ANALYTICAL REPORT 8344 2

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ETC - FINDLAY LABORATORY

CLIENT: USEPA Region IV
Garden City, GA

ATTN: M. Rigatti
Shane Hitchcock, OSC

PROJECT NUMBER: 7034S

SAMPLE TYPE: Solid

ANALYSIS PERFORMED:

Landfill Disposal Parameters

(Sample: 50)

DATE COMPLETED: 7/29/89

DATE RECEIVED: 7/18/89

This report is "PROPRIETARY AND CONFIDENTIAL" and delivered to, and intended for the exclusive use of the above named client only. Environmental Testing and Certification Corp. assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.

The analyses and data interpretation that form the basis of this report was prepared under the direct supervision and control of the undersigned who is solely responsible for the contents and conclusions therein.

Reviewed and Approved by: R. J. Schock, Mgr., ETC-Findlay Laboratory — 8/4/89 Date

PROJECT 7034S

SUMMARY REPORT OF ANALYTICAL SERVICES

1. INTRODUCTION

ETC-Findlay Laboratory received 1 sample from OHM Corporation (OHMC). This sample was acquired by their technical personnel and transferred to the laboratory complete with Chain-of-Custody Record(s), a copy of which is attached for reference. This sample was analyzed for Landfill Disposal parameters.

2. ANALYTICAL METHODOLOGY

Density

Densities were determined by Standard Methods for the Examination of Water and Wastewater, Method 213E, "Specific Gravity," 16th edition, 1985.

Total Solids

Solid samples were analyzed for Total Solids (TS) according to Standard Methods for the Examination of Water and Wastewater, 16th edition, 1985; Method 209F, "Residue, Total, Gravimetric, Dried at 103°C-105°C."

Paint Filter Test

This test was performed on the samples in accordance with USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, September 1986 and Update #1, January 1989; Method 9095, "Paint Filter Liquids Test."

Cyanide - Reactive

Samples were prepared and analyzed according to USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, September 1986 and Update #1, January 1989; Method 7.3.3.2, Test Method to Determine Hydrogen Cyanide Released from Wastes.

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SUMMARY REPORT OF ANALYTICAL SERVICES

Sulfide - Reactive

Samples were prepared and analyzed according to USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, September 1986 and Update #1, January 1989; Method 7.3.4.2, Test Method to Determine Hydrogen Sulfide Released from Wastes.

pH

Samples are tested for pH according to USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, July 1986 and Update #1, January 1989; Method 9045, "Soil pH Method."

Flash Point (Seta-Flash)

Flash points were performed at 23-93°C according to the procedure specified in USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, July 1986 and Update #1, January 1989; Method 1020, "Seta-flash Closed-cup Method."

Flammability Test

To determine if the sample continues to flame after ignition, a copper wire is dipped into the sample and then placed in the flame of a propane torch. Once the sample is removed from the flame an observation is made. If the sample continues to flame, the test is positive; if the flame goes out, the test is negative.

Total Cyanide

Water and wastewater samples were analyzed for Total Cyanide content by USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, July 1986 and Update #1, January 1989; Method 9010, Total and Amenable Cyanide.

Total Phenols

Samples were prepared and analyzed according to EPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, July 1982; Method 9065, Phenolics (Spectrophotometric, Manual 4-AAP with Distillation).

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SUMMARY REPORT OF ANALYTICAL SERVICES

GC/MS Volatile Organic Analyses and Screens

Samples are prepared and analyzed using Method 5030, "Purge and Trap" and Method 8260, "Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique," USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, September 1986 and Update #1, January 1989, as appropriate for the sample matrix type.

GC/MS Semi-Volatile Organic Analyses and Screens

Samples are prepared using Method 3540 or 3550. Additional clean-up is accomplished using Method 3640, "Gel-Permeation Cleanup." Samples are then analyzed using Method 8270, "Gas Chromatography/ Mass Spectrometry for Semi-Volatile Organics: Capillary Column Technique." USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, September 1986 and Update #1, January 1989.

Pesticides and PCB Analysis

Samples are prepared using Method 3540 or 3550. Additional clean-up is accomplished using one or more of the following Methods: 3620, 3640, or 3660. Samples are then analyzed using Method 8080, "Organochlorine Pesticides and PCBs." All methods referenced are as they currently appear in USEPA's Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-846, 3rd edition, September 1986 and Update #1, January 1989.

Herbicide Analysis

Soils, sediments, and other solid samples are extracted and analyzed using Method 8150, "Chlorinated Herbicides," as described in USEPA's Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods, SW-846, 3rd edition, September 1986, and Update #1, January 1989.

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SUMMARY REPORT OF ANALYTICAL SERVICES

Metals

Samples were prepared and analyzed according to USEPA's Test Methods for Evaluating Solid Wastes, Physical and Chemical Methods, SW-846, 3rd edition, September 1986 or SW-846 Update #1, January 1989. Sample preparation follows Method 3010, "Acid Digestion of Sediments, Sludges, and Soils." Samples are then analyzed for arsenic, barium, cadmium, total chromium, copper, lead, selenium, silver, and zinc using Method 6010, "Inductively Coupled Plasma Atomic Emission Spectroscopy." Mercury is analyzed using Method 7470 "Mercury in Liquid Waste."

3. ANALYTICAL RESULTS

The following tables detail the analytical results for sample #7034S-50.

APPENDIX A

PROJECT 7034S TABLES

PROJECT 7034S
LANDFILL DISPOSAL ANALYSIS - SOLID SAMPLES

TABLE 1 - PHYSICAL AND CONVENTIONAL ANALYSES

SAMPLE IDENTIFIER: Soil and Trash
ETC SAMPLE NUMBER: 7034S-50

Parameter	Result
Physical Tests:	
Color	Brown
Number of Phases	1
Physical state of phases	Solid
Percent by volume of phases	100
Density (bulk)	0.85 g/cc
Solids, Total	84.2 % by weight
Paint Filter Test	Pass
Characteristics Tests:	
Reactivity	
Reactive: Cyanide	< 10 mg/kg
Sulfide	< 10 mg/kg
Corrosivity	
pH Test	8.0 pH units
Ignitability	
Flash Point, SF, CC	> 93°C
Flame Test	Negative
Compositional Tests:	
Conventionals	
Total: Cyanide	< 1.0 mg/kg
Phenols	11.5 mg/kg

TABLE 1: QUANTITATIVE RESULTS

JUL 28, 1989

Disposal Volatiles (JR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

QVS039

Compound	Results: Sample Concen. mg/kg	MDL mg/kg	Blank Data mg/kg
Acetone	BDL	49.8	BDL
Acrolein	BDL	49.8	BDL
Acrylonitrile	BDL	24.9	BDL
Benzene	BDL	9.95	BDL
Bromoform	BDL	9.95	BDL
Carbon disulfide	BDL	9.95	BDL
Carbon tetrachloride	BDL	9.95	BDL
Chlorobenzene	BDL	9.95	BDL
2-Chloro-1,3-butadiene	BDL	9.95	BDL
Chlorodibromomethane	BDL	9.95	BDL
Chloroethane	BDL	9.95	BDL
Chloroform	BDL	9.95	BDL
2-Chloroethylvinyl ether	BDL	9.95	BDL
3-Chloropropene	BDL	9.95	BDL
1,2-Dibromo-3-chloropropane	BDL	9.95	BDL
Dichlorobromomethane	BDL	9.95	BDL
1,4-Dichloro-2-butene	BDL	9.95	BDL
Dichlorodifluoromethane	BDL	9.95	BDL
1,1-Dichloroethane	BDL	9.95	BDL
1,2-Dichloroethane	BDL	9.95	BDL
1,1-Dichloroethylene	BDL	9.95	BDL
1,2-Dichloropropane	BDL	9.95	BDL
cis-1,3-Dichloropropylene	BDL	9.95	BDL
trans-1,3-Dichloropropylene	BDL	9.95	BDL
Dibromomethane	BDL	9.95	BDL
Ethylbenzene	BDL	9.95	BDL
Ethylene dibromide	BDL	9.95	BDL
2-Hexanone	BDL	9.95	BDL
Iodomethane	BDL	9.95	BDL
Methyl bromide	BDL	9.95	BDL
Methyl chloride	BDL	9.95	BDL
Methylene chloride	BDL	9.95	BDL
Methyl ethyl ketone	BDL	9.95	BDL
Methyl-iso-butyl ketone	BDL	9.95	BDL
Styrene	BDL	9.95	BDL
1,1,1,2-Tetrachloroethane	BDL	9.95	BDL
1,1,2,2-Tetrachloroethane	BDL	9.95	BDL
Tetrachloroethylene	BDL	9.95	BDL
Tetrahydrofuran	BDL	9.95	BDL

TABLE 1: QUANTITATIVE RESULTS

JUL 28, 1989

Disposal Volatiles (JR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

QVS039

Compound	Results		
	Sample Concen. mg/kg	MDL mg/kg	Blank Data mg/kg
Toluene	BDL	9.95	BDL
1,1,1-Trichloroethane	29.2	9.95	BDL
1,1,2-Trichloroethane	BDL	9.95	BDL
Trichloroethylene	BDL	9.95	BDL
Trichlorofluoromethane	BDL	9.95	BDL
1,2-Trans-dichloroethylene	BDL	9.95	BDL
1,2,3-Trichloropropane	BDL	9.95	BDL
1,1,2-Trichlorotrifluoroethane	BDL	9.95	BDL
Vinyl acetate	BDL	49.8	BDL
Vinyl chloride	BDL	9.95	BDL
m+p-Xylenes	BDL	9.95	BDL
o-Xylene	BDL	9.95	BDL

PROJECT 7034S

TABLE 3 - TENTATIVELY IDENTIFIED VOLATILE SCREEN RESULTS

SAMPLE IDENTIFIER: Soil and Trash
ETC SAMPLE NUMBER: 7034S-50

CAS #	Compounds	Retention Time (min)	Estimated Concentration (mg/kg)
108429	3-chloro Benzenamine	28.09	17.0
1120214	Undecane	29.04	13.0

mg/kg = ppm (parts-per-million)

TABLE 1: QUANTITATIVE RESULTS

JUL 27, 1989

Disposal Semi-Volatiles (JR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

QC2732

Compound	Results: Sample Concen. mg/kg	MDL mg/kg	Blank Data mg/kg
Acenaphthene	BDL	18.5	BDL
Acenaphthylene	BDL	18.5	BDL
Anthracene	BDL	18.5	BDL
Benzoic acid	BDL	92.6	BDL
Benzyl alcohol	BDL	18.5	BDL
Benzo(a)anthracene	BDL	18.5	BDL
Benzo(b)fluoranthene	BDL	18.5	BDL
tris(2,3-Dibromopropyl)phospha	BDL	18.5	BDL
Benzo(k)fluoranthene	BDL	18.5	BDL
Benzo(ghi)perylene	BDL	18.5	BDL
Benzo(a)pyrene	BDL	18.5	BDL
bis(2-Chloroethoxy)ethane	BDL	18.5	BDL
bis(2-Chloroethyl) ether	BDL	18.5	BDL
bis(2-Chloroethoxy)methane	BDL	18.5	BDL
bis(2-Chloroisopropyl)ether	BDL	18.5	BDL
bis(2-Ethylhexyl)phthalate	BDL	18.5	BDL
4-Bromophenyl phenyl ether	BDL	18.5	BDL
Butyl benzyl phthalate	BDL	18.5	BDL
4-Chloroaniline	BDL	18.5	BDL
p-Chloro-m-cresol	BDL	18.5	BDL
2-Chloronaphthalene	BDL	18.5	BDL
2-Chlorophenol	BDL	18.5	BDL
4-Chlorophenyl phenyl ether	BDL	18.5	BDL
3-Chloropropionitrile	BDL	18.5	BDL
Chrysene	BDL	18.5	BDL
Dibenzo(a,h)anthracene	BDL	18.5	BDL
Dibenzofuran	BDL	18.5	BDL
Di-n-butyl phthalate	BDL	18.5	BDL
1,2-Dichlorobenzene	BDL	18.5	BDL
1,3-Dichlorobenzene	BDL	18.5	BDL
1,4-Dichlorobenzene	BDL	18.5	BDL
3,3'-Dichlorobenzidine	BDL	18.5	BDL
2,4-Dichlorophenol	BDL	18.5	BDL
2,6-Dichlorophenol	BDL	18.5	BDL
Diethyl phthalate	BDL	18.5	BDL
Dimethyl phthalate	BDL	18.5	BDL
2,4-Dimethylphenol	BDL	18.5	BDL
4,6-Dinitro-o-cresol	BDL	92.6	BDL
2,4-Dinitrophenol	BDL	92.6	BDL

TABLE 1: QUANTITATIVE RESULTS

JUL 27, 1989

Disposal Semi-Volatiles (JR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

QC2732

Compound	Results		
	Sample Concen. mg/kg	MDL mg/kg	Blank Data mg/kg
2,4-Dinitrotoluene	BDL	18.5	BDL
2,6-Dinitrotoluene	BDL	18.5	BDL
Di-n-octyl phthalate	BDL	18.5	BDL
Fluoranthene	BDL	18.5	BDL
Fluorene	BDL	18.5	BDL
Hexachlorobenzene	BDL	18.5	BDL
Hexachlorobutadiene	BDL	18.5	BDL
Hexachlorocyclopentadiene	BDL	18.5	BDL
Hexachloroethane	BDL	18.5	BDL
Hexachloropropene	BDL	18.5	BDL
Indeno(1,2,3-c,d)pyrene	BDL	18.5	BDL
Isophorone	BDL	18.5	BDL
4,4'-Methylenebis(2-chloroanil	BDL	18.5	BDL
2-Methylnaphthalene	BDL	18.5	BDL
2-Methylphenol	BDL	18.5	BDL
4-Methylphenol	BDL	18.5	BDL
N-Nitrosodimethylamine	BDL	18.5	BDL
N-Nitrosodi-n-propylamine	BDL	18.5	BDL
N-Nitrosodiphenylamine	BDL	18.5	BDL
Naphthalene	BDL	18.5	BDL
2-Nitroaniline	BDL	18.5	BDL
3-Nitroaniline	BDL	18.5	BDL
4-Nitroaniline	BDL	18.5	BDL
Nitrobenzene	BDL	18.5	BDL
2-Nitrophenol	BDL	18.5	BDL
4-Nitrophenol	BDL	92.6	BDL
Pentachlorobenzene	BDL	18.5	BDL
Pentachloronitrobenzene	BDL	18.5	BDL
Pentachlorophenol	BDL	92.6	BDL
Pentachloroethane	BDL	18.5	BDL
Phenanthrene	BDL	18.5	BDL
Phenol	BDL	18.5	BDL
Pronamide	BDL	18.5	BDL
Pyrene	BDL	18.5	BDL
1,2,4,5-Tetrachlorobenzene	BDL	18.5	BDL
2,3,4,6-Tetrachlorophenol	BDL	18.5	BDL
1,2,4-Trichlorobenzene	BDL	18.5	BDL
2,4,5-Trichlorophenol	BDL	18.5	BDL
2,4,6-Trichlorophenol	BDL	18.5	BDL

PROJECT 7034S

TABLE 5 - TENTATIVELY IDENTIFIED SEMI-VOLATILE SCREEN RESULTS

SAMPLE IDENTIFIER: Soil and Trash
ETC SAMPLE NUMBER: 7034S-50

CAS #	Compounds	Retention Time (min)	Estimated Concentration (mg/kg)
629787	Neptadecane	33.1	935
483658	phenanthrene, 1-methyl-7-(1-methylethyl)	30.1	530
1235741	1-phenanthrene carboxylic acid	31.5	38.1
24035505	phenanthrene carboxaldehyde	32.4	25.6
96480	2 (3H)-Furanone, dihydro	7.5	23.7
N/A	Total Petroleum Hydrocarbons	N/A	
	Lube oil range hydrocarbons	N/A	81,100

N/A = Not applicable
mg/kg = ppm (parts-per-million)

AUG 3, 1989

TABLE 1: QUANTITATIVE RESULTS

Disposal Pesticide/PCB Compounds - GC Analysis (JR13)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717	0

QC2732

Compound	Results: Sample Concen. mg/kg	MDL mg/kg	Blank Data mg/kg
Aldrin	BDL	18.5	BDL
Alpha-BHC	BDL	18.5	BDL
Beta-BHC	BDL	18.5	BDL
4,4'-DDD	BDL	18.5	BDL
4,4'-DDE	BDL	18.5	BDL
4,4'-DDT	BDL	18.5	BDL
Delta-BHC	BDL	18.5	BDL
Dieldrin	BDL	18.5	BDL
Endosulfan sulfate	BDL	18.5	BDL
Endosulfan I	BDL	18.5	BDL
Endosulfan II	BDL	18.5	BDL
Endrin	BDL	18.5	BDL
Endrin aldehyde	BDL	18.5	BDL
Heptachlor	BDL	18.5	BDL
Heptachlor epoxide	BDL	18.5	BDL
Aroclor 1016	BDL	.25	BDL
Aroclor 1221	BDL	.25	BDL
Aroclor 1232	BDL	.25	BDL
Aroclor 1242	BDL	.25	BDL
Aroclor 1248	BDL	.25	BDL
Aroclor 1254	BDL	.25	BDL
Aroclor 1260	BDL	.25	BDL
Lindane	BDL	18.5	BDL

JUL 24, 1989

TABLE 1: QUANTITATIVE RESULTS

Herbicide Compounds - GC Analysis (JR29)

QC2731

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

Compound	Results		
	Sample Concen. mg/kg	MDL mg/kg	Blank Data mg/kg
2,4-D	BDL	.0962	BDL
2,4,5-T	BDL	.0962	BDL
2,4,5-TP (Silvex)	BDL	.0962	BDL

AUG 4, 1989

TABLE 1: QUANTITATIVE RESULTS

RCRA Pesticides - GC Analysis (JR09)

QC2744

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

Compound	Results: Sample Concen. mg/l	Results: MDL mg/l	Results: Blank Data mg/l
Endrin (Leachate)	BDL	.00100	BDL
Lindane (Leachate)	BDL	.00100	BDL
Methoxychlor (Leachate)	BDL	.00100	BDL
Toxaphene (Leachate)	BDL	.01000	BDL

JUL 26, 1989

TABLE 1: QUANTITATIVE RESULTS

RCRA/TCLP Herbicide Compounds - GC Analysis (JR33)

QC2738

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717	0

Compound	Results		
	Sample Concen. mg/l	MDL mg/l	Blank Data mg/l
2,4-D (Leachate)	BDL	.010	BDL
2,4,5-T (Leachate)	BDL	.010	BDL
2,4,5-TP (Silvex) (Leachate)	BDL	.0100	BDL

TABLE 1: QUANTITATIVE RESULTS

AUG 3, 1989

RCRA Metals Analysis (JR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

QC-342

Compound	Results: Sample Concen. mg/l	Results: MDL mg/l	Results: Blank Data mg/l
Arsenic (Leachate)	BDL	.5	BDL
Barium (Leachate)	BDL	.5	BDL
Cadmium (Leachate)	BDL	.5	BDL
Chromium (Leachate)	BDL	.5	BDL
Copper (Leachate)	BDL	.5	BDL
Lead (Leachate)	BDL	.5	BDL
Mercury (Leachate)	BDL	.05	BDL
Selenium (Leachate)	BDL	.5	BDL
Silver (Leachate)	BDL	.5	BDL
Zinc (Leachate)	BDL	.5	BDL

APPENDIX B

PROJECT 7034S
QUALITY ASSURANCE DATA

PROJECT 7034S

QUALITY ASSURANCE DATA

Conventionals

Reactive Cyanide - % Spike Recovery:

Method Spike	87.4

Amenable Cyanide - % Spike Recovery:

Method Spike	0.92

Total Cyanide - % Spike Recoveries:

Method Spike	84.3
Matrix Spike	81.7

Reactive Sulfide - % Spike Recovery:

Method Spike	85.8

Total Phenols - % Spike Recoveries:

Method Spike	111
Matrix Spike	100
Matrix Spike Duplicate	99.9

JUL 28, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

Compound	Amount added ug	% Recovery	Control Limits Lower	Control Limits Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	1.25	108	70	121
Bromofluorobenzene	1.25	109	74	121
Toluene-D8	1.25	110	81	117
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	246	89	23	120
2-Fluorobiphenyl	250	97	30	115
Terphenyl-D14	244	119	18	137
ACID FRACTION (GC/MS)				
Phenol-D6	505	93	24	113
2-Fluorophenol	498	94	25	121
2,4,6-Tribromophenol	500	89	19	122
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

AUG 2, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
QVS039V		BLANK				0

Compound	Amount added ug	% Recovery	Control Limits Lower	Control Limits Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	1.25	88	70	122
Bromofluorobenzene	1.25	94	74	122
Toluene-D8	1.25	90	81	118
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	-	-	-	-
2-Fluorobiphenyl	-	-	-	-
Terphenyl-D14	-	-	-	-
ACID FRACTION (GC/MS)				
Phenol-D6	-	-	-	-
2-Fluorophenol	-	-	-	-
2,4,6-Tribromophenol	-	-	-	-
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

AUG 2, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC4954VS		SPIKE				0

Compound	Amount added ug	% Recovery	Control Limits Lower	Control Limits Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	1.25	94	70	121
Bromofluorobenzene	1.25	101	74	121
Toluene-D8	1.25	103	81	117
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	-	-	-	-
2-Fluorobiphenyl	-	-	-	-
Terphenyl-D14	-	-	-	-
ACID FRACTION (GC/MS)				
Phenol-D6	-	-	-	-
2-Fluorophenol	-	-	-	-
2,4,6-Tribromophenol	-	-	-	-
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

AUG 2, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
QVS039VS		SPIKE				0

Compound	Amount added ug	% Recovery	Control Limits Lower	Control Limits Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	1.25	97	70	121
Bromofluorobenzene	1.25	104	74	121
Toluene-D8	1.25	107	81	117
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	-	-	-	-
2-Fluorobiphenyl	-	-	-	-
Terphenyl-D14	-	-	-	-
ACID FRACTION (GC/MS)				
Phenol-D6	-	-	-	-
2-Fluorophenol	-	-	-	-
2,4,6-Tribromophenol	-	-	-	-
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

AUG 2, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC4954VR		DUPLICATE				0

Compound	Amount added ug	% Recovery	Control Limits Lower	Control Limits Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	1.25	100	70	121
Bromofluorobenzene	1.25	107	74	121
Toluene-D8	1.25	111	81	117
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	-	-	-	-
2-Fluorobiphenyl	-	-	-	-
Terphenyl-D14	-	-	-	-
ACID FRACTION (GC/MS)				
Phenol-D6	-	-	-	-
2-Fluorophenol	-	-	-	-
2,4,6-Tribromophenol	-	-	-	-
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

AUG 2, 1989

TABLE 1: QUALITY ASSURANCE DATA

Disposal Volatiles (JR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

QVS039

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate		
	Blank Data mg/kg	Concen. Added mg/kg	% Recov	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov	First mg/kg	Second mg/kg	RPD
Benzene	BDL	5.00	100	BDL	236	103	243	220	10
Bromoform	BDL	5.00	93	BDL	236	107	251	227	10
Carbon tetrachloride	BDL	5.00	96	BDL	236	93	219	199	9
Chlorobenzene	BDL	5.00	102	BDL	236	103	243	214	13
Chlorodibromomethane	BDL	5.00	97	BDL	236	25	59.3	231	118
Chloroethane	BDL	5.00	92	BDL	236	88	206	196	5
Chloroform	BDL	5.00	104	BDL	236	91	214	193	11
2-Chloroethylvinyl ether	BDL	5.00	99	BDL	236	102	240	227	5
Dichlorobromomethane	BDL	5.00	97	BDL	236	102	241	219	9
Dichlorodifluoromethane	BDL	5.00	72	BDL	236	72	170	162	5
1,1-Dichloroethane	BDL	5.00	96	BDL	236	93	219	195	12
1,2-Dichloroethane	BDL	5.00	95	BDL	236	94	222	202	10
1,1-Dichloroethylene	BDL	5.00	103	BDL	236	105	248	221	12
1,2-Dichloropropane	BDL	5.00	105	BDL	236	112	264	241	9
cis-1,3-Dichloropropylene	BDL	6.00	101	BDL	283	104	296	268	10
trans-1,3-Dichloropropylene	BDL	4.00	97	BDL	189	101	191	172	10
Ethylbenzene	BDL	5.00	107	BDL	236	106	251	223	12
Methyl bromide	BDL	5.00	62	BDL	236	81	191	185	3
Methyl chloride	BDL	5.00	87	BDL	236	78	183	171	7
Methylene chloride	BDL	5.00	94	BDL	236	94	221	195	13
1,1,2,2-Tetrachloroethane	BDL	5.00	103	BDL	236	117	276	251	10
Tetrachloroethylene	BDL	5.00	101	BDL	236	100	236	209	12
Toluene	BDL	5.00	106	BDL	236	106	249	221	12
1,1,1-Trichloroethane	BDL	5.00	96	BDL	236	99	233	211	10
1,1,2-Trichloroethane	BDL	5.00	102	BDL	236	112	264	243	8
Trichloroethylene	BDL	5.00	96	BDL	236	100	236	214	10
Trichlorofluoromethane	BDL	5.00	96	BDL	236	92	218	192	12
1,2-Trans-dichloroethylene	BDL	5.00	93	BDL	236	88	208	185	12
Vinyl chloride	BDL	5.00	88	BDL	236	86	203	193	5

JUL 27, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
JC5461	OHM CORPORATION SOUTHEST REG.	007034S	S 50	890717		0

Compound	Amount added	% Recovery	Control Limits Lower	Control Limits Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	-	-	-	-
Bromofluorobenzene	-	-	-	-
Toluene-D8	-	-	-	-
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	246	89	23	120
2-Fluorobiphenyl	250	97	30	115
Terphenyl-D14	244	119	18	137
ACID FRACTION (GC/MS)				
Phenol-D6	505	93	24	113
2-Fluorophenol	498	94	25	121
2,4,6-Tribromophenol	500	89	19	122
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

JUL 27, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
QC2732C		BLANK				0

Compound	Amount added	% Recovery	Control Limits	
			Lower	Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	-	-	-	-
Bromofluorobenzene	-	-	-	-
Toluene-D8	-	-	-	-
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	246	91	23	120
2-Fluorobiphenyl	250	98	30	115
Terphenyl-D14	244	122	18	137
ACID FRACTION (GC/MS)				
Phenol-D6	505	91	24	113
2-Fluorophenol	498	92	25	121
2,4,6-Tribromophenol	500	80	19	122
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

JUL 27, 1989

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours
QC2732CS		SPIKE				0

Compound	Amount added	% Recovery	Control Limits	
			Lower	Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	-	-	-	-
Bromofluorobenzene	-	-	-	-
Toluene-D8	-	-	-	-
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	246	87	23	120
2-Fluorobiphenyl	250	97	30	115
Terphenyl-D14	244	123	18	137
ACID FRACTION (GC/MS)				
Phenol-D6	505	95	24	113
2-Fluorophenol	498	97	25	121
2,4,6-Tribromophenol	500	89	19	122
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

JUL 27, 1989

TABLE 1: QUALITY ASSURANCE DATA

Disposal Semi-Volatiles (JR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

QC2732

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate			
	Blank Data mg/kg	Concen. Added mg/kg	% Recov	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov	First mg/kg	Second mg/kg	RPD	
Acenaphthene	BDL	508	96	-	-	-	-	-	-	
p-Chloro-m-cresol	BDL	511	79	-	-	-	-	-	-	
2-Chlorophenol	BDL	505	95	-	-	-	-	-	-	
Di-n-butyl phthalate	BDL	493	100	-	-	-	-	-	-	
1,4-Dichlorobenzene	BDL	495	93	-	-	-	-	-	-	
2,4-Dinitrotoluene	BDL	524	80	-	-	-	-	-	-	
2-Methylphenol	BDL	492	75	-	-	-	-	-	-	
4-Nitrophenol	BDL	515	55	-	-	-	-	-	-	
Pentachlorophenol	BDL	489	27	-	-	-	-	-	-	
Phenol	BDL	528	93	-	-	-	-	-	-	
Pyrene	BDL	513	102	-	-	-	-	-	-	
1,2,4-Trichlorobenzene	BDL	514	93	-	-	-	-	-	-	

JUL 24, 1989

TABLE 1: QUALITY ASSURANCE DATA

Herbicide Compounds - GC Analysis (JR29)

Chain of Custody Data Required for ETC Data Management Summary Reports

QC2731

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate			
	Blank Data mg/kg	Concen. Added mg/kg	% Recov	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov	First mg/kg	Second mg/kg	RPD	
2,4-D	BDL	.108	102	BDL	1.04	102	1.06	1.02	4	
2,4,5-T	BDL	.100	108	BDL	.962	107	1.03	1.02	1	
2,4,5-TP (Silvex)	BDL	.102	96	BDL	.981	92	.901	.929	3	

JUL 27, 1989

TABLE 1: QUALITY ASSURANCE DATA

RCRA Pesticides - GC Analysis (JR09)

Chain of Custody Data Required for ETC Data Management Summary Reports

QC2744

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate			
	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen. Added mg/l	% Recov	First mg/l	Second mg/l	RPD	
Endrin (Leachate)	BDL	.00400	90	BDL	.00400	97	.00386	.00348	10	
Lindane (Leachate)	BDL	.00400	91	BDL	.00400	90	.00361	.00336	7	
Methoxychlor (Leachate)	BDL	.00380	98	BDL	.00380	106	.00403	.00344	16	
Toxaphene	BDL	.0512	85	BDL	0.0562	79	.0404	.0407	.7	
		Spiked conc = .0433			0.0404					

JUL 26, 1989

TABLE 1: QUALITY ASSURANCE DATA

RCRA/TCLP Herbicide Compounds - GC Analysis (JR33)

Chain of Custody Data Required for ETC Data Management Summary Reports

QC2738

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate			
	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen. Added mg/l	% Recov	First mg/l	Second mg/l	RPD	
2,4-D (Leachate)	BDL	.108	91	BDL	.108	99	.107	.0998	7	
2,4,5-T (Leachate)	BDL	.100	42	BDL	.100	39	.0389	.0416	7	
2,4,5-TP (Silvex) (Leachate)	BDL	.102	92	BDL	.102	101	.103	.0931	10	

AUG 4, 1989

TABLE 1: QUALITY ASSURANCE DATA

Disposal Pesticide/PCB Compounds - GC Analysis (JR13)

Chain of Custody Data Required for ETC Data Management Summary Reports

QC2732

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate			
	Blank Data mg/kg	Concen. Added mg/kg	% Recov	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov	First mg/kg	Second mg/kg	RPD	
4,4'-DDT	BDL	510	29	BDL	495	79	392	374	5	
Aroclor 1248	BDL	.92	83	DL	0	-		BDL	0	
Lindane	BDL	509	80	BDL	494	92	456	423	8	

NOTE: Matrix Spike diluted out due to elevated level of PCBs in the sample.

AUG 3, 1989

TABLE 1: QUALITY ASSURANCE DATA

RCRA Metals Analysis (JR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

QC-342

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate		
	Blank Data mg/l	Concen. Added mg/l	% Recov	Unspiked Sample mg/l	Concen. Added mg/l	% Recov	First mg/l	Second mg/l	RPD
Arsenic (Leachate)	BDL	2	101	BDL	2	93	1.86	1.95	5
Barium (Leachate)	BDL	2	105	.168	2	90	1.97	2.13	8
Cadmium (Leachate)	BDL	.05	104	BDL	.05	86	.043	.048	11
Chromium (Leachate)	BDL	.2	102	BDL	.2	82	.164	.175	6
Copper (Leachate)	BDL	.25	103	BDL	.25	92	.229	.25	9
Lead (Leachate)	BDL	.5	102	BDL	.5	84	.422	.449	6
Mercury (Leachate)	BDL	.005	107	BDL	.0067	115	.0077	.0078	1
Selenium (Leachate)	BDL	2	103	BDL	2	90	1.8	1.96	9
Silver (Leachate)	BDL	.05	106	BDL	.05	78	.039	.043	10
Zinc (Leachate)	BDL	.5	105	BDL	.5	93	.467	.499	7

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 43836

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: General Refining
PROJECT LOCATION: Garden City GA.
PROJ. NO.: 7034
PROJECT CONTACT: Randy Bennett
PROJECT TELEPHONE NO.: 912-964-7965
CLIENT'S REPRESENTATIVE: Don Rigger
PROJECT MANAGER/SUPERVISOR: Randy Bennett

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS): Pro-Filefor LandFill Disposal

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS									REMARKS
1	7034-50	7-17	1545			Soil + Trash on Site	1gt.									
2																
3																
4																
5																
6																
7																
8																
9																
10																

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	01	Eric A Steele	Fed-Ex	7-17	1700
2	1	Fedex	Gary Lamb	7/18/89	1000
3					
4					

REMARKS: Pre Bob Shoch
7 Day turnaround

SAMPLER'S SIGNATURE: Eric A Steele

A Subsidiary of Environmental Treatment and Technologies Corp.
The Environmental Services Company

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