

2 March 2004
Reference: 0010686

399 Boylston Street, 6th floor
Boston, MA 02116
(617) 267-8377
(617) 267-6447 (fax)

NPDES Permit Unit
Mail Code (CPE)
Office of Ecosystem Protection
Environmental Protection Agency
One Congress St., Suite 1100
Boston, MA 02114-2023



RE: NPDES Exclusion #MA 03I-123
Former Raytheon Facility
Wayland, Massachusetts
January to February 2004

Dear Sir or Madam:

On behalf of Raytheon Company (Raytheon), Environmental Resources Management, Inc. (ERM) is submitting analytical reports for water samples collected from the surface water treatment system at the former Raytheon site located at 430 Boston Post Road in Wayland, Massachusetts. This report has been prepared in support of the National Pollution Discharge Elimination System (NPDES) Exclusion Permit for the discharge of treated surface water from dewatering activities on site. This is the final submittal as site remedial activities have been completed.

Wetland remediation and restoration activities at the site required dewatering of the excavation area. Two sumps in the excavation area transferred collected surface water and soil pore water to the water treatment system. The water treatment system consisted of equalization tanks, primary bag filters, treatment by activated carbon, and secondary bag filters. The treated water was discharged into the Sudbury River downstream of wetland restoration activities.

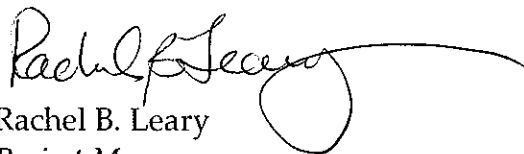
In mid-December 2003, all work related to the wetland excavation on the site was suspended for approximately one month due to rising water levels of the Sudbury River and the wetland area. The dewatering system was shut down until 17 January 2004 when the river level subsided and the excavation recommenced. In accordance with the NPDES Permit Exclusion, beginning in January 2004, water samples were collected monthly. All samples were submitted for analysis of polynuclear aromatic hydrocarbons

(PAHs), polychlorinated biphenyls (PCBs), arsenic, copper, chromium, lead, silver, pH and total suspended solids (TSS) using the appropriate EPA analytical methods. Analytical results are summarized in Table 1. Copies of laboratory analytical reports are included in Appendix A.

The system has operated within the limits of the exclusion permit during January and February 2004 with the exception of TSS. On 28 January 2004 there was an exceedance of 140 mg/L for TSS. It was believed that the treatment system had been sampled between sediment bag filter changes causing sediment collected in the bottom of the filter housing to enter the effluent sample. The system was resampled on 9 February 2004 and TSS was again in exceedance (110 mg/L). The system was sample again the following week (16 February 2004) and the exceedance of TSS was 180 mg/L. The system was shut down on 24 February 2004. The final exceedance led to the discovery of a 2-foot build up of sediment in the settling tank. The outtake pipe was inundated with sediment causing the exceedance. No further discharge occurred, however and the portion of the project that required the treatment system was completed on 27 February 2004. It should be noted that the river discharge pipe was fitted with a bag filter that most likely abated any discharge impacts. The treatment system has been decommissioned and removed from the site.

If you require any additional information, please contact the undersigned at (617) 267-8377.

Sincerely,



Rachel B. Leary
Project Manager

encl: Table 1: Summary of Water Treatment System Analytical Results
Appendix A: Laboratory Analytical Reports

cc: Mr. Edwin Madera, Raytheon Company
Benson Gould, CMG
MADEP Database Unit
Public Repositories

Table 1
 Summary of Water Treatment System Analytical Results
 Former Raytheon Facility
 Wayland, MA

Date Sampled Sample I.D.	Maximum Limits*	11-Nov-03			13-Nov-03			16-Nov-03			21-Nov-03			01-Dec-03		
		Influent	Mid	Effluent	Influent	Mid	Effluent	Influent	Mid	Effluent	Influent	Mid	Effluent	Influent	Mid	Effluent
Solids, Total Suspended (mg/L)	30	240	10	-	210	-	-	21	13	-	17	15	-	120	67	-
pH (std units)	6.5-8.3	7.7	9.7	10.1	7.3	8.8	9.4	7.1	7.9	6.5	7.1	7.2	7.0	7.4	7.4	6.8
Total Metals (mg/L)																
Arsenic	NS	0.018	0.014	0.015	0.023	-	-	0.015	-	-	0.012	0.011	-	0.031	0.022	-
Chromium	0.10	0.47	0.05	0.02	0.28	0.03	0.02	0.03	0.01	-	0.04	0.03	-	0.15	0.09	-
Copper	0.10	0.77	0.06	0.03	0.46	0.05	0.05	0.16	0.04	-	0.10	0.07	-	0.30	0.16	-
Lead	0.055	0.145	-	-	0.078	0.011	0.011	0.013	-	-	0.011	-	-	0.039	0.021	-
Silver	0.035	0.027	-	-	0.014	-	-	-	-	-	-	-	-	0.010	0.006	-
PAHs (ug/L)																
Total PAHs	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)																
Aroclor® 1260		3.45	0.58	-	0.868	-	-	-	-	-	-	-	-	0.621	-	-
Total PCBs	0.258	3.45	0.58	-	0.868	-	-	-	-	-	-	-	-	0.621	-	-

Notes:

* = As defined in NPDES Exclusion # MA 03I-123, Attachment A

NS = No standard defined in NPDES Exclusion

- = Nondetect

Shaded cells represent exceedences

Table 1
 Summary of Water Treatment System Analytical Results
 Former Raytheon Facility
 Wayland, MA

Date Sampled Sample I.D.	Maximum Limits*	05-Dec-03			12-Dec-03			28-Jan-04			09-Feb-04			16-Feb-04		
		Influent	Mid	Effluent	Influent	Mid	Effluent	Influent	Mid	Effluent	Influent	Mid	Effluent	Influent	Mid	Effluent
Solids, Total Suspended (mg/L)	30	180	130	-	79	22	-	200	110	140	53	52	110	1100	320	180
pH (std units)	6.5-8.3	7.3	7.2	6.8	7.1	7.1	7.1	7.5	7.1	6.9	6.7	6.6	6.5	7.5	6.7	6.6
Total Metals (mg/L)																
Arsenic	NS	0.036	0.023	-	-	-	-	0.118	0.059	0.016	0.007	0.007	0.027	0.176	0.045	0.028
Chromium	0.10	0.10	0.09	-	0.05	0.01	-	0.03	0.02	0.01	-	-	0.03	0.10	0.03	0.01
Copper	0.10	0.23	0.18	-	0.10	0.02	-	0.18	0.03	0.03	0.43	0.02	0.05	0.13	0.05	0.03
Lead	0.055	0.031	0.023	-	0.019	-	-	0.013	-	-	0.080	-	0.018	0.111	0.035	0.02
Silver	0.035	0.007	0.008	-	-	-	-	-	-	-	-	-	-	0.005	-	-
PAHs (ug/L)																
Total PAHs	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCBs (ug/L)																
Aroclor® 1260		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	0.258	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
 * = As defined in NPDES Exclusion # MA 03I-1
 NS = No standard defined in NPDES Exclusion
 - = Nondetect
 Shaded cells represent exceedences

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: ERM-New England **Laboratory Job Number:** L0400686
Address: 399 Boylston Street
6th Floor **Date Received:** 28-JAN-2004
Boston, MA 02116 **Date Reported:** 03-FEB-2004
Attn: Ms. Rachel Leary **Delivery Method:** Alpha
Project Number: 10686.8
Site: VERIFICATION SAMPLING

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0400686-01	WTS-(IN) 0128	RAYTHEON WAYLAND
L0400686-02	WTS-(MID) 0128	RAYTHEON WAYLAND
L0400686-03	WTS-(EFF) 0128	RAYTHEON WAYLAND

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: Scott McLean
This document electronically signed

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0400686-01	Date Collected: 28-JAN-2004 09:00
WTS-(IN) 0128	Date Received : 28-JAN-2004
Sample Matrix: WATER	Date Reported : 03-FEB-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 6-Amber,1-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Solids, Total Suspended	200	mg/l	25.	4 160.2		0129 15:45	DT
pH	7.5	SU	-	4 150.1		0128 20:05	HG
Total Metals				19 200.7			
Arsenic, Total	0.118	mg/l	0.005	19 200.7		0129 14:00 0130 10:14	RW
Chromium, Total	0.03	mg/l	0.01	19 200.7		0129 14:00 0130 10:14	RW
Copper, Total	0.18	mg/l	0.01	19 200.7		0129 14:00 0130 10:14	RW
Lead, Total	0.013	mg/l	0.010	19 200.7		0129 14:00 0130 10:14	RW
Silver, Total	ND	mg/l	0.005	19 200.7		0129 14:00 0130 10:14	RW
PNA's by GC/MS 625				5 625		0129 10:30 0129 18:24	HL
Acenaphthene	ND	ug/l	5.0				
2-Chloronaphthalene	ND	ug/l	6.0				
Fluoranthene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
Benzo(a)anthracene	ND	ug/l	5.0				
Benzo(a)pyrene	ND	ug/l	5.0				
Benzo(b)fluoranthene	ND	ug/l	5.0				
Benzo(k)fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
1-Methylnaphthalene	ND	ug/l	5.0				
2-Methylnaphthalene	ND	ug/l	8.0				
Surrogate(s)	Recovery			QC Criteria			
Nitrobenzene-d5	48.0	%					
2-Fluorobiphenyl	51.0	%					
4-Terphenyl-d14	81.0	%					
Polychlorinated Biphenyls				5 608		0202 15:30 0203 12:55	AK

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0400686-01
WTS-(IN) 0128

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0202 15:30	0203 12:55	AK
Aroclor 1221	ND	ug/l	0.515				
Aroclor 1232	ND	ug/l	0.515				
Aroclor 1242/1016	ND	ug/l	0.515				
Aroclor 1248	ND	ug/l	0.515				
Aroclor 1254	ND	ug/l	0.515				
Aroclor 1260	ND	ug/l	0.515				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	69.0	%					
Decachlorobiphenyl	55.0	%					

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0400686-02	Date Collected: 28-JAN-2004 09:05
WTS-(MID) 0128	Date Received : 28-JAN-2004
Sample Matrix: WATER	Date Reported : 03-FEB-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 6-Amber,1-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Solids, Total Suspended	110	mg/l	25.	4 160.2	0129 15:45	DT
pH	7.1	SU	-	4 150.1	0128 20:05	HG
Total Metals				19 200.7		
Arsenic, Total	0.059	mg/l	0.005	19 200.7	0129 14:00	0130 10:20 RW
Chromium, Total	0.02	mg/l	0.01	19 200.7	0129 14:00	0130 10:20 RW
Copper, Total	0.03	mg/l	0.01	19 200.7	0129 14:00	0130 10:20 RW
Lead, Total	ND	mg/l	0.010	19 200.7	0129 14:00	0130 10:20 RW
Silver, Total	ND	mg/l	0.005	19 200.7	0129 14:00	0130 10:20 RW
PNA's by GC/MS 625				5 625	0129 10:30	0129 19:09 HL
Acenaphthene	ND	ug/l	4.9			
2-Chloronaphthalene	ND	ug/l	5.9			
Fluoranthene	ND	ug/l	4.9			
Naphthalene	ND	ug/l	4.9			
Benzo(a)anthracene	ND	ug/l	4.9			
Benzo(a)pyrene	ND	ug/l	4.9			
Benzo(b)fluoranthene	ND	ug/l	4.9			
Benzo(k)fluoranthene	ND	ug/l	4.9			
Chrysene	ND	ug/l	4.9			
Acenaphthylene	ND	ug/l	4.9			
Anthracene	ND	ug/l	4.9			
Benzo(ghi)perylene	ND	ug/l	4.9			
Fluorene	ND	ug/l	4.9			
Phenanthrene	ND	ug/l	4.9			
Dibenzo(a,h)anthracene	ND	ug/l	4.9			
Indeno(1,2,3-cd)pyrene	ND	ug/l	6.8			
Pyrene	ND	ug/l	4.9			
1-Methylnaphthalene	ND	ug/l	4.9			
2-Methylnaphthalene	ND	ug/l	7.8			
Surrogate(s)	Recovery		QC Criteria			
Nitrobenzene-d5	50.0	%				
2-Fluorobiphenyl	54.0	%				
4-Terphenyl-d14	82.0	%				
Polychlorinated Biphenyls				5 608	0202 15:30	0203 12:52 AK

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0400686-02
WTS-(MID) 0128

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0202 15:30	0203 12:52	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	71.0	%					
Decachlorobiphenyl	58.0	%					

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0400686-03	Date Collected: 28-JAN-2004 09:10
WTS-(EFF) 0128	Date Received : 28-JAN-2004
Sample Matrix: WATER	Date Reported : 03-FEB-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 6-Amber,1-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Solids, Total Suspended	140	mg/l	25.	4 160.2		0129 15:45 DT
pH	6.9	SU	-	4 150.1		0128 20:05 HG
Total Metals				19 200.7		
Arsenic, Total	0.016	mg/l	0.005	19 200.7	0129 14:00	0130 10:28 RW
Chromium, Total	0.01	mg/l	0.01	19 200.7	0129 14:00	0130 10:28 RW
Copper, Total	0.03	mg/l	0.01	19 200.7	0129 14:00	0130 10:28 RW
Lead, Total	ND	mg/l	0.010	19 200.7	0129 14:00	0130 10:28 RW
Silver, Total	ND	mg/l	0.005	19 200.7	0129 14:00	0130 10:28 RW
PNA's by GC/MS 625				5 625	0129 10:30	0129 19:54 HL
Acenaphthene	ND	ug/l	4.8			
2-Chloronaphthalene	ND	ug/l	5.8			
Fluoranthene	ND	ug/l	4.8			
Naphthalene	ND	ug/l	4.8			
Benzo(a)anthracene	ND	ug/l	4.8			
Benzo(a)pyrene	ND	ug/l	4.8			
Benzo(b)fluoranthene	ND	ug/l	4.8			
Benzo(k)fluoranthene	ND	ug/l	4.8			
Chrysene	ND	ug/l	4.8			
Acenaphthylene	ND	ug/l	4.8			
Anthracene	ND	ug/l	4.8			
Benzo(ghi)perylene	ND	ug/l	4.8			
Fluorene	ND	ug/l	4.8			
Phenanthrene	ND	ug/l	4.8			
Dibenzo(a,h)anthracene	ND	ug/l	4.8			
Indeno(1,2,3-cd)pyrene	ND	ug/l	6.8			
Pyrene	ND	ug/l	4.8			
1-Methylnaphthalene	ND	ug/l	4.8			
2-Methylnaphthalene	ND	ug/l	7.8			
Surrogate(s)	Recovery		QC Criteria			
Nitrobenzene-d5	42.0	%				
2-Fluorobiphenyl	46.0	%				
4-Terphenyl-d14	79.0	%				
Polychlorinated Biphenyls				5 608	0202 15:30	0203 13:23 AK

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0400686-03
WTS-(EFF) 0128

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0202 15:30	0203 13:23	AK
Aroclor 1221	ND	ug/l	0.505				
Aroclor 1232	ND	ug/l	0.505				
Aroclor 1242/1016	ND	ug/l	0.505				
Aroclor 1248	ND	ug/l	0.505				
Aroclor 1254	ND	ug/l	0.505				
Aroclor 1260	ND	ug/l	0.505				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	74.0	%					
Decachlorobiphenyl	62.0	%					

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0400686

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Solids, Total Suspended for sample(s) 01-03 (L0400651-01, WG161880)					
Solids, Total Suspended	72.	72.	mg/l	0	
pH for sample(s) 01-03 (L0400686-01, WG161825)					
pH	7.5	7.5	SU	0	
Total Metals for sample(s) 01-03 (L0400686-01, WG161908)					
Arsenic, Total	0.118	0.125	mg/l	6	
Chromium, Total	0.03	0.03	mg/l	4	
Copper, Total	0.18	0.18	mg/l	0	
Lead, Total	0.013	0.014	mg/l	5	
Silver, Total	ND	ND	mg/l	NC	
PNA's by GC/MS 625 for sample(s) 01-03 (L0400686-03, WG161876)					
Acenaphthene	ND	ND	ug/l	NC	
2-Chloronaphthalene	ND	ND	ug/l	NC	
Fluoranthene	ND	ND	ug/l	NC	
Naphthalene	ND	ND	ug/l	NC	
Benzo(a)anthracene	ND	ND	ug/l	NC	
Benzo(a)pyrene	ND	ND	ug/l	NC	
Benzo(b)fluoranthene	ND	ND	ug/l	NC	
Benzo(k)fluoranthene	ND	ND	ug/l	NC	
Chrysene	ND	ND	ug/l	NC	
Acenaphthylene	ND	ND	ug/l	NC	
Anthracene	ND	ND	ug/l	NC	
Benzo(ghi)perylene	ND	ND	ug/l	NC	
Fluorene	ND	ND	ug/l	NC	
Phenanthrene	ND	ND	ug/l	NC	
Dibenzo(a,h)anthracene	ND	ND	ug/l	NC	
Indeno(1,2,3-cd)Pyrene	ND	ND	ug/l	NC	
Pyrene	ND	ND	ug/l	NC	
Benzo(e)Pyrene	ND	ND	ug/l	NC	
Biphenyl	ND	ND	ug/l	NC	
Perylene	ND	ND	ug/l	NC	
1-Methylnaphthalene	ND	ND	ug/l	NC	
2-Methylnaphthalene	ND	ND	ug/l	NC	
Surrogate(s)	Recovery				QC Criteria
Nitrobenzene-d5	42.0	50.0	%	17	
2-Fluorobiphenyl	46.0	53.0	%	14	
4-Terphenyl-d14	79.0	92.0	%	15	
Polychlorinated Biphenyls for sample(s) 01-03 (L0400686-02, WG162159)					
Aroclor 1221	ND	ND	ug/l	NC	30
Aroclor 1232	ND	ND	ug/l	NC	30
Aroclor 1242/1016	ND	ND	ug/l	NC	30
Aroclor 1248	ND	ND	ug/l	NC	30
Aroclor 1254	ND	ND	ug/l	NC	30
Aroclor 1260	ND	ND	ug/l	NC	30

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0400686

Continued

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
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Polychlorinated Biphenyls for sample(s) 01-03 (L0400686-02, WG162159)

Surrogate(s)	Recovery				QC Criteria
2,4,5,6-Tetrachloro-m-xylene	71.0	74.0	%	4	
Decachlorobiphenyl	58.0	68.0	%	16	

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0400686

Parameter	% Recovery	QC Criteria
pH LCS for sample(s) 01-03 (WG161825)		
pH	100	
Total Metals LCS for sample(s) 01-03 (WG161908)		
Arsenic, Total	108	
Chromium, Total	95	
Copper, Total	96	
Lead, Total	104	
Silver, Total	87	
PNA's by GC/MS 625 LCS for sample(s) 01-03 (WG161876)		
Acenaphthene	71	
2-Chloronaphthalene	69	
Fluoranthene	92	
Anthracene	79	
Pyrene	95	
Surrogate(s)		
Nitrobenzene-d5	49	
2-Fluorobiphenyl	66	
4-Terphenyl-d14	83	
Polychlorinated Biphenyls LCS for sample(s) 01-03 (WG162159)		
Aroclor 1242/1016	85	
Aroclor 1260	98	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	65	
Decachlorobiphenyl	66	
Total Metals SPIKE for sample(s) 01-03 (L0400686-02, WG161908)		
Arsenic, Total	104	
Chromium, Total	92	
Copper, Total	92	
Lead, Total	99	
Silver, Total	85	
PNA's by GC/MS 625 SPIKE for sample(s) 01-03 (L0400686-03, WG161876)		
Acenaphthene	62	
2-Chloronaphthalene	57	
Fluoranthene	88	
Anthracene	75	
Pyrene	88	
Surrogate(s)		
Nitrobenzene-d5	43	
2-Fluorobiphenyl	57	
4-Terphenyl-d14	82	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0400686

Continued

Parameter	% Recovery	QC Criteria
Polychlorinated Biphenyls SPIKE for sample(s) 01-03 (L0400686-02, WG162159)		
Aroclor 1242/1016	92	
Aroclor 1260	93	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	79	
Decachlorobiphenyl	70	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0400686

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG161880-1)							
Solids, Total Suspended	ND	mg/l	5.0	4 160.2		0129 15:45	DT
Blank Analysis for sample(s) 01-03 (WG161908-3)							
Total Metals				19 200.7			
Arsenic, Total	ND	mg/l	0.005	19 200.7	0129 14:00	0130 10:02	RW
Chromium, Total	ND	mg/l	0.01	19 200.7	0129 14:00	0130 10:02	RW
Copper, Total	ND	mg/l	0.01	19 200.7	0129 14:00	0130 10:02	RW
Lead, Total	ND	mg/l	0.010	19 200.7	0129 14:00	0130 10:02	RW
Silver, Total	ND	mg/l	0.005	19 200.7	0129 14:00	0130 10:02	RW
Blank Analysis for sample(s) 01-03 (WG161876-1)							
PNA's by GC/MS 625				5 625	0129 10:30	0129 16:52	HL
Acenaphthene	ND	ug/l	5.0				
2-Chloronaphthalene	ND	ug/l	6.0				
Fluoranthene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
Benzo(a)anthracene	ND	ug/l	5.0				
Benzo(a)pyrene	ND	ug/l	5.0				
Benzo(b)fluoranthene	ND	ug/l	5.0				
Benzo(k)fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
1-Methylnaphthalene	ND	ug/l	5.0				
2-Methylnaphthalene	ND	ug/l	8.0				
Surrogate(s)	Recovery			QC Criteria			
Nitrobenzene-d5	46.0	%					
2-Fluorobiphenyl	47.0	%					
4-Terphenyl-d14	85.0	%					
Blank Analysis for sample(s) 01-03 (WG162159-1)							
Polychlorinated Biphenyls				5 608	0202 15:30	0203 11:58	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0400686

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG162159-1)							
Polychlorinated Biphenyls continued				5 608		0202 15:30	0203 11:58 AK
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	76.0	%					
Decachlorobiphenyl	53.0	%					

**ALPHA ANALYTICAL LABORATORIES
ADDENDUM I**

REFERENCES

4. Methods for Chemical Analysis of Water and Wastes. EPA 600/4-82-055. 1982.
5. Test Procedures for Analysis of Organic Pollutants. Appendix A, Part 136, Code of Federal Regulations. July 1, 1985 edition.
19. Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, Code of Federal Regulations. July 1, 1999 edition.

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.
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

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.



CHAIN OF CUSTODY

PAGE 1 OF 1Eight Walkup Drive Westborough, MA 01581
TEL: 508-898-9220 FAX: 508-898-9193Date Rec'd in Lab: 1/28/04ALPHA Job #: 10400686**Client Information**Client: ERM
Address: 399 Boylston St
Boston, MA 02116
Phone: 617 267 8377
Fax: 617 267 6447
Email: Rachel.levy@erm.com
 These samples have been previously analyzed by Alpha**Project Information**Project Name: Verification Sampling
Project Location: Raytheon Wayland Wetlands
Project #: 0010686.8
Project Manager: Rachel Levy
ALPHA Quote #:**Turn-Around Time** Standard RUSH (only confirmed if pre-approved!)
Date Due: 2/2/04 Time:**Report Information - Data Deliverables** FAX EMAIL
 ADEx Add'l Deliverables**Billing Information** Same as Client info PO #:**Regulatory Requirements/Report Limits**

State/Fed Program	Criteria

MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED
 Yes No Are MCP Analytical Methods Required?
 Yes No Are Drinking Water Samples Submitted?
 Yes No Have you met minimum field QC requirements?
Other Project Specific Requirements/Comments/Detection Limits:
Ca

ANALYSIS	SAMPLE HANDLING										TOTAL # BOTTLES	
	Filtration <input type="checkbox"/> Done <input type="checkbox"/> Not needed <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please specify below)											
<u>Total PCBs</u>												
<u>Total PAHs</u>												
<u>TH</u>												
<u>TSS</u>												
<u>Total Cu, Cd, Pb, Ag, As</u>												

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										Sample Specific Comments	TOTAL # BOTTLES	
		Date	Time			Total PCBs	Total PAHs	TH	TSS	Total Cu, Cd, Pb, Ag, As	SAMPLE HANDLING							
<u>0010686-1</u>	<u>WTS - (IN) 0128</u>	<u>1/28/04</u>	<u>9:00</u>	<u>SW</u>	<u>CR</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>								<u>7</u>
<u>2</u>	<u>WTS - (Mid) 0128</u>	<u>↓</u>	<u>9:05</u>	<u>↓</u>	<u>↓</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>								<u>7</u>
<u>3</u>	<u>WTS - (EFF) 0128</u>	<u>↓</u>	<u>9:10</u>	<u>↓</u>	<u>↓</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>								<u>7</u>

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?Container Type AAAPO
Preservative AAAACRelinquished By: [Signature] Date/Time: 1/28/04 1630
Received By: [Signature] Date/Time: 1/28/04 1740

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: ERM-New England **Laboratory Job Number:** L0401093
Address: 399 Boylston Street
6th Floor **Date Received:** 09-FEB-2004
Boston, MA 02116 **Date Reported:** 12-FEB-2004
Attn: Ms. Rachel Leary **Delivery Method:** Alpha
Project Number: 10686.8
Site: VERIFICATION SAMPLING

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0401093-01	WTS-(IN) 0209	RAYTHEON WAYLAND
L0401093-02	WTS-(MID) 0209	RAYTHEON WAYLAND
L0401093-03	WTS-(EFF) 0209	RAYTHEON WAYLAND

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: Scott McLean
This document electronically signed

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0401093-01	Date Collected: 09-FEB-2004 14:00
WTS-(IN) 0209	Date Received : 09-FEB-2004
Sample Matrix: WATER	Date Reported : 12-FEB-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 6-Amber,1-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Solids, Total Suspended	53.	mg/l	10.	4 160.2		0212 14:50 DT
pH	6.7	SU	-	4 150.1		0209 21:00 HG
Total Metals				19 200.7		
Arsenic, Total	0.007	mg/l	0.005	19 200.7	0210 13:00	0211 12:39 MG
Chromium, Total	ND	mg/l	0.01	19 200.7	0210 13:00	0211 12:39 MG
Copper, Total	0.43	mg/l	0.01	19 200.7	0210 13:00	0211 12:39 MG
Lead, Total	0.080	mg/l	0.010	19 200.7	0210 13:00	0211 12:39 MG
Silver, Total	ND	mg/l	0.005	19 200.7	0210 13:00	0211 12:39 MG
PNA's by GC/MS 625				5 625	0210 10:00	0211 17:02 HL
Acenaphthene	ND	ug/l	5.0			
2-Chloronaphthalene	ND	ug/l	6.0			
Fluoranthene	ND	ug/l	5.0			
Naphthalene	ND	ug/l	5.0			
Benzo(a)anthracene	ND	ug/l	5.0			
Benzo(a)pyrene	ND	ug/l	5.0			
Benzo(b)fluoranthene	ND	ug/l	5.0			
Benzo(k)fluoranthene	ND	ug/l	5.0			
Chrysene	ND	ug/l	5.0			
Acenaphthylene	ND	ug/l	5.0			
Anthracene	ND	ug/l	5.0			
Benzo(ghi)perylene	ND	ug/l	5.0			
Fluorene	ND	ug/l	5.0			
Phenanthrene	ND	ug/l	5.0			
Dibenzo(a,h)anthracene	ND	ug/l	5.0			
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0			
Pyrene	ND	ug/l	5.0			
1-Methylnaphthalene	ND	ug/l	5.0			
2-Methylnaphthalene	ND	ug/l	8.0			
Surrogate(s)	Recovery			QC Criteria		
Nitrobenzene-d5	57.0	%				
2-Fluorobiphenyl	63.0	%				
4-Terphenyl-d14	92.0	%				
Polychlorinated Biphenyls				5 608	0210 10:00	0211 14:40 AK

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0401093-01
WTS-(IN) 0209

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0210 10:00	0211 14:40	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	58.0	%					
Decachlorobiphenyl	59.0	%					

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0401093-02	Date Collected: 09-FEB-2004 14:00
WTS-(MID) 0209	Date Received : 09-FEB-2004
Sample Matrix: WATER	Date Reported : 12-FEB-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 6-Amber,1-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Solids, Total Suspended	52.	mg/l	10.	4 160.2		0212 14:50 DT
pH	6.6	SU	-	4 150.1		0209 21:00 HG
Total Metals				19 200.7		
Arsenic, Total	0.007	mg/l	0.005	19 200.7	0210 13:00	0211 12:43 MG
Chromium, Total	ND	mg/l	0.01	19 200.7	0210 13:00	0211 12:43 MG
Copper, Total	0.02	mg/l	0.01	19 200.7	0210 13:00	0211 12:43 MG
Lead, Total	ND	mg/l	0.010	19 200.7	0210 13:00	0211 12:43 MG
Silver, Total	ND	mg/l	0.005	19 200.7	0210 13:00	0211 12:43 MG
PNA's by GC/MS 625				5 625	0210 10:00	0211 17:49 HL
Acenaphthene	ND	ug/l	5.0			
2-Chloronaphthalene	ND	ug/l	6.0			
Fluoranthene	ND	ug/l	5.0			
Naphthalene	ND	ug/l	5.0			
Benzo(a)anthracene	ND	ug/l	5.0			
Benzo(a)pyrene	ND	ug/l	5.0			
Benzo(b)fluoranthene	ND	ug/l	5.0			
Benzo(k)fluoranthene	ND	ug/l	5.0			
Chrysene	ND	ug/l	5.0			
Acenaphthylene	ND	ug/l	5.0			
Anthracene	ND	ug/l	5.0			
Benzo(ghi)perylene	ND	ug/l	5.0			
Fluorene	ND	ug/l	5.0			
Phenanthrene	ND	ug/l	5.0			
Dibenzo(a,h)anthracene	ND	ug/l	5.0			
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0			
Pyrene	ND	ug/l	5.0			
1-Methylnaphthalene	ND	ug/l	5.0			
2-Methylnaphthalene	ND	ug/l	8.0			
Surrogate(s)	Recovery			QC Criteria		
Nitrobenzene-d5	55.0	%				
2-Fluorobiphenyl	58.0	%				
4-Terphenyl-d14	90.0	%				
Polychlorinated Biphenyls				5 608	0210 10:00	0211 15:08 AK

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0401093-02
WTS-(MID) 0209

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0210 10:00	0211 15:08	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	49.0	%					
Decachlorobiphenyl	56.0	%					

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0401093-03	Date Collected: 09-FEB-2004 14:00
WTS-(EFF) 0209	Date Received : 09-FEB-2004
Sample Matrix: WATER	Date Reported : 12-FEB-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 6-Amber,1-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Solids, Total Suspended	110	mg/l	10.	4 160.2		0212 14:50	DT
pH	6.5	SU	-	4 150.1		0209 21:00	HG
Total Metals				19 200.7			
Arsenic, Total	0.027	mg/l	0.005	19 200.7	0210 13:00	0211 12:48	MG
Chromium, Total	0.03	mg/l	0.01	19 200.7	0210 13:00	0211 12:48	MG
Copper, Total	0.05	mg/l	0.01	19 200.7	0210 13:00	0211 12:48	MG
Lead, Total	0.018	mg/l	0.010	19 200.7	0210 13:00	0211 12:48	MG
Silver, Total	ND	mg/l	0.005	19 200.7	0210 13:00	0211 12:48	MG
PNA's by GC/MS 625				5 625	0210 10:00	0211 18:35	HL
Acenaphthene	ND	ug/l	5.0				
2-Chloronaphthalene	ND	ug/l	6.0				
Fluoranthene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
Benzo(a)anthracene	ND	ug/l	5.0				
Benzo(a)pyrene	ND	ug/l	5.0				
Benzo(b)fluoranthene	ND	ug/l	5.0				
Benzo(k)fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
1-Methylnaphthalene	ND	ug/l	5.0				
2-Methylnaphthalene	ND	ug/l	8.0				
Surrogate(s)	Recovery			QC Criteria			
Nitrobenzene-d5	60.0	%					
2-Fluorobiphenyl	63.0	%					
4-Terphenyl-d14	88.0	%					
Polychlorinated Biphenyls				5 608	0210 10:00	0211 15:37	AK

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0401093-03
WTS-(EFF) 0209

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0210 10:00	0211 15:37	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	57.0	%					
Decachlorobiphenyl	57.0	%					

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0401093

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Solids, Total Suspended for sample(s) 01-03 (L0401093-01, WG162755)					
Solids, Total Suspended	53.	55.	mg/l	4	
pH for sample(s) 01-03 (L0401093-03, WG162619)					
pH	6.5	6.5	SU	0	
Total Metals for sample(s) 01-03 (L0401069-01, WG162737)					
Chromium, Total	ND	ND	mg/l	NC	
Copper, Total	0.02	0.02	mg/l	4	
Lead, Total	ND	ND	mg/l	NC	
PNA's by GC/MS 625 for sample(s) 01-03 (L0401093-01, WG162690)					
Acenaphthene	ND	ND	ug/l	NC	
2-Chloronaphthalene	ND	ND	ug/l	NC	
Fluoranthene	ND	ND	ug/l	NC	
Naphthalene	ND	ND	ug/l	NC	
Benzo(a)anthracene	ND	ND	ug/l	NC	
Benzo(a)pyrene	ND	ND	ug/l	NC	
Benzo(b)fluoranthene	ND	ND	ug/l	NC	
Benzo(k)fluoranthene	ND	ND	ug/l	NC	
Chrysene	ND	ND	ug/l	NC	
Acenaphthylene	ND	ND	ug/l	NC	
Anthracene	ND	ND	ug/l	NC	
Benzo(ghi)perylene	ND	ND	ug/l	NC	
Fluorene	ND	ND	ug/l	NC	
Phenanthrene	ND	ND	ug/l	NC	
Dibenzo(a,h)anthracene	ND	ND	ug/l	NC	
Indeno(1,2,3-cd)Pyrene	ND	ND	ug/l	NC	
Pyrene	ND	ND	ug/l	NC	
Benzo(e)Pyrene	ND	ND	ug/l	NC	
Biphenyl	ND	ND	ug/l	NC	
Perylene	ND	ND	ug/l	NC	
1-Methylnaphthalene	ND	ND	ug/l	NC	
2-Methylnaphthalene	ND	ND	ug/l	NC	
Surrogate(s)	Recovery				QC Criteria
Nitrobenzene-d5	57.0	58.0	%	2	
2-Fluorobiphenyl	63.0	63.0	%	0	
4-Terphenyl-d14	92.0	94.0	%	2	
Polychlorinated Biphenyls for sample(s) 01-03 (L0401093-03, WG162691)					
Aroclor 1221	ND	ND	ug/l	NC	30
Aroclor 1232	ND	ND	ug/l	NC	30
Aroclor 1242/1016	ND	ND	ug/l	NC	30
Aroclor 1248	ND	ND	ug/l	NC	30
Aroclor 1254	ND	ND	ug/l	NC	30
Aroclor 1260	ND	ND	ug/l	NC	30

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0401093

Continued

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Polychlorinated Biphenyls for sample(s) 01-03 (L0401093-03, WG162691)					
Surrogate(s)	Recovery				QC Criteria
2,4,5,6-Tetrachloro-m-xylene	57.0	58.0	%	2	
Decachlorobiphenyl	57.0	61.0	%	7	

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0401093

Parameter	% Recovery	QC Criteria
pH LCS for sample(s) 01-03 (WG162619)		
pH	100	
Total Metals LCS for sample(s) 01-03 (WG162737)		
Arsenic, Total	97	
Chromium, Total	100	
Copper, Total	96	
Lead, Total	95	
Silver, Total	96	
PNA's by GC/MS 625 LCS for sample(s) 01-03 (WG162690)		
Acenaphthene	73	
2-Chloronaphthalene	80	
Fluoranthene	100	
Anthracene	82	
Pyrene	110	
Surrogate(s)		
Nitrobenzene-d5	64	
2-Fluorobiphenyl	71	
4-Terphenyl-d14	92	
Polychlorinated Biphenyls LCS for sample(s) 01-03 (WG162691)		
Aroclor 1242/1016	67	
Aroclor 1260	78	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	46	
Decachlorobiphenyl	47	
Total Metals SPIKE for sample(s) 01-03 (L0401069-02, WG162737)		
Arsenic, Total	102	
Chromium, Total	100	
Copper, Total	100	
Lead, Total	95	
Silver, Total	97	
PNA's by GC/MS 625 SPIKE for sample(s) 01-03 (L0401093-01, WG162690)		
Acenaphthene	72	
2-Chloronaphthalene	81	
Fluoranthene	100	
Anthracene	81	
Pyrene	110	
Surrogate(s)		
Nitrobenzene-d5	63	
2-Fluorobiphenyl	71	
4-Terphenyl-d14	92	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0401093

Continued

Parameter	% Recovery	QC Criteria
Polychlorinated Biphenyls SPIKE for sample(s) 01-03 (L0401093-03, WG162691)		
Aroclor 1242/1016	74	
Aroclor 1260	84	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	58	
Decachlorobiphenyl	62	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0401093

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG162755-1)							
Solids, Total Suspended	ND	mg/l	5.0	4 160.2		0212 14:50	DT
Blank Analysis for sample(s) 01-03 (WG162737-3)							
Total Metals				19 200.7			
Arsenic, Total	ND	mg/l	0.005	19 200.7	0210 13:00	0211 11:47	MG
Chromium, Total	ND	mg/l	0.005	19 200.7	0210 13:00	0211 11:47	MG
Copper, Total	ND	mg/l	0.0025	19 200.7	0210 13:00	0211 11:47	MG
Lead, Total	ND	mg/l	0.005	19 200.7	0210 13:00	0211 11:47	MG
Silver, Total	ND	mg/l	0.005	19 200.7	0210 13:00	0211 11:47	MG
Blank Analysis for sample(s) 01-03 (WG162690-1)							
PNA's by GC/MS 625				5 625	0210 10:00	0211 13:41	HL
Acenaphthene	ND	ug/l	5.0				
2-Chloronaphthalene	ND	ug/l	6.0				
Fluoranthene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
Benzo(a)anthracene	ND	ug/l	5.0				
Benzo(a)pyrene	ND	ug/l	5.0				
Benzo(b)fluoranthene	ND	ug/l	5.0				
Benzo(k)fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
1-Methylnaphthalene	ND	ug/l	5.0				
2-Methylnaphthalene	ND	ug/l	8.0				
Surrogate(s)	Recovery			QC Criteria			
Nitrobenzene-d5	65.0	%					
2-Fluorobiphenyl	67.0	%					
4-Terphenyl-d14	102.	%					
Blank Analysis for sample(s) 01-03 (WG162691-1)							
Polychlorinated Biphenyls				5 608	0210 10:00	0211 12:00	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0401093

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG162691-1)							
Polychlorinated Biphenyls continued				5 608		0210 10:00	0211 12:00 AK
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	47.0	%					
Decachlorobiphenyl	55.0	%					

**ALPHA ANALYTICAL LABORATORIES
ADDENDUM I**

REFERENCES

4. Methods for Chemical Analysis of Water and Wastes. EPA 600/4-82-055. 1982.
5. Test Procedures for Analysis of Organic Pollutants. Appendix A, Part 136, Code of Federal Regulations. July 1, 1985 edition.
19. Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, Code of Federal Regulations. July 1, 1999 edition.

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.
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

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.



CHAIN OF CUSTODY

PAGE 1 OF 1Date Rec'd in Lab: 2-9-04ALPHA Job #: L0401093Eight Walkup Drive Westborough, MA 01581
TEL: 508-898-9220 FAX: 508-898-9193**Client Information**Client: ERM
Address: 399 Boylston St
Boston, MA 02116
Phone: 617-267-8377
Fax: 6447
Email: These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Project InformationProject Name: Verification Sampling
Project Location: Wayland MA
Project #: 10686.8
Project Manager: R. Leary
ALPHA Quote #:**Turn-Around Time** Standard RUSH (only confirmed if pre-approved!)Date Due: 2-12-04 Time:**Report Information - Data Deliverables** FAX EMAIL
 ADEX Add'l Deliverables**Billing Information** Same as Client info PO #:**Regulatory Requirements/Report Limits**

State /Fed Program Criteria

MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED Yes No Are MCP Analytical Methods Required?
 Yes No Are Drinking Water Samples Submitted?
 Yes No Have you met minimum field QC requirements?

ANALYSIS		SAMPLE HANDLING	
Total PCB's		Filtration	
Total PPA's		<input type="checkbox"/> Done	
PH		<input type="checkbox"/> Not needed	
TSS		<input type="checkbox"/> Lab to do	
Total Cu, Cr, Pb, Ag		Preservation	
		<input type="checkbox"/> Lab to do	
		(Please specify below)	
		Sample Specific Comments	

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS										Sample Specific Comments	TOTAL # BOTTLES
		Date	Time			Total PCB's	Total PPA's	PH	TSS	Total Cu, Cr, Pb, Ag	Filtration	Preservation	Lab to do	Lab to do			
01093	01 WTS - (IN) 0209	2/9/04	1400	SW	PL	2	2	1	1	1							
	02 WTS - (MID) 0209	↓	↓	↓	↓	2	2	1	1	1							
	03 WTS - (EFF) 0209	↓	↓	↓	↓	2	2	1	1	1							

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY**IS YOUR PROJECT MCP ?**Container Type N A A A A
Preservative A A A A C

Relinquished By:	Date/Time	Received By:	Date/Time
	2/9/04 16:00		2/9/04 16:00
	2/9/04 17:00		2-09-04 17:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: ERM-New England **Laboratory Job Number:** L0401381
Address: 399 Boylston Street
6th Floor **Date Received:** 16-FEB-2004
Boston, MA 02116 **Date Reported:** 19-FEB-2004
Attn: Ms. Rachel Leary **Delivery Method:** Alpha
Project Number: 10686.8
Site: VERIFICATION SAMPLING

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0401381-01	WTS-(IN)0216	RAYTHEON WAYLAND
L0401381-02	WTS-(MID)0216	RAYTHEON WAYLAND
L0401381-03	WTS-(EFF)0216	RAYTHEON WAYLAND

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: James Todaro
This document electronically signed

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0401381-01
WTS-(IN)0216

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0217 17:30	0219 05:53	AK
Aroclor 1221	ND	ug/l	0.588				
Aroclor 1232	ND	ug/l	0.588				
Aroclor 1242/1016	ND	ug/l	0.588				
Aroclor 1248	ND	ug/l	0.588				
Aroclor 1254	ND	ug/l	0.588				
Aroclor 1260	ND	ug/l	0.588				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	55.0	%					
Decachlorobiphenyl	48.0	%					

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number:	L0401381-02	Date Collected:	16-FEB-2004 14:10
	WTS-(MID)0216	Date Received :	16-FEB-2004
Sample Matrix:	WATER	Date Reported :	19-FEB-2004
Condition of Sample:	Satisfactory	Field Prep:	None
Number & Type of Containers: 5-Amber,1-Plastic			

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Solids, Total Suspended	320	mg/l	50.	4 160.2		0218 11:40	DT
pH	6.7	SU	-	4 150.1		0216 21:00	LK
Total Metals				19 200.7			
Arsenic, Total	0.045	mg/l	0.005	19 200.7	0217 12:40	0218 14:46	RW
Chromium, Total	0.03	mg/l	0.01	19 200.7	0217 12:40	0218 14:46	RW
Copper, Total	0.05	mg/l	0.01	19 200.7	0217 12:40	0218 14:46	RW
Lead, Total	0.035	mg/l	0.010	19 200.7	0217 12:40	0218 14:46	RW
Silver, Total	ND	mg/l	0.005	19 200.7	0217 12:40	0218 14:46	RW
PNA's by GC/MS 625				5 625	0217 13:30	0218 19:42	HL
Acenaphthene	ND	ug/l	4.9				
2-Chloronaphthalene	ND	ug/l	5.9				
Fluoranthene	ND	ug/l	4.9				
Naphthalene	ND	ug/l	4.9				
Benzo(a)anthracene	ND	ug/l	4.9				
Benzo(a)pyrene	ND	ug/l	4.9				
Benzo(b)fluoranthene	ND	ug/l	4.9				
Benzo(k)fluoranthene	ND	ug/l	4.9				
Chrysene	ND	ug/l	4.9				
Acenaphthylene	ND	ug/l	4.9				
Anthracene	ND	ug/l	4.9				
Benzo(ghi)perylene	ND	ug/l	4.9				
Fluorene	ND	ug/l	4.9				
Phenanthrene	ND	ug/l	4.9				
Dibenzo(a,h)anthracene	ND	ug/l	4.9				
Indeno(1,2,3-cd)pyrene	ND	ug/l	6.9				
Pyrene	ND	ug/l	4.9				
1-Methylnaphthalene	ND	ug/l	4.9				
2-Methylnaphthalene	ND	ug/l	7.9				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	49.0	%					
2-Fluorobiphenyl	56.0	%					
4-Terphenyl-d14	90.0	%					
Polychlorinated Biphenyls				5 608	0217 17:30	0219 06:22	AK

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0401381-02
WTS-(MID)0216

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0217 17:30	0219 06:22	AK
Aroclor 1221	ND	ug/l	0.526				
Aroclor 1232	ND	ug/l	0.526				
Aroclor 1242/1016	ND	ug/l	0.526				
Aroclor 1248	ND	ug/l	0.526				
Aroclor 1254	ND	ug/l	0.526				
Aroclor 1260	ND	ug/l	0.526				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	51.0	%					
Decachlorobiphenyl	55.0	%					

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0401381-03	Date Collected: 16-FEB-2004 14:20
WTS-(EFF)0216	Date Received : 16-FEB-2004
Sample Matrix: WATER	Date Reported : 19-FEB-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 5-Amber,1-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Solids, Total Suspended	180	mg/l	25.	4 160.2		0218 11:40	DT
pH	6.6	SU	-	4 150.1		0216 21:00	LK
Total Metals				19 200.7			
Arsenic, Total	0.028	mg/l	0.005	19 200.7	0217 12:40	0218 15:02	RW
Chromium, Total	0.01	mg/l	0.01	19 200.7	0217 12:40	0218 15:02	RW
Copper, Total	0.03	mg/l	0.01	19 200.7	0217 12:40	0218 15:02	RW
Lead, Total	0.02	mg/l	0.010	19 200.7	0217 12:40	0218 15:02	RW
Silver, Total	ND	mg/l	0.005	19 200.7	0217 12:40	0218 15:02	RW
PNA's by GC/MS 625				5 625	0217 13:30	0218 20:27	HL
Acenaphthene	ND	ug/l	5.0				
2-Chloronaphthalene	ND	ug/l	6.0				
Fluoranthene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
Benzo(a)anthracene	ND	ug/l	5.0				
Benzo(a)pyrene	ND	ug/l	5.0				
Benzo(b)fluoranthene	ND	ug/l	5.0				
Benzo(k)fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
1-Methylnaphthalene	ND	ug/l	5.0				
2-Methylnaphthalene	ND	ug/l	8.0				
Surrogate(s)	Recovery			QC Criteria			
Nitrobenzene-d5	44.0	%					
2-Fluorobiphenyl	52.0	%					
4-Terphenyl-d14	86.0	%					
Polychlorinated Biphenyls				5 608	0217 17:30	0219 05:24	AK

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0401381-03
WTS-(EFF)0216

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Polychlorinated Biphenyls continued				5 608	0217 17:30	0219 05:24	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	52.0	%					
Decachlorobiphenyl	51.0	%					

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0401381

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Solids, Total Suspended for sample(s) 01-03 (L0401381-01, WG163339)					
Solids, Total Suspended	1100	1200	mg/l	9	
pH for sample(s) 01-03 (L0401369-02, WG163191)					
pH	11.1	11.2	SU	1	
Total Metals for sample(s) 01-03 (L0401369-01, WG163321)					
Arsenic, Total	ND	ND	mg/l	NC	
Chromium, Total	ND	ND	mg/l	NC	
Copper, Total	0.03	0.03	mg/l	4	
Lead, Total	ND	ND	mg/l	NC	
Silver, Total	ND	ND	mg/l	NC	
PNA's by GC/MS 625 for sample(s) 01-03 (L0401381-03, WG163307)					
Acenaphthene	ND	ND	ug/l	NC	
2-Chloronaphthalene	ND	ND	ug/l	NC	
Fluoranthene	ND	ND	ug/l	NC	
Naphthalene	ND	ND	ug/l	NC	
Benzo(a)anthracene	ND	ND	ug/l	NC	
Benzo(a)pyrene	ND	ND	ug/l	NC	
Benzo(b)fluoranthene	ND	ND	ug/l	NC	
Benzo(k)fluoranthene	ND	ND	ug/l	NC	
Chrysene	ND	ND	ug/l	NC	
Acenaphthylene	ND	ND	ug/l	NC	
Anthracene	ND	ND	ug/l	NC	
Benzo(ghi)perylene	ND	ND	ug/l	NC	
Fluorene	ND	ND	ug/l	NC	
Phenanthrene	ND	ND	ug/l	NC	
Dibenzo(a,h)anthracene	ND	ND	ug/l	NC	
Indeno(1,2,3-cd)Pyrene	ND	ND	ug/l	NC	
Pyrene	ND	ND	ug/l	NC	
Benzo(e)Pyrene	ND	ND	ug/l	NC	
Biphenyl	ND	ND	ug/l	NC	
Perylene	ND	ND	ug/l	NC	
1-Methylnaphthalene	ND	ND	ug/l	NC	
2-Methylnaphthalene	ND	ND	ug/l	NC	
Surrogate(s)	Recovery				QC Criteria
Nitrobenzene-d5	44.0	39.0	%	12	
2-Fluorobiphenyl	52.0	47.0	%	10	
4-Terphenyl-d14	86.0	89.0	%	3	
Polychlorinated Biphenyls for sample(s) 01-03 (L0401381-03, WG163306)					
Aroclor 1221	ND	ND	ug/l	NC	30
Aroclor 1232	ND	ND	ug/l	NC	30
Aroclor 1242/1016	ND	ND	ug/l	NC	30
Aroclor 1248	ND	ND	ug/l	NC	30
Aroclor 1254	ND	ND	ug/l	NC	30
Aroclor 1260	ND	ND	ug/l	NC	30

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0401381

Continued

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
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Polychlorinated Biphenyls for sample(s) 01-03 (L0401381-03, WG163306)

Surrogate(s)	Recovery				QC Criteria
2,4,5,6-Tetrachloro-m-xylene	52.0	53.0	%	2	
Decachlorobiphenyl	51.0	59.0	%	15	

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0401381

Parameter	% Recovery	QC Criteria
pH LCS for sample(s) 01-03 (WG163191)		
pH	100	
Total Metals LCS for sample(s) 01-03 (WG163321)		
Arsenic, Total	108	
Chromium, Total	100	
Copper, Total	96	
Lead, Total	106	
Silver, Total	111	
PNA's by GC/MS 625 LCS for sample(s) 01-03 (WG163307)		
Acenaphthene	65	
2-Chloronaphthalene	68	
Fluoranthene	99	
Anthracene	82	
Pyrene	100	
Surrogate(s)		
Nitrobenzene-d5	51	
2-Fluorobiphenyl	60	
4-Terphenyl-d14	88	
Polychlorinated Biphenyls LCS for sample(s) 01-03 (WG163306)		
Aroclor 1242/1016	67	
Aroclor 1260	83	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	46	
Decachlorobiphenyl	66	
Total Metals SPIKE for sample(s) 01-03 (L0401369-02, WG163321)		
Arsenic, Total	108	
Chromium, Total	95	
Copper, Total	96	
Lead, Total	103	
Silver, Total	104	
PNA's by GC/MS 625 SPIKE for sample(s) 01-03 (L0401381-03, WG163307)		
Acenaphthene	76	
2-Chloronaphthalene	76	
Fluoranthene	100	
Anthracene	84	
Pyrene	110	
Surrogate(s)		
Nitrobenzene-d5	58	
2-Fluorobiphenyl	68	
4-Terphenyl-d14	89	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0401381

Continued

Parameter	% Recovery	QC Criteria
Polychlorinated Biphenyls SPIKE for sample(s) 01-03 (L0401381-03, WG163306)		
Aroclor 1242/1016	70	
Aroclor 1260	85	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	53	
Decachlorobiphenyl	62	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0401381

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG163339-1)							
Solids, Total Suspended	ND	mg/l	5.0	4 160.2		0218 11:40	DT
Blank Analysis for sample(s) 01-03 (WG163321-3)							
Total Metals				19 200.7			
Arsenic, Total	ND	mg/l	0.005	19 200.7	0217 12:40	0218 13:59	RW
Chromium, Total	ND	mg/l	0.01	19 200.7	0217 12:40	0218 13:59	RW
Copper, Total	ND	mg/l	0.01	19 200.7	0217 12:40	0218 13:59	RW
Lead, Total	ND	mg/l	0.010	19 200.7	0217 12:40	0218 13:59	RW
Silver, Total	ND	mg/l	0.005	19 200.7	0217 12:40	0218 13:59	RW
Blank Analysis for sample(s) 01-03 (WG163307-1)							
PNA's by GC/MS 625				5 625	0217 13:30	0218 15:55	HL
Acenaphthene	ND	ug/l	5.0				
2-Chloronaphthalene	ND	ug/l	6.0				
Fluoranthene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
Benzo(a)anthracene	ND	ug/l	5.0				
Benzo(a)pyrene	ND	ug/l	5.0				
Benzo(b)fluoranthene	ND	ug/l	5.0				
Benzo(k)fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
Benzo(ghi)perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a,h)anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd)pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
1-Methylnaphthalene	ND	ug/l	5.0				
2-Methylnaphthalene	ND	ug/l	8.0				
Surrogate(s)	Recovery			QC Criteria			
Nitrobenzene-d5	45.0	%					
2-Fluorobiphenyl	49.0	%					
4-Terphenyl-d14	94.0	%					
Blank Analysis for sample(s) 01-03 (WG163306-1)							
Polychlorinated Biphenyls				5 608	0217 17:30	0219 03:30	AK
Aroclor 1221	ND	ug/l	0.500				
Aroclor 1232	ND	ug/l	0.500				
Aroclor 1242/1016	ND	ug/l	0.500				
Aroclor 1248	ND	ug/l	0.500				
Aroclor 1254	ND	ug/l	0.500				
Aroclor 1260	ND	ug/l	0.500				

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0401381

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG163306-1)							
Polychlorinated Biphenyls continued				5 608		0217 17:30	0219 03:30 AK
Surrogate(s)	Recovery			QC Criteria			
2,4,5,6-Tetrachloro-m-xylene	35.0	%					
Decachlorobiphenyl	52.0	%					

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

4. Methods for Chemical Analysis of Water and Wastes. EPA 600/4-82-055. 1982.
5. Test Procedures for Analysis of Organic Pollutants. Appendix A, Part 136, Code of Federal Regulations. July 1, 1985 edition.
19. Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, Code of Federal Regulations. July 1, 1999 edition.

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.
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

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.

