FINAL REPORT

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

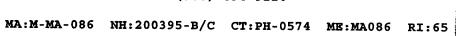
Environmental Resources Management 399 Boylston Street, 6th Floor Boston, Massachusetts 02116

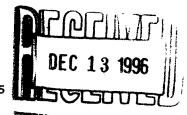


Appendix F Laboratory Anayltical Reports -Soil

ALPHA ANALYTICAL LABORATORIES

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





CERTIFICATE OF ANALYSIS

Client: ERM-New England

Laboratory Job Number: L9609126

Address: 205 Portland Street

Invoice Number: 89411

Boston, MA 02114

Date Received: 05-DEC-96

Attn:

John McTigue

Date Reported: 12-DEC-96

Project Number: EC9610-01

Delivery Method: Alpha

Site: Raytheon

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

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

Laboratory Sample Number: L9609126-01

Date Collected: 03-DEC-96

BW-1, S-7, 12-14' Sample Matrix: SOIL

Date Received: 05-DEC-96 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 IP PREP ANALYSIS
Solids, Total	92.	ş	0.10	3	2540B	10-Dec S7
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			i e
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.			

Laboratory Sample Number: L9609126-01

BW-1, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD		TES	II
			****			PREP	ANALYSIS	
Volatile Organics by GC/MS co	ontinued			1	8260	11-De	ac 11-Dec	DI
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								
Foluene-d8	105.	ક						
1-Bromofluorobenzene	93.0	8						
Dibromofluoromethane	109.	9						

Laboratory Sample Number: L9609126-01

BW-1, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSI	ID S
Polychlorinated Biphenyls				1	8080	06-Dec 10-De	c DP
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	ક					
Decachlorobiphenyl	81.0	ક					
Hydrocarbon Scan GC 8100 Modi	fied			1	8100M	06-Dec 10-De	c 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	102.	%					

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

Laboratory Sample Number: L9609126-02

BW-2, S-7, 12-14'

Date Collected: 04-DEC-96
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	II
Solids, Total	85.	ક	0.10	3	2540B	10-Dec	ra
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.				

Laboratory Sample Number: L9609126-02

BW-2, S-7, 12-14'

1 1 1 1 1 1 1 1 1 1	PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	II
Dodomethane	Volatile Organics by GC/MS c	ontinued			1	8260	11-Dec 11-Dec	DI
1,2,3-Trichloropropane	1,4-Dichlorobutane	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 50. 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. Bromochloromethane ND ug/kg 25. 1,2-Dibromochane ND ug/kg 25. 1,3-Dichloropropane ND ug/kg 25. Bromobenzene ND	Iodomethane	ND	ug/kg	50.				
Dichlorodifluoromethane ND ug/kg 50. Acetone ND ug/kg 50. Carbon Disulfide ND ug/kg 50. 2-Butanone ND ug/kg 50. 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 50. Acrylonitrile ND ug/kg 25. 2,2-Dichloropropane ND ug/kg 25. 1,2-Dibromoethane ND	1,2,3-Trichloropropane	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. Ethyl methacrylate ND ug/kg 50. Acrolein ND ug/kg 50. Acrolein ND ug/kg 50. Acrolein ND ug/kg 50. Acrolein ND ug/kg 50. Ethyl methacrylate ND ug/kg 50. Acrolein ND ug/kg 50. Ethyl methacrylate ND ug/kg 50. Acrolein ND ug/kg 50. Ethyl methacrylate ND ug/kg 25. 1,2-Dichloropropane ND ug/kg 25. 1,2-Dichloropropane 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. N-Butylbenzene ND ug/kg 25. esc-Butylbenzene ND ug/kg 25. esc-Butylbenzene ND ug/kg 25. esc-Chlorotoluene ND ug/kg 25. 1,2-Dibromo-3-chloropropane ND ug/kg 25. Isopropylbenzene ND ug/kg 25. Isopropylbenzene ND ug/kg 25. Isopropyltoluene ND ug/kg 25. Isopropyltoluene ND ug/kg 25. Naphthalene ND ug/kg 2	Styrene	ND	ug/kg	5.0				
Carbon Disulfide ND ug/kg 23. 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 50. Acrolein ND ug/kg 50. Acrolein ND ug/kg 50. Bromochloromethane ND ug/kg 25. 2,2-Dichloropropane ND ug/kg 25. 1,2-Dibromoethane ND ug/kg 25. 1,2-Dichloropropane ND ug/kg 25. 1,1,1,2-Tetrachloroethane ND ug/kg 25. 1,1,1,2-Tetrachloroethane ND ug/kg 25. n-Butylbenzene ND ug/kg 25. n-Butylbenzene ND ug/kg 25. n-Chlorotoluene ND	Dichlorodifluoromethane	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 50. Acrylonitrile ND ug/kg 50. Bromochloromethane ND ug/kg 25. 2,2-Dichloropropane ND ug/kg 25. 1,2-Dibromoethane ND ug/kg 25. 1,1,1,2-Tetrachloroethane ND ug/kg 25. Bromobenzene ND ug/kg 25. Bromobenzene ND ug/kg 25. Bromothloromethane ND ug/kg 25. 1,2-Dibromoethane ND ug/kg 25. Bromothloropropane ND ug/kg 25. Bromoth	Acetone	ND	ug/kg	50.				
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 50. Acrolein 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. sec-Butylbenzene ND ug/kg 25. sec-Butylbenzene ND ug/kg 25. sec-Butylbenzene ND ug/kg 25. p-Chlorotoluene ND	Carbon Disulfide	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 25. 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. Bromobenzene ND ug/kg 25. Bromotenzene ND ug/kg 25. Bromotenzene ND ug/kg 25. Bromotenzene N	2-Butanone	ND	ug/kg	23.				
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. 1,1,1,2-Tetrachloroethane ND ug/kg 25. Bromobenzene ND ug/kg 25. n-Butylbenzene ND ug/kg 25. n-Butylbenzene ND ug/kg 25. c-Chlorotoluene ND ug/kg 25. c-Chlorotoluene ND ug/kg 25. p-Chlorotoluene ND ug/kg 25. 1,2-Dibromo-3-chloropropane ND ug/kg 25. Isopropylbenzene ND ug/kg 25. Isopropyltoluene ND	Vinyl Acetate	ND	ug/kg	50.				
Ethyl methacrylate	4-Methyl-2-pentanone	ND	ug/kg	50.				
Acrolein 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. 1,1,1,2-Tetrachloroethane ND ug/kg 25. Bromobenzene N	2-Hexanone	ND	ug/kg	50.				
Acrolein 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. 1,1,1,2-Tetrachloroethane ND ug/kg 25. Bromobenzene N	Ethyl methacrylate	ND		50.				
Bromochloromethane	Acrolein	ND	ug/kg	130				
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. e-Entylbenzene ND ug/kg 25. o-Chlorotoluene ND ug/kg 25. p-Chlorotoluene ND ug/kg 25. p-Chlorotoluene ND ug/kg 25. Hexachlorobutadiene ND ug/kg 25. Hexachlorobutadiene ND ug/kg 25. p-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-Trimethylbenzene	Acrylonitrile	ND	ug/kg	50.				
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. sec-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. 1,2,4-Trimethylbenzene ND ug/kg 25. 1,2,4-Trimethylbenze	Bromochloromethane	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. c-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. n-Propylbenzene 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. 1,2,4-Trimethylbenzene ND ug/kg 25. 1,2,4-Trimethylbenzene ND ug/kg 25. 1,2,4-Trim	2,2-Dichloropropane	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. p-Chlorotoluene ND ug/kg 25. Hexachlorobutadiene ND ug/kg 25. Isopropylbenzene ND ug/kg 25. Isopropyltoluene ND ug/kg 25. Naphthalene ND ug/kg 25. Naphthalene 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. 1,2,4-Trimethylbenzene		ND						
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-Trichloro-2-butene ND ug/kg 25. Ethyl ether ND ug/kg 25. Ug/kg	1,3-Dichloropropane	ND						
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. 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 25. Ethyl ether ND ug/kg 25.	1,1,1,2-Tetrachloroethane	ND					•	
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 25.	Bromobenzene	ND						
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. Isopropyltoluene ND ug/kg 25. Naphthalene ND ug/kg 25. Naphthalene 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. 1,2,4-Trimethylbenzene ND ug/kg 25. 1,2,4-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 25.	n-Butylbenzene	ND						
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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. 1,2,4-Trimethylbenzene ND ug/kg 25. 1,2,4-Trimethylbenzene ND ug/kg 25. 25. 25. 26. 27. 28. 29. 29. 29. 29. 20. 20. 20. 20	p-Chlorotoluene	ND						
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. 1,2,4-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	1,2-Dibromo-3-chloropropane	ND						
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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. 1,2,4-Trimethylbenzene ND ug/kg 25. trans-1,4-Dichloro-2-butene ND ug/kg 25. Ethyl ether ND ug/kg 130								
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. 1,2,4-Trimethylbenzene ND ug/kg 25. trans-1,4-Dichloro-2-butene ND ug/kg 25. Ethyl ether ND ug/kg 130								
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								
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								
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								
1,2,4-Trimethylbenzene ND ug/kg 25. trans-1,4-Dichloro-2-butene ND ug/kg 25. Ethyl ether ND ug/kg 130								
trans-1,4-Dichloro-2-butene ND ug/kg 25. Ethyl ether ND ug/kg 130								
Ethyl ether ND ug/kg 130								
SURROGATE RECOVERY								
	SURROGATE RECOVERY							
Toluene-d8 99.0 %		99.0	*					
4-Bromofluorobenzene 86.0 %	4-Bromofluorobenzene	86.0						
Dibromofluoromethane 96.0 %	Dibromofluoromethane	96.0						

Laboratory Sample Number: L9609126-02

BW-2, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA'	TES	II
						PREP	ANALYSIS	
Polychlorinated Biphenyls				1	8080	06-D	ec 10-Dec	DF
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	ક્ષ						
Decachlorobiphenyl	63.0	8						
Hydrocarbon Scan GC 8100 Modif	Eied			1	8100M	06-De	ec 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	ક્ષ						

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

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

Laboratory Sample Number: L9609126-03

BW-3, S-7, 12-14'

Sample Matrix:

Date Collected: 04-DEC-96 Date Received: 05-DEC-96 Date Reported: 12-DEC-96

SOIL

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial, 2 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	II
Solids, Total	91.	¥	0.10	3	2540B	10-Dec	 S:
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.				

Laboratory Sample Number: L9609126-03

BW-3, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD		TES	II
						PREP	ANALYSIS	
Volatile Organics by GC/MS c	ontinued			1	8260	11-D	ac 11-Dec	DI
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.	9						
1-Bromofluorobenzene	91.0	*						
Dibromofluoromethane	112.	8						

Laboratory Sample Number: L9609126-03

BW-3, S-7, 12-14'

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DA'		ID
						PREP	ANALYSIS	
Polychlorinated Biphenyls				1	8080	06+De	ac 10-Dec	DΓ
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	&				٠.		
Decachlorobiphenyl	89.0	8						
Hydrocarbon Scan GC 8100 Modif	ied			1	8100M	06+D€	c 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	8				v.		

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

Laboratory Sample Number: L9609126-04

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Date Received: 05-DEC-96

Sample Matrix:

WATER

Date Reported: 12-DEC-96

Date Collected: 12-NOV-96

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	res Analysis	ID
Volatile Organics by GC/MS				1	8260	06-Dec	DE
Methylene chloride	ND	ug/l	25.			 	
1,1-Dichloroethane	ND	ug/l	7.5				
Chloroform	ND	ug/1	7.5				
Carbon tetrachloride	ND	ug/1	5.0				
1,2-Dichloropropane	ND	ug/l	18.				
Dibromochloromethane	ND	ug/l	5.0				
1,1,2-Trichloroethane	ND	ug/1	7.5				
2-Chloroethylvinyl ether	ND	ug/l	50.				
Tetrachloroethene	ND	ug/l	7.5				
Chlorobenzene	ND	ug/l	18.			*	
Trichlorofluoromethane	ND	ug/1	25.				
1,2-Dichloroethane	ND	ug/l	7.5				
1,1,1-Trichloroethane	ND	ug/l	5.0				
Bromodichloromethane	ND	ug/1	5.0				
trans-1,3-Dichloropropene	ND	ug/1	7.5				
cis-1,3-Dichloropropene	ND	ug/1	5.0				
Bromoform	ND	ug/1	5.0				
1,1,2,2-Tetrachloroethane	ND	ug/1	5.0				
Benzene	ND	ug/1	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/1	7.5				
Trichloroethene	ND	ug/1	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/1	50.				
Xylenes	ND	ug/l	5.0				
cis-1,2-Dichloroethene	ND	ug/1	5.0				
Dibromomethane	ND	ug/l	50.				
1,4-Dichlorobutane	ND	ug/l	50.				
Iodomethane	ND	ug/1	50.				

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

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Laboratory Sample Number: L9609126-04

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PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES IN PREP ANALYSIS
Volatile Organics by GC/MS co	ontinued			1	8260	06-Dec D
1,2,3-Trichloropropane	ND	ug/l	50.			
Styrene	ND	ug/1	5.0			
Dichlorodifluoromethane	ND	ug/l	50.			-
Acetone	ND	ug/1	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/1	5.0			
n-Butylbenzene	ND	ug/1	5.0			
sec-Butylbenzene tert-Butylbenzene	ND ND	ug/1	5.0			
o-Chlorotoluene	ND	ug/l	5.0 5.0			
p-Chlorotoluene	ND	ug/l	5.0			
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0			
Hexachlorobutadiene	ND	ug/l ug/l	5.0			,
Isopropylbenzene	ND	ug/1 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/1	5.0			
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0			
Ethyl ether	ND	ug/1	130			
SURROGATE RECOVERY						
Toluene-d8	104.	8				
4-Bromofluorobenzene	95.0	ક				
Dibromofluoromethane	103.	ક્ષ				

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9609126

Parameter	Value 1	Value 2	RPD	Units

Solids, Total	DUPLICATI	for sample	:(s) 01-03	

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9609126

Parameter	MS %	MSD %	RPD
Volatile Organics by GC/	MS Spike Recov	ery MS/MSD	For sample(s) 04
1,1-Dichloroethene	93	104	11
Trichloroethene	95	100	5
Benzene	99	102	3
			_
Toluene	98	106	8

ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

- 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.

Eight Walkup Drive CHAIN OF CUSTODY RECORD No. 71573 Westborough, MA 01581-1019 Analytical Laboratories, Inc. 508-898-9220 FAX 508-898-9193 and ANALYSIS REQUEST RECORD Company Name: ERM-New England, Inc. Project Number: EC9610-01 Project Name / Location : Date Received in Lab: Raytheon - Way and MA P.O. Number: Company Address: 205 Partland St Phone Number 742-8228 Project Manager: John McTique Boston MA Dally 9609126 FAX No.: 720-5742 Container Codes: Method Preserve. P = Plastic V = Vial Matrix / Source MATRIX / SOURCE CODES C = Cube G = Glees (number of containers) MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill A = Amber Glass L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water B = Bacteria Container R = River Stream Nitric Sulfuric Solubles Date Time ALPHA SG = Sludge B = Bottom Sediment O = Other Lab# Containers X1 = Other_ Sample I.D. (number/type) (Lab Use Only) Analysis Requested 914.1 (3/4) 14, 26/5 12/3 3:00 8260, 8:00, 8080 PCBs (3/4) 12/4/10:00 8260, 8100, 8080 PCBS 12/4 3:00 8260 8100 8080 PCBS Tripblank WA 11/12 15:00 8260

Deste

Sempler's Signature

RECEIVED MAY & 6 1998

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

Boston, MA 02116

Invoice Number: 15228

6th Floor

Date Received: 13-MAY-98

Attn:

Joe Fiacco

Date Reported: 21-MAY-98

Project Number: 143-45

Delivery Method: Alpha

Site:

Raytheon

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

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

Laboratory Sample Number: L9803660-01

Date Collected: 11-MAY-98 TP-8/5-6'

Sample Matrix:

SOIL

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

Condition of Sample: Satisfactory

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	IE
Solids, Total	87.	ક	0.10	3	2540B	19-May S	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May S	S1_
Arochlor 1221 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	250 250 250 250 250 250 250 250				
SURROGATE RECOVERY	110	ug/ kg	230				
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	120. 100.	એ એ					

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

Laboratory Sample Number: L9803660-02

TP-9/5-6'

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

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.	8					
Decachlorobiphenyl	120.	ષ્ટ					

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

Laboratory Sample Number: L9803660-03

Date Collected: 11-MAY-98

TP-10/4-5'

Date Received: 13-MAY-98

Sample Matrix:

SOIL

Date Reported: 21-MAY-98

Condition of Sample:

Satisfactory

Field Prep:

None

PARAMETER	RESULT UNITS RI	RDL	REF	METHOD		DATES PREP ANALYSIS		
			· · · · · · · · · · · · · · · · · · ·					
Solids, Total	81.	용	0.10	3	2540B		19-May	ST
Polychlorinated Biphenyls				1	8080	14-Ma	y 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	83.0	ક						
Decachlorobiphenyl	70.0	8						

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

Laboratory Sample Number: L9803660-04

TP-11/6'

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

SOIL

Date Reported : 21-MAY-98

Condition of Sample:

Sample Matrix:

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 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	250 250 250 250 250 250 250 250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	104. 110.	96 96					

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

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

Laboratory Sample Number: L9803660-05

TP-12/6-8'

SOIL

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

Date Reported: 21-MAY-98

Condition of Sample:

Sample Matrix:

Satisfactory

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES		ID
						PREP	ANALYSIS	
Solids, Total	75.	ક	0.10	3	2540B		19-May	ST
Polychlorinated Biphenyls				1	8080	14 - Ma	y 21-May	Sı
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.	ક						
Decachlorobiphenyl	106.	ક						

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

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	122.	%					
Decachlorobiphenyl	102.	ક					

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

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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

RESULT	UNITS	RDL	REF	METHOD	DAT PREP		ID
79.	8	0.10	3	2540B		19-May	ST
			1	8080	14-Ma	y 20-May	S
ND	ug/kg	320					
ND	J. J						
ND		320					
ND	J. J	320					
ND	ug/kg	320					
ND	ug/kg	320					
ND	ug/kg	320					
ND	ug/kg	320					
121.	8						
	79. ND ND ND ND ND ND ND ND ND N	79. % ND ug/kg	ND ug/kg 320	79.	79. % 0.10 3 2540B. 1 8080 ND ug/kg 320	79. % 0.10 3 2540B. 1 8080 14-Ma ND ug/kg 320	PREP ANALYSIS 79. % 0.10 3 2540B 19-May 1 8080 14-May 20-May ND ug/kg 320

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

Laboratory Sample Number: L9803660-08

TP-15/4-5'

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

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	84.	ફ	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	SE
Arochlor 1221	ND	uq/kq	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.	용					

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

Laboratory Sample Number: L9803660-09

TP-16/4-5'

Sample Matrix: SOIL

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

Date Reported: 13-MAY-98

Condition of Sample:

Satisfactory

Field Prep:

None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	IF
Solids, Total	84.	80	0.10	3	2540B	19-May	ST.
Polychlorinated Biphenyls				1	8080	14-May 20-May	ç
Arochlor 1221 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	250 250 250 250 250 250 250 250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	90.0 84.0	9 6					

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

Laboratory Sample Number: L9803660-10

TP-17/4-5'

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	ID
Solids, Total	83.	ક	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 20-May	SE
Arochlor 1221 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	250 250 250 250 250 250 250 250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	96.0 82.0	& &					

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

Laboratory Sample Number: L9803660-11

TP-18/6-7'

SOIL

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

Date Reported: 21-MAY-98

Condition of Sample: Satisfactory

Sample Matrix:

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	II
						PREP ANALYS	IS _
Solids, Total	83.	ફ	0.10	3	2540B	19-M	ay S''
Polychlorinated Biphenyls				1	8080	14-May 20-M	ay Sr
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						1	
2,4,5,6-Tetrachloro-m-xylene	116.	ş					
Decachlorobiphenyl	97.0	ક					

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

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.	8					
Decachlorobiphenyl	88.0	8					

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

Laboratory Sample Number: L9803660-13

Date Collected: 12-MAY-98 TP-20/6-7'

Sample Matrix:

SOIL

Date Received: 13-MAY-98

Date Reported: 21-MAY-98

Condition of Sample:

Satisfactory

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP A	S NALYSIS	ID
Solids, Total	86.	ક	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	ક						
Decachlorobiphenyl	70.0	옿						

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

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.	9	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	SE
Arochlor 1221 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	250 250 250 250 250 250 250 250				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	63.0 70.0	એ એ					

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

05219804:43 Page 15

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

Laboratory Sample Number: L9803660-15

TP-22/5-6'

Sample Matrix:

SOIL

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

Date Reported : 21-MAY-98

Condition of Sample:

Satisfactory

Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES I PREP ANALYSIS
Solids, Total	88.	8	0.10	3	2540B	19-May ST
Polychlorinated Biphenyls				1	8080	14-May 21-May S
Arochlor 1221 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND ND ND ND ND ND ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	250 250 250 250 250 250 250 250			
SURROGATE RECOVERY						
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	91.0 87.0	96 96				

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

Laboratory Sample Number: L9803660-16

TP-23/5-7'

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

Sample Matrix:

SOIL

Date Reported : 21-MAY-98

Condition of Sample:

Field Prep:

None

Satisfactory

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Solids, Total	79.	8	0.10	3	2540B	19-May	ST
Polychlorinated Biphenyls				1	8080	14-May 21-May	SE
Arochlor 1221 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	320 320 320 320 320 320 320 320				
SURROGATE RECOVERY							
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	102. 91.0	० ० ०					

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

Laboratory Sample Number: L9803660-17

Date Collected: 12-MAY-98

Sample Matrix:

TP-24/5-7' SOIL

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

Condition of Sample:

Satisfactory

Field Prep:

None

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES ID PREP ANALYSIS
Solids, Total	86.	ઝ	0.10	3	2540B	19-May ST
Polychlorinated Biphenyls				1	8080	14-May 21-May
Arochlor 1221 Arochlor 1232 Arochlor 1242/PCB 1016 Arochlor 1248 Arochlor 1254 Arochlor 1260 Arochlor 1262 Arochlor 1268	ND	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	250 250 250 250 250 250 250 250			
SURROGATE RECOVERY						
2,4,5,6-Tetrachloro-m-xylene Decachlorobiphenyl	109. 92.0	8				

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9803660

Parameter	Value 1	Value 2	RPD	Units	
Solids, Total	DUPLICAT	E for samp	le(s) 01-1	0	
	87.	87.	0	8	
Solids, Total	DUPLICAT	E for samp	le(s) 11-1	7	
	86.	87.	1	१	

ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

- 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.

AL		Eight Walku _l Westborough	•		81-	1019		СНА	IN (OF CUS	STODY	RECORD	No. 7	7.798
Analytical		508-898-9220					3	and	ANA	ALYSIS R	EQUEST	RECORD	Sheet	ò <u>2</u>
Company Name:		Project Number	r: 143	45				ject Name			4	Date Received in Lab	Date Due:	das
	RM	P.O. Number:						KAYT	HEUM	- WAYLA	wa MA	5/13	5/21	198
Company Address:	399 Buylston St	F	Phone Nu	mber : 6	172	6783	77 Pro	ject Mana				Alpha Job Number: (Lab use only)	
	Bosdon, MA 02116		FAX No.						٥٥	E FACE	0	9	803660	
ALPHA Lab#		Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Containe O = Other Containers	, હું [(numb	er of	Preser containe CI	ers) [I	Sam	oling	MW = Monitoring L = Lake/Pone	d/Ocean I = Inf	O = Outfall Stuent $E = Effluent D$	W = Well LF = W = Drinking Wa B = Bottom Sed	ter
(Lab Use Only)	Sample I.D.	(number/type)) Ÿ	5 3	Ī	Su H	Ŏ Ş	Date	Time		Ana	alysis Reques	sted	
3660.1	TP-8/5-6.F1	16	S	X				Slulas			S	13		
2	TP-9/5-6 Fr	16	5	χ				411/98	0910					
3	TP-10/4-5 FA	16	S	X				Jul98	0945					
4	TP-11/6 C+	16	S	X				5/11/98	1010	PCBs				
5	TP-12/6-8.ft	16	S	X_				5/11/48	1040	PCBs				
(TP-13 /5-6 FA	16	S	χ_				5/11/98	1105	PCBs				
7	TP-14/4-5F4	16	S	X_{\perp}				5/11/98	1135	PCBs				
P	TP-15/4-5A	16	S	χ _				5/11/98	1200	PCB5				
g	TP-16/4-5ft	16	S	X				\$ 1498	1300	PCBs				
[0	TP-17/4-55	16	5	X				\$11/98	1340	PCBs		<u> </u>	,	
Sampler's Signature	()	filiation Da	1	Time	NU	MBER	TRA	NSFERS	RELINO	UISHED BY	TRANSFERS	ACCEPTED BY	DATE	TIME
ADDICIONAL CO		211	1980	750	_	1		Jac (hau	ပ	70	7/	5/13/98	0930
						2	1	2C	<u> </u>		Soup	5%	5/12/20	17:00
				-		3	6	Dry	<u> </u>	>	lun	•	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

Invoice Number: 15387

6th Floor

Boston, MA 02116

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

AL	PHA	Eight Walkup Westborough,			158	31-1	019)	C	НА	IN	OF CU	STODY	RECORD	No. 7	7797
	1	508-898-9220								and	ANA	ALYSIS F	REQUEST	RECORD	Sheet 2	Z
Company Name:		Project Number:	143	.49					Pro	ject Nam	e / Locatio	on:		Date Received in Lab	Date Due:	7.
	ERM	P.O. Number:							1.			4 - WAY	INO, MA	\$/13	5/2	1/28
Company Address:	399 Boyleton 54	Ph	one N	umber	: 61	7 26	78.	377	Pro	ject Mana	ger :			Alpha Job Number: (1	ab use only)	
	Boston, MA 02116	FA Container Codes :	AX No	~	-	·					Joe	Fiacco		9.	1998 W	
ALPHA Lab#	Sample I.D.	P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other Containers	Matrix / Source		mbe	Nitric	ontai	iners	Ή	Sam Date	pling	MW = Monitorin L = Lake/Pon	d/Ocean i = In	unoff O = Outfall \ fluent E = Effluent D	N = Well LF = V = Drinking Wa B = Bottom Sedi	fer
(Lab Use Only)	Sample 1.D.	(number/type)	Σ	D	8	Ż (<u>a</u> :	티	र्ग द्व	Date	Time		An	alysis Reques	ted	
360.11	TP-18/6-7f+	16	5	X					1	5/11/48		l .	s T	3		
12	TP-19 / 6-8 FA	16	S	X						5/12/98	0846	1	Ī			
ß	TP-20 /6-7ft	16	5	X						Slizla	0905	PCBS				
14	TP-21/6-8 ft	16	5	X						र्राथक	0945	PCBs				
	16-55 \ 2-9 t+	16	5	X			_			5/12/98	1020	PCBs				
	TP-23/5-7-F4	16	5	X				_		5/12/98	1050	PCB;				
}	TP-24/5-7 Ft	16	5	X			\downarrow	$oldsymbol{\perp}$	ļ	वायक	1140	PCB.				
							1									
						_										
Sampler's Signature		filiation Date														
ourplot of our address	4 (, , ,	, , ,	2.0	Time		NUM	BER	1	TRAN	ISFERS	RELING	UISHED BY	TRANSFERS	ACCEPTED BY	DATE	TIME
ADDITIONAL GO		-m 5/13/°	"	093	4	1		1	¥	<u>edi</u>	new		ZCIL	/	5/13/98	0930
					-	2		\perp	4	5	·/>		Don	W.	5/17/28	Ria
					-	3		+		Day	9	<u>چ</u>	lun	-	5/13/28	1240
					\perp	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

MW-33/10-14 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	DAT		ID
						PREP	ANALYSIS	
Solids, Total	89.	ક	0.10	3	2540B		27-May	ST
Volatile Organics by GC/MS				1	8260	22- M a	у 22-Мау	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 ug/kg	5.0					
1,2-Dichlorobenzene	ND	ug/kg ug/kg	50.					
1,3-Dichlorobenzene	ND	ug/kg ug/kg	50. 50.					
1,4-Dichlorobenzene	ND	ug/kg ug/kg	50. 50.					
Methyl tert butyl ether	ND		50. 50.					
Xylenes	ND ND	ug/kg						
cis-1,2-Dichloroethene	ND ND	ug/kg	5.0					
Dibromomethane	ND ND	ug/kg	5.0					
DIDI OMONIC CHAME	מא	ug/kg	50.					

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

05289801:44 Page 2

ALPHA ANALYTICAL LABORATORIES CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9803858-01

MW-33/10-14 FT

PARAMETER	RESULT	UNITS	RDL	REF	METHOD		res	II
						PREP	ANALYSIS	
Volatile Organics by GC/MS co	ntinued			1	8260	22-M	ay 22-May	J
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.					
rans-1,4-Dichloro-2-butene	ND	ug/kg	25.					
Ethyl ether	ND	ug/kg	130					
SURROGATE RECOVERY								
Foluene-d8	97.0	ે						
l-Bromofluorobenzene	95.0	ક						
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

SOIL

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

Date Reported: 28-MAY-98

Condition of Sample:

Sample Matrix:

Satisfactory

Field Prep:

None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE	S NALYSIS	ID
							TALL SIS	
Solids, Total	90.	ક	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 ug/kg	50.					
1,3-Dichlorobenzene	ND	ug/kg ug/kg	50.					
1,4-Dichlorobenzene	ND	ug/kg ug/kg	50. 50.					
Methyl tert butyl ether	ND	ug/kg ug/kg	50. 50.					
Xylenes	ND	ug/kg ug/kg						
cis-1,2-Dichloroethene	ND ND	ug/kg ug/kg	5.0 5.0					
Dibromomethane	ND ND							
o mome origine	MD	ug/kg	50.					

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

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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 c	ontinued			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	કૃ					
4-Bromofluorobenzene	93.0	8					
Dibromofluoromethane	93.0	ક					

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	DUPLICAT	E for sample	e(s) 01-02		

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9803858

Parameter	MS %	MSD %	RPD	
Volatile Organics by GC/	MS Spike Recov	ery MS/MSD f	or 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 PREP ANALYSIS	I
BLANK	sample for	Job Sampl	e(s) 01-0	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 ug/kg	10.				
2-Butanone	ND	ug/kg ug/kg	4.5				
Vinyl Acetate	ND						
4-Methyl-2-pentanone	ND	ug/kg	10.				
2-Hexanone	ND	ug/kg	10.				
Ethyl methacrylate	ND	ug/kg ug/kg	10.				
	1112	49/149	10.				

ALPHA ANALYTICAL LABORATORIES QUALITY ASSURANCE BATCH BLANK ANALYSIS

Continued

PARAMETER	RESULT	UNITS	\mathtt{RDL}	REF	METHOD	DA'	res	ID
						PREP	ANALYSIS	
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	8						
Dibromofluoromethane	98.0	8						

ALPHA ANALYTICAL LABORATORIES ADDENDUM I

REFERENCES

- 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.

AL	PHA	Eight Walki Westboroug	•		4 158	1-10	י 19	1	C	ΗA	¬ IN (OF CUSTODY	RECORD	No. 78910
		508-898-922						3	,	and	ANA	ALYSIS REQUEST	RECORD	Sheetof
Company Name: ERM		Project Number	:		,				R		EON	n: - WAYLANO, MA	Date Received in Lab:	Date Due: 5/27/98/18
	ylstonst.,6th Floor MA 02116		Phone N FAX No						roje	ect Mana	-	- -iacco	Alpha Job Number: (L	b use only) }}}
ALPHA Lab#		Container Codes: P = Plestic V = Vis C = Cube G = Git A = Amber Glass B = Bacteria Contai O = Other Containers	ss ner / Xi	(nu	mber	Nitric Sulfuric	taine	rs)	s - F.	Samp Date	oling	MATRIX / SOUR MW = Monitoring Well RO = R L = Lake/Pond/Ocean I = In R = River Stream S = So X1 = Other	lunoff O = Outfall W offuent E = Effluent DW	= Well LF = Landfill = Drinking Water = Bottom Sediment
(Lab Use Only)	Sample I.D.	(number/typ		٦	<u>ड</u>	Z S	듸	힉	S	Date	Time	An	alysis Request	ed
3158	mw-33/10-14.ft 8-12 mw-40/8-112gg-ft	16	S	X						5/13/28	1030	VOCs - 8260	B	
.ل	mw. 40 /8-112 ft	16	S	X						5/12/98	1125	VOCs - 8260	73	
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Sampler's Signature Oe ADDITIONAL CO	airo		Date /19/98	Time	- 1	NUMB 1	ER	TF	AN	SFERS	RELING		S ACCEPTED BY	DATE TIME
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