

Raytheon Company

Phase II Comprehensive Site
Assessment

Former Raytheon Facility

430 Boston Post Road

Wayland, Massachusetts

(Volume III – Appendix F - G)

27 November 2001

143.51

Environmental Resources Management

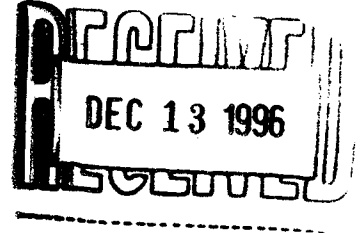
399 Boylston Street, 6th Floor
Boston, Massachusetts 02116



Appendix F
Laboratory Analytical Reports -
Soil

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220



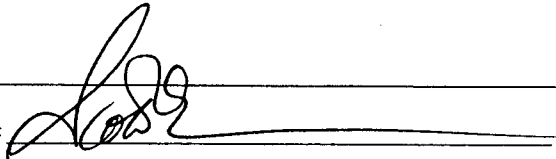
MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: ERM-New England
Address: 205 Portland Street
Boston, MA 02114
Attn: John McTigue
Project Number: EC9610-01
Site: Raytheon

Laboratory Job Number: L9609126
Invoice Number: 89411
Date Received: 05-DEC-96
Date Reported: 12-DEC-96
Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9609126-01	BW-1, S-7, 12-14'	Wayland, MA
L9609126-02	BW-2, S-7, 12-14'	Wayland, MA
L9609126-03	BW-3, S-7, 12-14'	Wayland, MA
L9609126-04	TRIP BLANK	Wayland, MA

Authorized by: 

Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9609126-01
BW-1, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS continued				1	8260	11-Dec 11-Dec	DB
1,4-Dichlorobutane	ND	ug/kg	50.				
Iodomethane	ND	ug/kg	50.				
1,2,3-Trichloropropane	ND	ug/kg	50.				
Styrene	ND	ug/kg	5.0				
Dichlorodifluoromethane	ND	ug/kg	50.				
Acetone	ND	ug/kg	50.				
Carbon Disulfide	ND	ug/kg	50.				
2-Butanone	ND	ug/kg	23.				
Vinyl Acetate	ND	ug/kg	50.				
4-Methyl-2-pentanone	ND	ug/kg	50.				
2-Hexanone	ND	ug/kg	50.				
Ethyl methacrylate	ND	ug/kg	50.				
Acrolein	ND	ug/kg	130				
Acrylonitrile	ND	ug/kg	50.				
Bromochloromethane	ND	ug/kg	25.				
2,2-Dichloropropane	ND	ug/kg	25.				
1,2-Dibromoethane	ND	ug/kg	25.				
1,3-Dichloropropane	ND	ug/kg	25.				
1,1,1,2-Tetrachloroethane	ND	ug/kg	25.				
Bromobenzene	ND	ug/kg	25.				
n-Butylbenzene	ND	ug/kg	25.				
sec-Butylbenzene	ND	ug/kg	25.				
tert-Butylbenzene	ND	ug/kg	25.				
o-Chlorotoluene	ND	ug/kg	25.				
p-Chlorotoluene	ND	ug/kg	25.				
1,2-Dibromo-3-chloropropane	ND	ug/kg	25.				
Hexachlorobutadiene	ND	ug/kg	25.				
Isopropylbenzene	ND	ug/kg	25.				
p-Isopropyltoluene	ND	ug/kg	25.				
Naphthalene	ND	ug/kg	25.				
n-Propylbenzene	ND	ug/kg	25.				
1,2,3-Trichlorobenzene	ND	ug/kg	25.				
1,2,4-Trichlorobenzene	ND	ug/kg	25.				
1,3,5-Trimethylbenzene	ND	ug/kg	25.				
1,2,4-Trimethylbenzene	ND	ug/kg	25.				
trans-1,4-Dichloro-2-butene	ND	ug/kg	25.				
Ethyl ether	ND	ug/kg	130				
SURROGATE RECOVERY							
Toluene-d8	105.	%					
4-Bromofluorobenzene	93.0	%					
Dibromofluoromethane	109.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9609126-01
BW-1, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Polychlorinated Biphenyls							DP
				1	8080	06-Dec 10-Dec	
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	82.0	%					
Decachlorobiphenyl	81.0	%					
Hydrocarbon Scan GC 8100 Modified							DI
				1	8100M	06-Dec 10-Dec	
Mineral Spirits	ND	mg/kg	100				
Gasoline	ND	mg/kg	100				
Fuel Oil #2/Diesel	ND	mg/kg	100				
Fuel Oil #4	ND	mg/kg	100				
Fuel Oil #6	ND	mg/kg	100				
Motor Oil	ND	mg/kg	100				
Kerosene	ND	mg/kg	100				
SURROGATE RECOVERY							
o-Terphenyl	102.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9609126-02
 Date Collected: 04-DEC-96
 BW-2, S-7, 12-14'
 Date Received : 05-DEC-96
 Sample Matrix: SOIL
 Date Reported : 12-DEC-96
 Condition of Sample: Satisfactory
 Field Prep: None
 Number & Type of Containers: 1 Vial, 2 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	85.	%	0.10	3	2540B	10-Dec	ST
Volatile Organics by GC/MS				1	8260	11-Dec	11-Dec DB
Methylene chloride	ND	ug/kg	25.				
1,1-Dichloroethane	ND	ug/kg	7.5				
Chloroform	ND	ug/kg	7.5				
Carbon tetrachloride	ND	ug/kg	5.0				
1,2-Dichloropropane	ND	ug/kg	18.				
Dibromochloromethane	ND	ug/kg	5.0				
1,1,2-Trichloroethane	ND	ug/kg	7.5				
2-Chloroethylvinyl ether	ND	ug/kg	50.				
Tetrachloroethene	ND	ug/kg	7.5				
Chlorobenzene	ND	ug/kg	18.				
Trichlorofluoromethane	ND	ug/kg	25.				
1,2-Dichloroethane	ND	ug/kg	7.5				
1,1,1-Trichloroethane	ND	ug/kg	5.0				
Bromodichloromethane	ND	ug/kg	5.0				
trans-1,3-Dichloropropene	ND	ug/kg	7.5				
cis-1,3-Dichloropropene	ND	ug/kg	5.0				
Bromoform	ND	ug/kg	5.0				
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0				
Benzene	ND	ug/kg	5.0				
Toluene	ND	ug/kg	7.5				
Ethylbenzene	ND	ug/kg	5.0				
Chloromethane	ND	ug/kg	50.				
Bromomethane	ND	ug/kg	10.				
Vinyl chloride	ND	ug/kg	18.				
Chloroethane	ND	ug/kg	10.				
1,1-Dichloroethene	ND	ug/kg	7.5				
trans-1,2-Dichloroethene	ND	ug/kg	7.5				
Trichloroethene	ND	ug/kg	5.0				
1,2-Dichlorobenzene	ND	ug/kg	50.				
1,3-Dichlorobenzene	ND	ug/kg	50.				
1,4-Dichlorobenzene	ND	ug/kg	50.				
Methyl tert butyl ether	ND	ug/kg	50.				
Xylenes	ND	ug/kg	5.0				
cis-1,2-Dichloroethene	ND	ug/kg	5.0				
Dibromomethane	ND	ug/kg	50.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9609126-02
BW-2, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS continued				1	8260	11-Dec 11-Dec	DP
1,4-Dichlorobutane	ND	ug/kg	50.				
Iodomethane	ND	ug/kg	50.				
1,2,3-Trichloropropane	ND	ug/kg	50.				
Styrene	ND	ug/kg	5.0				
Dichlorodifluoromethane	ND	ug/kg	50.				
Acetone	ND	ug/kg	50.				
Carbon Disulfide	ND	ug/kg	50.				
2-Butanone	ND	ug/kg	23.				
Vinyl Acetate	ND	ug/kg	50.				
4-Methyl-2-pentanone	ND	ug/kg	50.				
2-Hexanone	ND	ug/kg	50.				
Ethyl methacrylate	ND	ug/kg	50.				
Acrolein	ND	ug/kg	130				
Acrylonitrile	ND	ug/kg	50.				
Bromochloromethane	ND	ug/kg	25.				
2,2-Dichloropropane	ND	ug/kg	25.				
1,2-Dibromoethane	ND	ug/kg	25.				
1,3-Dichloropropane	ND	ug/kg	25.				
1,1,1,2-Tetrachloroethane	ND	ug/kg	25.				
Bromobenzene	ND	ug/kg	25.				
n-Butylbenzene	ND	ug/kg	25.				
sec-Butylbenzene	ND	ug/kg	25.				
tert-Butylbenzene	ND	ug/kg	25.				
o-Chlorotoluene	ND	ug/kg	25.				
p-Chlorotoluene	ND	ug/kg	25.				
1,2-Dibromo-3-chloropropane	ND	ug/kg	25.				
Hexachlorobutadiene	ND	ug/kg	25.				
Isopropylbenzene	ND	ug/kg	25.				
p-Isopropyltoluene	ND	ug/kg	25.				
Naphthalene	ND	ug/kg	25.				
n-Propylbenzene	ND	ug/kg	25.				
1,2,3-Trichlorobenzene	ND	ug/kg	25.				
1,2,4-Trichlorobenzene	ND	ug/kg	25.				
1,3,5-Trimethylbenzene	ND	ug/kg	25.				
1,2,4-Trimethylbenzene	ND	ug/kg	25.				
trans-1,4-Dichloro-2-butene	ND	ug/kg	25.				
Ethyl ether	ND	ug/kg	130				

SURROGATE RECOVERY

Toluene-d8	99.0	%
4-Bromofluorobenzene	86.0	%
Dibromofluoromethane	96.0	%

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9609126-02
BW-2, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Polychlorinated Biphenyls				1	8080	06-Dec 10-Dec	DB
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	62.0	%					
Decachlorobiphenyl	63.0	%					
Hydrocarbon Scan GC 8100 Modified				1	8100M	06-Dec 10-Dec	DB
Mineral Spirits	ND	mg/kg	100				
Gasoline	ND	mg/kg	100				
Fuel Oil #2/Diesel	ND	mg/kg	100				
Fuel Oil #4	ND	mg/kg	100				
Fuel Oil #6	ND	mg/kg	100				
Motor Oil	ND	mg/kg	100				
Kerosene	ND	mg/kg	100				
SURROGATE RECOVERY							
o-Terphenyl	99.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9609126-03 Date Collected: 04-DEC-96
 BW-3, S-7, 12-14' Date Received : 05-DEC-96
 Sample Matrix: SOIL Date Reported : 12-DEC-96
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Vial, 2 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES		IT
						PREP	ANALYSIS	
Solids, Total	91.	%	0.10	3	2540B		10-Dec	ST
Volatile Organics by GC/MS				1	8260		11-Dec	11-Dec DB
Methylene chloride	ND	ug/kg	25.					
1,1-Dichloroethane	ND	ug/kg	7.5					
Chloroform	ND	ug/kg	7.5					
Carbon tetrachloride	ND	ug/kg	5.0					
1,2-Dichloropropane	ND	ug/kg	18.					
Dibromochloromethane	ND	ug/kg	5.0					
1,1,2-Trichloroethane	ND	ug/kg	7.5					
2-Chloroethylvinyl ether	ND	ug/kg	50.					
Tetrachloroethene	ND	ug/kg	7.5					
Chlorobenzene	ND	ug/kg	18.					
Trichlorofluoromethane	ND	ug/kg	25.					
1,2-Dichloroethane	ND	ug/kg	7.5					
1,1,1-Trichloroethane	ND	ug/kg	5.0					
Bromodichloromethane	ND	ug/kg	5.0					
trans-1,3-Dichloropropene	ND	ug/kg	7.5					
cis-1,3-Dichloropropene	ND	ug/kg	5.0					
Bromoform	ND	ug/kg	5.0					
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0					
Benzene	ND	ug/kg	5.0					
Toluene	ND	ug/kg	7.5					
Ethylbenzene	ND	ug/kg	5.0					
Chloromethane	ND	ug/kg	50.					
Bromomethane	ND	ug/kg	10.					
Vinyl chloride	ND	ug/kg	18.					
Chloroethane	ND	ug/kg	10.					
1,1-Dichloroethene	ND	ug/kg	7.5					
trans-1,2-Dichloroethene	ND	ug/kg	7.5					
Trichloroethene	ND	ug/kg	5.0					
1,2-Dichlorobenzene	ND	ug/kg	50.					
1,3-Dichlorobenzene	ND	ug/kg	50.					
1,4-Dichlorobenzene	ND	ug/kg	50.					
Methyl tert butyl ether	ND	ug/kg	50.					
Xylenes	ND	ug/kg	5.0					
cis-1,2-Dichloroethene	ND	ug/kg	5.0					
Dibromomethane	ND	ug/kg	50.					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9609126-03
BW-3, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS continued				1	8260	11-Dec 11-Dec	DB
1,4-Dichlorobutane	ND	ug/kg	50.				
Iodomethane	ND	ug/kg	50.				
1,2,3-Trichloropropane	ND	ug/kg	50.				
Styrene	ND	ug/kg	5.0				
Dichlorodifluoromethane	ND	ug/kg	50.				
Acetone	ND	ug/kg	50.				
Carbon Disulfide	ND	ug/kg	50.				
2-Butanone	ND	ug/kg	23.				
Vinyl Acetate	ND	ug/kg	50.				
4-Methyl-2-pentanone	ND	ug/kg	50.				
2-Hexanone	ND	ug/kg	50.				
Ethyl methacrylate	ND	ug/kg	50.				
Acrolein	ND	ug/kg	130				
Acrylonitrile	ND	ug/kg	50.				
Bromochloromethane	ND	ug/kg	25.				
2,2-Dichloropropane	ND	ug/kg	25.				
1,2-Dibromoethane	ND	ug/kg	25.				
1,3-Dichloropropane	ND	ug/kg	25.				
1,1,1,2-Tetrachloroethane	ND	ug/kg	25.				
Bromobenzene	ND	ug/kg	25.				
n-Butylbenzene	ND	ug/kg	25.				
sec-Butylbenzene	ND	ug/kg	25.				
tert-Butylbenzene	ND	ug/kg	25.				
o-Chlorotoluene	ND	ug/kg	25.				
p-Chlorotoluene	ND	ug/kg	25.				
1,2-Dibromo-3-chloropropane	ND	ug/kg	25.				
Hexachlorobutadiene	ND	ug/kg	25.				
Isopropylbenzene	ND	ug/kg	25.				
p-Isopropyltoluene	ND	ug/kg	25.				
Naphthalene	ND	ug/kg	25.				
n-Propylbenzene	ND	ug/kg	25.				
1,2,3-Trichlorobenzene	ND	ug/kg	25.				
1,2,4-Trichlorobenzene	ND	ug/kg	25.				
1,3,5-Trimethylbenzene	ND	ug/kg	25.				
1,2,4-Trimethylbenzene	ND	ug/kg	25.				
trans-1,4-Dichloro-2-butene	ND	ug/kg	25.				
Ethyl ether	ND	ug/kg	130				

SURROGATE RECOVERY

Toluene-d8	104.	%
4-Bromofluorobenzene	91.0	%
Dibromofluoromethane	112.	%

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9609126-03
BW-3, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Polychlorinated Biphenyls				1	8080	06-Dec 10-Dec	DI
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	85.0	%					
Decachlorobiphenyl	89.0	%					
Hydrocarbon Scan GC 8100 Modified				1	8100M	06-Dec 10-Dec	DI
Mineral Spirits	ND	mg/kg	100				
Gasoline	ND	mg/kg	100				
Fuel Oil #2/Diesel	ND	mg/kg	100				
Fuel Oil #4	ND	mg/kg	100				
Fuel Oil #6	ND	mg/kg	100				
Motor Oil	ND	mg/kg	100				
Kerosene	ND	mg/kg	100				
SURROGATE RECOVERY							
o-Terphenyl	96.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9609126-04 Date Collected: 12-NOV-96
 Sample Matrix: TRIP BLANK Date Received : 05-DEC-96
 WATER Date Reported : 12-DEC-96
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	ID
						PREP ANALYSIS	
Volatile Organics by GC/MS				1	8260	06-Dec	DB
Methylene chloride	ND	ug/l	25.				
1,1-Dichloroethane	ND	ug/l	7.5				
Chloroform	ND	ug/l	7.5				
Carbon tetrachloride	ND	ug/l	5.0				
1,2-Dichloropropane	ND	ug/l	18.				
Dibromochloromethane	ND	ug/l	5.0				
1,1,2-Trichloroethane	ND	ug/l	7.5				
2-Chloroethylvinyl ether	ND	ug/l	50.				
Tetrachloroethene	ND	ug/l	7.5				
Chlorobenzene	ND	ug/l	18.				
Trichlorofluoromethane	ND	ug/l	25.				
1,2-Dichloroethane	ND	ug/l	7.5				
1,1,1-Trichloroethane	ND	ug/l	5.0				
Bromodichloromethane	ND	ug/l	5.0				
trans-1,3-Dichloropropene	ND	ug/l	7.5				
cis-1,3-Dichloropropene	ND	ug/l	5.0				
Bromoform	ND	ug/l	5.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0				
Benzene	ND	ug/l	5.0				
Toluene	ND	ug/l	7.5				
Ethylbenzene	ND	ug/l	5.0				
Chloromethane	ND	ug/l	50.				
Bromomethane	ND	ug/l	10.				
Vinyl chloride	ND	ug/l	10.				
Chloroethane	ND	ug/l	10.				
1,1-Dichloroethene	ND	ug/l	5.0				
trans-1,2-Dichloroethene	ND	ug/l	7.5				
Trichloroethene	ND	ug/l	5.0				
1,2-Dichlorobenzene	ND	ug/l	50.				
1,3-Dichlorobenzene	ND	ug/l	50.				
1,4-Dichlorobenzene	ND	ug/l	50.				
Methyl tert butyl ether	ND	ug/l	50.				
Xylenes	ND	ug/l	5.0				
cis-1,2-Dichloroethene	ND	ug/l	5.0				
Dibromomethane	ND	ug/l	50.				
1,4-Dichlorobutane	ND	ug/l	50.				
Iodomethane	ND	ug/l	50.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9609126-04
TRIP BLANK

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	IN
						PREP ANALYSIS	
Volatile Organics by GC/MS continued				1	8260	06-Dec	D
1,2,3-Trichloropropane	ND	ug/l	50.				
Styrene	ND	ug/l	5.0				
Dichlorodifluoromethane	ND	ug/l	50.				
Acetone	ND	ug/l	50.				
Carbon Disulfide	ND	ug/l	50.				
2-Butanone	ND	ug/l	23.				
Vinyl Acetate	ND	ug/l	50.				
4-Methyl-2-pentanone	ND	ug/l	50.				
2-Hexanone	ND	ug/l	50.				
Ethyl methacrylate	ND	ug/l	50.				
Acrolein	ND	ug/l	130				
Acrylonitrile	ND	ug/l	50.				
Bromochloromethane	ND	ug/l	5.0				
2,2-Dichloropropane	ND	ug/l	5.0				
1,2-Dibromoethane	ND	ug/l	5.0				
1,3-Dichloropropane	ND	ug/l	5.0				
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0				
Bromobenzene	ND	ug/l	5.0				
n-Butylbenzene	ND	ug/l	5.0				
sec-Butylbenzene	ND	ug/l	5.0				
tert-Butylbenzene	ND	ug/l	5.0				
o-Chlorotoluene	ND	ug/l	5.0				
p-Chlorotoluene	ND	ug/l	5.0				
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0				
Hexachlorobutadiene	ND	ug/l	5.0				
Isopropylbenzene	ND	ug/l	5.0				
p-Isopropyltoluene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
n-Propylbenzene	ND	ug/l	5.0				
1,2,3-Trichlorobenzene	ND	ug/l	5.0				
1,2,4-Trichlorobenzene	ND	ug/l	5.0				
1,3,5-Trimethylbenzene	ND	ug/l	5.0				
1,2,4-Trimethylbenzene	ND	ug/l	5.0				
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0				
Ethyl ether	ND	ug/l	130				

SURROGATE RECOVERY

Toluene-d8	104.	%
4-Bromofluorobenzene	95.0	%
Dibromofluoromethane	103.	%

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9609126

Parameter	Value 1	Value 2	RPD	Units
Solids, Total	DUPLICATE for sample(s) 01-03			
	91.	91.	0	%

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9609126

Parameter	MS %	MSD %	RPD
<hr/>			
Volatile Organics by GC/MS Spike Recovery MS/MSD for sample(s) 04			
1,1-Dichloroethene	93	104	11
Trichloroethene	95	100	5
Benzene	99	102	3
Toluene	98	106	8
Chlorobenzene	97	104	7

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.
3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

ALPHA

Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 71573

Sheet 1 of 1

Company Name: *ERM-New England, Inc.*

Project Number: *EC9610-01*

Project Name/Location: *Raytheon-Wayland MA*

Date Received in Lab: *12/5*

Date Due: *12/12*

Company Address: *205 Portland St
Boston MA 02114*

Phone Number *742-8228*

Project Manager: *John McTigue*

Alpha Job Number: (Lab use only)
9609126

FAX No.: *720-5742*

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers)						Solubles - F.F.	Sampling		MATRIX / SOURCE CODES			
				Unpres.	Ice	Nitric	Sulfuric	HCl	Other		Date	Time	Analysis Requested			
<i>9126.1</i>	<i>BW-1, S-7, 12-14'</i>	<i>(3/G) 1V*</i>	<i>S</i>	<i>3</i>						<i>12/3</i>	<i>3:00</i>	<i>8260, 8100, 8080 PCBs TS</i>				
<i>2</i>	<i>BW-2, S-7, 12-14'</i>	<i>(3/G) </i>	<i>S</i>	<i>3</i>						<i>12/4</i>	<i>10:00</i>	<i>8260, 8100, 8080 PCBs </i>				
<i>3</i>	<i>BW-3, S-7, 12-14'</i>	<i>(3/G) </i>	<i>S</i>	<i>3</i>						<i>12/4</i>	<i>3:00</i>	<i>8260, 8100, 8080 PCBs </i>				
<i>4</i>	<i>Tripblank</i>	<i>1/V</i>	<i>WA</i>					<i>1</i>		<i>11/12</i>	<i>15:00</i>	<i>8260</i>				

Sampler's Signature: _____ Affiliation: _____ Date: _____ Time: _____

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
<i>1</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>12-5-96</i>	<i>1310</i>
<i>2</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>12/5/96</i>	<i>1415</i>
<i>3</i>				
<i>4</i>				

ADDITIONAL COMMENTS:

ALPHA ANALYTICAL LABORATORIES

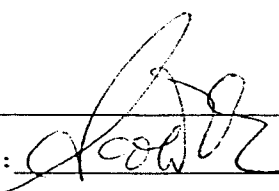
Eight Walkup Drive
 Westborough, Massachusetts 01581-1019
 (508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: ERM-New England	Laboratory Job Number: L9803660
Address: 399 Boylston Street 6th Floor Boston, MA 02116	Invoice Number: 15228
Attn: Joe Fiacco	Date Received: 13-MAY-98
Project Number: 143-45	Date Reported: 21-MAY-98
Site: Raytheon	Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9803660-01	TP-8/5-6'	Wayland, MA
L9803660-02	TP-9/5-6'	Wayland, MA
L9803660-03	TP-10/4-5'	Wayland, MA
L9803660-04	TP-11/6'	Wayland, MA
L9803660-05	TP-12/6-8'	Wayland, MA
L9803660-06	TP-13/5-6'	Wayland, MA
L9803660-07	TP-14/4-5'	Wayland, MA
L9803660-08	TP-15/4-5'	Wayland, MA
L9803660-09	TP-16/4-5'	Wayland, MA
L9803660-10	TP-17/4-5'	Wayland, MA
L9803660-11	TP-18/6-7'	Wayland, MA
L9803660-12	TP-19/6-8'	Wayland, MA
L9803660-13	TP-20/6-7'	Wayland, MA
L9803660-14	TP-21/6-8'	Wayland, MA
L9803660-15	TP-22/5-6'	Wayland, MA
L9803660-16	TP-23/5-7'	Wayland, MA
L9803660-17	TP-24/5-7'	Wayland, MA

Authorized by: 
 Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-01
 TP-8/5-6'
 Date Collected: 11-MAY-98
 Date Received : 13-MAY-98
 Sample Matrix: SOIL
 Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory
 Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	IL
Solids, Total	87.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	SL
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	120.	%					
Decachlorobiphenyl	100.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-02
 Date Collected: 11-MAY-98
 TP-9/5-6'
 Date Received : 13-MAY-98
 Sample Matrix: SOIL
 Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory
 Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	83.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	SE
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	141.	%					
Decachlorobiphenyl	120.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-03
 Sample Matrix: TP-10/4-5'
 SOIL
 Condition of Sample: Satisfactory
 Number & Type of Containers: 1 Glass

Date Collected: 11-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98
 Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	81.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	SI
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	83.0	%					
Decachlorobiphenyl	70.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-04 Date Collected: 11-MAY-98
 TP-11/6' Date Received : 13-MAY-98
 Sample Matrix: SOIL Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	80.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	SE
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	104.	%					
Decachlorobiphenyl	110.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-05
 TP-12/6-8'
 Sample Matrix: SOIL
 Condition of Sample: Satisfactory
 Number & Type of Containers: 1 Glass

Date Collected: 11-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	75.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May	21-May S
Arochlor 1221	ND	ug/kg	330				
Arochlor 1232	ND	ug/kg	330				
Arochlor 1242/PCB 1016	ND	ug/kg	330				
Arochlor 1248	ND	ug/kg	330				
Arochlor 1254	ND	ug/kg	330				
Arochlor 1260	ND	ug/kg	330				
Arochlor 1262	ND	ug/kg	330				
Arochlor 1268	ND	ug/kg	330				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	124.	%					
Decachlorobiphenyl	106.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-06
 TP-13/5-6'
 Date Collected: 11-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98

Sample Matrix: SOIL

Condition of Sample: Satisfactory
 Field Prep: None

Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	84.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	SE
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	122.	%					
Decachlorobiphenyl	102.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-07 Date Collected: 11-MAY-98
 TP-14/4-5' Date Received : 13-MAY-98
 Sample Matrix: SOIL Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	79.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls							14-May 20-May S.
Arochlor 1221	ND	ug/kg	320				
Arochlor 1232	ND	ug/kg	320				
Arochlor 1242/PCB 1016	ND	ug/kg	320				
Arochlor 1248	ND	ug/kg	320				
Arochlor 1254	ND	ug/kg	320				
Arochlor 1260	ND	ug/kg	320				
Arochlor 1262	ND	ug/kg	320				
Arochlor 1268	ND	ug/kg	320				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	121.	%					
Decachlorobiphenyl	98.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-08 Date Collected: 11-MAY-98
 TP-15/4-5' Date Received : 13-MAY-98
 Sample Matrix: SOIL Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	84.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	SE
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	120.	%					
Decachlorobiphenyl	102.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-09 Date Collected: 11-MAY-98
 TP-16/4-5' Date Received : 13-MAY-98
 Sample Matrix: SOIL Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	IF
Solids, Total	84.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	S
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	90.0	%					
Decachlorobiphenyl	84.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-10 Date Collected: 11-MAY-98
 Sample Matrix: TP-17/4-5' Date Received : 13-MAY-98
 SOIL Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	83.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	SE
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				

SURROGATE RECOVERY

2,4,5,6-Tetrachloro-m-xylene 96.0 %
 Decachlorobiphenyl 82.0 %

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-11
 TP-18/6-7'
 Date Collected: 11-MAY-98
 Date Received : 13-MAY-98
 Sample Matrix: SOIL
 Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory
 Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	IL
Solids, Total	83.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	ST
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	116.	%					
Decachlorobiphenyl	97.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-12
 Date Collected: 12-MAY-98
 TP-19/6-8'
 Date Received : 13-MAY-98
 Sample Matrix: SOIL
 Date Reported : 21-MAY-98
 Condition of Sample: Satisfactory
 Field Prep: None
 Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	85.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	SE
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	101.	%					
Decachlorobiphenyl	88.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-13
 TP-20/6-7'
 Date Collected: 12-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98

Sample Matrix: SOIL

Condition of Sample: Satisfactory
 Field Prep: None

Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	86.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	SL
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	79.0	%					
Decachlorobiphenyl	70.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-14
 TP-21/6-8'
 Date Collected: 12-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98

Sample Matrix: SOIL

Condition of Sample: Satisfactory
 Field Prep: None

Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	84.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	SE
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				

SURROGATE RECOVERY

2,4,5,6-Tetrachloro-m-xylene	63.0	%
Decachlorobiphenyl	70.0	%

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-15
 TP-22/5-6'
 Date Collected: 12-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98

Sample Matrix: SOIL

Condition of Sample: Satisfactory
 Field Prep: None

Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	I
Solids, Total	88.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May	21-May S
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	91.0	%					
Decachlorobiphenyl	87.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-16
 Sample Matrix: TP-23/5-7'
 SOIL
 Condition of Sample: Satisfactory
 Number & Type of Containers: 1 Glass

Date Collected: 12-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	79.	%	0.10	3	2540B		19-May ST
Polychlorinated Biphenyls				1	8080		14-May 21-May SE
Arochlor 1221	ND	ug/kg	320				
Arochlor 1232	ND	ug/kg	320				
Arochlor 1242/PCB 1016	ND	ug/kg	320				
Arochlor 1248	ND	ug/kg	320				
Arochlor 1254	ND	ug/kg	320				
Arochlor 1260	ND	ug/kg	320				
Arochlor 1262	ND	ug/kg	320				
Arochlor 1268	ND	ug/kg	320				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	102.	%					
Decachlorobiphenyl	91.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803660-17
 TP-24/5-7'
 Date Collected: 12-MAY-98
 Date Received : 13-MAY-98
 Date Reported : 21-MAY-98

Sample Matrix: SOIL

Condition of Sample: Satisfactory
 Field Prep: None

Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	86.	%	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	
Arochlor 1221	ND	ug/kg	250				
Arochlor 1232	ND	ug/kg	250				
Arochlor 1242/PCB 1016	ND	ug/kg	250				
Arochlor 1248	ND	ug/kg	250				
Arochlor 1254	ND	ug/kg	250				
Arochlor 1260	ND	ug/kg	250				
Arochlor 1262	ND	ug/kg	250				
Arochlor 1268	ND	ug/kg	250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene	109.	%					
Decachlorobiphenyl	92.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9803660

Parameter	Value 1	Value 2	RPD	Units
Solids, Total	DUPLICATE for sample(s) 01-10			
	87.	87.	0	%
Solids, Total	DUPLICATE for sample(s) 11-17			
	86.	87.	1	%

**ALPHA ANALYTICAL LABORATORIES
ADDENDUM I**

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.
3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

ALPHA

Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 77798

Sheet 1 of 2

Company Name: ERM	Project Number: 14345	Project Name/Location: RAYTHEON - WAYLAND MA	Date Received in Lab: 5/13	Date Due: 5/21/98
Company Address: 399 Baylston St Boston, MA 02116	Phone Number: 617 267 8377	Project Manager: JOE FACCO	Alpha Job Number: (Lab use only) 9803660	
P.O. Number:		FAX No.: 617 264 6447		

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers)						Solubles - F.F.	Sampling Date Time	MATRIX / SOURCE CODES MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water R = River Stream S = Soil SG = Sludge B = Bottom Sediment X1 = Other _____ X2 = Other _____	Analysis Requested
				Unpres.	Ice	Nitric	Sulfuric	HCl	Other				
				Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other									
3660.1	TP-8 / 5-6 ft	1 G	S	X						5/11/98 0845	PCBs	TS	
2	TP-9 / 5-6 ft	1 G	S	X						5/11/98 0910	PCBs		
3	TP-10 / 4-5 ft	1 G	S	X						5/11/98 0945	PCBs		
4	TP-11 / 6 ft	1 G	S	X						5/11/98 1010	PCBs		
5	TP-12 / 6-8 ft	1 G	S	X						5/11/98 1040	PCBs		
6	TP-13 / 5-6 ft	1 G	S	X						5/11/98 1105	PCBs		
7	TP-14 / 4-5 ft	1 G	S	X						5/11/98 1135	PCBs		
8	TP-15 / 4-5 ft	1 G	S	X						5/11/98 1200	PCBs		
9	TP-16 / 4-5 ft	1 G	S	X						5/11/98 1300	PCBs		
10	TP-17 / 4-5 ft	1 G	S	X						5/11/98 1340	PCBs		

Sampler's Signature: <i>Joe Facco</i>	Affiliation: ERM	Date: 5/13/98	Time: 0930	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
ADDITIONAL COMMENTS:				1	<i>Joe Facco</i>	<i>[Signature]</i>	5/13/98	0930
				2	<i>PCB</i>	<i>[Signature]</i>	5/13/98	17:00
				3	<i>[Signature]</i>	<i>[Signature]</i>	5/13/98	1240
				4				

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: ERM-New England

Laboratory Job Number: L9803858

Address: 399 Boylston Street
6th Floor
Boston, MA 02116

Invoice Number: 15387

Date Received: 20-MAY-98

Attn: Joe Fiacco

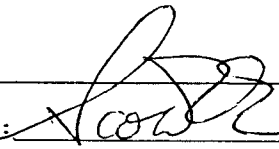
Date Reported: 28-MAY-98

Project Number: 143-45

Delivery Method: Alpha

Site: Raytheon

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9803858-01	MW-33/10-14 FT	Wayland, MA
L9803858-02	MW-40/8-12 FT	Wayland, MA

Authorized by: 

Scott McLean - Laboratory Director

ALPHA

Analytical Laboratories, Inc.

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Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 77797

Sheet 2 of 2

Company Name: ERM	Project Number: 143.45	Project Name/Location: RAYTHEON - WAYLAND, MA	Date Received in Lab: 5/13	Date Due: 5/20 5/21/98
Company Address: 399 Boylston St Boston, MA 02116	Phone Number: 617 267 8377	Project Manager: JOE FIACCO	Alpha Job Number: (Lab use only) 9803660	
	P.O. Number:	FAX No.: 617 267 6447		

ALPHA Lab # (Lab Use Only)	Sample I.D.	Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers)						Solubles - F.F.	Sampling		MATRIX / SOURCE CODES				
					Unpres.	Ice	Nitric	Sulfuric	HCl	Other		Date	Time	MW = Monitoring Well	RO = Runoff	O = Outfall	W = Well	LF = Landfill
															L = Lake/Pond/Ocean	I = Influent	E = Effluent	DW = Drinking Water
3660.11	TP-18/6-7ft	1G	S	X							5/11/98	1410	PCBs	TS				
12	TP-19/6-8ft	1G	S	X							5/12/98	0840	PCBs					
13	TP-20/6-7ft	1G	S	X							5/12/98	0905	PCBs					
14	TP-21/6-8ft	1G	S	X							5/12/98	0945	PCBs					
15	TP-22/5-6ft	1G	S	X							5/12/98	1020	PCBs					
16	TP-23/5-7ft	1G	S	X							5/12/98	1050	PCBs					
17	TP-24/5-7ft	1G	S	X							5/12/98	1140	PCBs					

Sampler's Signature: Joe Fiacco	Affiliation: ERM	Date: 5/13/98	Time: 0930	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
ADDITIONAL COMMENTS:				1	<i>Joe Fiacco</i>	<i>PCB</i>	5/13/98	0930
				2	<i>Joe Fiacco</i>	<i>Dorey Shaw</i>	5/13/98	12:00
				3	<i>Dorey Shaw</i>	<i>Wm</i>	5/13/98	1240
				4				

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803858-01 Date Collected: 13-MAY-98
 MW-33/10-14 FT Date Received : 20-MAY-98
 Sample Matrix: SOIL Date Reported : 28-MAY-98
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES		ID
						PREP	ANALYSIS	
Solids, Total	89.	%	0.10	3	2540B		27-May	ST
Volatile Organics by GC/MS				1	8260		22-May	22-May Ju
Methylene chloride	ND	ug/kg	25.					
1,1-Dichloroethane	ND	ug/kg	7.5					
Chloroform	ND	ug/kg	7.5					
Carbon tetrachloride	ND	ug/kg	5.0					
1,2-Dichloropropane	ND	ug/kg	18.					
Dibromochloromethane	ND	ug/kg	5.0					
1,1,2-Trichloroethane	ND	ug/kg	7.5					
2-Chloroethylvinyl ether	ND	ug/kg	50.					
Tetrachloroethene	ND	ug/kg	7.5					
Chlorobenzene	ND	ug/kg	18.					
Trichlorofluoromethane	ND	ug/kg	25.					
1,2-Dichloroethane	ND	ug/kg	7.5					
1,1,1-Trichloroethane	ND	ug/kg	5.0					
Bromodichloromethane	ND	ug/kg	5.0					
trans-1,3-Dichloropropene	ND	ug/kg	7.5					
cis-1,3-Dichloropropene	ND	ug/kg	5.0					
Bromoform	ND	ug/kg	5.0					
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0					
Benzene	ND	ug/kg	5.0					
Toluene	ND	ug/kg	7.5					
Ethylbenzene	ND	ug/kg	5.0					
Chloromethane	ND	ug/kg	50.					
Bromomethane	ND	ug/kg	10.					
Vinyl chloride	ND	ug/kg	18.					
Chloroethane	ND	ug/kg	10.					
1,1-Dichloroethene	ND	ug/kg	7.5					
trans-1,2-Dichloroethene	ND	ug/kg	7.5					
Trichloroethene	ND	ug/kg	5.0					
1,2-Dichlorobenzene	ND	ug/kg	50.					
1,3-Dichlorobenzene	ND	ug/kg	50.					
1,4-Dichlorobenzene	ND	ug/kg	50.					
Methyl tert butyl ether	ND	ug/kg	50.					
Xylenes	ND	ug/kg	5.0					
cis-1,2-Dichloroethene	ND	ug/kg	5.0					
Dibromomethane	ND	ug/kg	50.					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9803858-01
MW-33/10-14 FT

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS continued				1	8260	22-May 22-May	JP
1,4-Dichlorobutane	ND	ug/kg	50.				
Iodomethane	ND	ug/kg	50.				
1,2,3-Trichloropropane	ND	ug/kg	50.				
Styrene	ND	ug/kg	5.0				
Dichlorodifluoromethane	ND	ug/kg	50.				
Acetone	ND	ug/kg	50.				
Carbon Disulfide	ND	ug/kg	50.				
2-Butanone	ND	ug/kg	23.				
Vinyl Acetate	ND	ug/kg	50.				
4-Methyl-2-pentanone	ND	ug/kg	50.				
2-Hexanone	ND	ug/kg	50.				
Ethyl methacrylate	ND	ug/kg	50.				
Acrolein	ND	ug/kg	130				
Acrylonitrile	ND	ug/kg	50.				
Bromochloromethane	ND	ug/kg	25.				
2,2-Dichloropropane	ND	ug/kg	25.				
1,2-Dibromoethane	ND	ug/kg	25.				
1,3-Dichloropropane	ND	ug/kg	25.				
1,1,1,2-Tetrachloroethane	ND	ug/kg	25.				
Bromobenzene	ND	ug/kg	25.				
n-Butylbenzene	ND	ug/kg	25.				
sec-Butylbenzene	ND	ug/kg	25.				
tert-Butylbenzene	ND	ug/kg	25.				
o-Chlorotoluene	ND	ug/kg	25.				
p-Chlorotoluene	ND	ug/kg	25.				
1,2-Dibromo-3-chloropropane	ND	ug/kg	25.				
Hexachlorobutadiene	ND	ug/kg	25.				
Isopropylbenzene	ND	ug/kg	25.				
p-Isopropyltoluene	ND	ug/kg	25.				
Naphthalene	ND	ug/kg	25.				
n-Propylbenzene	ND	ug/kg	25.				
1,2,3-Trichlorobenzene	ND	ug/kg	25.				
1,2,4-Trichlorobenzene	ND	ug/kg	25.				
1,3,5-Trimethylbenzene	ND	ug/kg	25.				
1,2,4-Trimethylbenzene	ND	ug/kg	25.				
trans-1,4-Dichloro-2-butene	ND	ug/kg	25.				
Ethyl ether	ND	ug/kg	130				
SURROGATE RECOVERY							
Toluene-d8	97.0	%					
4-Bromofluorobenzene	95.0	%					
Dibromofluoromethane	93.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9803858-02
 MW-40/8-12 FT
 Sample Matrix: SOIL

Date Collected: 13-MAY-98
 Date Received : 20-MAY-98
 Date Reported : 28-MAY-98

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES		ID
						PREP	ANALYSIS	
Solids, Total	90.	%	0.10	3	2540B		27-May	ST
Volatile Organics by GC/MS				1	8260		22-May	22-May J
Methylene chloride	ND	ug/kg	25.					
1,1-Dichloroethane	ND	ug/kg	7.5					
Chloroform	ND	ug/kg	7.5					
Carbon tetrachloride	ND	ug/kg	5.0					
1,2-Dichloropropane	ND	ug/kg	18.					
Dibromochloromethane	ND	ug/kg	5.0					
1,1,2-Trichloroethane	ND	ug/kg	7.5					
2-Chloroethylvinyl ether	ND	ug/kg	50.					
Tetrachloroethene	ND	ug/kg	7.5					
Chlorobenzene	ND	ug/kg	18.					
Trichlorofluoromethane	ND	ug/kg	25.					
1,2-Dichloroethane	ND	ug/kg	7.5					
1,1,1-Trichloroethane	ND	ug/kg	5.0					
Bromodichloromethane	ND	ug/kg	5.0					
trans-1,3-Dichloropropene	ND	ug/kg	7.5					
cis-1,3-Dichloropropene	ND	ug/kg	5.0					
Bromoform	ND	ug/kg	5.0					
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0					
Benzene	ND	ug/kg	5.0					
Toluene	ND	ug/kg	7.5					
Ethylbenzene	ND	ug/kg	5.0					
Chloromethane	ND	ug/kg	50.					
Bromomethane	ND	ug/kg	10.					
Vinyl chloride	ND	ug/kg	18.					
Chloroethane	ND	ug/kg	10.					
1,1-Dichloroethene	ND	ug/kg	7.5					
trans-1,2-Dichloroethene	ND	ug/kg	7.5					
Trichloroethene	ND	ug/kg	5.0					
1,2-Dichlorobenzene	ND	ug/kg	50.					
1,3-Dichlorobenzene	ND	ug/kg	50.					
1,4-Dichlorobenzene	ND	ug/kg	50.					
Methyl tert butyl ether	ND	ug/kg	50.					
Xylenes	ND	ug/kg	5.0					
cis-1,2-Dichloroethene	ND	ug/kg	5.0					
Dibromomethane	ND	ug/kg	50.					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9803858-02
 MW-40/8-12 FT

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS continued				1	8260	22-May 22-May	JP
1,4-Dichlorobutane	ND	ug/kg	50.				
Iodomethane	ND	ug/kg	50.				
1,2,3-Trichloropropane	ND	ug/kg	50.				
Styrene	ND	ug/kg	5.0				
Dichlorodifluoromethane	ND	ug/kg	50.				
Acetone	ND	ug/kg	50.				
Carbon Disulfide	ND	ug/kg	50.				
2-Butanone	ND	ug/kg	23.				
Vinyl Acetate	ND	ug/kg	50.				
4-Methyl-2-pentanone	ND	ug/kg	50.				
2-Hexanone	ND	ug/kg	50.				
Ethyl methacrylate	ND	ug/kg	50.				
Acrolein	ND	ug/kg	130				
Acrylonitrile	ND	ug/kg	50.				
Bromochloromethane	ND	ug/kg	25.				
2,2-Dichloropropane	ND	ug/kg	25.				
1,2-Dibromoethane	ND	ug/kg	25.				
1,3-Dichloropropane	ND	ug/kg	25.				
1,1,1,2-Tetrachloroethane	ND	ug/kg	25.				
Bromobenzene	ND	ug/kg	25.				
n-Butylbenzene	ND	ug/kg	25.				
sec-Butylbenzene	ND	ug/kg	25.				
tert-Butylbenzene	ND	ug/kg	25.				
o-Chlorotoluene	ND	ug/kg	25.				
p-Chlorotoluene	ND	ug/kg	25.				
1,2-Dibromo-3-chloropropane	ND	ug/kg	25.				
Hexachlorobutadiene	ND	ug/kg	25.				
Isopropylbenzene	ND	ug/kg	25.				
p-Isopropyltoluene	ND	ug/kg	25.				
Naphthalene	ND	ug/kg	25.				
n-Propylbenzene	ND	ug/kg	25.				
1,2,3-Trichlorobenzene	ND	ug/kg	25.				
1,2,4-Trichlorobenzene	ND	ug/kg	25.				
1,3,5-Trimethylbenzene	ND	ug/kg	25.				
1,2,4-Trimethylbenzene	ND	ug/kg	25.				
trans-1,4-Dichloro-2-butene	ND	ug/kg	25.				
Ethyl ether	ND	ug/kg	130				

SURROGATE RECOVERY

Toluene-d8	96.0	%
4-Bromofluorobenzene	93.0	%
Dibromofluoromethane	93.0	%

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9803858

Parameter	Value 1	Value 2	RPD	Units
Solids, Total	DUPLICATE for sample(s) 01-02			
	94.	94.	0	%

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9803858

Parameter	MS %	MSD %	RPD
<hr/>			
Volatile Organics by GC/MS Spike Recovery MS/MSD for sample(s) 01-02			
1,1-Dichloroethene	101	98	3
Trichloroethene	100	97	3
Benzene	100	97	3
Toluene	100	95	5
Chlorobenzene	103	97	6

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	I
							PREP ANALYSIS
BLANK sample for Job Sample(s) 01-02							
Volatile Organics by GC/MS				1	8260	22-May 22-May	
Methylene chloride	ND	ug/kg	5.0				
1,1-Dichloroethane	ND	ug/kg	1.5				
Chloroform	ND	ug/kg	1.5				
Carbon tetrachloride	ND	ug/kg	1.0				
1,2-Dichloropropane	ND	ug/kg	3.5				
Dibromochloromethane	ND	ug/kg	1.0				
1,1,2-Trichloroethane	ND	ug/kg	1.5				
2-Chloroethylvinyl ether	ND	ug/kg	10.				
Tetrachloroethene	ND	ug/kg	1.5				
Chlorobenzene	ND	ug/kg	3.5				
Trichlorofluoromethane	ND	ug/kg	5.0				
1,2-Dichloroethane	ND	ug/kg	1.5				
1,1,1-Trichloroethane	ND	ug/kg	1.0				
Bromodichloromethane	ND	ug/kg	1.0				
trans-1,3-Dichloropropene	ND	ug/kg	1.5				
cis-1,3-Dichloropropene	ND	ug/kg	1.0				
Bromoform	ND	ug/kg	1.0				
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0				
Benzene	ND	ug/kg	1.0				
Toluene	ND	ug/kg	1.5				
Ethylbenzene	ND	ug/kg	1.0				
Chloromethane	ND	ug/kg	10.				
Bromomethane	ND	ug/kg	2.0				
Vinyl chloride	ND	ug/kg	3.5				
Chloroethane	ND	ug/kg	2.0				
1,1-Dichloroethene	ND	ug/kg	1.5				
trans-1,2-Dichloroethene	ND	ug/kg	1.5				
Trichloroethene	ND	ug/kg	1.0				
1,2-Dichlorobenzene	ND	ug/kg	10.				
1,3-Dichlorobenzene	ND	ug/kg	10.				
1,4-Dichlorobenzene	ND	ug/kg	10.				
Methyl tert butyl ether	ND	ug/kg	10.				
Xylenes	ND	ug/kg	1.0				
cis-1,2-Dichloroethene	ND	ug/kg	1.0				
Dibromomethane	ND	ug/kg	10.				
1,4-Dichlorobutane	ND	ug/kg	10.				
Iodomethane	ND	ug/kg	10.				
1,2,3-Trichloropropane	ND	ug/kg	10.				
Styrene	ND	ug/kg	1.0				
Dichlorodifluoromethane	ND	ug/kg	10.				
Acetone	ND	ug/kg	10.				
Carbon Disulfide	ND	ug/kg	10.				
2-Butanone	ND	ug/kg	4.5				
Vinyl Acetate	ND	ug/kg	10.				
4-Methyl-2-pentanone	ND	ug/kg	10.				
2-Hexanone	ND	ug/kg	10.				
Ethyl methacrylate	ND	ug/kg	10.				

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Acrolein	ND	ug/kg	25.				
Acrylonitrile	ND	ug/kg	10.				
Bromochloromethane	ND	ug/kg	5.0				
2,2-Dichloropropane	ND	ug/kg	5.0				
1,2-Dibromoethane	ND	ug/kg	5.0				
1,3-Dichloropropane	ND	ug/kg	5.0				
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.0				
Bromobenzene	ND	ug/kg	5.0				
n-Butylbenzene	ND	ug/kg	5.0				
sec-Butylbenzene	ND	ug/kg	5.0				
tert-Butylbenzene	ND	ug/kg	5.0				
o-Chlorotoluene	ND	ug/kg	5.0				
p-Chlorotoluene	ND	ug/kg	5.0				
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.0				
Hexachlorobutadiene	ND	ug/kg	5.0				
Isopropylbenzene	ND	ug/kg	5.0				
p-Isopropyltoluene	ND	ug/kg	5.0				
Naphthalene	ND	ug/kg	5.0				
n-Propylbenzene	ND	ug/kg	5.0				
1,2,3-Trichlorobenzene	ND	ug/kg	5.0				
1,2,4-Trichlorobenzene	ND	ug/kg	5.0				
1,3,5-Trimethylbenzene	ND	ug/kg	5.0				
1,2,4-Trimethylbenzene	ND	ug/kg	5.0				
trans-1,4-Dichloro-2-butene	ND	ug/kg	5.0				
Ethyl ether	ND	ug/kg	25.				
SURROGATE RECOVERY							
Toluene-d8	101.	%					
4-Bromofluorobenzene	99.0	%					
Dibromofluoromethane	98.0	%					

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.
3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

ALPHA

Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 78910

Sheet 1 of 1

Company Name: ERM	Project Number: 143.45	Project Name/Location: RAYTHEON - WAYLAND, MA	Date Received in Lab: 5/20	Date Due: 5/27/98
Company Address: 399 Boylston St., 6th Floor Boston, MA 02116	P.O. Number:	Project Manager: Joe Fiaco	Alpha Job Number: (Lab use only) 9803858	
	Phone Number: 617 267 8377			
	FAX No.: 617 267 6447			

ALPHA Lab # (Lab Use Only)	Sample I.D.	Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers)						Solubles - F.F.	Sampling		MATRIX / SOURCE CODES				
					Unpres.	Ice	Nitric	Sulfuric	HCl	Other		Date	Time	MW = Monitoring Well	RO = Runoff	O = Outfall	W = Well	LF = Landfill
3858.1	mw-33/10-14 ft	1 G	S	X							5/13/98	1030	VOCs - 8260	TS				
2	mw-40 / ⁸⁻¹² 8-11 ft	1 G	S	X							5/12/98	1125	VOCs - 8260	TS				

Sampler's Signature: Joe Fiaco	Affiliation: ERM	Date: 5/19/98	Time: 0900	NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
ADDITIONAL COMMENTS:				1	<i>Joe Fiaco</i>	<i>[Signature]</i>	5/20/98	1055
				2	<i>[Signature]</i>	<i>[Signature]</i>	5/20/98	1350
				3				
				4				