CT&E Environmental Services Inc.

Laboratory Division

Laboratory Analysis Report

July 22, 1997

P. Hoffman
Harding Lawson & Assoc
601 E 57th Place
Anchorage, AK 99518

Client Name	Harding Lawson & Assoc
Project ID	35646 C. Romanzof Landfill [973286]
Printed	July 22, 1997

Enclosed are the analytical results associated with the above project.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by CT&E. A copy of our Quality Control Manual that outlines this program is available at your request.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth in our Quality Assurance Program Plan.

If you have any questions regarding this report or if we can be of any other assistance, please call your CT&E Project Manager at (907) 562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

- U - Indicates the compound was analyzed for but not detected.
- J - Indicates an estimated value that falls below PQL, but is greater than the MDL.
- B - Indicates the analyte is found in the blank associated with the sample.
- * - The analyte has exceeded allowable limits.
- GT - Greater Than
- D - Secondary Dilution
- LT - Less Than
- ! - Surrogate out of range

200 W Potter Drive, Anchorage, AK 99518-1605 — Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road, Fairbanks, AK 99709-5471 — Tel: (907) 474-8656 Fax: (907) 474-9685

ENVIRONMENTAL FACILITIES IN ALASKA, CALIFORNIA, FLORIDA, ILLINOIS, MARYLAND, MICHIGAN, MISSOURI, NEW JERSEY, OHIO, WEST VIRGINIA



CT&E Ref.# 973286001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01SD
 Matrix Soil
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 13:51
 Collected Date/Time 06/20/97 15:15
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Sharon Peterson*

Sample Remarks:

GRO-Field surrogate 4-Bromofluorobenzene had low recovery possibly due to matrix interference. Sample was run 2x for confirmation.

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA FOR CORRECT % RECOVERY).

8260 - Surrogate recoveries do not meet QC criteria due to matrix interference. Confirmed by re-extraction.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	68.3	0.744	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Cobalt	6.66	0.744	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Copper	9.01	0.744	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Nickel	11.1	1.49	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Vanadium	26.4	1.49	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Zinc	30.7	7.44	mg/Kg	SW846-6010		06/24/97	06/30/97	EMM
Total Solids	82.2		%	SM18 2540G			06/25/97	DAV
Antimony	0.193 U	0.193	mg/Kg	SW846-7041		06/26/97	06/28/97	KGF
Arsenic	3.56	0.193	mg/Kg	SW846-7060		06/26/97	06/27/97	WTA
Beryllium	0.195	0.0965	mg/Kg	SW846-7091		06/26/97	06/27/97	KGF
Cadmium	0.0846	0.0193	mg/Kg	SW846-7131		06/26/97	06/27/97	KGF
Chromium	13.9	1.93	mg/Kg	SW846-7191		06/26/97	06/27/97	KGF
Lead	5.25	1.93	mg/Kg	SW846-7421		06/26/97	06/27/97	KGF
Selenium	1.93 U	1.93	mg/Kg	SW846-7740		06/26/97	06/30/97	WTA
Silver	0.0386 U	0.0386	mg/Kg	SW846-7761		06/26/97	06/27/97	KGF
Thallium	0.193 U	0.193	mg/Kg	SW846-7841		06/26/97	06/28/97	KGF
Gasoline Range Organics	0.961 U	0.961	mg/Kg	AK101 GRO		06/20/97	06/25/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	30.9		%	AK101 GRO	(50-150)	06/20/97	06/25/97	



CT&E Ref.# 973286001
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ01SD
 Matrix Soil
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 13:51
 Collected Date/Time 06/20/97 15:15
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
1,4-Difluorobenzene <Surr>	71		%	AK101 GRO		06/20/97	06/25/97	
AK102								
Diesel Range Organics	13.1	9.72	mg/Kg	AK102 DRO		06/24/97	06/24/97	WAA
Surrogates								
5d Androstane <surr>	97.9		%	AK102 DRO	(50-150)	06/24/97	06/24/97	
SW8080 Pesticides								
alpha-BHC	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
beta-BHC	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Chlordane	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
gamma-BHC (Lindane)	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
delta-BHC	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Aldrin	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor epoxide	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan I	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDE	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Dieldrin	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan II	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDD	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin aldehyde	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDT	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan sulfate	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin ketone	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Methoxychlor	0.000806 U	0.000806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB



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 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Toxaphene	0.0806 U	0.0806	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	85.4		%	SW846 8080	(15-125)	06/24/97	07/08/97	
Tetrachloro-m-xylene <Surr>	76.4		%	SW846 8080	(10-91)	06/24/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.40 U	0.40	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyridine	0.40 U	0.40	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Aniline	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethyl)ether	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chlorophenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,3-Dichlorobenzene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,4-Dichlorobenzene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzyl alcohol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,2-Dichlorobenzene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylphenol (o-Cresol)	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
bis(2-chloroisopropyl)ether	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Methylphenol (p-Cresol)	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitroso-di-n-propylamine	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachloroethane	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Nitrobenzene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Isophorone	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Nitrophenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dimethylphenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzoic acid	0.79 U	0.79	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethoxy)methane	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,2,4-Trichlorobenzene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Naphthalene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloroaniline	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobutadiene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloro-3-methylphenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dichlorophenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylnaphthalene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorocyclopentadiene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4,6-Trichlorophenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4,5-Trichlorophenol	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chloronaphthalene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Nitroaniline	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dimethylphthalate	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthylene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,6-Dinitrotoluene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
3-Nitroaniline	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrophenol	2.0 U	2.0	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitrophenol	2.0 U	2.0	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dibenzofuran	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrotoluene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Diethylphthalate	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chlorophenyl-phenylether	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluorene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitroaniline	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methyl-4,6-dinitrophenol	0.79 U	0.79	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitrosodiphenylamine	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Bromophenyl-phenylether	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobenzene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pentachlorophenol	0.79 U	0.79	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenanthrene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Anthracene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



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 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Di-n-butylphthalate	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluoranthene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyrene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Azobenzene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Butylbenzylphthalate	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
3,3-Dichlorobenzidine	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(a)Anthracene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Chrysene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
bis(2-Ethylhexyl)phthalate	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
di-n-Octylphthalate	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(b)Fluoranthene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(k)fluoranthene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(a)pyrene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Indeno(1,2,3-c,d) pyrene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dibenzo(a,h)anthracene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(g,h,i)perylene	0.20 U	0.20	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	67.8		%	SW846-8270	(19-122)	06/26/97	07/09/97	
Phenol-d6 <Surr>	45.2		%	SW846-8270	(24-113)	06/26/97	07/09/97	
Terphenyl-d14 <Surr>	73.7		%	SW846-8270	(18-137)	06/26/97	07/09/97	
2-Fluorobiphenyl <Surr>	84.3		%	SW846-8270	(30-115)	06/26/97	07/09/97	
2-Fluorophenol <Surr>	46.1		%	SW846-8270	(25-121)	06/26/97	07/09/97	
Nitrobenzene-d5 <Surr>	73.5		%	SW846-8270	(23-120)	06/26/97	07/09/97	
PCB's by GC ECD								
Aroclor-1016	0.00806 U	0.00806	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1221	0.00806 U	0.00806	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1232	0.00806 U	0.00806	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Aroclor-1242	0.00806 U	0.00806	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1248	0.00806 U	0.00806	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1254	0.00806 U	0.00806	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1260	0.00806 U	0.00806	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	84.7		%	SW846 8080	(15-125)	06/24/97	06/27/97	
Tetrachloro-m-xylene <Surr>	69.5		%	SW846 8080	(10-91)	06/24/97	06/27/97	
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,1-Trichloroethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2,2-Tetrachloroethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2-Trichloroethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2,3-Trichloropropane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromo-3-chloropropane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromoethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichlorobenzene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloroethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloropropane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,3-Dichloropropane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,4-Dichlorobenzene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
4-Methyl-2-pentanone	0.53 U	0.53	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Acetone	0.53 U	0.53	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Benzene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromochloromethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromodichloromethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM



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Surrogates								
Bromoform	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromomethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Carbon tetrachloride	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chlorobenzene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloroethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloroform	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloromethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dibromochloromethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dibromomethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dichlorodifluoromethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Ethylbenzene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Methylene chloride	0.26 U	0.26	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
P & M -Xylene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Styrene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
sec-Butylbenzene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Tetrachloroethene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Toluene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Trichloroethene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Trichlorofluoromethane	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Vinyl chloride	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
cis-1,2-Dichloroethene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
cis-1,3-Dichloropropene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
o-Xylene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
trans-1,2-Dichloroethene	0.053 U	0.053	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Surrogates								
1,2-Dichloroethane-d4 <surr>	55.8		X	SW846 8260		06/24/97	07/01/97	
Toluene-d8 <surr>	69.8		X	SW846 8260		06/24/97	07/01/97	
4-Bromofluorobenzene <Surr>	61.9		X	SW846 8260		06/24/97	07/01/97	



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 Printed Date/Time 07/22/97 14:47
 Collected Date/Time 06/20/97 15:45
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 Technical Director: Stephen C. Ede

Released By *Sharon Paton*

Sample Remarks:

DRO - Heavier hydrocarbons contributing to diesel range quantitation.
 DRO/RRO - Possible lube oil pattern.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	55.3	0.818	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Cobalt	4.62	0.818	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Copper	15.5	0.818	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Nickel	12.7	1.64	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Vanadium	18.2	1.64	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Zinc	39.0	8.18	mg/Kg	SW846-6010		06/24/97	06/30/97	EMM
Total Solids	87.4		%	SM18 2540G			06/25/97	DAV
Antimony	0.210 U	0.210	mg/Kg	SW846-7041		06/26/97	06/28/97	KGF
Arsenic	3.10	0.210	mg/Kg	SW846-7060		06/26/97	06/27/97	WTA
Beryllium	0.132	0.0210	mg/Kg	SW846-7091		06/26/97	06/27/97	KGF
Cadmium	0.0909	0.0210	mg/Kg	SW846-7131		06/26/97	06/27/97	KGF
Chromium	8.46	2.10	mg/Kg	SW846-7191		06/26/97	06/27/97	KGF
Lead	16.6	2.10	mg/Kg	SW846-7421		06/26/97	06/27/97	KGF
Selenium	2.10 U	2.10	mg/Kg	SW846-7740		06/26/97	06/30/97	WTA
Silver	0.0421 U	0.0421	mg/Kg	SW846-7761		06/26/97	06/27/97	KGF
Thallium	0.210 U	0.210	mg/Kg	SW846-7841		06/26/97	06/28/97	KGF
Gasoline Range Organics	0.823 U	0.823	mg/Kg	AK101 GRO		06/20/97	06/23/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	49.4		%	AK101 GRO	(50-150)	06/20/97	06/23/97	
1,4-Difluorobenzene <Surr>	80.4		%	AK101 GRO		06/20/97	06/23/97	



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
AK102								
Diesel Range Organics	34.7	9.02	mg/Kg	AK102 DRD		06/24/97	06/24/97	WAA
Surrogates								
5d Androstane <surp>	104		%	AK102 DRD	(50-150)	06/24/97	06/24/97	
SW8080 Pesticides								
alpha-BHC	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
beta-BHC	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Chlordane	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
gamma-BHC (Lindane)	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
delta-BHC	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Aldrin	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor epoxide	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan I	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDE	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Dieldrin	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan II	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDD	0.00115	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin aldehyde	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDT	0.000813	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan sulfate	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin ketone	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Methoxychlor	0.000677 U	0.000677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Toxaphene	0.0677 U	0.0677	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB



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Surrogates								
Decachlorobiphenyl <Surr>	82.3		%	SW846 8080	(15-125)	06/24/97	07/08/97	
Tetrachloro-m-xylene <Surr>	78.5		%	SW846 8080	(10-91)	06/24/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.37 U	0.37	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyridine	0.37 U	0.37	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Aniline	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethyl)ether	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chlorophenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,3-Dichlorobenzene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,4-Dichlorobenzene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzyl alcohol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,2-Dichlorobenzene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylphenol (o-Cresol)	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
bis(2-chloroisopropyl)ether	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Methylphenol (p-Cresol)	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitroso-di-n-propylamine	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachloroethane	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Nitrobenzene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Isophorone	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Nitrophenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dimethylphenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzoic acid	0.74 U	0.74	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethoxy)methane	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,2,4-Trichlorobenzene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Naphthalene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloroaniline	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobutadiene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloro-3-methylphenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



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Surrogates								
2,4-Dichlorophenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylnaphthalene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorocyclopentadiene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,3,6-Trichlorophenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,3,5-Trichlorophenol	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chloronaphthalene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Nitroaniline	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dimethylphthalate	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthylene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,6-Dinitrotoluene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
3-Nitroaniline	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrophenol	1.9 U	1.9	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitrophenol	1.9 U	1.9	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dibenzofuran	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrotoluene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Diethylphthalate	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chlorophenyl-phenylether	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluorene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitroaniline	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methyl-4,6-dinitrophenol	0.74 U	0.74	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitrosodiphenylamine	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Bromophenyl-phenylether	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobenzene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pentachlorophenol	0.74 U	0.74	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenanthrene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Anthracene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Di-n-butylphthalate	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluoranthene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyrene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Azobenzene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



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Surrogates								
Butylbenzylphthalate	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
3,3-Dichlorobenzidine	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Benzo(a)Anthracene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Chrysene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
bis(2-Ethylhexyl)phthalate	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
di-n-Octylphthalate	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Benzo[b]Fluoranthene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Benzo[k]fluoranthene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Benzo[a]pyrene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Indeno[1,2,3-c,d] pyrene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Dibenzo[a,h]anthracene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Benzo[g,h,i]perylene	0.19 U	0.19	mg/Kg	SW846-8270		06/26/97	07/09/97	SVN
Surrogates								
2,4,6-Tribromophenol <Surr>	61.5		%	SW846-8270	(19-122)	06/26/97	07/09/97	
Phenol-d6 <Surr>	38.9		%	SW846-8270	(24-113)	06/26/97	07/09/97	
Terphenyl-d14 <Surr>	55		%	SW846-8270	(18-137)	06/26/97	07/09/97	
2-Fluorobiphenyl <Surr>	68.1		%	SW846-8270	(30-115)	06/26/97	07/09/97	
2-Fluorophenol <Surr>	39.1		%	SW846-8270	(25-121)	06/26/97	07/09/97	
Nitrobenzene-d5 <Surr>	61.2		%	SW846-8270	(23-120)	06/26/97	07/09/97	
PCB's by GC ECD								
Aroclor-1016	0.00677 U	0.00677	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1221	0.00677 U	0.00677	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1232	0.00677 U	0.00677	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1242	0.00677 U	0.00677	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1248	0.00677 U	0.00677	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1254	0.00677 U	0.00677	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB
Aroclor-1260	0.00677 U	0.00677	mg/Kg	SW846 8080		06/24/97	06/27/97	JLB



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Surrogates								
Decachlorobiphenyl <Surr>	81.7		%	SW846 8080	(15-125)	06/24/97	06/27/97	
Tetrachloro-m-xylene <Surr>	71.6		%	SW846 8080	(10-91)	06/24/97	06/27/97	
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,1-Trichloroethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2,2-Tetrachloroethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2-Trichloroethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2,3-Trichloropropane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromo-3-chloropropane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromoethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichlorobenzene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloroethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloropropane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,3-Dichloropropane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,4-Dichlorobenzene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
4-Methyl-2-pentanone	0.48 U	0.48	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Acetone	0.48 U	0.48	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Benzene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromochloromethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromodichloromethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromoform	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromomethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Carbon tetrachloride	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chlorobenzene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloroethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloroform	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloromethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM



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Surrogates								
Dibromochloromethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dibromomethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dichlorodifluoromethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Ethylbenzene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Methylene chloride	0.24 U	0.24	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
P & M -Xylene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Styrene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
sec-Butylbenzene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Tetrachloroethene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Toluene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Trichloroethene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Trichlorofluoromethane	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Vinyl chloride	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
cis-1,2-Dichloroethene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
cis-1,3-Dichloropropene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
o-Xylene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
trans-1,2-Dichloroethene	0.048 U	0.048	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Surrogates								
1,2-Dichloroethane-D4 <surr>	76.1		%	SW846 8260		06/24/97	07/01/97	
Toluene-d8 <surr>	97		%	SW846 8260		06/24/97	07/01/97	
4-Bromofluorobenzene <Surr>	86.5		%	SW846 8260		06/24/97	07/01/97	



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Released By *Sharon Preston*

Sample Remarks:

GRO/BTEX Bromooffluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA FOR CORRECT % RECOVERY).

DRO/RRO - Pattern consistent with lube oil.

DRO - Heavier hydrocarbons contributing to diesel range quantitation.

8260 - Surrogate recoveries do not meet QC criteria due to matrix interference. Confirmed by re-extraction.

8081Pesticides - Sample detection limit raised 500X due to the presence of PCB.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	128	0.784	mg/Kg	SW846-6010		06/25/97	06/27/97	EMM
Cobalt	9.34	0.784	mg/Kg	SW846-6010		06/25/97	06/27/97	EMM
Copper	14.9	0.784	mg/Kg	SW846-6010		06/25/97	06/27/97	EMM
Nickel	14.5	1.57	mg/Kg	SW846-6010		06/25/97	06/27/97	EMM
Vanadium	28.8	1.57	mg/Kg	SW846-6010		06/25/97	06/27/97	EMM
Zinc	169	78.4	mg/Kg	SW846-6010		06/25/97	06/30/97	EMM
Total Solids	77.6		%	SM18 2540G			06/25/97	DAV
Antimony	0.288 U	0.288	mg/Kg	SW846-7041		06/26/97	06/28/97	KGF
Arsenic	6.43	2.88	mg/Kg	SW846-7060		06/26/97	06/27/97	WTA
Beryllium	0.230	0.0288	mg/Kg	SW846-7091		06/26/97	06/27/97	KGF
Cadmium	0.621	0.288	mg/Kg	SW846-7131		06/26/97	06/27/97	KGF
Chromium	15.1	2.88	mg/Kg	SW846-7191		06/26/97	06/27/97	KGF
Lead	17.5	2.88	mg/Kg	SW846-7421		06/26/97	06/27/97	KGF
Selenium	2.88 U	2.88	mg/Kg	SW846-7740		06/26/97	06/30/97	WTA
Silver	0.0575 U	0.0575	mg/Kg	SW846-7761		06/26/97	06/27/97	KGF
Thallium	0.288 U	0.288	mg/Kg	SW846-7841		06/26/97	06/28/97	KGF
Gasoline Range Organics	1.17 U	1.17	mg/Kg	AK101 GRO		06/20/97	06/23/97	GSM



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4-Bromofluorobenzene <Surr>	41		%	AK101 GRO	(50-150)	06/20/97	06/23/97	
1,4-Difluorobenzene <Surr>	78.8		%	AK101 GRO		06/20/97	06/23/97	
AK102								
Diesel Range Organics	181	10.2	mg/Kg	AK102 DRD		06/24/97	06/25/97	WAA
Surrogates								
5d Androstane <surr>	113		%	AK102 DRD	(50-150)	06/24/97	06/25/97	
SW8080 Pesticides								
alpha-BHC	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
beta-BHC	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Chlordane	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
gamma-BHC (Lindane)	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
delta-BHC	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Aldrin	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor epoxide	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan I	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDE	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Dieldrin	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan II	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDD	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin aldehyde	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDT	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan sulfate	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin ketone	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB



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Surrogates								
Methoxychlor	0.398 U	0.398	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Toxaphene	39.8 U	39.8	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	0		%	SW846 8080	(15-125)	06/24/97	07/08/97	
Tetrachloro-m-xylene <Surr>	0		%	SW846 8080	(10-91)	06/24/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.42 U	0.42	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyridine	0.42 U	0.42	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Aniline	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethyl)ether	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chlorophenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,3-Dichlorobenzene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,4-Dichlorobenzene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzyl alcohol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,2-Dichlorobenzene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylphenol (o-Cresol)	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
bis(2-chloroisopropyl)ether	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Methylphenol (p-Cresol)	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitroso-di-n-propylamine	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachloroethane	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Nitrobenzene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Isophorone	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Nitrophenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dimethylphenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzoic acid	0.83 U	0.83	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethoxy)methane	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
1,2,4-Trichlorobenzene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Naphthalene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloroaniline	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobutadiene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloro-3-methylphenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dichlorophenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylnaphthalene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorocyclopentadiene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4,6-Trichlorophenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4,5-Trichlorophenol	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chloronaphthalene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Nitroaniline	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dimethylphthalate	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthylene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,6-Dinitrotoluene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
3-Nitroaniline	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrophenol	2.1 U	2.1	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitrophenol	2.1 U	2.1	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dibenzofuran	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrotoluene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Diethylphthalate	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chlorophenyl-phenylether	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluorene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitroaniline	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methyl-4,6-dinitrophenol	0.83 U	0.83	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitrosodiphenylamine	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Bromophenyl-phenylether	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobenzene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pentachlorophenol	0.83 U	0.83	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenanthrene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Anthracene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Di-n-butylphthalate	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluoranthene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyrene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Azobenzene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Butylbenzylphthalate	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
3,3-Dichlorobenzidine	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(a)Anthracene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Chrysene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
bis(2-Ethylhexyl)phthalate	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
di-n-Octylphthalate	0.331	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(b)Fluoranthene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(k)fluoranthene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(a)pyrene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Indeno[1,2,3-c,d] pyrene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dibenzo(a,h)anthracene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(g,h,i)perylene	0.21 U	0.21	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	58.4		%	SW846-8270	(19-122)	06/26/97	07/09/97	
Phenol-d6 <Surr>	47.7		%	SW846-8270	(24-113)	06/26/97	07/09/97	
Terphenyl-d14 <Surr>	71.9		%	SW846-8270	(18-137)	06/26/97	07/09/97	
2-Fluorobiphenyl <Surr>	84.3		%	SW846-8270	(30-115)	06/26/97	07/09/97	
2-Fluorophenol <Surr>	46		%	SW846-8270	(25-121)	06/26/97	07/09/97	
Nitrobenzene-d5 <Surr>	75.3		%	SW846-8270	(23-120)	06/26/97	07/09/97	



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Surrogates								
PCB's by GC ECD								
Aroclor-1016	3.98 U	3.98	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1221	3.98 U	3.98	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1232	3.98 U	3.98	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1242	3.98 U	3.98	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1248	3.98 U	3.98	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1254	3.98 U	3.98	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1260	69.1	3.98	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	160		%	SW846 8080	(15-125)	06/24/97	06/30/97	
Tetrachloro-m-xylene <Surr>	64.9		%	SW846 8080	(10-91)	06/24/97	06/30/97	
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,1-Trichloroethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2,2-Tetrachloroethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2-Trichloroethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2,3-Trichloropropane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromo-3-chloropropane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromoethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichlorobenzene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloroethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloropropane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,3-Dichloropropane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM



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Surrogates								
1,4-Dichlorobenzene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
4-Methyl-2-pentanone	0.58 U	0.58	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Acetone	0.58 U	0.58	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Benzene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromochloromethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromodichloromethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromoform	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Bromomethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Carbon tetrachloride	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chlorobenzene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloroethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloroform	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Chloromethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dibromochloromethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dibromomethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Dichlorodifluoromethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Ethylbenzene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Methylene chloride	0.29 U	0.29	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
P & M -Xylene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Styrene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
sec-Butylbenzene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Tetrachloroethene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Toluene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Trichlorofluoromethane	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Trichloroethene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
Vinyl chloride	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
cis-1,2-Dichloroethene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
cis-1,3-Dichloropropene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
o-Xylene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
trans-1,2-Dichloroethene	0.058 U	0.058	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM



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CT&E Environmental Services Inc.

CT&E Ref.# 973286003
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ03SD
 Matrix Soil
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 14:47
 Collected Date/Time 06/20/97 16:15
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
1,2-Dichloroethane-D4 <surrogate>	60.9		%	SW846 8260		06/24/97	07/01/97	
Toluene-d8 <surrogate>	78.5		%	SW846 8260		06/24/97	07/01/97	
4-Bromofluorobenzene <Surrogate>	70		%	SW846 8260		06/24/97	07/01/97	



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 Printed Date/Time 07/22/97 14:47
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 Technical Director: Stephen C. Ede

Released By *Sharon Pecton*

Sample Remarks:
 GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA FOR CORRECT % RECOVERY).
 DRO - Heavier hydrocarbons contributing to diesel range quantitation.
 DRO/RRO - Pattern consistent with lube oil.
 Ak 101 sample leaked in transit.
 8260 - Surrogate recoveries do not meet QC criteria due to matrix interference. Confirmed by re-extraction.
 8081 Pesticide - Sample detection limit raised 2500X due to the presence of PCB.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Metals by ICP								
Barium	224	0.916	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Cobalt	17.1	4.58	mg/Kg	SW846-6010		06/24/97	06/30/97	EMM
Copper	25.7	4.58	mg/Kg	SW846-6010		06/24/97	06/30/97	EMM
Nickel	20.0	1.83	mg/Kg	SW846-6010		06/24/97	06/27/97	EMM
Vanadium	37.6	9.16	mg/Kg	SW846-6010		06/24/97	06/30/97	EMM
Zinc	427	9.16	mg/Kg	SW846-6010		06/24/97	06/30/97	EMM
Total Solids	72.4		%	SM18 25406		06/26/97	06/30/97	EMM
Antimony	0.374	0.199	mg/Kg	SW846-7041			06/25/97	DAV
Arsenic	13.4	1.99	mg/Kg	SW846-7060		06/26/97	06/28/97	KGF
Beryllium	0.364	0.0398	mg/Kg	SW846-7091		06/26/97	06/27/97	WTA
Cadmium	3.34	0.199	mg/Kg	SW846-7131		06/26/97	06/27/97	KGF
Chromium	20.2	1.99	mg/Kg	SW846-7191		06/26/97	06/27/97	KGF
Lead	26.5	1.99	mg/Kg	SW846-7421		06/26/97	06/27/97	KGF
Selenium	1.99 U	1.99	mg/Kg	SW846-7740		06/26/97	06/27/97	KGF
Silver	0.0851	0.0398	mg/Kg	SW846-7761		06/26/97	06/30/97	WTA
Thallium	0.199 U	0.199	mg/Kg	SW846-7841		06/26/97	06/27/97	KGF
						06/26/97	06/28/97	KGF



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CT&E Environmental Services Inc.

CT&E Ref.# 973286004
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Client PO#
 Printed Date/Time 07/22/97 14:47
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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Gasoline Range Organics	1.44 U	1.44	mg/Kg	AK101 GRO		06/20/97	06/23/97	GSM
Surrogates								
4-Bromofluorobenzene <Surr>	42.9		%	AK101 GRO	(50-150)	06/20/97	06/23/97	
1,4-Difluorobenzene <Surr>	105		%	AK101 GRO		06/20/97	06/23/97	
AK102								
Diesel Range Organics	371	10.8	mg/Kg	AK102 DRO		06/24/97	06/25/97	MAA
Surrogates								
5d Androstane <surr>	114		%	AK102 DRO	(50-150)	06/24/97	06/25/97	
SW8080 Pesticides								
alpha-BHC	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
beta-BHC	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Chlordane	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
gamma-BHC (Lindane)	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
delta-BHC	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Aldrin	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Heptachlor epoxide	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan I	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDE	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Dieldrin	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan II	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDD	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB



CT&E Ref.# 973286004
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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
Endrin aldehyde	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
4,4'-DDT	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endosulfan sulfate	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Endrin ketone	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Methoxychlor	2.20 U	2.20	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Toxaphene	220 U	220	mg/Kg	SW846 8080		06/24/97	07/08/97	JLB
Surrogates								
Decachlorobiphenyl <Surr>	0		%	SW846 8080	(15-125)	06/24/97	07/08/97	
Tetrachloro-m-xylene <Surr>	0		%	SW846 8080	(10-91)	06/24/97	07/08/97	
Semivolatiles by GC/MS								
N-Nitrosodimethylamine	0.90 U	0.90	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyridine	0.90 U	0.90	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Aniline	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethyl)ether	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chlorophenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,3-Dichlorobenzene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,4-Dichlorobenzene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzyl alcohol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,2-Dichlorobenzene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylphenol (o-Cresol)	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
bis(2-chloroisopropyl)ether	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Methylphenol (p-Cresol)	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitroso-di-n-propylamine	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachloroethane	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Nitrobenzene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Isophorone	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



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 Matrix Soil
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Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 14:48
 Collected Date/Time 06/20/97 16:45
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
2-Nitrophenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dimethylphenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzoic acid	1.8 U	1.8	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Bis(2-Chloroethoxy)methane	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
1,2,4-Trichlorobenzene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Naphthalene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloroaniline	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobutadiene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chloro-3-methylphenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dichlorophenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methylnaphthalene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorocyclopentadiene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4,6-Trichlorophenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4,5-Trichlorophenol	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Chloronaphthalene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Nitroaniline	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dimethylphthalate	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthylene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,6-Dinitrotoluene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
3-Nitroaniline	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Acenaphthene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrophenol	4.5 U	4.5	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitrophenol	4.5 U	4.5	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dibenzofuran	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2,4-Dinitrotoluene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Diethylphthalate	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Chlorophenyl-phenylether	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluorene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
4-Nitroaniline	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
2-Methyl-4,6-dinitrophenol	1.8 U	1.8	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
N-Nitrosodiphenylamine	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM



CT&E Ref.# 973286004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05SD
 Matrix Soil
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 PWSID

Client PO#
 Printed Date/Time 07/22/97 14:48
 Collected Date/Time 06/20/97 16:45
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
4-Bromophenyl-phenylether	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Hexachlorobenzene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pentachlorophenol	1.8 U	1.8	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Phenanthrene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Anthracene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Di-n-butylphthalate	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Fluoranthene	0.567	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Pyrene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Azobenzene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Butylbenzylphthalate	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
3,3-Dichlorobenzidine	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(a)Anthracene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Chrysene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
bis(2-Ethylhexyl)phthalate	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
di-n-Octylphthalate	0.701	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(b)Fluoranthene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(k)fluoranthene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo(a)pyrene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Indeno[1,2,3-c,d] pyrene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Dibenzo[a,h]anthracene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Benzo[g,h,i]perylene	0.45 U	0.45	mg/Kg	SW846-8270		06/26/97	07/09/97	SVM
Surrogates								
2,4,6-Tribromophenol <Surr>	63.1		%	SW846-8270	(19-122)	06/26/97	07/09/97	
Phenol-d6 <Surr>	51.2		%	SW846-8270	(24-113)	06/26/97	07/09/97	
Terphenyl-d14 <Surr>	78.5		%	SW846-8270	(18-137)	06/26/97	07/09/97	
2-Fluorobiphenyl <Surr>	86		%	SW846-8270	(30-115)	06/26/97	07/09/97	
2-Fluorophenol <Surr>	45.3		%	SW846-8270	(25-121)	06/26/97	07/09/97	
Nitrobenzene-d5 <Surr>	74.7		%	SW846-8270	(23-120)	06/26/97	07/09/97	



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Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 14:48
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Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
PCB's by GC ECD								
Aroclor-1016	22.0 U	22.0	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1221	22.0 U	22.0	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1232	22.0 U	22.0	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1242	22.0 U	22.0	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1248	22.0 U	22.0	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1254	22.0 U	22.0	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Aroclor-1260	437	22.0	mg/Kg	SW846 8080		06/24/97	06/30/97	LZ
Surrogates								
Decachlorobiphenyl <Surr>	74.9		%	SW846 8080	(15-125)	06/24/97	06/30/97	
Tetrachloro-m-xylene <Surr>	74.9		%	SW846 8080	(10-91)	06/24/97	06/30/97	
VOA by GC/MS Method SW8260								
1,1,1,2-Tetrachloroethane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,1-Trichloroethane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2,2-Tetrachloroethane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1,2-Trichloroethane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,1-Dichloroethene	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2,3-Trichloropropane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromo-3-chloropropane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dibromoethane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichlorobenzene	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloroethane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,2-Dichloropropane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM
1,3-Dichloropropane	0.060 U	0.060	mg/Kg	SW846 8260		06/24/97	07/01/97	SPM



CT&E Ref.# 973286004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05SD
 Matrix Soil
 Ordered By
 PWSID

Client PO#
 Printed Date/Time WK Auth. 30 07/22/97 14:48
 Collected Date/Time 06/20/97 16:45
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
1,4-Dichlorobenzene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
4-Methyl-2-pentanone	0.60 U	0.60	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Acetone	0.60 U	0.60	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Benzene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Bromochloromethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Bromodichloromethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Bromoform	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Bromomethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Carbon tetrachloride	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Chlorobenzene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Chloroethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Chloroform	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Chloromethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Dibromochloromethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Dibromomethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Dichlorodifluoromethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Ethylbenzene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Methylene chloride	0.30 U	0.30	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
P & M -Xylene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Styrene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
sec-Butylbenzene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Tetrachloroethene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Toluene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Trichloroethene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Trichlorofluoromethane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
Vinyl chloride	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
cis-1,2-Dichloroethene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
cis-1,3-Dichloropropane	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
o-Xylene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM
trans-1,2-Dichloroethene	0.060 U	0.060	mg/Kg	SU846 8260		06/24/97	07/01/97	SPM



CT&E Ref.# 973286004
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ05SD
 Matrix Soil
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/22/97 14:48
 Collected Date/Time 06/20/97 16:45
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Surrogates								
1,2-Dichloroethane-D4 <surrogate>	60.5		%	SW846 8260		06/24/97	07/01/97	
Toluene-d8 <surrogate>	76.9		%	SW846 8260		06/24/97	07/01/97	
4-Bromofluorobenzene <Surrogate>	69.9		%	SW846 8260		06/24/97	07/01/97	



CT&E Ref.# 973286005
 Client Name Harding Lawson & Assoc
 Project Name/# 35646 C. Romanzof Landfill
 Client Sample ID 97RMZ06SD
 Matrix Soil
 Ordered By
 PWSID

Client PO# WK Auth. 30
 Printed Date/Time 07/17/97 11:56
 Collected Date/Time 06/20/97 17:45
 Received Date/Time 06/23/97 10:00
 Technical Director: Stephen C. Ede

Released By *Shawn Patten*

Sample Remarks:

GRO/BTEX Bromofluorobenzene surrogate concentration incorrect in data handling system. Multiple BFB surrogate concentrations being used, data system can only except one concentration at a time. (SEE RAW DATA FOR CORRECT % RECOVERY).

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Gasoline Range Organics	2.00 U	2.00	mg/Kg	AK101 GRO		06/20/97	06/24/97	GSN
Surrogates								
4-Bromofluorobenzene <Surr>	73.9		%	AK101 GRO	(50-150)	06/20/97	06/24/97	
1,4-Difluorobenzene <Surr>	133		%	AK101 GRO		06/20/97	06/24/97	



July 28, 1997

MAS I.D 820980

Harding Lawson Associates
601 East 57th Place
Anchorage, AK 99518
Attn: Mr. Phil Hoffman

RECEIVED

Project Name. Cape Romanzof Landfill

JUL 29 1997

Project Number: 35646

HARDING LAWSON
ASSOCIATES

Dear Mr. Wilson:

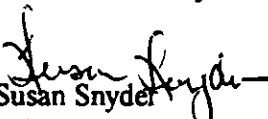
On June 23, 1997 MultiChem Analytical Services, LLC of Alaska received six samples for analysis in conjunction with the above listed project. The requested analyses were performed using EPA methodology or equivalent methods as specified below. The reports of analyses are enclosed. Below is an outline of the laboratories that participated in this project.

MAS-AK Analysis Performed: GRO (8015M), DRO (8100M)

MAS-WA Analysis Performed: Volatile Organic Compounds (8260), Semivolatile Organics (8270),
Metals (6010/7000), Organochlorine Pesticide/PCB (8081)

Please do not hesitate to contact us at (907) 248-8273, if you have any questions or comments.

Sincerely,
MultiChem Analytical Services


Susan Snyder
Laboratory Manager



Sample ID. Cross Reference Sheet

Client: Harding Lawson Associates
Project #: 35646
Project Name: Cape Romanzof Landfill

MAS I.D. 820980

MAS ID #	Client Description
820980 1	97RMZ06WA
820980 4	97RMZ04SW
820980 5	97RMZ04SW
820980 6	97RMZ04SD

MAS STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Blank of 100 gals
 2/11/80
 Lab: - MAS
 11/5/80
 15/5

CHAIN OF CUSTODY FORM

Project Number: 35646
 Name/Location: C. ROMANZOF LANDFILL
 Project Manager: P. BREEMAN

Samplers: J. McELROY
 C. MARSHALL

Project Number: 35646

Name/Location: C. ROMANZOF LANDFILL

Project Manager: P. BREEMAN
 Recorder: [Signature] (Signature Required)

ANALYSIS REQUESTED	
EPA 601/8010	
EPA 602/8020	
EPA 624/8240	
EPA 625/8270	
ICP METALS	
EPA 8015M/TPH	
AR 101 (GRE)	X
AR 102 (DEO)	X
9260 (VFA)	X
9260 (RFB/PRST)	X
9270 (SUCCS)	X
THE METALS	X

STATION DESCRIPTION / NOTES	SAMPLE #
97RMZ04SW X	
97RMZ04SD	
of project	

SOURCE CODE	MATRIX	#CONTAINERS & PRESERV	SAMPLE NUMBER OR LAB NUMBER		DATE			
			Yr	Wk	Seq	Yr	Mo	Day	Time
05	X	361	97	06	20	17	00	
06	X	ADPTE (1)	97	06	20	16	45	
								Final

LAB NUMBER		DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS	CHAIN OF CUSTODY RECORD			
Yr	Seq					RECEIVED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
					-IRPIMS DELIVERABLES	[Signature]	6/23/97 1000	[Signature]	
					-TEMP BLANK	[Signature]		[Signature]	
					INCLUDED	[Signature]		[Signature]	
					* EXTRA JARS PROVIDED FOR MAS / MSD ANAL	[Signature]		[Signature]	
					NOTE (1) 2-20Z	[Signature]		[Signature]	
					4-40Z	[Signature]		[Signature]	
					1-40Z METH	[Signature]		[Signature]	
METHOD OF SHIPMENT						[Signature]	6/23/97 1000	[Signature]	70
DISPATCHED BY (Signature)						[Signature]	6/23/97 1000	[Signature]	180

70 183

SAMPLE LOG-IN CHECKLIST

ACCESSION #: 820980 SUBCONTRACT WORK? YES / NO
 CLIENT NAME: HLA TO LAB (circle) MAS-R / OTHER: _____
 LOGGED-IN BY (print): Anna Braunard (sign): Anna Braunard
 Date received: 6-23-97 Client's Cooler # (if any): _____
 Is the project for: ACOE? YES / NO NAVY? YES / NO

1.	Did cooler arrive with shipping document?	(Hand delivery) N/A	YES	NO
2.	Are Custody seals present on cooler?	<input checked="" type="radio"/> YES / NO	How many? <u>2</u>	Where? <u>Front & Back</u>
	Seal date: <u>6-23</u>	Seal name: <u>Dan Lora</u>	Intact?	N/A
			<input checked="" type="radio"/> YES	NO
3.	Are Custody seals present on sample containers?		YES	<input checked="" type="radio"/> NO
	If "YES", intact?		<input checked="" type="radio"/> YES	NO
4.	Is the Chain of Custody (C-O-C) sealed in plastic bag?	<input checked="" type="radio"/> YES / <input checked="" type="radio"/> NO	Is Taped to cooler lid?	<input checked="" type="radio"/> YES / NO
5.	Is the C-O-C complete? *	Relinquished by client: <input checked="" type="radio"/> YES / NO	Analyses marked off:	<input checked="" type="radio"/> YES / NO
	* C-O-C or other representative documents, letters, and/or shipping memos		Signed/received by lab:	<input checked="" type="radio"/> YES / NO
6.	Is the C-O-C in agreement with samples received?			
	Sample ID's:	<input checked="" type="radio"/> YES / NO	Matrix: <u>H₂O / sediment</u>	<input checked="" type="radio"/> YES / NO
	Date sampled:	<input checked="" type="radio"/> YES / NO	# Containers:	<input checked="" type="radio"/> YES / NO
7.	Has the main logbook been filled out properly?		<input checked="" type="radio"/> YES	NO
8.	If samples are RUSH has notice been given?		<input checked="" type="radio"/> YES	NO
9.	Is proper preservation indicated on label(s)?		<input checked="" type="radio"/> YES	NO
10.	Did pH check verify preservative indicated?	(Volatiles) N/A	YES	NO
11.	Is there sufficient sample volume for analyses?		<input checked="" type="radio"/> YES	NO
12.	Are samples in proper containers? (see reference chart)		<input checked="" type="radio"/> YES	NO
13.	Are all samples within holding times for requested analysis?		<input checked="" type="radio"/> YES	NO
14.	Are all sample containers intact? (i.e. not broken, leaking...)		<input checked="" type="radio"/> YES	NO
15.	Are samples individually bagged?		<input checked="" type="radio"/> YES	NO
16.	Are all volatile samples headspace-free (< pea-size for waters)?	N/A	<input checked="" type="radio"/> YES	NO
17.	Shipping container (circle one):	<input checked="" type="radio"/> Cooler / Box / Other:		
18.	Type of packing material used (circle one):	<input checked="" type="radio"/> Bubble Wrap / Styrofoam Peanuts / Vermiculite / None		
19.	Refrigerant (circle one):	<input checked="" type="radio"/> Gel Ice / Loose Ice / Other:		None
20.	Was refrigerant frozen upon receipt?		<input checked="" type="radio"/> YES	NO
21.	Cooler temperature(s):	#1: <u>4.4</u> °C	#2: <u>5.9</u> °C	

Sample tagging check for QC:
 Sample ID's issued in order of appearance on C-O-C: YES / NO
 Tags placed in appropriate areas of sample containers: YES / NO

Initials of reviewer: AP
 Describe any "NO" items from checklist above: _____

Was client contacted: YES / NO / N/A Date: _____ Name of person contacted: _____
 Describe client instructions or actions taken: _____

GC-Fuels QC Evaluation Summary

Date: 07/08/97

Client: Harding Lawson Associates
 Method: AK 101
 Criteria: ADEC
 MAS-Alaska #: 820980
 Client Project #: 35646
 Matrix: Water & Soil
 Number of Samples: 3

Dates Extracted: 06/30/97
 Dates Analyzed: 07/03/97
 07/04/97
 07/05/97

QC Parameter	Method Criteria Acceptance	Comments/Actions
Holding Times	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Extraction Dates	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	AK101 sample #6 was received without extracted methanol. Sample was re-extracted from another jar of sediment.
Analysis Dates	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Continuing Calibration	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Method Blanks	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
QC Spike Samples	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
MS/MSD	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	Client did not supply an MS/MSD for AK101 soil sample.
Calculations	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Surrogate Recoveries	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Retention Times	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

Hydrocarbon Match: Samples were below the method reporting limit.

Laboratory QA:

Data meets guidelines established within the SOP for the MAS-Alaska Data Reporting Level 3, and State of Alaska Standard Quality Assurance Program Plan, 18AAC78 Underground Storage Tanks, as amended through Nov. 3, 1995.

Data Reviewed by Christine Macnicke Approved by A. Beare

GC-Fuels QC Evaluation Summary

Date:07/23/97

Client: Harding Lawson Assoc Dates Extracted: 06/24/97
 Method: AK 102 06/26/97
 Criteria: ADEC
 MAS-Alaska #: 820980 Dates Analyzed: 06/25/97
 Client Project #: 35646 06/26/97
 Matrix: Water & Soil 06/29/97
 Number of Samples: 2 (H2O) & 1 (Soil)

QC Parameter	Method Criteria Acceptance	Comments/Actions
Holding Times	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Extraction Dates	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Analysis Dates	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Continuing Calibration	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Method Blanks	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
QC Spike Samples	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
MS/MSD	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Calculations	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Surrogate Recoveries	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Retention Times	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

Hydrocarbon Match: Other. Sample 5 was below the method reporting limit. Samples 1 & 6 contain a middle diesel range distillate that is consistent with DF2. Sample 6 also contains a residual range envelope that resembles motor oil with some other unknown late diesel / early residual peaks.

Laboratory QA:

Data meets guidelines established within the SOP for the MAS-Alaska Data Reporting Level 3, and State of Alaska Standard Quality Assurance Program Plan, 18AAC78 Underground Storage Tanks, as amended through Nov. 3, 1995.

Data Reviewed by *Sinthy Myers* Approved by *Lee Ann Benko*

SUMMARY REPORT of ANALYSIS

Client: **Harding Lawson Associates**
 601 East 57th Place
 Anchorage, AK 99518

Lab Accession: 820980
 Date Received: 6/23/97
 Matrix: Water
 Units: µg/L GRO
 mg/L DRO
 Matrix: Soil
 Units: mg/kg

Project Name: Cape Romanzof Landfill
 Project Number: 35646
 Project Manager: Phil Hoffman

Reviewed By: 8mg

Client Sample	Lab Accession #	Date Collected	% Moisture	Conc Benzene	Conc. Toluene	Conc. Ethyl-Benzene	Conc. Total Xylene	Conc. GRO as Gasoline	Conc DRO as Diesel	Conc RRO as 10w40 oil
97RMZ06WA	820980 -1	6/20/97	N/A					<100	0.41	
97RMZ04SW	820980 -4	6/20/97	N/A					<100		
97RMZ04SW	820980 -5	6/20/97	N/A						<0.25	
97RMZ04SD	820980 -6	6/20/97	25					<1.3	340	

Methods:
 B.T.E.X = AK 101
 GRO = AK 101
 DRO = AK 102
 RRO = AK 103

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MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICES

GASOLINE RANGE ORGANICS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/03/97
SAMPLE MATRIX	: WATER	UNITS	: µg/L
METHOD	: AK 101 GRO	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
FUEL HYDROCARBONS	<100
HYDROCARBON RANGE	C6 - C10
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY		LIMITS
A, A, A-TRIFLUOROTOLUENE	98	82-121
BROMOFLUOROBENZENE	102	89-124
1-CHLOROCTANE	88	60-120

Analyst Lab Date 7.7.97
 Reviewer AK Date 7/10/97

MAS I.D. # 820980-1

GASOLINE RANGE ORGANICS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/23/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ06WA	DATE ANALYZED	: 07/04/97
SAMPLE MATRIX	: WATER	UNITS	: µg/L
METHOD	: AK 101 GRO	DILUTION FACTOR	: 1

 COMPOUNDS

RESULTS

FUEL HYDROCARBONS	<100
HYDROCARBON RANGE	C6 - C10
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY

LIMITS

A, A, A-TRIFLUOROTOLUENE	97	82-121
BROMOFLUOROBENZENE	103	89-124
1-CHLOROOCCTANE	93	60-120

Analyst Job Date 7.7.97
 Reviewer A Date 7/8/97

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MAS I.D. # 820980-4

MultiChem
ANALYTICAL SERVICES

GASOLINE RANGE ORGANICS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/23/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ04SW	DATE ANALYZED	: 07/04/97
SAMPLE MATRIX	: WATER	UNITS	: µg/L
METHOD	: AK 101 GRO	DILUTION FACTOR	: 1

COMPOUNDS

RESULTS

FUEL HYDROCARBONS	<100
HYDROCARBON RANGE	C6 - C10
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY

LIMITS

A,A,A-TRIFLUOROTOLUENE	99	82-121
BROMOFLUOROBENZENE	107	89-124
1-CHLOROOCCTANE	101	60-120

Analyst Lab Date 7.7.97
 Reviewer [Signature] Date 7/8/97

MAS I.D. # 820980

GASOLINE RANGE ORGANICS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: BLANK
PROJECT #	: 35646	DATE EXTRACTED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE ANALYZED	: 07/03/97
SAMPLE MATRIX	: WATER	UNITS	: µg/L
METHOD	: AK 101 GRO		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
GASOLINE	<100	2200	1900	86	1950	89	3
CONTROL LIMITS				% REC.			RPD
GASOLINE				78 - 109			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
A,A,A-TRIFLUOROTOLUENE		110		112		82 - 121	
BROMOFLUOROBENZENE		103		102		89 - 124	
1-CHLOROCTANE		97		96		60 - 120	

Analyst lab Date 7.7.97
 Reviewer AE Date 7.18.97

Page 1

Sample File : 97D03779
 MS File : 97D03780
 MSD File : 97D03781

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MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICES

GASOLINE RANGE ORGANICS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: 820980-1
PROJECT #	: 35646	DATE EXTRACTED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE ANALYZED	: 07/04/97
SAMPLE MATRIX	: WATER	UNITS	: µg/L
METHOD	: AK 101 GRO		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
GASOLINE	<100	2200	1770	80	1880	85	6
CONTROL LIMITS				% REC.			RPD
GASOLINE				63 - 111			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
A, A, A-TRIFLUOROTOLUENE		105		110		82 - 121	
BROMOFLUOROBENZENE		105		104		89 - 124	
1-CHLOROOCCTANE		99		99		60 - 120	

Analyst Jeb Date 7.7.97
 Reviewer [Signature] Date 7/8/97

MAS I.D. # 820980

GASOLINE RANGE ORGANICS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: 06/30/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/05/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: AK 101 GRO	DILUTION FACTOR	: 1
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		%MOISTURE	: .0

COMPOUNDS

RESULTS

FUEL HYDROCARBONS	<1.0
HYDROCARBON RANGE	C6 - C10
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY

LIMITS

A, A, A-TRIFLUOROTOLUENE	94	54-137
BROMOFLUOROBENZENE	107	52-148
1-CHLOROOCCTANE	92	60-120

Analyst lab Date 7.7.97
Reviewer # Date 7/18/97

70 193

MAS I.D. # 820980-6

MultiChem
ANALYTICAL SERVICES

GASOLINE RANGE ORGANICS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/23/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: 07/05/97
CLIENT I.D.	: 97RMZ04SD	DATE ANALYZED	: 07/05/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: AK 101 GRO	DILUTION FACTOR	: 1
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		%MOISTURE	: 25.0

COMPOUNDS

RESULTS

FUEL HYDROCARBONS	<1.3
HYDROCARBON RANGE	C6 - C10
HYDROCARBON QUANTITATION USING	GASOLINE

SURROGATE PERCENT RECOVERY

LIMITS

A, A, A-TRIFLUOROTOLUENE	80	54-137
BROMOFLUOROBENZENE	85	52-148
1-CHLOROCTANE	100	60-120

Analyst CM Date 7-8-97
 Reviewer AZ Date 7/18/97

MAS I.D. # 820980

GASOLINE RANGE ORGANICS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: BLANK
PROJECT #	: 35646	DATE EXTRACTED	: 06/30/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE ANALYZED	: 07/05/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: AK 101 GRO		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
GASOLINE	<1.00	22.0	18.3	83	20.1	91	9
CONTROL LIMITS				% REC.			RPD
GASOLINE				78 - 108			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
A, A, A-TRIFLUOROTOLUENE		103		111		54 - 137	
BROMOFLUOROBENZENE		104		103		52 - 148	
1-CHLOROOCANE		95		110		60 - 120	

Analyst lab Date 7.7.97
 Reviewer A Date 7/9/97

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MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICES

FUEL HYDROCARBONS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: 06/24/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 06/25/97
SAMPLE MATRIX	: WATER	UNITS	: mg/L
METHOD	: AK 102	DILUTION FACTOR	: 1

COMPOUNDS

RESULTS

FUEL HYDROCARBONS	<0.25
HYDROCARBON RANGE	C10 - C25
HYDROCARBON QUANTITATION USING	DIESEL

SURROGATE PERCENT RECOVERY

LIMITS

O-TERPHENYL	89	60-120
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Analyst JA Date 7/23/97
 Reviewer Lab Date 7/23/97

MAS I.D. # 820980-1

FUEL HYDROCARBONS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/23/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: 06/24/97
CLIENT I.D.	: 97RMZ06WA	DATE ANALYZED	: 06/26/97
SAMPLE MATRIX	: WATER	UNITS	: mg/L
METHOD	: AK 102	DILUTION FACTOR	: 1

COMPOUNDS RESULTS

FUEL HYDROCARBONS	0.41
HYDROCARBON RANGE	C10 - C25
HYDROCARBON QUANTITATION USING	DIESEL

SURROGATE PERCENT RECOVERY	LIMITS
O-TERPHENYL	94 60-120

Analyst TA Date 7/23/97
Reviewer Job Date 7/27/97

FUEL HYDROCARBONS
DATA SUMMARY

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL 2
CLIENT I.D. : 97RMZ04SW
SAMPLE MATRIX : WATER
METHOD : AK 102

DATE SAMPLED : 06/20/97
DATE RECEIVED : 06/23/97
DATE EXTRACTED : 06/24/97
DATE ANALYZED : 06/26/97
UNITS : mg/L
DILUTION FACTOR : 1

COMPOUNDS

RESULTS

FUEL HYDROCARBONS
HYDROCARBON RANGE
HYDROCARBON QUANTITATION USING

<0.25
C10 - C25
DIESEL

SURROGATE PERCENT RECOVERY

LIMITS

O-TERPHENYL

91

60-120

Analyst JA Date 7/23/97
Reviewer Job Date 7/27/97

MAS I.D. # 820980

FUEL HYDROCARBONS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL 2
SAMPLE MATRIX : WATER
METHOD : AK 102

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 06/24/97
DATE ANALYZED : 06/25/97
UNITS : mg/L

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
DIESEL	<0.250	3.41	3.00	88	3.06	90	2
CONTROL LIMITS				% REC.			RPD
DIESEL				72 - 120			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE	LIMITS		
O-TERPHENYL		92		93		60 - 120	

Analyst JA Date 7/23/97
Reviewer Lab Date 7/27/97

Sample File : 97B02745
MS File : 97B02746
MSD File : 97B02747

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MAS I.D. #.820980

MultiChem
ANALYTICAL SERVICES

FUEL HYDROCARBONS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL 2
SAMPLE MATRIX : WATER
METHOD : AK 102

SAMPLE I.D. # : 820980-1
DATE EXTRACTED : 06/24/97
DATE ANALYZED : 06/26/97
UNITS : mg/L

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
DIESEL	0.411	3.41	3.84	101	3.81	100	1
CONTROL LIMITS				% REC.			RPD
DIESEL				50 - 135			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE	LIMITS		
O-TERPHENYL		102		81		60 - 120	

Analyst TA Date 7/23/97
Reviewer Job Date 7/27/97

Sample File : 97B02790
MS File : 97B02788
MSD File : 97B02789

MAS I.D. # 820980

FUEL HYDROCARBONS
DATA SUMMARY

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL 2
CLIENT I.D. : METHOD BLANK
SAMPLE MATRIX : SOIL
METHOD : AK 102
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

DATE SAMPLED : N/A
DATE RECEIVED : N/A
DATE EXTRACTED : 06/26/97
DATE ANALYZED : 06/29/97
UNITS : mg/Kg
DILUTION FACTOR : 1
%MOISTURE : .0

COMPOUNDS

RESULTS

FUEL HYDROCARBONS <10
HYDROCARBON RANGE C10 - C25
HYDROCARBON QUANTITATION USING DIESEL

SURROGATE PERCENT RECOVERY

LIMITS

O-TERPHENYL 101 60-120

Analyst TA Date 7/23/97
Reviewer sub Date 7/27/97

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MAS I.D. # 820980-6

MultiChem
ANALYTICAL SERVICES

FUEL HYDROCARBONS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/23/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL 2	DATE EXTRACTED	: 06/26/97
CLIENT I.D.	: 97RMZ04SD	DATE ANALYZED	: 06/29/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
METHOD	: AK 102	DILUTION FACTOR	: 1
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		%MOISTURE	: 25.0

COMPOUNDS

RESULTS

FUEL HYDROCARBONS	340
HYDROCARBON RANGE	C10 - C25
HYDROCARBON QUANTITATION USING	DIESEL

SURROGATE PERCENT RECOVERY

LIMITS

O-TERPHENYL	89	60-120
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Analyst TA Date 7/23/97
 Reviewer Job Date 7/27/97

MAS I.D. # 820980

FUEL HYDROCARBONS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL 2
SAMPLE MATRIX : SOIL
METHOD : AK 102

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 06/26/97
DATE ANALYZED : 06/29/97
UNITS : mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
DIESEL	<10.0	136	138	101	132	97	4
CONTROL LIMITS				% REC.			RPD
DIESEL				85 - 120			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
O-TERPHENYL		103		94		60 - 120	

Analyst TA Date 7/23/97
Reviewer Sob Date 7-27-97

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MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICES

FUEL HYDROCARBONS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL 2
SAMPLE MATRIX : SOIL
METHOD : AK 102

SAMPLE I.D. # : 820956-2
DATE EXTRACTED : 06/26/97
DATE ANALYZED : 06/29/97
UNITS : mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
DIESEL	<11.4	155	154	99	158	102	3
CONTROL LIMITS				% REC.			RPD
DIESEL				72 - 131			20
SURROGATE RECOVERIES		SPIKE		DUP. SPIKE		LIMITS	
O-TERPHENYL		95		97		60 - 120	

Analyst TA Date 7/23/97
Reviewer Jeb Date 12/97

PERCENT MOISTURE RESULTS

MultiChem - Anchorage
Extraction Lab

Accession group: 820980

Date analyzed: 06/30/97

Report printed: 07/01/97

Filename: mois6035

Method: CLP ILM03.0

Accession Number	Percent Moisture	Flag
820980 - 6	25	

QC RESULTS

Accession Number	Sample Result	Duplicate Result	RPD	Flag
820956 - 3	35	35	0	

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MultiChem
ANALYTICAL SERVICES

MAS I.D. # 820980
UST - 026

July 21, 1997

Harding Lawson Associates
601 E. 57th Place
Anchorage AK 99518

Attention : Phil Hoffman

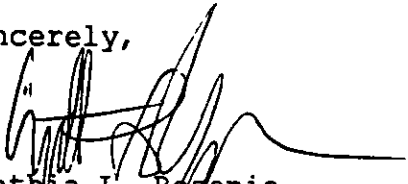
Project Number : 35646

Project Name : Cape Romanzof Landfill

Dear Mr. Hoffman:

On June 24, 1997, MultiChem Analytical Services received four samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Sincerely,



Cynthia L. Reznia
Project Manager

CLR/hal/ash

Enclosure



MAS I.D. # 820980

SAMPLE CROSS REFERENCE SHEET

CLIENT : HARDING LAWSON ASSOCIATES
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL

MAS #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
820980-1	97RMZ06WA	06/20/97	WATER
820980-3	97RMZ09WA	06/20/97	WATER
820980-4	97RMZ04SW	06/20/97	WATER
820980-6	97RMZ04SD	06/20/97	SEDIMENT

----- TOTALS -----

MATRIX	# SAMPLES
WATER	3
SEDIMENT	1

MAS STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

ANALYTICAL SCHEDULE

CLIENT : HARDING LAWSON ASSOCIATES
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL

ANALYSIS	TECHNIQUE	REFERENCE	LAB
VOLATILE ORGANIC COMPOUNDS	GCMS	EPA 8260	R
SEMIVOLATILE COMPOUNDS	GCMS	EPA 8270	R
ORGANOCHLORINE PESTICIDES & PCBs	GC/ECD	EPA 8081	R
ALUMINUM	ICAP	EPA 6010	R
ANTIMONY	ICAP	EPA 6010	R
ARSENIC	AA/GF	EPA 7060	R
BARIUM	ICAP	EPA 6010	R
BERYLLIUM	ICAP	EPA 6010	R
CADMIUM	ICAP	EPA 6010	R
CALCIUM	ICAP	EPA 6010	R
CHROMIUM	ICAP	EPA 6010	R
COBALT	ICAP	EPA 6010	R
COPPER	ICAP	EPA 6010	R
IRON	ICAP	EPA 6010	R
LEAD	AA/GF	EPA 7421	R
MAGNESIUM	ICAP	EPA 6010	R
MANGANESE	ICAP	EPA 6010	R
MERCURY	AA/COLD VAPOR	EPA 7470A	R
MERCURY	AA/COLD VAPOR	EPA 7471A	R
NICKEL	ICAP	EPA 6010	R

R = MAS - Renton
 ANC = MAS - Anchorage
 SUB = Subcontract

CONTINUED NEXT PAGE

MAS I.D. # 820980

ANALYTICAL SCHEDULE
CONTINUED

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL

ANALYSIS	TECHNIQUE	REFERENCE	LAB
POTASSIUM	ICAP	EPA 6010	R
SELENIUM	AA/GF	EPA 7440	R
SILVER	ICAP	EPA 6010	R
SODIUM	ICAP	EPA 6010	R
THALLIUM	AA/GF	EPA 7841	R
VANADIUM	ICAP	EPA 6010	R
ZINC	ICAP	EPA 6010	R
MOISTURE	GRAVIMETRIC	CLP SOW ILM04.0	R

R = MAS - Renton
ANC = MAS - Anchorage
SUB = Subcontract

QUALITY ASSURANCE
DATA REVIEW

Date: July 21, 1997

MAS Workorder: 820980

Analysis: VOLATILE ORGANICS

The data contained in the following report have been reviewed and approved by the appropriate supervisory personnel listed below:

Dave A. Wunderlich

Dave Wunderlich
Quality Assurance Manager

CERTIFICATION

MultiChem Analytical Services certifies that the analyses reported herein are true, complete, and correct within the limits of the methods employed.

MAS I.D. # 820980

CASE NARRATIVE

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL

CASE NARRATIVE: VOLATILE ORGANICS ANALYSIS

There were no anomalies associated with the preparation and/or analysis of the samples in this accession.

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MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
DICHLORODIFLUOROMETHANE	<1
CHLOROMETHANE	<5
VINYL CHLORIDE	<1
BROMOMETHANE	<1
CHLOROETHANE	<1
TRICHLOROFLUOROMETHANE	<1
1,1-DICHLOROETHENE	<1
METHYLENE CHLORIDE	<5
TRANS-1,2-DICHLOROETHENE	<1
1,1-DICHLOROETHANE	<1
CHLOROFORM	<1
CIS-1,2-DICHLOROETHENE	<1
BROMOCHLOROMETHANE	<1
2,2-DICHLOROPROPANE	<1
1,1,1-TRICHLOROETHANE	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROPROPENE	<1
CARBON TETRACHLORIDE	<1
BENZENE	<1
DIBROMOMETHANE	<1
1,2-DICHLOROPROPANE	<1
TRICHLOROETHENE	<1
BROMODICHLOROMETHANE	<1
CIS-1,3-DICHLOROPROPENE	<3
TRANS-1,3-DICHLOROPROPENE	<3
1,1,2-TRICHLOROETHANE	<1
TOLUENE	<1
1,2-DIBROMOETHANE (EDB)	<1
1,3-DICHLOROPROPANE	<1
CHLORODIBROMOMETHANE	<2
TETRACHLOROETHENE	<1
1,1,1,2-TETRACHLOROETHANE	<1
CHLOROBENZENE	<1
ETHYLBENZENE	<1
BROMOFORM	<3
STYRENE	<1
TOTAL XYLENES	<1
1,1,2,2-TETRACHLOROETHANE	<1

MAS I.D. # 820980

VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
1, 2, 3-TRICHLOROPROPANE	<1
ISOPROPYLBENZENE	<1
BROMOBENZENE	<1
N-PROPYLBENZENE	<1
2-CHLOROTOLUENE	<1
4-CHLOROTOLUENE	<1
1, 3, 5-TRIMETHYLBENZENE	<1
TERT-BUTYLBENZENE	<1
1, 2, 4-TRIMETHYLBENZENE	<1
SEC-BUTYLBENZENE	<1
1, 3-DICHLOROBENZENE	<2
1, 4-DICHLOROBENZENE	<2
P-ISOPROPYLTOLUENE	<2
1, 2-DICHLOROBENZENE	<2
N-BUTYLBENZENE	<1
1, 2-DIBROMO-3-CHLOROPROPANE	<3
1, 2, 4-TRICHLOROBENZENE	<5
NAPHTHALENE	<5
HEXACHLOROBUTADIENE	<3
1, 2, 3-TRICHLOROBENZENE	<5

SURROGATE PERCENT RECOVERY

LIMITS

1, 2-DICHLOROETHANE-D4	98	64 - 145
TOLUENE-D8	99	89 - 110
BROMOFLUOROBENZENE	99	82 - 112

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MAS I.D. # 820980-1

MultiChem
 ANALYTICAL SERVICES

 VOLATILE ORGANICS ANALYSIS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ06WA	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

 COMPOUNDS RESULTS

DICHLORODIFLUOROMETHANE	<1
CHLOROMETHANE	<5
VINYL CHLORIDE	<1
BROMOMETHANE	<1
CHLOROETHANE	<1
TRICHLOROFLUOROMETHANE	<1
1,1-DICHLOROETHENE	<1
METHYLENE CHLORIDE	<5
TRANS-1,2-DICHLOROETHENE	<1
1,1-DICHLOROETHANE	<1
CHLOROFORM	<1
CIS-1,2-DICHLOROETHENE	<1
BROMOCHLOROMETHANE	<1
2,2-DICHLOROPROPANE	<1
1,1,1-TRICHLOROETHANE	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROPROPENE	<1
CARBON TETRACHLORIDE	<1
BENZENE	<1
DIBROMOMETHANE	<1
1,2-DICHLOROPROPANE	<1
TRICHLOROETHENE	<1
BROMODICHLOROMETHANE	<1
CIS-1,3-DICHLOROPROPENE	<3
TRANS-1,3-DICHLOROPROPENE	<3
1,1,2-TRICHLOROETHANE	<1
TOLUENE	<1
1,2-DIBROMOETHANE (EDB)	<1
1,3-DICHLOROPROPANE	<1
CHLORODIBROMOMETHANE	<2
TETRACHLOROETHENE	<1
1,1,1,2-TETRACHLOROETHANE	<1
CHLOROBENZENE	<1
ETHYLBENZENE	<1
BROMOFORM	<3
STYRENE	<1
TOTAL XYLENES	<1
1,1,2,2-TETRACHLOROETHANE	<1

MAS I.D. # 820980-1

70 214
MultiChem
ANALYTICAL SERVICES

VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ06WA	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
1, 2, 3-TRICHLOROPROPANE	<1
ISOPROPYLBENZENE	<1
BROMOBENZENE	<1
N-PROPYLBENZENE	<1
2-CHLOROTOLUENE	<1
4-CHLOROTOLUENE	<1
1, 3, 5-TRIMETHYLBENZENE	<1
TERT-BUTYLBENZENE	<1
1, 2, 4-TRIMETHYLBENZENE	<1
SEC-BUTYLBENZENE	<1
1, 3-DICHLOROBENZENE	<2
1, 4-DICHLOROBENZENE	<2
P-ISOPROPYLTOLUENE	<2
1, 2-DICHLOROBENZENE	<2
N-BUTYLBENZENE	<2
1, 2-DIBROMO-3-CHLOROPROPANE	<1
1, 2, 4-TRICHLOROBENZENE	<3
NAPHTHALENE	<5
HEXACHLOROBUTADIENE	<5
1, 2, 3-TRICHLOROBENZENE	<3
	<5

SURROGATE PERCENT RECOVERY

LIMITS

1, 2-DICHLOROETHANE-D4	99	64 - 145
TOLUENE-D8	95	89 - 110
BROMOFLUOROBENZENE	97	82 - 112

VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ09WA	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
-----------	---------

DICHLORODIFLUOROMETHANE	<1
CHLOROMETHANE	<5
VINYL CHLORIDE	<1
BROMOMETHANE	<1
CHLOROETHANE	<1
TRICHLOROFLUOROMETHANE	<1
1,1-DICHLOROETHENE	<1
METHYLENE CHLORIDE	<5
TRANS-1,2-DICHLOROETHENE	<1
1,1-DICHLOROETHANE	<1
CHLOROFORM	<1
CIS-1,2-DICHLOROETHENE	<1
BROMOCHLOROMETHANE	<1
2,2-DICHLOROPROPANE	<1
1,1,1-TRICHLOROETHANE	<1
1,2-DICHLOROETHANE	<1
1,1-DICHLOROPROPENE	<1
CARBON TETRACHLORIDE	<1
BENZENE	<1
DIBROMOMETHANE	<1
1,2-DICHLOROPROPANE	<1
TRICHLOROETHENE	<1
BROMODICHLOROMETHANE	<1
CIS-1,3-DICHLOROPROPENE	<3
TRANS-1,3-DICHLOROPROPENE	<3
1,1,2-TRICHLOROETHANE	<1
TOLUENE	<1
1,2-DIBROMOETHANE (EDB)	<1
1,3-DICHLOROPROPANE	<1
CHLORODIBROMOMETHANE	<2
TETRACHLOROETHENE	<1
1,1,1,2-TETRACHLOROETHANE	<1
CHLOROBENZENE	<1
ETHYLBENZENE	<1
BROMOFORM	<3
STYRENE	<1
TOTAL XYLENES	<1
1,1,2,2-TETRACHLOROETHANE	<1

MAS I.D. # 820980-3

VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ09WA	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
1, 2, 3-TRICHLOROPROPANE	<1
ISOPROPYLBENZENE	<1
BROMOBENZENE	<1
N-PROPYLBENZENE	<1
2-CHLOROTOLUENE	<1
4-CHLOROTOLUENE	<1
1, 3, 5-TRIMETHYLBENZENE	<1
TERT-BUTYLBENZENE	<1
1, 2, 4-TRIMETHYLBENZENE	<1
SEC-BUTYLBENZENE	<1
1, 3-DICHLOROBENZENE	<2
1, 4-DICHLOROBENZENE	<2
P-ISOPROPYLTOLUENE	<2
1, 2-DICHLOROBENZENE	<2
N-BUTYLBENZENE	<1
1, 2-DIBROMO-3-CHLOROPROPANE	<3
1, 2, 4-TRICHLOROBENZENE	<5
NAPHTHALENE	<5
HEXACHLOROBUTADIENE	<3
1, 2, 3-TRICHLOROBENZENE	<5

SURROGATE PERCENT RECOVERY

LIMITS

1, 2-DICHLOROETHANE-D4	101	64 - 145
TOLUENE-D8	96	89 - 110
BROMOFLUOROBENZENE	94	82 - 112

70 217

MAS I.D. # 820980-4

MultiChem
 ANALYTICAL SERVICES

 VOLATILE ORGANICS ANALYSIS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ04SW	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

 COMPOUNDS RESULTS

DICHLORODIFLUOROMETHANE	.....	<1
CHLOROMETHANE		<5
VINYL CHLORIDE		<1
BROMOMETHANE	.....	<1
CHLOROETHANE		<1
TRICHLOROFLUOROMETHANE		<1
1,1-DICHLOROETHENE	.....	<1
METHYLENE CHLORIDE		<5
TRANS-1,2-DICHLOROETHENE		<1
1,1-DICHLOROETHANE	.....	<1
CHLOROFORM		<1
CIS-1,2-DICHLOROETHENE		<1
BROMOCHLOROMETHANE	.....	<1
2,2-DICHLOROPROPANE		<1
1,1,1-TRICHLOROETHANE		<1
1,2-DICHLOROETHANE	.....	<1
1,1-DICHLOROPROPENE		<1
CARBON TETRACHLORIDE		<1
BENZENE	.....	<1
DIBROMOMETHANE		<1
1,2-DICHLOROPROPANE		<1
TRICHLOROETHENE	.....	<1
BROMODICHLOROMETHANE		<1
CIS-1,3-DICHLOROPROPENE		<3
TRANS-1,3-DICHLOROPROPENE	.....	<3
1,1,2-TRICHLOROETHANE		<1
TOLUENE		<1
1,2-DIBROMOETHANE (EDB)	.....	<1
1,3-DICHLOROPROPANE		<1
CHLORODIBROMOMETHANE		<2
TETRACHLOROETHENE	.....	<1
1,1,1,2-TETRACHLOROETHANE		<1
CHLOROBENZENE		<1
ETHYLBENZENE	.....	<1
BROMOFORM		<3
STYRENE		<1
TOTAL XYLENES	.....	<1
1,1,2,2-TETRACHLOROETHANE		<1

MAS I.D. # 820980-4

VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ04SW	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
1,2,3-TRICHLOROPROPANE	<1
ISOPROPYLBENZENE	<1
BROMOBENZENE	<1
N-PROPYLBENZENE	<1
2-CHLOROTOLUENE	<1
4-CHLOROTOLUENE	<1
1,3,5-TRIMETHYLBENZENE	<1
TERT-BUTYLBENZENE	<1
1,2,4-TRIMETHYLBENZENE	<1
SEC-BUTYLBENZENE	<1
1,3-DICHLOROBENZENE	<2
1,4-DICHLOROBENZENE	<2
P-ISOPROPYLTOLUENE	<2
1,2-DICHLOROBENZENE	<2
N-BUTYLBENZENE	<1
1,2-DIBROMO-3-CHLOROPROPANE	<3
1,2,4-TRICHLOROBENZENE	<5
NAPHTHALENE	<5
HEXACHLOROBUTADIENE	<3
1,2,3-TRICHLOROBENZENE	<5

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	100	64 - 145
TOLUENE-D8	95	89 - 110
BROMOFLUOROBENZENE	98	82 - 112

VOLATILE ORGANICS ANALYSIS
 QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: BLANK
PROJECT #	: 35646	DATE EXTRACTED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE ANALYZED	: 07/02/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8260A		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
1,1-DICHLOROETHENE	<1.00	50.0	49.0	98	N/A	N/A	N/A
BENZENE	<1.00	50.0	49.5	99	N/A	N/A	N/A
TRICHLOROETHENE	<1.00	50.0	47.0	94	N/A	N/A	N/A
TOLUENE	<1.00	50.0	50.2	100	N/A	N/A	N/A
CHLOROENZENE	<1.00	50.0	53.2	106	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
1,1-DICHLOROETHENE	55 - 148	20
BENZENE	79 - 133	20
TRICHLOROETHENE	83 - 124	20
TOLUENE	83 - 131	20
CHLOROENZENE	80 - 140	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
1,2-DICHLOROETHANE-D4	99	N/A	64 - 145
TOLUENE-D8	99	N/A	89 - 110
BROMOFLUOROBENZENE	97	N/A	82 - 112

MAS I.D. # 820980

VOLATILE ORGANICS ANALYSIS
 QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES	SAMPLE I.D. # : 820980-1
PROJECT # : 35646	CLIENT I.D. # : 97RMZ06WA
PROJECT NAME : CAPE ROMANZOF LANDFILL	DATE EXTRACTED : N/A
SAMPLE MATRIX : WATER	DATE ANALYZED : 07/02/97
EPA METHOD : 8260A	UNITS : ug/L

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
1,1-DICHLOROETHENE	<1.00	50.0	51.5	103	47.9	96	7
BENZENE	<1.00	50.0	51.6	103	50.5	101	2
TRICHLOROETHENE	<1.00	50.0	49.6	99	48.8	98	2
TOLUENE	<1.00	50.0	52.2	104	49.9	100	5
CHLOROBENZENE	<1.00	50.0	54.8	110	54.2	108	1

CONTROL LIMITS

	% REC.	RPD
1,1-DICHLOROETHENE	49 - 157	20
BENZENE	72 - 138	20
TRICHLOROETHENE	77 - 134	20
TOLUENE	82 - 135	20
CHLOROBENZENE	72 - 138	20

SURROGATE RECOVERIES

	SPIKE	DUP. SPIKE	LIMITS
1,2-DICHLOROETHANE-D4	100	102	64 - 145
TOLUENE-D8	97	97	89 - 110
BROMOFLUOROBENZENE	98	98	82 - 112

VOLATILE ORGANICS ANALYSIS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/03/97
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
DICHLORODIFLUOROMETHANE	<2
CHLOROMETHANE	<5
VINYL CHLORIDE	<2
BROMOMETHANE	<5
CHLOROETHANE	<2
TRICHLOROFLUOROMETHANE	<2
1,1-DICHLOROETHENE	<2
METHYLENE CHLORIDE	<10
TRANS-1,2-DICHLOROETHENE	<2
1,1-DICHLOROETHANE	<2
CHLOROFORM	<2
CIS-1,2-DICHLOROETHENE	<2
BROMOCHLOROMETHANE	<2
2,2-DICHLOROPROPANE	<2
1,1,1-TRICHLOROETHANE	<2
1,2-DICHLOROETHANE	<2
1,1-DICHLOROPROPENE	<2
CARBON TETRACHLORIDE	<2
BENZENE	<2
DIBROMOMETHANE	<2
1,2-DICHLOROPROPANE	<2
TRICHLOROETHENE	<2
BROMODICHLOROMETHANE	<2
CIS-1,3-DICHLOROPROPENE	<2
TRANS-1,3-DICHLOROPROPENE	<2
1,1,2-TRICHLOROETHANE	<2
TOLUENE	<2
1,2-DIBROMOETHANE (EDB)	<2
1,3-DICHLOROPROPANE	<2
CHLORODIBROMOMETHANE	<2
TETRACHLOROETHENE	<2
1,1,1,2-TETRACHLOROETHANE	<2
CHLOROBENZENE	<2
ETHYLBENZENE	<2
BROMOFORM	<2
STYRENE	<2
TOTAL XYLENES	<2
1,1,2,2-TETRACHLOROETHANE	<2

MAS I.D. # 820980

MultiChem
 ANALYTICAL SERVICES

 VOLATILE ORGANICS ANALYSIS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/03/97
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
1, 2, 3-TRICHLOROPROPANE	<2
ISOPROPYLBENZENE	<2
BROMOBENZENE	<2
N-PROPYLBENZENE	<2
2-CHLOROTOLUENE	<2
4-CHLOROTOLUENE	<2
1, 3, 5-TRIMETHYLBENZENE	<2
TERT-BUTYLBENZENE	<2
1, 2, 4-TRIMETHYLBENZENE	<2
SEC-BUTYLBENZENE	<5
1, 3-DICHLOROBENZENE	<2
1, 4-DICHLOROBENZENE	<2
P-ISOPROPYLTOLUENE	<2
1, 2-DICHLOROBENZENE	<2
N-BUTYLBENZENE	<2
1, 2-DIBROMO-3-CHLOROPROPANE	<5
1, 2, 4-TRICHLOROBENZENE	<5
NAPHTHALENE	<5
HEXACHLOROBUTADIENE	<5
1, 2, 3-TRICHLOROBENZENE	<5

SURROGATE PERCENT RECOVERY

LIMITS

1, 2-DICHLOROETHANE-D4	100	67 - 150
TOLUENE-D8	105	85 - 116
BROMOFLUOROBENZENE	89	66 - 116

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MAS I.D. # 820980-6

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VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ04SD	DATE ANALYZED	: 07/03/97
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		% MOISTURE	: 29

COMPOUNDS	RESULTS
DICHLORODIFLUOROMETHANE	<3
CHLOROMETHANE	<7
VINYL CHLORIDE	<3
BROMOMETHANE	<7
CHLOROETHANE	<3
TRICHLOROFLUOROMETHANE	<3
1,1-DICHLOROETHENE	<3
METHYLENE CHLORIDE	<14
TRANS-1,2-DICHLOROETHENE	<3
1,1-DICHLOROETHANE	<3
CHLOROFORM	<3
CIS-1,2-DICHLOROETHENE	<3
BROMOCHLOROMETHANE	<3
2,2-DICHLOROPROPANE	<3
1,1,1-TRICHLOROETHANE	<3
1,2-DICHLOROETHANE	<3
1,1-DICHLOROPROPENE	<3
CARBON TETRACHLORIDE	<3
BENZENE	<3
DIBROMOMETHANE	<3
1,2-DICHLOROPROPANE	<3
TRICHLOROETHENE	<3
BROMODICHLOROMETHANE	<3
CIS-1,3-DICHLOROPROPENE	<3
TRANS-1,3-DICHLOROPROPENE	<3
1,1,2-TRICHLOROETHANE	<3
TOLUENE	<3
1,2-DIBROMOETHANE (EDB)	<3
1,3-DICHLOROPROPANE	<3
CHLORODIBROMOMETHANE	<3
TETRACHLOROETHENE	<3
1,1,1,2-TETRACHLOROETHANE	<3
CHLOROBENZENE	<3
ETHYLBENZENE	<3
BROMOFORM	<3
STYRENE	<3
TOTAL XYLENES	<3
1,1,2,2-TETRACHLOROETHANE	<3

MAS I.D. # 820980-6

VOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
CLIENT I.D.	: 97RMZ04SD	DATE ANALYZED	: 07/03/97
SAMPLE MATRIX	: SEDIMENT	UNITS	: ug/Kg
EPA METHOD	: 8260A	DILUTION FACTOR	: 1
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		% MOISTURE	: 29

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COMPOUNDS	RESULTS
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1,2,3-TRICHLOROPROPANE	<3
ISOPROPYLBENZENE		<3
BROMOBENZENE		<3
N-PROPYLBENZENE	<3
2-CHLOROTOLUENE		<3
4-CHLOROTOLUENE		<3
1,3,5-TRIMETHYLBENZENE	.....	<3
TERT-BUTYLBENZENE		<3
1,2,4-TRIMETHYLBENZENE		<3
SEC-BUTYLBENZENE	.....	<7
1,3-DICHLOROBENZENE		<3
1,4-DICHLOROBENZENE		<3
P-ISOPROPYLTOLUENE	.....	<3
1,2-DICHLOROBENZENE		<3
N-BUTYLBENZENE		<3
1,2-DIBROMO-3-CHLOROPROPANE	.....	<7
1,2,4-TRICHLOROBENZENE		<7
NAPHTHALENE		<7
HEXACHLOROBUTADIENE	.....	<7
1,2,3-TRICHLOROBENZENE		<7

SURROGATE PERCENT RECOVERY

LIMITS

1,2-DICHLOROETHANE-D4	98	67 - 150
TOLUENE-D8	102	85 - 116
BROMOFLUOROBENZENE	81	66 - 116

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MAS I.D. # 820980

MultiChem
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 VOLATILE ORGANICS ANALYSIS
 QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: BLANK
PROJECT #	: 35646	DATE EXTRACTED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE ANALYZED	: 07/03/97
SAMPLE MATRIX	: SOIL	UNITS	: ug/Kg
EPA METHOD	: 8260A		

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
1,1-DICHLOROETHENE	<2.00	50.0	59.5	119	N/A	N/A	N/A
BENZENE	<2.00	50.0	52.6	105	N/A	N/A	N/A
TRICHLOROETHENE	<2.00	50.0	49.1	98	N/A	N/A	N/A
TOLUENE	<2.00	50.0	53.6	107	N/A	N/A	N/A
CHLOROBENZENE	<2.00	50.0	54.3	109	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
1,1-DICHLOROETHENE	57 - 146	20
BENZENE	80 - 138	20
TRICHLOROETHENE	81 - 129	20
TOLUENE	92 - 126	20
CHLOROBENZENE	68 - 128	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
1,2-DICHLOROETHANE-D4	100	N/A	67 - 150
TOLUENE-D8	106	N/A	85 - 116
BROMOFLUOROBENZENE	87	N/A	66 - 116

MAS I.D. # 820980

VOLATILE ORGANICS ANALYSIS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: 820980-6
PROJECT #	: 35646	CLIENT I.D. #	: 97RMZ04SD
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: N/A
SAMPLE MATRIX	: SEDIMENT	DATE ANALYZED	: 07/03/97
EPA METHOD	: 8260A	UNITS	: ug/Kg
		% MOISTURE	: 29

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
1,1-DICHLOROETHENE	<2.82	70.4	72.7	103	68.2	97	6
BENZENE	<2.82	70.4	68.5	97	68.7	98	0
TRICHLOROETHENE	<2.82	70.4	61.0	87	60.7	86	0
TOLUENE	<2.82	70.4	68.6	97	68.7	98	0
CHLOROBENZENE	<2.82	70.4	70.0	99	68.2	97	3

CONTROL LIMITS	% REC.	RPD
1,1-DICHLOROETHENE	44 - 171	20
BENZENE	76 - 159	20
TRICHLOROETHENE	77 - 134	20
TOLUENE	84 - 152	20
CHLOROBENZENE	68 - 128	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
1,2-DICHLOROETHANE-D4	96	99	67 - 150
TOLUENE-D8	105	106	85 - 116
BROMOFLUOROBENZENE	82	84	66 - 116

QUALITY ASSURANCE
DATA REVIEW

Date: July 21, 1997

MAS Workorder: 820980

Analysis: SEMIVOLATILE ORGANICS

The data contained in the following report have been reviewed and approved by the appropriate supervisory personnel listed below:

D. A. Wunderlich

Dave Wunderlich
Quality Assurance Manager

CERTIFICATION

MultiChem Analytical Services certifies that the analyses reported herein are true, complete, and correct within the limits of the methods employed.

CASE NARRATIVE

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL

CASE NARRATIVE: SEMIVOLATILE ORGANICS ANALYSIS

The following anomalies were associated with the preparation and/or analysis of the samples in this accession:

Bis(2-ethylhexyl) phthalate and di-n-butyl phthalate were detected in the method blank associated with soil sample 820980-6 (97RMZ04SD) at concentrations below the reporting limit. The blank associated with the water samples contained bis(2-ethylhexyl) phthalate. These values were flagged "J" for reporting purposes and should be considered estimated. Any sample results demonstrating the presence of these compounds have been flagged "B" to denote their presence in the associated method blank.

The surrogate nitrobenzene-d5 fell below established control limits in soil sample 820980-6. Standard operating procedures for MultiChem Analytical Services allow one surrogate from each semi-volatile fraction (acid and/or base-neutral) to fail recovery criteria before corrective action must be performed; therefore, no further corrective action was performed.

The surrogate 2,4,6-tribromophenol exceeded established control limits in the matrix spike of soil sample 820980-6. Standard operating procedures for MultiChem Analytical Services allow one surrogate from each semi-volatile fraction (acid and/or base-neutral) to fail recovery criteria before corrective action must be performed; therefore, no further corrective action was performed.

Recovery of pyrene in the matrix spike of soil sample 820980-6 exceeded established control limits. Recovery of this compound in both the matrix spike duplicate and blank spike were within control limits, and the relative percent difference between the matrix spike and matrix spike duplicate was within control limits, so no corrective action was performed.

All other associated quality assurance/quality control (QA/QC) parameters were within established MAS control limits.

SEMIVOLATILE ORGANICS ANALYSIS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 06/27/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8270	DILUTION FACTOR	: 1

 COMPOUNDS

 RESULTS

N-NITROSODIMETHYLAMINE	<10
PHENOL	<10
ANILINE	<10
BIS (2-CHLOROETHYL) ETHER	<10
2-CHLOROPHENOL	<10
1,3-DICHLOROBENZENE	<10
1,4-DICHLOROBENZENE	<10
BENZYL ALCOHOL	<10
1,2-DICHLOROBENZENE	<10
2-METHYLPHENOL	<10
2,2'-OXYBIS (1-CHLOROPROPANE)	<10
3/4-METHYLPHENOL	<10
N-NITROSO-DI-N-PROPYLAMINE	<10
HEXACHLOROETHANE	<10
NITROBENZENE	<10
ISOPHORONE	<10
2-NITROPHENOL	<10
2,4-DIMETHYLPHENOL	<10
BENZOIC ACID	<50
BIS (2-CHLOROETHOXY)METHANE	<10
2,4-DICHLOROPHENOL	<10
1,2,4-TRICHLOROBENZENE	<10
NAPHTHALENE	<10
4-CHLOROANILINE	<10
HEXACHLOROBUTADIENE	<10
4-CHLORO-3-METHYLPHENOL	<10
2-METHYLNAPHTHALENE	<10
HEXACHLOROCYCLOPENTADIENE	<10
2,4,6-TRICHLOROPHENOL	<10
2,4,5-TRICHLOROPHENOL	<50
2-CHLORONAPHTHALENE	<10
2-NITROANILINE	<50
DIMETHYLPHTHALATE	<10
ACENAPHTHYLENE	<10
3-NITROANILINE	<50
ACENAPHTHENE	<10
2,4-DINITROPHENOL	<50
4-NITROPHENOL	<50

SEMIVOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 06/27/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8270	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
DIBENZOFURAN	<10
2,4-DINITROTOLUENE	<10
2,6-DINITROTOLUENE	<10
DIETHYLPHTHALATE	<10
4-CHLOROPHENYL-PHENYLETHER	<10
FLUORENE	<10
4-NITROANILINE	<50
4,6-DINITRO-2-METHYLPHENOL	<50
N-NITROSODIPHENYLAMINE	<10
4-BROMOPHENYL-PHENYLETHER	<10
HEXACHLOROBENZENE	<10
PENTACHLOROPHENOL	<10
PHENANTHRENE	<10
ANTHRACENE	<10
DI-N-BUTYLPHTHALATE	<10
FLUORANTHENE	<10
BENZIDINE	<100
PYRENE	<10
BUTYLBENZYLPHTHALATE	<10
3,3'-DICHLOROBENZIDINE	<20
BENZO (A) ANTHRACENE	<10
BIS (2-ETHYLHEXYL) PHTHALATE	1 J
CHRYSENE	<10
DI-N-OCTYLPHTHALATE	<10
BENZO (B) FLUORANTHENE	<10
BENZO (K) FLUORANTHENE	<10
BENZO (A) PYRENE	<10
INDENO (1,2,3-CD) PYRENE	<10
DIBENZO (A, H) ANTHRACENE	<10
BENZO (G, H, I) PERYLENE	<10

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	70	46 - 137
2-FLUOROBIPHENYL	66	46 - 119
TERPHENYL-D14	62	32 - 132
PHENOL-D5	80	44 - 119
2-FLUOROPHENOL	71	46 - 118
2,4,6-TRIBROMOPHENOL	88	45 - 143

J = Estimated value.

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 SEMIVOLATILE ORGANICS ANALYSIS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: 97RMZ06WA	DATE ANALYZED	: 06/27/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8270	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
N-NITROSODIMETHYLAMINE	<10
PHENOL	<10
ANILINE	<10
BIS (2-CHLOROETHYL) ETHER	<10
2-CHLOROPHENOL	<10
1,3-DICHLOROBENZENE	<10
1,4-DICHLOROBENZENE	<10
BENZYL ALCOHOL	<10
1,2-DICHLOROBENZENE	<10
2-METHYLPHENOL	<10
2,2'-OXYBIS (1-CHLOROPROPANE)	<10
3/4-METHYLPHENOL	<10
N-NITROSO-DI-N-PROPYLAMINE	<10
HEXACHLOROETHANE	<10
NITROBENZENE	<10
ISOPHORONE	<10
2-NITROPHENOL	<10
2,4-DIMETHYLPHENOL	<10
BENZOIC ACID	<51
BIS (2-CHLOROETHOXY) METHANE	<10
2,4-DICHLOROPHENOL	<10
1,2,4-TRICHLOROBENZENE	<10
NAPHTHALENE	<10
4-CHLOROANILINE	<10
HEXACHLOROBUTADIENE	<10
4-CHLORO-3-METHYLPHENOL	<10
2-METHYLNAPHTHALENE	<10
HEXACHLOROCYCLOPENTADIENE	<10
2,4,6-TRICHLOROPHENOL	<10
2,4,5-TRICHLOROPHENOL	<51
2-CHLORONAPHTHALENE	<10
2-NITROANILINE	<51
DIMETHYLPHTHALATE	<10
ACENAPHTHYLENE	<10
3-NITROANILINE	<51
ACENAPHTHENE	<10
2,4-DINITROPHENOL	<51
4-NITROPHENOL	<51

SEMIVOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: 97RMZ06WA	DATE ANALYZED	: 06/27/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8270	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
DIBENZOFURAN	<10
2,4-DINITROTOLUENE	<10
2,6-DINITROTOLUENE	<10
DIETHYLPHTHALATE	<10
4-CHLOROPHENYL-PHENYLETHER	<10
FLUORENE	<10
4-NITROANILINE	<51
4,6-DINITRO-2-METHYLPHENOL	<51
N-NITROSODIPHENYLAMINE	<10
4-BROMOPHENYL-PHENYLETHER	<10
HEXACHLOROBENZENE	<10
PENTACHLOROPHENOL	<10
PHENANTHRENE	<10
ANTHRACENE	<10
DI-N-BUTYLPHTHALATE	<10
FLUORANTHENE	<10
BENZIDINE	<100
PYRENE	<10
BUTYLBENZYLPHTHALATE	<10
3,3'-DICHLOROBENZIDINE	<20
BENZO (A) ANTHRACENE	<10
BIS (2-ETHYLHEXYL) PHTHALATE	3 JB
CHRYSENE	<10
DI-N-OCTYLPHTHALATE	<10
BENZO (B) FLUORANTHENE	<10
BENZO (K) FLUORANTHENE	<10
BENZO (A) PYRENE	<10
INDENO (1,2,3-CD) PYRENE	<10
DIBENZO (A,H) ANTHRACENE	<10
BENZO (G,H,I) PERYLENE	<10

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	73	46 - 137
2-FLUOROBIPHENYL	63	46 - 119
TERPHENYL-D14	66	32 - 132
PHENOL-D5	80	44 - 119
2-FLUOROPHENOL	72	46 - 118
2,4,6-TRIBROMOPHENOL	96	45 - 143

B = Analyte is found in the associated blank as well as the sample.
J = Estimated value.

SEMIVOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: 97RMZ04SW	DATE ANALYZED	: 06/27/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8270	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
N-NITROSODIMETHYLAMINE	<9
PHENOL	<9
ANILINE	<9
BIS (2-CHLOROETHYL) ETHER	<9
2-CHLOROPHENOL	<9
1,3-DICHLOROBENZENE	<9
1,4-DICHLOROBENZENE	<9
BENZYL ALCOHOL	<9
1,2-DICHLOROBENZENE	<9
2-METHYLPHENOL	<9
2,2'-OXYBIS (1-CHLOROPROPANE)	<9
3/4-METHYLPHENOL	<9
N-NITROSO-DI-N-PROPYLAMINE	<9
HEXACHLOROETHANE	<9
NITROBENZENE	<9
ISOPHORONE	<9
2-NITROPHENOL	<9
2,4-DIMETHYLPHENOL	<9
BENZOIC ACID	<47
BIS (2-CHLOROETHOXY) METHANE	<9
2,4-DICHLOROPHENOL	<9
1,2,4-TRICHLOROBENZENE	<9
NAPHTHALENE	<9
4-CHLOROANILINE	<9
HEXACHLOROBUTADIENE	<9
4-CHLORO-3-METHYLPHENOL	<9
2-METHYLNAPHTHALENE	<9
HEXACHLOROCYCLOPENTADIENE	<9
2,4,6-TRICHLOROPHENOL	<9
2,4,5-TRICHLOROPHENOL	<47
2-CHLORONAPHTHALENE	<9
2-NITROANILINE	<47
DIMETHYLPHTHALATE	<9
ACENAPHTHYLENE	<9
3-NITROANILINE	<47
ACENAPHTHENE	<9
2,4-DINITROPHENOL	<47
4-NITROPHENOL	<47

SEMIVOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: 97RMZ04SW	DATE ANALYZED	: 06/27/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 8270	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
DIBENZOFURAN	<9
2,4-DINITROTOLUENE	<9
2,6-DINITROTOLUENE	<9
DIETHYLPHTHALATE	<9
4-CHLOROPHENYL-PHENYLETHER	<9
FLUORENE	<9
4-NITROANILINE	<47
4,6-DINITRO-2-METHYLPHENOL	<47
N-NITROSODIPHENYLAMINE	<9
4-BROMOPHENYL-PHENYLETHER	<9
HEXACHLOROBENZENE	<9
PENTACHLOROPHENOL	<9
PHENANTHRENE	<9
ANTHRACENE	<9
DI-N-BUTYLPHTHALATE	<9
FLUORANTHENE	<9
BENZIDINE	<94
PYRENE	<9
BUTYLBENZYLPHTHALATE	<9
3,3'-DICHLOROBENZIDINE	<19
BENZO (A) ANTHRACENE	<9
BIS (2-ETHYLHEXYL) PHTHALATE	1 JB
CHRYSENE	<9
DI-N-OCTYLPHTHALATE	<9
BENZO (B) FLUORANTHENE	<9
BENZO (K) FLUORANTHENE	<9
BENZO (A) PYRENE	<9
INDENO (1,2,3-CD) PYRENE	<9
DIBENZO (A, H) ANTHRACENE	<9
BENZO (G, H, I) PERYLENE	<9

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	78	46 - 137
2-FLUOROBIPHENYL	71	46 - 119
TERPHENYL-D14	70	32 - 132
PHENOL-D5	84	44 - 119
2-FLUOROPHENOL	73	46 - 118
2,4,6-TRIBROMOPHENOL	88	45 - 143

B = Analyte is found in the associated blank as well as the sample.
J = Estimated value.

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SEMIVOLATILE ORGANICS ANALYSIS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL
SAMPLE MATRIX : WATER
EPA METHOD : 8270

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 06/25/97
DATE ANALYZED : 06/27/97
UNITS : ug/L

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
PHENOL	<10.0	75.0	47.5	63	N/A	N/A	N/A
2-CHLOROPHENOL	<10.0	75.0	55.3	74	N/A	N/A	N/A
1,4-DICHLOROBENZENE	<10.0	50.0	35.4	71	N/A	N/A	N/A
N-NITROSO-DI-N-PROPYLAMINE	<10.0	50.0	32.8	66	N/A	N/A	N/A
1,2,4-TRICHLOROBENZENE	<10.0	50.0	38.9	78	N/A	N/A	N/A
4-CHLORO-3-METHYLPHENOL	<10.0	75.0	59.4	79	N/A	N/A	N/A
ACENAPHTHENE	<10.0	50.0	41.4	83	N/A	N/A	N/A
4-NITROPHENOL	<50.0	75.0	58.2	78	N/A	N/A	N/A
2,4-DINITROTOLUENE	<10.0	50.0	45.4	91	N/A	N/A	N/A
PENTACHLOROPHENOL	<10.0	75.0	61.1	81	N/A	N/A	N/A
PYRENE	<10.0	50.0	36.3	73	N/A	N/A	N/A

CONTROL LIMITS

	% REC.	RPD
PHENOL	50 - 103	20
2-CHLOROPHENOL	44 - 109	20
1,4-DICHLOROBENZENE	48 - 112	20
N-NITROSO-DI-N-PROPYLAMINE	45 - 132	20
1,2,4-TRICHLOROBENZENE	46 - 116	21
4-CHLORO-3-METHYLPHENOL	52 - 124	20
ACENAPHTHENE	54 - 109	20
4-NITROPHENOL	55 - 138	21
2,4-DINITROTOLUENE	52 - 131	20
PENTACHLOROPHENOL	31 - 143	20
PYRENE	35 - 114	20

SURROGATE RECOVERIES

	SPIKE	DUP. SPIKE	LIMITS
NITROBENZENE-D5	74	N/A	46 - 137
2-FLUOROBIPHENYL	65	N/A	46 - 119
TERPHENYL-D14	68	N/A	32 - 132
PHENOL-D5	72	N/A	44 - 119
2-FLUOROPHENOL	71	N/A	46 - 118
2,4,6-TRIBROMOPHENOL	101	N/A	45 - 143

SEMIVOLATILE ORGANICS ANALYSIS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL
SAMPLE MATRIX : WATER
EPA METHOD : 8270

SAMPLE I.D. # : 820980-4
CLIENT I.D. # : 97RMZ04SW
DATE EXTRACTED : 06/25/97
DATE ANALYZED : 06/27/97
UNITS : ug/L

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
PHENOL	<9.43	70.8	46.3	65	45.8	65	1
2-CHLOROPHENOL	<9.43	70.8	53.3	75	58.7	83	10
1,4-DICHLOROBENZENE	<9.43	47.2	33.2	70	33.9	72	2
N-NITROSO-DI-N-PROPYLAMINE	<9.43	47.2	45.0	95	45.1	96	0
1,2,4-TRICHLOROBENZENE	<9.43	47.2	36.1	76	36.5	77	1
4-CHLORO-3-METHYLPHENOL	<9.43	70.8	60.5	85	60.2	85	0
ACENAPHTHENE	<9.43	47.2	40.4	86	40.5	86	0
4-NITROPHENOL	<47.2	70.8	53.8	76	53.7	76	0
2,4-DINITROTOLUENE	<9.43	47.2	42.0	89	43.1	91	3
PENTACHLOROPHENOL	<9.43	70.8	62.9	89	65.7	93	4
PYRENE	<9.43	47.2	36.7	78	42.7	90	15

CONTROL LIMITS

	% REC.	RPD
PHENOL	50 - 107	20
2-CHLOROPHENOL	30 - 134	20
1,4-DICHLOROBENZENE	42 - 119	20
N-NITROSO-DI-N-PROPYLAMINE	42 - 132	20
1,2,4-TRICHLOROBENZENE	37 - 129	21
4-CHLORO-3-METHYLPHENOL	52 - 126	20
ACENAPHTHENE	54 - 109	20
4-NITROPHENOL	51 - 146	21
2,4-DINITROTOLUENE	33 - 142	20
PENTACHLOROPHENOL	31 - 148	20
PYRENE	23 - 124	20

SURROGATE RECOVERIES

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
NITROBENZENE-D5	78	72	46 - 137
2-FLUOROBIPHENYL	67	67	46 - 119
TERPHENYL-D14	67	77	32 - 132
PHENOL-D5	74	72	44 - 119
2-FLUOROPHENOL	72	75	46 - 118
2,4,6-TRIBROMOPHENOL	85	73	45 - 143

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SEMIVOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/30/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/07/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8270	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
N-NITROSODIMETHYLAMINE	<0.17
PHENOL	<0.17
ANILINE	<0.17
BIS (2-CHLOROETHYL) ETHER	<0.17
2-CHLOROPHENOL	<0.17
1,3-DICHLOROBENZENE	<0.17
1,4-DICHLOROBENZENE	<0.17
BENZYL ALCOHOL	<0.17
1,2-DICHLOROBENZENE	<0.17
2-METHYLPHENOL	<0.17
2,2'-OXYBIS (1-CHLOROPROPANE)	<0.17
3/4-METHYLPHENOL	<0.17
N-NITROSO-DI-N-PROPYLAMINE	<0.17
HEXACHLOROETHANE	<0.17
NITROBENZENE	<0.17
ISOPHORONE	<0.17
2-NITROPHENOL	<0.17
2,4-DIMETHYLPHENOL	<0.17
BENZOIC ACID	<0.83
BIS (2-CHLOROETHOXY) METHANE	<0.17
2,4-DICHLOROPHENOL	<0.17
1,2,4-TRICHLOROBENZENE	<0.17
NAPHTHALENE	<0.17
4-CHLOROANILINE	<0.17
HEXACHLOROBUTADIENE	<0.17
4-CHLORO-3-METHYLPHENOL	<0.17
2-METHYLNAPHTHALENE	<0.17
HEXACHLOROCYCLOPENTADIENE	<0.17
2,4,6-TRICHLOROPHENOL	<0.17
2,4,5-TRICHLOROPHENOL	<0.83
2-CHLORONAPHTHALENE	<0.17
2-NITROANILINE	<0.83
DIMETHYLPHTHALATE	<0.17
ACENAPHTHYLENE	<0.17
3-NITROANILINE	<0.83
ACENAPHTHENE	<0.17
2,4-DINITROPHENOL	<0.83
4-NITROPHENOL	<0.83

SEMIVOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/30/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/07/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8270	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
DIBENZOFURAN	<0.17
2,4-DINITROTOLUENE	<0.17
2,6-DINITROTOLUENE	<0.17
DIETHYLPHTHALATE	<0.17
4-CHLOROPHENYL-PHENYLETHER	<0.17
FLUORENE	<0.17
4-NITROANILINE	<0.17
4,6-DINITRO-2-METHYLPHENOL	<0.83
N-NITROSODIPHENYLAMINE	<0.83
4-BROMOPHENYL-PHENYLETHER	<0.17
HEXACHLOROBENZENE	<0.17
PENTACHLOROPHENOL	<0.83
PHENANTHRENE	<0.17
ANTHRACENE	<0.17
DI-N-BUTYLPHTHALATE	0.0081 J
FLUORANTHENE	<0.17
BENZIDINE	<1.7
PYRENE	<0.17
BUTYLBENZYLPHTHALATE	<0.17
3,3'-DICHLOROBENZIDINE	<0.33
BENZO (A) ANTHRACENE	<0.17
BIS (2-ETHYLHEXYL) PHTHALATE	0.050 J
CHRYSENE	<0.17
DI-N-OCTYLPHTHALATE	<0.17
BENZO (B) FLUORANTHENE	<0.17
BENZO (K) FLUORANTHENE	<0.17
BENZO (A) PYRENE	<0.17
INDENO (1,2,3-CD) PYRENE	<0.17
DIBENZO (A, H) ANTHRACENE	<0.17
BENZO (G, H, I) PERYLENE	<0.17

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	62	41 - 117
2-FLUOROBIPHENYL	61	36 - 128
TERPHENYL-D14	81	38 - 146
PHENOL-D5	73	38 - 117
2-FLUOROPHENOL	59	41 - 103
2,4,6-TRIBROMOPHENOL	51	38 - 130

J = Estimated value.

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 SEMIVOLATILE ORGANICS ANALYSIS
 DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/30/97
CLIENT I.D.	: 97RMZ04SD	DATE ANALYZED	: 07/07/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8270	DILUTION FACTOR	: 20
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		% MOISTURE	: 29

 COMPOUNDS

 RESULTS

N-NITROSODIMETHYLAMINE	.....	<4.7
PHENOL		<4.7
ANILINE		<4.7
BIS (2-CHLOROETHYL) ETHER	.....	<4.7
2-CHLOROPHENOL		<4.7
1,3-DICHLOROBENZENE		<4.7
1,4-DICHLOROBENZENE	.....	<4.7
BENZYL ALCOHOL		<4.7
1,2-DICHLOROBENZENE		<4.7
2-METHYLPHENOL	.....	<4.7
2,2'-OXYBIS (1-CHLOROPROPANE)		<4.7
3/4-METHYLPHENOL		<4.7
N-NITROSO-DI-N-PROPYLAMINE	.....	<4.7
HEXACHLOROETHANE		<4.7
NITROBENZENE		<4.7
ISOPHORONE	.....	<4.7
2-NITROPHENOL		<4.7
2,4-DIMETHYLPHENOL		<4.7
BENZOIC ACID	.....	<23
BIS (2-CHLOROETHOXY) METHANE		<4.7
2,4-DICHLOROPHENOL		<4.7
1,2,4-TRICHLOROBENZENE	.....	<4.7
NAPHTHALENE		<4.7
4-CHLOROANILINE		<4.7
HEXACHLOROBUTADIENE	.....	<4.7
4-CHLORO-3-METHYLPHENOL		<4.7
2-METHYLNAPHTHALENE		<4.7
HEXACHLOROCYCLOPENTADIENE	.....	<4.7
2,4,6-TRICHLOROPHENOL		<4.7
2,4,5-TRICHLOROPHENOL		<23
2-CHLORONAPHTHALENE	.....	<4.7
2-NITROANILINE		<23
DIMETHYLPHTHALATE		<4.7
ACENAPHTHYLENE	.....	<4.7
3-NITROANILINE		<23
ACENAPHTHENE		<4.7
2,4-DINITROPHENOL	.....	<23
4-NITROPHENOL		<23

SEMIVOLATILE ORGANICS ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/30/97
CLIENT I.D.	: 97RMZ04SD	DATE ANALYZED	: 07/07/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8270	DILUTION FACTOR	: 20
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		% MOISTURE	: 29

COMPOUNDS	RESULTS
DIBENZOFURAN	<4.7
2,4-DINITROTOLUENE	<4.7
2,6-DINITROTOLUENE	<4.7
DIETHYLPHTHALATE	<4.7
4-CHLOROPHENYL-PHENYLEETHER	<4.7
FLUORENE	<4.7
4-NITROANILINE	<4.7
4,6-DINITRO-2-METHYLPHENOL	<23
N-NITROSODIPHENYLAMINE	<23
4-BROMOPHENYL-PHENYLEETHER	<4.7
HEXACHLOROBENZENE	0.58 J
PENTACHLOROPHENOL	<23
PHENANTHRENE	<4.7
ANTHRACENE	<4.7
DI-N-BUTYLPHTHALATE	<4.7
FLUORANTHENE	<4.7
BENZIDINE	<4.7
PYRENE	<4.7
BUTYLBENZYLPHTHALATE	<4.7
3,3'-DICHLOROBENZIDINE	<9.4
BENZO (A) ANTHRACENE	<4.7
BIS (2-ETHYLHEXYL) PHTHALATE	0.63 JB
CHRYSENE	<4.7
DI-N-OCTYLPHTHALATE	<4.7
BENZO (B) FLUORANTHENE	<4.7
BENZO (K) FLUORANTHENE	<4.7
BENZO (A) PYRENE	<4.7
INDENO (1,2,3-CD) PYRENE	<4.7
DIBENZO (A, H) ANTHRACENE	<4.7
BENZO (G, H, I) PERYLENE	<4.7

SURROGATE PERCENT RECOVERY

LIMITS

NITROBENZENE-D5	34 H	41 - 117
2-FLUOROBIPHENYL	73	36 - 128
TERPHENYL-D14	106	38 - 146
PHENOL-D5	53	38 - 117
2-FLUOROPHENOL	51	41 - 103
2,4,6-TRIBROMOPHENOL	76	38 - 130

B = Analyte is found in the associated blank as well as the sample.
H = Out of limits.
J = Estimated value.

SEMIVOLATILE ORGANICS ANALYSIS
 QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL
 SAMPLE MATRIX : SOIL
 EPA METHOD : 8270

SAMPLE I.D. # : BLANK
 DATE EXTRACTED : 06/30/97
 DATE ANALYZED : 07/07/97
 UNITS : mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
PHENOL	<0.167	2.50	1.54	62	N/A	N/A	N/A
2-CHLOROPHENOL	<0.167	2.50	1.68	67	N/A	N/A	N/A
1,4-DICHLOROBENZENE	<0.167	1.67	1.17	70	N/A	N/A	N/A
N-NITROSO-DI-N-PROPYLAMINE	<0.167	1.67	1.33	80	N/A	N/A	N/A
1,2,4-TRICHLOROBENZENE	<0.167	1.67	1.30	78	N/A	N/A	N/A
4-CHLORO-3-METHYLPHENOL	<0.167	2.50	1.90	76	N/A	N/A	N/A
ACENAPHTHENE	<0.167	1.67	1.29	77	N/A	N/A	N/A
4-NITROPHENOL	<0.833	2.50	1.49	60	N/A	N/A	N/A
2,4-DINITROTOLUENE	<0.167	1.67	1.50	90	N/A	N/A	N/A
PENTACHLOROPHENOL	<0.833	2.50	1.99	80	N/A	N/A	N/A
PYRENE	<0.167	1.67	1.54	92	N/A	N/A	N/A

CONTROL LIMITS

	% REC.	RPD
PHENOL		
2-CHLOROPHENOL	40 - 93	20
1,4-DICHLOROBENZENE	45 - 96	20
N-NITROSO-DI-N-PROPYLAMINE	42 - 94	20
1,2,4-TRICHLOROBENZENE	36 - 107	20
4-CHLORO-3-METHYLPHENOL	42 - 104	20
ACENAPHTHENE	47 - 108	20
4-NITROPHENOL	48 - 102	20
2,4-DINITROTOLUENE	52 - 112	21
PENTACHLOROPHENOL	39 - 118	20
PYRENE	46 - 108	27
	52 - 102	29

SURROGATE RECOVERIES

	SPIKE	DUP. SPIKE	LIMITS
NITROBENZENE-D5	64	N/A	41 - 117
2-FLUOROBIPHENYL	62	N/A	36 - 128
TERPHENYL-D14	84	N/A	38 - 146
PHENOL-D5	73	N/A	38 - 117
2-FLUOROPHENOL	66	N/A	41 - 103
2,4,6-TRIBROMOPHENOL	86	N/A	38 - 130

MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICESSEMIVOLATILE ORGANICS ANALYSIS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: 820980-6
PROJECT #	: 35646	CLIENT I.D. #	: 97RMZ04SD
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/30/97
SAMPLE MATRIX	: SOIL	DATE ANALYZED	: 07/07/97
EPA METHOD	: 8270	UNITS	: mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
PHENOL	<4.69	3.52	2.76	78	2.85	81	3
2-CHLOROPHENOL	<4.69	3.52	3.18	90	3.10	88	3
1,4-DICHLOROBENZENE	<4.69	2.35	1.91	81	1.91	81	0
N-NITROSO-DI-N-PROPYLAMINE	<4.69	2.35	2.31	98	2.18	93	6
1,2,4-TRICHLOROBENZENE	<4.69	2.35	2.35	100	2.22	94	6
4-CHLORO-3-METHYLPHENOL	<4.69	3.52	3.93	112	3.96	113	1
ACENAPHTHENE	<4.69	2.35	2.90	123	2.74	117	6
4-NITROPHENOL	<23.5	3.52	2.07	59	1.73	49	18
2,4-DINITROTOLUENE	<4.69	2.35	1.89	80	1.75	74	8
PENTACHLOROPHENOL	<23.5	3.52	0.958	27	0.948	27	1
PYRENE	<4.69	2.35	3.61	154H	3.54	151	2

CONTROL LIMITS

	% REC.	RPD
PHENOL	38 - 104	20
2-CHLOROPHENOL	36 - 118	20
1,4-DICHLOROBENZENE	35 - 103	20
N-NITROSO-DI-N-PROPYLAMINE	36 - 114	20
1,2,4-TRICHLOROBENZENE	33 - 126	20
4-CHLORO-3-METHYLPHENOL	47 - 118	20
ACENAPHTHENE	30 - 134	20
4-NITROPHENOL	42 - 150	21
2,4-DINITROTOLUENE	28 - 131	20
PENTACHLOROPHENOL	23 - 129	27
PYRENE	21 - 151	29

SURROGATE RECOVERIES

	SPIKE	DUP. SPIKE	LIMITS
NITROBENZENE-D5	65	59	41 - 117
2-FLUOROBIPHENYL	91	87	36 - 128
TERPHENYL-D14	134	129	38 - 146
PHENOL-D5	89	84	38 - 117
2-FLUOROPHENOL	81	77	41 - 103
2,4,6-TRIBROMOPHENOL	131H	124	38 - 130

H = Out of limits.

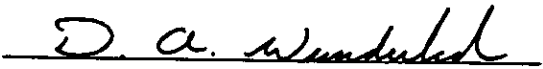
QUALITY ASSURANCE
DATA REVIEW

Date: July 21, 1997

MAS Workorder: 820980

Analysis: ORGANOCHLORINE PESTICIDES
& PCBs

The data contained in the following report have been reviewed and approved by the appropriate supervisory personnel listed below:



Dave Wunderlich
Quality Assurance Manager

CERTIFICATION

MultiChem Analytical Services certifies that the analyses reported herein are true, complete, and correct within the limits of the methods employed.

MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICES

CASE NARRATIVE

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL

CASE NARRATIVE: ORGANOCHLORINE PESTICIDES & PCBs ANALYSIS

The following anomalies were associated with the preparation and/or analysis of the samples in this accession:

The responses of some analytes exceeded control limits on one column in the continuing calibration verifications (CCVs) which bracketed this sample set. When this occurred, all quantitations were taken from the column where response was within control limits.

Recovery of the surrogate tetrachloro-m-xylene (TCMX) from the soil blank spike associated with this set fell below MAS control limits and was flagged with "H". No further corrective action was performed since recovery of the other surrogate was in control from this extract. Recoveries of the surrogate decachlorobiphenyl (DCBP) from soil sample 820980-6 (97RMZ04SD) and the associated MS/MSD set exceeded control limits due to interference from the high levels of polychlorinated biphenyls (PCBs) present in the native sample. These recoveries were flagged with a "G".

Due to the high levels of PCBs present in 820980-6, this extract and the associated MS/MSD set were diluted (factor 500) to bring the PCB pattern on scale. Therefore, all spiked analytes in the MS/MSD were diluted out, and no recoveries could be calculated. All spike recoveries from the associated blank spike were in control, so no further corrective action was taken.

All other associated quality assurance/quality control (QA/QC) parameters were within established MAS control limits.

70 : 245

MAS I.D. # 820980

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ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/04/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 608/8081	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
ALDRIN	<0.050
ALPHA-BHC	<0.050
BETA-BHC	<0.050
GAMMA-BHC (LINDANE)	<0.050
DELTA-BHC	<0.050
CHLORDANE (TOTAL)	<0.10
P, P'-DDD	<0.10
P, P'-DDE	<0.10
P, P'-DDT	<0.10
DIELDRIN	<0.10
ENDOSULFAN I	<0.050
ENDOSULFAN II	<0.10
ENDOSULFAN SULFATE	<0.10
ENDRIN	<0.10
ENDRIN ALDEHYDE	<0.10
ENDRIN KETONE	<0.10
HEPTACHLOR	<0.050
HEPTACHLOR EPOXIDE	<0.050
METHOXYCHLOR	<0.50
TOXAPHENE	<1.0
AROCLOR 1016	<1.0
AROCLOR 1221	<1.0
AROCLOR 1232	<1.0
AROCLOR 1242	<1.0
AROCLOR 1248	<1.0
AROCLOR 1254	<1.0
AROCLOR 1260	<1.0

SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	81	35 - 110
TETRACHLORO-M-XYLENE	60	41 - 124

MAS I.D. # 820980-1

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: 97RMZ06WA	DATE ANALYZED	: 07/06/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 608/8081	DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
-----------	---------

ALDRIN	<0.050
ALPHA-BHC	<0.050
BETA-BHC	<0.050
GAMMA-BHC (LINDANE)	<0.050
DELTA-BHC	<0.050
CHLORDANE (TOTAL)	<0.10
P, P'-DDD	<0.10
P, P'-DDE	<0.10
P, P'-DDT	<0.10
DIELDRIN	<0.10
ENDOSULFAN I	<0.050
ENDOSULFAN II	<0.10
ENDOSULFAN SULFATE	<0.10
ENDRIN	<0.10
ENDRIN ALDEHYDE	<0.10
ENDRIN KETONE	<0.10
HEPTACHLOR	<0.050
HEPTACHLOR EPOXIDE	<0.050
METHOXYCHLOR	<0.50
TOXAPHENE	<1.0
AROCLOR 1016	<1.0
AROCLOR 1221	<1.0
AROCLOR 1232	<1.0
AROCLOR 1242	<1.0
AROCLOR 1248	<1.0
AROCLOR 1254	<1.0
AROCLOR 1260	<1.0

SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	80	35 - 110
TETRACHLORO-M-XYLENE	56	41 - 124

70 247

MAS I.D. # 820980-4

MultiChem
ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
CLIENT I.D.	: 97RMZ04SW	DATE ANALYZED	: 07/06/97
SAMPLE MATRIX	: WATER	UNITS	: ug/L
EPA METHOD	: 608/8081	DILUTION FACTOR	: 1

 COMPOUNDS RESULTS

ALDRIN	<0.047
ALPHA-BHC	<0.047
BETA-BHC	<0.047
GAMMA-BHC (LINDANE)	<0.047
DELTA-BHC	<0.047
CHLORDANE (TOTAL)	<0.094
P, P'-DDD	<0.094
P, P'-DDE	<0.094
P, P'-DDT	<0.094
DIELDRIN	<0.094
ENDOSULFAN I	<0.047
ENDOSULFAN II	<0.094
ENDOSULFAN SULFATE	<0.094
ENDRIN	<0.094
ENDRIN ALDEHYDE	<0.094
ENDRIN KETONE	<0.094
HEPTACHLOR	<0.047
HEPTACHLOR EPOXIDE	<0.047
METHOXYCHLOR	<0.47
TOXAPHENE	<0.94
AROCLOR 1016	<0.94
AROCLOR 1221	<0.94
AROCLOR 1232	<0.94
AROCLOR 1242	<0.94
AROCLOR 1248	<0.94
AROCLOR 1254	<0.94
AROCLOR 1260	<0.94

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SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	78	35 - 110
TETRACHLORO-M-XYLENE	66	41 - 124

MAS I.D. # 820980

70 248

MultiChem
ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL
SAMPLE MATRIX : WATER
EPA METHOD : 608/8081

SAMPLE I.D. # : BLANK.
DATE EXTRACTED : 06/25/97
DATE ANALYZED : 07/04/97
UNITS : ug/L

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
ALDRIN	<0.0500	0.250	0.188	75	N/A	N/A	N/A
GAMMA-BHC (LINDANE)	<0.0500	0.250	0.204	82	N/A	N/A	N/A
P, P'-DDT	<0.100	0.500	0.448	90	N/A	N/A	N/A
DIELDRIN	<0.100	0.500	0.450	90	N/A	N/A	N/A
ENDRIN	<0.100	0.500	0.461	92	N/A	N/A	N/A
HEPTACHLOR	<0.0500	0.250	0.200	80	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
ALDRIN	66 - 106	20
GAMMA-BHC (LINDANE)	61 - 109	20
P, P'-DDT	61 - 124	20
DIELDRIN	75 - 118	20
ENDRIN	64 - 139	20
HEPTACHLOR	64 - 121	20

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
DECACHLOROBIPHENYL	76	N/A	35 - 110
TETRACHLORO-M-XYLENE	60	N/A	41 - 124

MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICES

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: 820980-1
PROJECT #	: 35646	CLIENT I.D. #	: 97RMZ06WA
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 06/25/97
SAMPLE MATRIX	: WATER	DATE ANALYZED	: 07/06/97
EPA METHOD	: 608/8081	UNITS	: ug/L

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
ALDRIN	<0.0500	0.250	0.177	71	0.167	67	6
GAMMA-BHC (LINDANE)	<0.0500	0.250	0.189	76	0.185	74	2
P, P'-DDT	<0.100	0.500	0.389	78	0.401	80	3
DIELDRIN	<0.100	0.500	0.442	88	0.439	88	1
ENDRIN	<0.100	0.500	0.494	99	0.485	97	2
HEPTACHLOR	<0.0500	0.250	0.187	75	0.180	72	4

CONTROL LIMITS

	% REC.	RPD
ALDRIN	48 - 119	20
GAMMA-BHC (LINDANE)	49 - 114	20
P, P'-DDT	32 - 141	20
DIELDRIN	61 - 125	20
ENDRIN	52 - 144	20
HEPTACHLOR	44 - 134	20

SURROGATE RECOVERIES

	SPIKE	DUP. SPIKE	LIMITS
DECACHLOROBIPHENYL	65	77	35 - 110
TETRACHLORO-M-XYLENE	62	58	41 - 124

MAS I.D. # 820980

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: N/A
PROJECT #	: 35646	DATE RECEIVED	: N/A
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 07/03/97
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 07/16/97
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8081	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS RESULTS

ALDRIN	.....	<0.0025
ALPHA-BHC		<0.0025
BETA-BHC		<0.0025
GAMMA-BHC (LINDANE)	.....	<0.0025
DELTA-BHC		<0.0025
CHLORDANE (TOTAL)		<0.0050
P, P'-DDD	.....	<0.0050
P, P'-DDE		<0.0050
P, P'-DDT		<0.0050
DIELDRIN	.....	<0.0050
ENDOSULFAN I		<0.0025
ENDOSULFAN II		<0.0050
ENDOSULFAN SULFATE	.....	<0.0050
ENDRIN		<0.0050
ENDRIN ALDEHYDE		<0.0050
ENDRIN KETONE	.....	<0.0050
HEPTACHLOR		<0.0025
HEPTACHLOR EPOXIDE		<0.0025
METHOXYCHLOR	.....	<0.025
TOXAPHENE		<0.050
AROCLOR 1016		<0.033
AROCLOR 1221	.....	<0.033
AROCLOR 1232		<0.033
AROCLOR 1242		<0.033
AROCLOR 1248	.....	<0.033
AROCLOR 1254		<0.033
AROCLOR 1260		<0.033

SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	.....	88	28 - 138
TETRACHLORO-M-XYLENE		46	43 - 119

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
DATA SUMMARY

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 07/03/97
CLIENT I.D.	: 97RMZ04SD	DATE ANALYZED	: 07/16/97
SAMPLE MATRIX	: SEDIMENT	UNITS	: mg/Kg
EPA METHOD	: 8081	DILUTION FACTOR	: 500
RESULTS ARE CORRECTED FOR MOISTURE CONTENT		% MOISTURE	: 29

COMPOUNDS	RESULTS
ALDRIN	<1.8
ALPHA-BHC	<1.8
BETA-BHC	<1.8
GAMMA-BHC (LINDANE)	<1.8
DELTA-BHC	<1.8
CHLORDANE (TOTAL)	<3.5
P, P'-DDD	<3.5
P, P'-DDE	<3.5
P, P'-DDT	<3.5
DIELDRIN	<3.5
ENDOSULFAN I	<1.8
ENDOSULFAN II	<3.5
ENDOSULFAN SULFATE	<3.5
ENDRIN	<3.5
ENDRIN ALDEHYDE	<3.5
ENDRIN KETONE	<3.5
HEPTACHLOR	<1.8
HEPTACHLOR EPOXIDE	<1.8
METHOXYCHLOR	<18
TOXAPHENE	<35
AROCLOR 1016	<23
AROCLOR 1221	<23
AROCLOR 1232	<23
AROCLOR 1242	<23
AROCLOR 1248	<23
AROCLOR 1254	<23
AROCLOR 1260	<23

630 D0

SURROGATE PERCENT RECOVERY

LIMITS

DECACHLOROBIPHENYL	170 G	28 - 138
TETRACHLORO-M-XYLENE	74	43 - 119

D0 = Value from a 1000 fold diluted analysis.
G = Out of limits due to high levels of target analytes in sample.

MAS I.D. # 820980

ORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
QUALITY CONTROL DATA

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL
SAMPLE MATRIX : SOIL
EPA METHOD : 8081

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 07/03/97
DATE ANALYZED : 07/16/97
UNITS : mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
ALDRIN	<0.00250	0.0167	0.0105	63	N/A	N/A	N/A
GAMMA-BHC (LINDANE)	<0.00250	0.0167	0.0111	66	N/A	N/A	N/A
P, P'-DDT	<0.00500	0.0333	0.0274	82	N/A	N/A	N/A
DIELDRIN	<0.00500	0.0333	0.0277	83	N/A	N/A	N/A
ENDRIN	<0.00500	0.0333	0.0306	92	N/A	N/A	N/A
HEPTACHLOR	<0.00250	0.0167	0.0111	66	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
ALDRIN	58 - 117	21
GAMMA-BHC (LINDANE)	58 - 109	25
P, P'-DDT	55 - 130	27
DIELDRIN	67 - 122	26
ENDRIN	70 - 138	40
HEPTACHLOR	57 - 127	24

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
DECACHLOROBIPHENYL	82	N/A	28 - 138
TETRACHLORO-M-XYLENE	16H	N/A	43 - 119

H = Out of limits.

70 253

MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICESORGANOCHLORINE PESTICIDES AND PCB ANALYSIS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	SAMPLE I.D. #	: 820980-6
PROJECT #	: 35646	CLIENT I.D. #	: 97RMZ04SD
PROJECT NAME	: CAPE ROMANZOF LANDFILL	DATE EXTRACTED	: 07/03/97
SAMPLE MATRIX	: SEDIMENT	DATE ANALYZED	: 07/16/97
EPA METHOD	: 8081	UNITS	: mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
ALDRIN	<1.76	0.0235	NC	G	NC	G	G
GAMMA-BHC (LINDANE)	<1.76	0.0235	NC	G	NC	G	G
P, P'-DDT	<3.52	0.0469	NC	G	NC	G	G
DIELDRIN	<3.52	0.0469	NC	G	NC	G	G
ENDRIN	<3.52	0.0469	NC	G	NC	G	G
HEPTACHLOR	<1.76	0.0235	NC	G	NC	G	G

CONTROL LIMITS

	% REC.	RPD
ALDRIN	52 - 117	21
GAMMA-BHC (LINDANE)	40 - 115	25
P, P'-DDT	46 - 147	27
DIELDRIN	46 - 132	26
ENDRIN	40 - 165	40
HEPTACHLOR	48 - 128	24

SURROGATE RECOVERIES

	SPIKE	DUP. SPIKE	LIMITS
DECACHLOROBIPHENYL	200G	198G	28 - 138
TETRACHLORO-M-XYLENE	73	75	43 - 119

G = Out of limits due to high levels of target analytes in sample.
NC = Not calculable.

QUALITY ASSURANCE
DATA REVIEW

Date: July 21, 1997

MAS Workorder: 820980

Analysis: METALS

The data contained in the following report have been reviewed and approved by the appropriate supervisory personnel listed below:



Dave Wunderlich
Quality Assurance Manager

CERTIFICATION

MultiChem Analytical Services certifies that the analyses reported herein are true, complete, and correct within the limits of the methods employed.

CASE NARRATIVE

CLIENT : HARDING LAWSON ASSOCIATES
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL

CASE NARRATIVE: METALS ANALYSIS

The following anomalies were associated with the preparation and/or analysis of the samples in this accession:

Sodium was detected at 0.11 mg/L for the digestion blank associated with samples 820980-1 (97RMZ06WA) and 820980-4 (97RMZ04SW). The total sodium content of the samples was greater than ten (10) times the sodium contamination in the digestion blank. Therefore, no further corrective action was performed.

The reporting limit for silver was raised by a factor of 10 for sample 820980-6 (97RMZ04SD) due to matrix interference from high levels of iron. The corresponding dilution was performed to eliminate the effects of matrix interference and the reporting limit was raised accordingly.

The matrix spike (MS) percent recovery of manganese in the quality control (QC) for sample 820980-6 (97RMZ04SD) was within the established control limits of 27-159%, but was flagged with a "G" due to high manganese concentration. The manganese content in the QC sample was greater than four (4) times the amount of spike added.

The MS percent recoveries of aluminum, iron and magnesium in the QC for sample 820980-6 (97RMZ04SD) were outside the established control limits of 75-125%. The aluminum, iron and magnesium contents in the QC sample were greater than four (4) times the amount of spike added. The total aluminum, iron and magnesium MS recoveries were flagged with a "G".

The MS recovery of calcium fell below the established control limits of 75-125% for sample 820980-6 (97RMZ04SD). A post-digestion spike for calcium was performed, and the resulting percent recovery was within the established control limits. Therefore, the calcium MS recovery was flagged with an "H".

The relative percent difference (RPD) for lead in the matrix duplicate sample associated with samples 820980-1 (97RMZ06WA) and 820980-4 (97RMZ04SW) exceeded the established control limits. However, because the lead content was less than five (5) times the reporting limit, the difference between the sample and sample duplicate was used to determine the control limit. Using the reporting limit of 0.0030 mg/L as the control limit for the difference, the quality control (QC) was within acceptable parameters.

All other associated quality assurance/quality control (QA/QC) parameters were within established MAS control limits.

MAS I.D. # 820980

MultiChem
ANALYTICAL SERVICESTOTAL
METALS ANALYSIS
DATA SUMMARY

CLIENT : HARDING LAWSON ASSOCIATES DATE SAMPLED : N/A
 PROJECT # : 35646 DATE RECEIVED : N/A
 PROJECT NAME : CAPE ROMANZOF LANDFILL UNITS : mg/L
 CLIENT I.D. : METHOD BLANK
 SAMPLE MATRIX : WATER

ELEMENT	DATE PREPARED	DATE ANALYZED	RESULT	DIL	BATCH
ALUMINUM	07/01/97	07/08/97	<0.20	1.0	RW7361I
ANTIMONY	07/01/97	07/08/97	<0.050	1.0	RW7361I
ARSENIC	07/01/97	07/08/97	<0.0050	1.0	RW7360F
BARIUM	07/01/97	07/08/97	<0.010	1.0	RW7361I
BERYLLIUM	07/01/97	07/08/97	<0.0050	1.0	RW7361I
CADMIUM	07/01/97	07/08/97	<0.0050	1.0	RW7361I
CALCIUM	07/01/97	07/08/97	<0.10	1.0	RW7361I
CHROMIUM	07/01/97	07/08/97	<0.010	1.0	RW7361I
COBALT	07/01/97	07/08/97	<0.010	1.0	RW7361I
COPPER	07/01/97	07/08/97	<0.010	1.0	RW7361I
IRON	07/01/97	07/08/97	<0.050	1.0	RW7361I
LEAD	07/01/97	07/09/97	<0.0030	1.0	RW7360F
MAGNESIUM	07/01/97	07/08/97	<0.050	1.0	RW7361I
MANGANESE	07/01/97	07/08/97	<0.010	1.0	RW7361I
MERCURY	06/30/97	07/01/97	<0.00020	1.0	HG7101W
NICKEL	07/01/97	07/08/97	<0.010	1.0	RW7361I
POTASSIUM	07/01/97	07/08/97	<0.20	1.0	RW7361I
SELENIUM	07/01/97	07/10/97	<0.0050	1.0	RW7360F
SILVER	07/01/97	07/08/97	<0.0050	1.0	RW7361I
SODIUM	07/01/97	07/08/97	0.11	1.0	RW7361I
THALLIUM	07/01/97	07/11/97	<0.0050	1.0	RW7360F
VANADIUM	07/01/97	07/08/97	<0.010	1.0	RW7361I
ZINC	07/01/97	07/08/97	<0.010	1.0	RW7361I

TOTAL
METALS ANALYSIS
DATA SUMMARY

MultiChem
ANALYTICAL SERVICES

CLIENT	: HARDING LAWSON ASSOCIATES	DATE SAMPLED	: 06/20/97
PROJECT #	: 35646	DATE RECEIVED	: 06/24/97
PROJECT NAME	: CAPE ROMANZOF LANDFILL	UNITS	: mg/L
CLIENT I.D.	: 97RMZ06WA		
SAMPLE MATRIX	: WATER		

ELEMENT	DATE PREPARED	DATE ANALYZED	RESULT	DIL	BATCH
ALUMINUM	07/01/97	07/08/97	1.2	1.0	RW7361I
ANTIMONY	07/01/97	07/08/97	<0.050	1.0	RW7361I
ARSENIC	07/01/97	07/08/97	<0.0050	1.0	RW7360F
BARIUM	07/01/97	07/08/97	0.037	1.0	RW7361I
BERYLLIUM	07/01/97	07/08/97	<0.0050	1.0	RW7361I
CADMIUM	07/01/97	07/08/97	<0.0050	1.0	RW7361I
CALCIUM	07/01/97	07/08/97	5.4	1.0	RW7361I
CHROMIUM	07/01/97	07/08/97	<0.010	1.0	RW7361I
COBALT	07/01/97	07/08/97	<0.010	1.0	RW7361I
COPPER	07/01/97	07/08/97	<0.010	1.0	RW7361I
IRON	07/01/97	07/08/97	1.8	1.0	RW7361I
LEAD	07/01/97	07/09/97	<0.0030	1.0	RS7360F
MAGNESIUM	07/01/97	07/08/97	1.3	1.0	RW7361I
MANGANESE	07/01/97	07/08/97	0.59	1.0	RW7361I
MERCURY	06/30/97	07/01/97	<0.00020	1.0	HG7101W
NICKEL	07/01/97	07/08/97	<0.010	1.0	RW7361I
POTASSIUM	07/01/97	07/08/97	0.89	1.0	RW7361I
SELENIUM	07/01/97	07/10/97	<0.0050	1.0	RW7360F
SILVER	07/01/97	07/08/97	<0.0050	1.0	RW7361I
SODIUM	07/01/97	07/08/97	3.8	1.0	RW7361I
THALLIUM	07/01/97	07/11/97	<0.0050	1.0	RW7360F
VANADIUM	07/01/97	07/08/97	<0.010	1.0	RW7361I
ZINC	07/01/97	07/08/97	<0.010	1.0	RW7361I

TOTAL
 METALS ANALYSIS
 DATA SUMMARY

CLIENT : HARDING LAWSON ASSOCIATES DATE SAMPLED : 06/20/97
 PROJECT # : 35646 DATE RECEIVED : 06/24/97
 PROJECT NAME : CAPE ROMANZOF LANDFILL UNITS : mg/L
 CLIENT I.D. : 97RMZ04SW
 SAMPLE MATRIX : WATER

ELEMENT	DATE PREPARED	DATE ANALYZED	RESULT	DIL	BATCH
ALUMINUM	07/01/97	07/08/97	2.1	1.0	RW7361I
ANTIMONY	07/01/97	07/08/97	<0.050	1.0	RW7361I
ARSENIC	07/01/97	07/08/97	<0.0050	1.0	RW7360F
BARIUM	07/01/97	07/08/97	0.039	1.0	RW7361I
BERYLLIUM	07/01/97	07/08/97	<0.0050	1.0	RW7361I
CADMIUM	07/01/97	07/08/97	<0.0050	1.0	RW7361I
CALCIUM	07/01/97	07/08/97	2.6	1.0	RW7361I
CHROMIUM	07/01/97	07/08/97	<0.010	1.0	RW7361I
COBALT	07/01/97	07/08/97	<0.010	1.0	RW7361I
COPPER	07/01/97	07/08/97	<0.010	1.0	RW7361I
IRON	07/01/97	07/08/97	3.5	1.0	RW7361I
LEAD	07/01/97	07/09/97	0.0038	1.0	RW7360F
MAGNESIUM	07/01/97	07/08/97	1.2	1.0	RW7361I
MANGANESE	07/01/97	07/08/97	0.26	1.0	RW7361I
MERCURY	06/30/97	07/01/97	<0.00020	1.0	HG7101W
NICKEL	07/01/97	07/08/97	<0.010	1.0	RW7361I
POTASSIUM	07/01/97	07/08/97	0.67	1.0	RW7361I
SELENIUM	07/01/97	07/10/97	<0.0050	1.0	RW7360F
SILVER	07/01/97	07/08/97	<0.0050	1.0	RW7361I
SODIUM	07/01/97	07/08/97	3.2	1.0	RW7361I
THALLIUM	07/01/97	07/11/97	<0.0050	1.0	RW7360F
VANADIUM	07/01/97	07/08/97	<0.010	1.0	RW7361I
ZINC	07/01/97	07/08/97	0.053	1.0	RW7361I

TOTAL METALS ANALYSIS
 QUALITY CONTROL DATA

 CLIENT : HARDING LAWSON ASSOCIATES UNITS : mg/L
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL

ELEMENT	MAS I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC	BATCH NUMBER
ALUMINUM	BLANK	<0.200	N/A	N/A	0.955	1.00	96	RW7361I
ALUMINUM	820980-4*	2.11	2.10	0	10.9	10.0	88	RW7361I
ANTIMONY	BLANK	<0.0500	N/A	N/A	0.977	1.00	98	RW7361I
ANTIMONY	820980-4*	<0.0500	<0.0500	NC	0.970	1.00	97	RW7361I
ARSENIC	BLANK	<0.00500	N/A	N/A	0.237	0.0250	95	RW7360F
ARSENIC	820980-4*	<0.00500	<0.0050	NC	0.234	0.0250	94	RW7360F
BARIUM	BLANK	<0.0100	N/A	N/A	0.918	1.00	92	RW7361I
BARIUM	820980-4*	0.0386	0.0365	6	0.959	1.00	92	RW7361I
BERYLLIUM	BLANK	<0.00500	N/A	N/A	0.952	1.00	95	RW7361I
BERYLLIUM	820980-4*	<0.00500	<0.00500	NC	0.946	1.00	95	RW7361I
CADMIUM	BLANK	<0.00500	N/A	N/A	0.982	1.00	98	RW7361I
CADMIUM	820980-4*	<0.00500	<0.00500	NC	0.957	1.00	96	RW7361I
CALCIUM	BLANK	<0.100	N/A	N/A	0.990	1.00	99	RW7361I
CALCIUM	820980-4*	2.62	2.46	6	11.5	10.0	89	RW7361I
CHROMIUM	BLANK	<0.0100	N/A	N/A	0.974	1.00	97	RW7361I
CHROMIUM	820980-4*	<0.0100	<0.0100	NC	0.962	1.00	96	RW7361I
COBALT	BLANK	<0.0100	N/A	N/A	0.987	1.00	99	RW7361I
COBALT	820980-4*	<0.0100	<0.0100	NC	0.971	1.00	97	RW7361I
COPPER	BLANK	<0.0100	N/A	N/A	0.954	1.00	95	RW7361I
COPPER	820980-4*	<0.0100	<0.0100	NC	0.952	1.00	95	RW7361I
IRON	BLANK	<0.0500	N/A	N/A	0.972	1.00	97	RW7361I
IRON	820980-4*	3.47	3.25	7	12.4	10.0	89	RW7361I
LEAD	BLANK	<0.00300	N/A	N/A	0.237	0.250	95	RW7360F
LEAD	820980-4*	0.00377	0.00465	21	0.263	0.250	90	RW7360F
MAGNESIUM	BLANK	<0.0500	N/A	N/A	0.999	1.00	100	RW7361I
MAGNESIUM	820980-4*	1.17	1.11	5	10.5	10.0	93	RW7361I

* CLIENT I.D. # 97RMZ04SW

CONTINUED NEXT PAGE

MAS I.D. # 820980

TOTAL METALS ANALYSIS
QUALITY CONTROL DATA
CONTINUED

CLIENT : HARDING LAWSON ASSOCIATES UNITS : mg/L
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL

ELEMENT	MAS I.D.	SAMPLE RESULT	DUP RESULT	SPIKED RPD RESULT	SPIKE ADDED	% REC	BATCH NUMBER
MANGANESE	BLANK	<0.0100	N/A	N/A 0.958	1.00	96	RW7361I
MANGANESE	820980-4*	0.257	0.237	8 1.19	1.00	93	RW7361I
MERCURY	BLANK	<0.000200	N/A	N/A 0.00231	0.00200	116	HG7101W
MERCURY	820980-1+	<0.000200	<0.000200	NC 0.00239	0.00200	120	HG7101W
NICKEL	BLANK	<0.0100	N/A	N/A 0.974	1.00	97	RW7361I
NICKEL	820980-4*	<0.0100	<0.0100	NC 0.958	1.00	96	RW7361I
POTASSIUM	BLANK	<0.200	N/A	N/A 9.28	10.0	93	RW7361I
POTASSIUM	820980-4*	0.674	0.601	11 9.82	10.0	91	RW7361I
SELENIUM	BLANK	<0.00500	N/A	N/A 0.0196	0.0250	78	RW7360F
SELENIUM	820980-4*	<0.00500	<0.00500	NC 0.0187	0.0250	75	RW7360F
SILVER	BLANK	<0.00500	N/A	N/A 0.996	1.00	100	RW7361I
SILVER	820980-4*	<0.00500	<0.00500	NC 0.993	1.00	99	RW7361I
SODIUM	BLANK	0.114	N/A	N/A 0.992	1.00	88	RW7361I
SODIUM	820980-4*	3.22	3.08	4 12.2	10.0	90	RW7361I
THALLIUM	BLANK	<0.00500	N/A	N/A 0.0248	0.0250	99	RW7360F
THALLIUM	820980-4*	<0.00500	<0.00500	NC 0.0240	0.0250	96	RW7360F
VANADIUM	BLANK	<0.0100	N/A	N/A 0.952	1.00	95	RW7361I
VANADIUM	820980-4*	<0.0100	<0.0100	NC 0.946	1.00	95	RW7361I
ZINC	BLANK	<0.0100	N/A	N/A 0.960	1.00	96	RW7361I
ZINC	820980-4*	0.0534	0.0500	7 1.00	1.00	95	RW7361I

NC = Not Calculable.

+ CLIENT I.D. # 97RMZ06WA

* CLIENT I.D. # 97RMZ04SW

TOTAL METALS ANALYSIS
 QUALITY CONTROL DATA
 CONTINUED

 CLIENT : HARDING LAWSON ASSOCIATES UNITS : mg/L
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL

CONTROL LIMITS

ELEMENT	BLANK SPIKE %RECOVERY	BLANK SPIKE RPD	MATRIX SPIKE %RECOVERY	MATRIX SPIKE RPD	MATRIX DUPLICATE RPD
ALUMINUM	85-115	N/A	80-120	N/A	20
ANTIMONY	85-115	N/A	72-118	N/A	20
ARSENIC	76-118	N/A	64-137	N/A	20
BARIUM	85-115	N/A	71-119	N/A	20
BERYLLIUM	85-115	N/A	70-120	N/A	20
CADMIUM	85-115	N/A	71-120	N/A	20
CALCIUM	85-115	N/A	75-125	N/A	20
CHROMIUM	85-115	N/A	71-118	N/A	20
COBALT	85-115	N/A	73-119	N/A	20
COPPER	85-115	N/A	75-116	N/A	20
IRON	85-115	N/A	73-109	N/A	20
LEAD	77-117	N/A	74-124	N/A	20
MAGNESIUM	85-115	N/A	61-127	N/A	20
MANGANESE	85-115	N/A	75-116	N/A	20
MERCURY	82-122	N/A	57-146	N/A	20
NICKEL	85-115	N/A	69-118	N/A	20
POTASSIUM	85-115	N/A	84-115	N/A	20
SELENIUM	78-116	N/A	75-125	N/A	20
SILVER	85-115	N/A	77-118	N/A	20
SODIUM	85-115	N/A	52-141	N/A	20
THALLIUM	79-112	N/A	55-121	N/A	20
VANADIUM	85-115	N/A	79-115	N/A	20
ZINC	85-115	N/A	79-115	N/A	20

MAS I.D. # 820980

METALS ANALYSIS
DATA SUMMARY

CLIENT : HARDING LAWSON ASSOCIATES
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL
 CLIENT I.D. : METHOD BLANK
 SAMPLE MATRIX : SEDIMENT

DATE SAMPLED : N/A
 DATE RECEIVED : N/A
 UNITS : mg/Kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ELEMENT	DATE PREPARED	DATE ANALYZED	RESULT	DIL	BATCH
ALUMINUM	06/26/97	06/30/97	<10	1.0	RS7323I
ANTIMONY	06/26/97	06/30/97	<2.5	1.0	RS7323I
ARSENIC	06/26/97	06/30/97	<0.25	1.0	RS7322F
BARIUM	06/26/97	06/30/97	<0.50	1.0	RS7323I
BERYLLIUM	06/26/97	06/30/97	<0.25	1.0	RS7323I
CADMIUM	06/26/97	06/30/97	<0.25	1.0	RS7323I
CALCIUM	06/26/97	06/30/97	<5.0	1.0	RS7323I
CHROMIUM	06/26/97	06/30/97	<0.50	1.0	RS7323I
COBALT	06/26/97	06/30/97	<0.50	1.0	RS7323I
COPPER	06/26/97	06/30/97	<0.50	1.0	RS7323I
IRON	06/26/97	06/30/97	<2.5	1.0	RS7323I
LEAD	06/26/97	06/30/97	<0.15	1.0	RS7322F
MAGNESIUM	06/26/97	06/30/97	<2.5	1.0	RS7323I
MANGANESE	06/26/97	06/30/97	<0.50	1.0	RS7323I
MERCURY	06/26/97	06/27/97	<0.10	1.0	HG7099S
NICKEL	06/26/97	06/30/97	<0.50	1.0	RS7323I
POTASSIUM	06/26/97	06/30/97	<10	1.0	RS7323I
SELENIUM	06/26/97	07/10/97	<0.25	1.0	RS7322F
THALLIUM	06/26/97	07/11/97	<0.25	1.0	RS7322F
SILVER	06/26/97	07/08/97	<0.25	1.0	RS7323I
SODIUM	06/26/97	07/08/97	<2.5	1.0	RS7323I
VANADIUM	06/26/97	06/30/97	<0.50	1.0	RS7323I
ZINC	06/26/97	06/30/97	<0.50	1.0	RS7323I

METALS ANALYSIS
 DATA SUMMARY

CLIENT : HARDING LAWSON ASSOCIATES
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL
 CLIENT I.D. : 97RMZ04SD
 SAMPLE MATRIX : SEDIMENT
 DATE SAMPLED : 06/20/97
 DATE RECEIVED : 06/24/97
 UNITS : mg/Kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ELEMENT	DATE PREPARED	DATE ANALYZED	RESULT	DIL	BATCH
ALUMINUM	06/26/97	06/30/97	10000	1.0	RS7323I
ANTIMONY	06/26/97	06/30/97	<3.6	1.0	RS7323I
ARSENIC	06/26/97	06/30/97	9.9	5.0	RS7322F
BARIUM	06/26/97	06/30/97	120	1.0	RS7323I
BERYLLIUM	06/26/97	06/30/97	<0.36	1.0	RS7323I
CADMIUM	06/26/97	06/30/97	0.56	1.0	RS7323I
CALCIUM	06/26/97	06/30/97	1400	1.0	RS7323I
CHROMIUM	06/26/97	06/30/97	23	1.0	RS7323I
COBALT	06/26/97	06/30/97	8.3	1.0	RS7323I
COPPER	06/26/97	06/30/97	17	1.0	RS7323I
IRON	06/26/97	06/30/97	20000	1.0	RS7323I
LEAD	06/26/97	06/30/97	22	20	RS7322F
MAGNESIUM	06/26/97	06/30/97	4500	1.0	RS7323I
MANGANESE	06/26/97	06/30/97	1000	1.0	RS7323I
MERCURY	06/26/97	06/27/97	<0.13	1.0	HG7099S
NICKEL	06/26/97	06/30/97	18	1.0	RS7323I
POTASSIUM	06/26/97	06/30/97	1700	1.0	RS7323I
SELENIUM	06/26/97	07/10/97	<0.35	1.0	RS7322F
THALLIUM	06/26/97	07/11/97	<0.35	1.0	RS7322F
SILVER	06/26/97	07/08/97	<3.6	10.0	RS7323I
SODIUM	06/26/97	07/08/97	110	1.0	RS7323I
VANADIUM	06/26/97	06/30/97	36	1.0	RS7323I
ZINC	06/26/97	06/30/97	150	1.0	RS7323I

MAS I.D. # 820980

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MultiChem
ANALYTICAL SERVICESMETALS ANALYSIS
QUALITY CONTROL DATACLIENT : HARDING LAWSON ASSOCIATES UNITS : mg/Kg
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL

ELEMENT	MAS I.D.	SAMPLE RESULT	DUP RESULT	SPIKED RPD RESULT	SPIKE ADDED	% REC	BATCH NUMBER
ALUMINUM	BLANK	<10.0	N/A	N/A	45.8	92	RS7323I
ALUMINUM	820980-6#	10500	9810	7	9740	G	RS7323I
ANTIMONY	BLANK	<2.50	N/A	N/A	43.5	87	RS7323I
ANTIMONY	820980-6#	<3.61	<3.59	NC	20.1	28	RS7323I
ARSENIC	BLANK	<0.250	N/A	N/A	1.43	114	RS7322F
ARSENIC	820980-6#	9.92	10.4	5	14.4	84	RS7322F
BARIUM	BLANK	<0.500	N/A	N/A	43.5	87	RS7323I
BARIUM	820980-6#	120	125	4	173	74	RS7323I
BERYLLIUM	BLANK	<0.250	N/A	N/A	42.3	85	RS7323I
BERYLLIUM	820980-6#	<0.361	<0.359	NC	61.3	85	RS7323I
CADMIUM	BLANK	<0.250	N/A	N/A	43.4	87	RS7323I
CADMIUM	820980-6#	0.556	0.739	28	59.6	82	RS7323I
CALCIUM	BLANK	<5.00	N/A	N/A	45.9	92	RS7323I
CALCIUM	820980-6#	1380	1290	7	1790	57H	RS7323I
CHROMIUM	BLANK	<0.500	N/A	N/A	45.7	91	RS7323I
CHROMIUM	820980-6#	23.3	21.5	8	83.2	83	RS7323I
COBALT	BLANK	<0.500	N/A	N/A	44.8	90	RS7323I
COBALT	820980-6#	8.29	8.62	4	68.9	84	RS7323I
COPPER	BLANK	<0.500	N/A	N/A	44.7	89	RS7323I
COPPER	820980-6#	16.9	18.1	7	80.3	88	RS7323I
IRON	BLANK	<2.50	N/A	N/A	43.7	87	RS7323I
IRON	820980-6#	19600	22800	15	18400	G	RS7323I
LEAD	BLANK	<0.150	N/A	N/A	1.23	98	RS7322F
LEAD	820980-6#	21.6	23.1	7	25.8	79	RS7322F
MAGNESIUM	BLANK	<2.50	N/A	N/A	47.0	94	RS7323I
MAGNESIUM	820980-6#	4470	4150	7	4550	11G	RS7323I

G = Out of limits due to high levels of target analytes in sample.

H = Out of limits.

NC = Not calculable.

CLIENT I.D. # 97RMZ04SD

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 MAS I.D. # 820980

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 ANALYTICAL SERVICES

METALS ANALYSIS
 QUALITY CONTROL DATA
 CONTINUED

CLIENT : HARDING LAWSON ASSOCIATES UNITS : mg/Kg
 PROJECT # : 35646
 PROJECT NAME : CAPE ROMANZOF LANDFILL

ELEMENT	MAS I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC	BATCH NUMBER
MANGANESE	BLANK	<0.500	N/A	N/A	44.2	50.0	88	RS7323I
MANGANESE	820980-6#	1010	1240	20	1080	72.1	97G	RS7323I
MERCURY	BLANK	<0.100	N/A	N/A	1.02	1.00	102	HG7099S
MERCURY	820980-6#	<0.134	<0.135	NC	1.53	1.30	118	HG7099S
NICKEL	BLANK	<0.500	N/A	N/A	44.2	50.0	88	RS7323I
NICKEL	820980-6#	17.7	17.9	1	75.6	72.1	80	RS7323I
POTASSIUM	BLANK	<10.0	N/A	N/A	435	500	87	RS7323I
POTASSIUM	820980-6#	1650	1520	8	2060	721	57	RS7323I
SELENIUM	BLANK	<0.250	N/A	N/A	1.16	1.25	93	RS7322F
SELENIUM	820980-6#	<0.352	<0.362	NC	1.04	1.78	58	RS7322F
SILVER	BLANK	<0.250	N/A	N/A	44.2	50.0	88	RS7323I
SILVER	820980-6#	<3.61	<3.59	NC	63.5	72.1	88	RS7323I
SODIUM	BLANK	<2.50	N/A	N/A	43.4	50.0	87	RS7323I
SODIUM	820980-6#	106	92.9	13	687	721	81	RS7323I
THALLIUM	BLANK	<0.250	N/A	N/A	1.22	1.25	98	RS7322F
THALLIUM	820980-6#	<0.352	<0.362	NC	1.70	1.78	96	RS7322F
VANADIUM	BLANK	<0.500	N/A	N/A	46.7	50.0	93	RS7323I
VANADIUM	820980-6#	36.1	34.7	4	97.4	72.1	85	RS7323I
ZINC	BLANK	<0.500	N/A	N/A	43.1	50.0	86	RS7323I
ZINC	820980-6#	155	187	19	210	72.1	76	RS7323I

G = Out of limits due to high levels of target analytes in sample.

H = Out of limits.

NC = Not Calculable.

CLIENT I.D. # 97RMZ04SD

MAS I.D. # 820980

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ANALYTICAL SERVICES

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GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : HARDING LAWSON ASSOCIATES MATRIX : SEDIMENT
PROJECT # : 35646
PROJECT NAME : CAPE ROMANZOF LANDFILL UNITS : %
EPA METHOD : CLP SOW ILM04.0

MAS I.D. #	CLIENT I.D.	MOISTURE
820980-6	97RMZ04SD	29

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MAS I.D. # 820980

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ANALYTICAL SERVICES

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT	: HARDING LAWSON ASSOCIATES	MATRIX	: SEDIMENT
PROJECT #	: 35646		
PROJECT NAME	: CAPE ROMANZOF LANDFILL	UNITS	: %
EPA METHOD	: CLP SOW ILM04.0		

PARAMETER	MAS I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	820980-6#	29	28	4	N/A	N/A	N/A

CLIENT I.D. # 97RMZ04SD

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

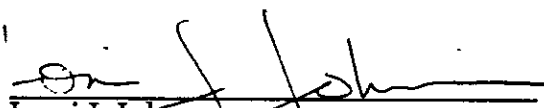
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Closure Monitoring Report
Landfill 2 (LF03)
Cape Romanzof LRRS, Alaska

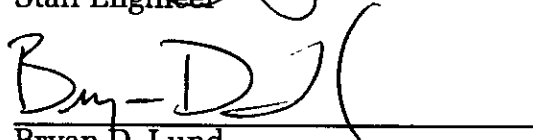
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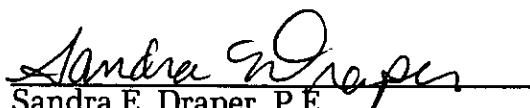


Lorri J. Johnson
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Bryan D. Lund
Project Geologist

Quality Control Reviewer



Sandra E. Draper, P.E.
Civil Engineer - 9360

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FINAL PAGE

ADMINISTRATIVE RECORD

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