ALPHA ANALYTICAL LABORATORIES

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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

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

Attn: Jeremy Picard

Project Number: 0013606.03.02

Site: RAYTHEON-WAYLAND

Laboratory Job Number: L0404510

Date Received: 30-APR-2004

Date Reported: 07-MAY-2004

Delivery Method: Alpha

The following questions pertain only to MCP Analytical Methods

An affirmative response to questions A,B,C & D is required for "Presumptive Certainty" status

A. Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set?	YES
B. Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	YES
C. Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	YES
D. **VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	NA

A response to questions E and F is required for "Presumptive Certainty" status

E. Were all QC performance standards and recommendations for the specified method(s) achieved?	NO
F. Were results for all analyte-list compounds/elements for the specified method(s) reported?	NO

Any answers of NO to the above questions are addressed in the case narrative.

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

Laboratory Job Number: L0404510
Date Reported: 07-MAY-2004

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0404510-01	HA-101	WAYLAND, MA
L0404510-02	MW-261S	WAYLAND, MA
L0404510-03	DUP-11	WAYLAND, MA
L0404510-04	MW-264M	WAYLAND, MA
L0404510-05	MW-266MB	WAYLAND, MA

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0404510

Report Submission

In reference to question F, at the client's request, the samples were analyzed only for the compounds specified on the chain of custody.

Volatile Organics

L0404510-02, and -03 have elevated limits of detection due to the 100x dilutions required by the elevated concentrations of target compounds in the sample.

L0404510-04 has elevated limits of detection due to the 2x dilutions required by the elevated concentrations of target compounds in the sample.

L0404510-05 has elevated limits of detection due to the 10x dilutions required by the elevated concentrations of target compounds in the sample.

In reference to question E, the LCS associated with -02 and -03 has low recoveries for bromomethane and 1,4-dioxane, both difficult analytes.

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: L0404510-01
HA-101
Sample Matrix: WATER

Date Collected: 30-APR-2004 09:00
Date Received : 30-APR-2004
Date Reported : 07-MAY-2004

Condition of Sample: Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 3-Plastic

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Metals							
Arsenic, Dissolved	ND	mg/l	0.005	54 6010B	0503 13:00	0504 14:41	MG

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: L0404510-02
MW-261S
Sample Matrix: WATER

Date Collected: 30-APR-2004 11:40
Date Received : 30-APR-2004
Date Reported : 07-MAY-2004

Condition of Sample: Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Alkalinity, Total	49.	mg CaCO3/L	2.0	30	2320B		0506 16:17	ED
Chloride	6.9	mg/l	1.0	1	9251		0503 22:32	DD
Nitrogen, Nitrate	ND	mg/l	0.10	30	4500NO3-F		0430 21:57	DD
Sulfate	32.	mg/l	10.	1	9038		0506 16:50	JT
Dissolved Metals								
Iron, Dissolved	9.5	mg/l	0.05	54	6010B	0503 13:00	0504 14:45	MG
Manganese, Dissolved	0.33	mg/l	0.01	54	6010B	0503 13:00	0504 14:45	MG
Volatile Organics by MCP 8260B				54	8260B		0506 02:40	RY
Methylene chloride	ND	ug/l	500					
1,1-Dichloroethane	ND	ug/l	75.					
Chloroform	ND	ug/l	75.					
Carbon tetrachloride	ND	ug/l	50.					
1,2-Dichloropropane	ND	ug/l	180					
Dibromochloromethane	ND	ug/l	50.					
1,1,2-Trichloroethane	ND	ug/l	75.					
Tetrachloroethene	58.	ug/l	50.					
Chlorobenzene	ND	ug/l	50.					
1,2-Dichloroethane	ND	ug/l	50.					
1,1,1-Trichloroethane	ND	ug/l	50.					
Bromodichloromethane	ND	ug/l	50.					
trans-1,3-Dichloropropene	ND	ug/l	50.					
cis-1,3-Dichloropropene	ND	ug/l	50.					
Bromoform	ND	ug/l	200					
1,1,2,2-Tetrachloroethane	ND	ug/l	50.					
Chloromethane	ND	ug/l	250					
Vinyl chloride	ND	ug/l	100					
Chloroethane	ND	ug/l	100					
1,1-Dichloroethene	ND	ug/l	50.					
trans-1,2-Dichloroethene	ND	ug/l	75.					
Trichloroethene	3900	ug/l	50.					
1,2-Dichlorobenzene	ND	ug/l	250					
1,3-Dichlorobenzene	ND	ug/l	250					
1,4-Dichlorobenzene	ND	ug/l	250					

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0404510-02
MW-261S

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				54 8260B		0506 02:40	RY
cis-1,2-Dichloroethene	120	ug/l	50.				
Dichlorodifluoromethane	ND	ug/l	500				
1,2-Dibromoethane	ND	ug/l	200				
1,3-Dichloropropane	ND	ug/l	250				
1,1,1,2-Tetrachloroethane	ND	ug/l	50.				
o-Chlorotoluene	ND	ug/l	250				
p-Chlorotoluene	ND	ug/l	250				
Hexachlorobutadiene	ND	ug/l	100				
1,2,4-Trichlorobenzene	ND	ug/l	250				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	96.0	%	70-130				
Toluene-d8	99.0	%	70-130				
4-Bromofluorobenzene	127.	%	70-130				
Dibromofluoromethane	99.0	%	70-130				

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: L0404510-03
DUP-11
Sample Matrix: WATER

Date Collected: 30-APR-2004 00:00
Date Received : 30-APR-2004
Date Reported : 07-MAY-2004

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B				54 8260B		0506 03:17	RY
Methylene chloride	ND	ug/l	500				
1,1-Dichloroethane	ND	ug/l	75.				
Chloroform	ND	ug/l	75.				
Carbon tetrachloride	ND	ug/l	50.				
1,2-Dichloropropane	ND	ug/l	180				
Dibromochloromethane	ND	ug/l	50.				
1,1,2-Trichloroethane	ND	ug/l	75.				
Tetrachloroethene	60.	ug/l	50.				
Chlorobenzene	ND	ug/l	50.				
1,2-Dichloroethane	ND	ug/l	50.				
1,1,1-Trichloroethane	ND	ug/l	50.				
Bromodichloromethane	ND	ug/l	50.				
trans-1,3-Dichloropropene	ND	ug/l	50.				
cis-1,3-Dichloropropene	ND	ug/l	50.				
Bromoform	ND	ug/l	200				
1,1,2,2-Tetrachloroethane	ND	ug/l	50.				
Chloromethane	ND	ug/l	250				
Vinyl chloride	ND	ug/l	100				
Chloroethane	ND	ug/l	100				
1,1-Dichloroethene	ND	ug/l	50.				
trans-1,2-Dichloroethene	ND	ug/l	75.				
Trichloroethene	4200	ug/l	50.				
1,2-Dichlorobenzene	ND	ug/l	250				
1,3-Dichlorobenzene	ND	ug/l	250				
1,4-Dichlorobenzene	ND	ug/l	250				
cis-1,2-Dichloroethene	130	ug/l	50.				
Dichlorodifluoromethane	ND	ug/l	500				
1,2-Dibromoethane	ND	ug/l	200				
1,3-Dichloropropane	ND	ug/l	250				
1,1,1,2-Tetrachloroethane	ND	ug/l	50.				
o-Chlorotoluene	ND	ug/l	250				
p-Chlorotoluene	ND	ug/l	250				
Hexachlorobutadiene	ND	ug/l	100				
1,2,4-Trichlorobenzene	ND	ug/l	250				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0404510-03
DUP-11

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				54 8260B		0506 03:17	RY
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	97.0	%	70-130				
Toluene-d8	100.	%	70-130				
4-Bromofluorobenzene	127.	%	70-130				
Dibromofluoromethane	98.0	%	70-130				

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: L0404510-04
MW-264M
Sample Matrix: WATER

Date Collected: 30-APR-2004 13:15
Date Received : 30-APR-2004
Date Reported : 07-MAY-2004

Condition of Sample: Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Alkalinity, Total	72.	mg CaCO3/L	2.0	30	2320B		0506 16:17	ED
Chloride	30.	mg/l	1.0	1	9251		0503 20:47	DD
Nitrogen, Nitrate	ND	mg/l	0.10	30	4500NO3-F		0430 21:58	DD
Sulfate	18.	mg/l	10.	1	9038		0506 16:50	JT
Dissolved Metals								
Iron, Dissolved	11.	mg/l	0.05	54	6010B	0503 13:00	0504 14:48	MG
Manganese, Dissolved	0.35	mg/l	0.01	54	6010B	0503 13:00	0504 14:48	MG
Volatile Organics by MCP 8260B				54	8260B		0506 12:16	RY
Methylene chloride	ND	ug/l	10.					
1,1-Dichloroethane	ND	ug/l	1.5					
Chloroform	ND	ug/l	1.5					
Carbon tetrachloride	ND	ug/l	1.0					
1,2-Dichloropropane	ND	ug/l	3.5					
Dibromochloromethane	ND	ug/l	1.0					
1,1,2-Trichloroethane	ND	ug/l	1.5					
Tetrachloroethene	7.5	ug/l	1.0					
Chlorobenzene	ND	ug/l	1.0					
1,2-Dichloroethane	ND	ug/l	1.0					
1,1,1-Trichloroethane	ND	ug/l	1.0					
Bromodichloromethane	ND	ug/l	1.0					
trans-1,3-Dichloropropene	ND	ug/l	1.0					
cis-1,3-Dichloropropene	ND	ug/l	1.0					
Bromoform	ND	ug/l	4.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0					
Chloromethane	ND	ug/l	5.0					
Vinyl chloride	10.	ug/l	2.0					
Chloroethane	ND	ug/l	2.0					
1,1-Dichloroethene	ND	ug/l	1.0					
trans-1,2-Dichloroethene	ND	ug/l	1.5					
Trichloroethene	67.	ug/l	1.0					
1,2-Dichlorobenzene	ND	ug/l	5.0					
1,3-Dichlorobenzene	ND	ug/l	5.0					
1,4-Dichlorobenzene	ND	ug/l	5.0					

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0404510-04
MW-264M

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				54 8260B		0506 12:16	RY
cis-1,2-Dichloroethene	88.	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	10.				
1,2-Dibromoethane	ND	ug/l	4.0				
1,3-Dichloropropane	ND	ug/l	5.0				
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0				
o-Chlorotoluene	ND	ug/l	5.0				
p-Chlorotoluene	ND	ug/l	5.0				
Hexachlorobutadiene	ND	ug/l	2.0				
1,2,4-Trichlorobenzene	ND	ug/l	5.0				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	96.0	%	70-130				
Toluene-d8	98.0	%	70-130				
4-Bromofluorobenzene	118.	%	70-130				
Dibromofluoromethane	97.0	%	70-130				

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: L0404510-05
MW-266MB
Sample Matrix: WATER

Date Collected: 30-APR-2004 15:50
Date Received : 30-APR-2004
Date Reported : 07-MAY-2004

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Alkalinity, Total	71.	mg CaCO3/L	2.0	30	2320B		0506 16:17	ED
Chloride	7.8	mg/l	1.0	1	9251		0503 20:48	DD
Nitrogen, Nitrate	ND	mg/l	0.10	30	4500NO3-F		0430 21:59	DD
Sulfate	26.	mg/l	10.	1	9038		0506 16:50	JT
Dissolved Metals								
Iron, Dissolved	20.	mg/l	0.05	54	6010B	0503 13:00	0504 14:52	MG
Manganese, Dissolved	0.16	mg/l	0.01	54	6010B	0503 13:00	0504 14:52	MG
Volatile Organics by MCP 8260B				54	8260B		0506 12:53	RY
Methylene chloride	ND	ug/l	50.					
1,1-Dichloroethane	ND	ug/l	7.5					
Chloroform	ND	ug/l	7.5					
Carbon tetrachloride	ND	ug/l	5.0					
1,2-Dichloropropane	ND	ug/l	18.					
Dibromochloromethane	ND	ug/l	5.0					
1,1,2-Trichloroethane	ND	ug/l	7.5					
Tetrachloroethene	43.	ug/l	5.0					
Chlorobenzene	ND	ug/l	5.0					
1,2-Dichloroethane	ND	ug/l	5.0					
1,1,1-Trichloroethane	ND	ug/l	5.0					
Bromodichloromethane	ND	ug/l	5.0					
trans-1,3-Dichloropropene	ND	ug/l	5.0					
cis-1,3-Dichloropropene	ND	ug/l	5.0					
Bromoform	ND	ug/l	20.					
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0					
Chloromethane	ND	ug/l	25.					
Vinyl chloride	ND	ug/l	10.					
Chloroethane	ND	ug/l	10.					
1,1-Dichloroethene	ND	ug/l	5.0					
trans-1,2-Dichloroethene	ND	ug/l	7.5					
Trichloroethene	370	ug/l	5.0					
1,2-Dichlorobenzene	ND	ug/l	25.					
1,3-Dichlorobenzene	ND	ug/l	25.					
1,4-Dichlorobenzene	ND	ug/l	25.					

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0404510-05
MW-266MB

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				54 8260B		0506 12:53	RY
cis-1,2-Dichloroethene	230	ug/l	5.0				
Dichlorodifluoromethane	ND	ug/l	50.				
1,2-Dibromoethane	ND	ug/l	20.				
1,3-Dichloropropane	ND	ug/l	25.				
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0				
o-Chlorotoluene	ND	ug/l	25.				
p-Chlorotoluene	ND	ug/l	25.				
Hexachlorobutadiene	ND	ug/l	10.				
1,2,4-Trichlorobenzene	ND	ug/l	25.				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	93.0	%	70-130				
Toluene-d8	100.	%	70-130				
4-Bromofluorobenzene	123.	%	70-130				
Dibromofluoromethane	98.0	%	70-130				

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0404510

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Alkalinity, Total for sample(s) 02,04-05 (L0404519-02, WG169895)					
Alkalinity, Total	38.	38.	mg CaCO3/L	0	4
Chloride for sample(s) 02,04-05 (L0404515-01, WG169565)					
Chloride	320	320	mg/l	0	7
Nitrogen, Nitrate for sample(s) 02,04-05 (L0404477-03, WG169426)					
Nitrogen, Nitrate	ND	ND	mg/l	NC	6
Sulfate for sample(s) 02,04-05 (L0404309-03, WG169909)					
Sulfate	130	130	mg/l	0	14

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0404510

Parameter	% Recovery	QC Criteria
Alkalinity, Total LCS for sample(s) 02,04-05 (WG169895)		
Alkalinity, Total	106	85-115
Chloride LCS for sample(s) 02,04-05 (WG169565)		
Chloride	97	84-110
Nitrogen, Nitrate LCS for sample(s) 02,04-05 (WG169426)		
Nitrogen, Nitrate	98	88-105
Sulfate LCS for sample(s) 02,04-05 (WG169909)		
Sulfate	100	84-108
Dissolved Metals LCS for sample(s) 01-02,04-05 (WG169601)		
Arsenic, Dissolved	109	80-120
Iron, Dissolved	100	80-120
Manganese, Dissolved	102	80-120
Volatile Organics by MCP 8260B LCS for sample(s) 04-05 (WG169886)		
Methylene chloride	90	70-130
1,1-Dichloroethane	104	70-130
Chloroform	91	70-130
Carbon tetrachloride	98	70-130
1,2-Dichloropropane	96	70-130
Dibromochloromethane	83	70-130
1,1,2-Trichloroethane	85	70-130
Tetrachloroethene	89	70-130
Chlorobenzene	94	70-130
1,2-Dichloroethane	92	70-130
1,1,1-Trichloroethane	95	70-130
Bromodichloromethane	93	70-130
trans-1,3-Dichloropropene	78	70-130
cis-1,3-Dichloropropene	88	70-130
Bromoform	83	70-130
1,1,2,2-Tetrachloroethane	95	70-130
Chloromethane	88	70-130
Vinyl chloride	93	70-130
Chloroethane	99	70-130
1,1-Dichloroethene	86	70-130
trans-1,2-Dichloroethene	94	70-130
Trichloroethene	94	70-130
1,2-Dichlorobenzene	94	70-130
1,3-Dichlorobenzene	96	70-130
1,4-Dichlorobenzene	95	70-130
cis-1,2-Dichloroethene	96	70-130
Dichlorodifluoromethane	83	70-130
1,2-Dibromoethane	101	70-130
1,3-Dichloropropane	89	70-130
1,1,1,2-Tetrachloroethane	86	70-130
o-Chlorotoluene	102	70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0404510

Continued

Parameter	% Recovery	QC Criteria
Volatile Organics by MCP 8260B LCS for sample(s) 04-05 (WG169886)		
p-Chlorotoluene	102	70-130
Hexachlorobutadiene	111	70-130
1,2,4-Trichlorobenzene	105	70-130
Surrogate(s)		
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130
Dibromofluoromethane	101	70-130
Volatile Organics by MCP 8260B LCS for sample(s) 02-03 (WG169846)		
Methylene chloride	88	70-130
1,1-Dichloroethane	101	70-130
Chloroform	88	70-130
Carbon tetrachloride	95	70-130
1,2-Dichloropropane	94	70-130
Dibromochloromethane	75	70-130
1,1,2-Trichloroethane	78	70-130
Tetrachloroethene	83	70-130
Chlorobenzene	88	70-130
Trichlorofluoromethane	86	70-130
1,2-Dichloroethane	89	70-130
1,1,1-Trichloroethane	92	70-130
Bromodichloromethane	87	70-130
trans-1,3-Dichloropropene	73	70-130
cis-1,3-Dichloropropene	86	70-130
1,1-Dichloropropene	88	70-130
Bromoform	74	70-130
1,1,2,2-Tetrachloroethane	87	70-130
Benzene	94	70-130
Toluene	86	70-130
Ethylbenzene	89	70-130
Chloromethane	86	70-130
Bromomethane	51	70-130
Vinyl chloride	90	70-130
Chloroethane	92	70-130
1,1-Dichloroethene	85	70-130
trans-1,2-Dichloroethene	88	70-130
Trichloroethene	93	70-130
1,2-Dichlorobenzene	86	70-130
1,3-Dichlorobenzene	87	70-130
1,4-Dichlorobenzene	87	70-130
Methyl tert butyl ether	90	70-130
p/m-Xylene	92	70-130
o-Xylene	86	70-130
cis-1,2-Dichloroethene	94	70-130
Dibromomethane	90	70-130
1,2,3-Trichloropropane	88	70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0404510

Continued

Parameter	% Recovery	QC Criteria
Volatile Organics by MCP 8260B LCS for sample(s) 02-03 (WG169846)		
Styrene	86	70-130
Dichlorodifluoromethane	86	70-130
Acetone	90	70-130
Carbon disulfide	84	70-130
2-Butanone	92	70-130
4-Methyl-2-pentanone	85	70-130
2-Hexanone	88	70-130
Bromochloromethane	91	70-130
Tetrahydrofuran	104	70-130
2,2-Dichloropropane	100	70-130
1,2-Dibromoethane	89	70-130
1,3-Dichloropropane	82	70-130
1,1,1,2-Tetrachloroethane	82	70-130
Bromobenzene	82	70-130
n-Butylbenzene	97	70-130
sec-Butylbenzene	99	70-130
tert-Butylbenzene	99	70-130
o-Chlorotoluene	93	70-130
p-Chlorotoluene	92	70-130
1,2-Dibromo-3-chloropropane	78	70-130
Hexachlorobutadiene	104	70-130
Isopropylbenzene	91	70-130
p-Isopropyltoluene	98	70-130
Naphthalene	89	70-130
n-Propylbenzene	98	70-130
1,2,3-Trichlorobenzene	93	70-130
1,2,4-Trichlorobenzene	99	70-130
1,3,5-Trimethylbenzene	98	70-130
1,2,4-Trimethylbenzene	97	70-130
Ethyl ether	86	70-130
Isopropyl Ether	106	70-130
Ethyl-Tert-Butyl-Ether	94	70-130
Tertiary-Amyl Methyl Ether	88	70-130
1,4-Dioxane	64	70-130
Surrogate(s)		
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130
Dibromofluoromethane	99	70-130
Alkalinity, Total SPIKE for sample(s) 02,04-05 (L0404515-03, WG169895)		
Alkalinity, Total	96	86-116
Chloride SPIKE for sample(s) 02,04-05 (L0404515-01, WG169565)		
Chloride	150	58-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0404510

Continued

Parameter	% Recovery	QC Criteria
Nitrogen, Nitrate SPIKE for sample(s) 02,04-05 (L0404477-03, WG169426)		
Nitrogen, Nitrate	98	83-120
Sulfate SPIKE for sample(s) 02,04-05 (L0404180-04, WG169909)		
Sulfate	105	55-147

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0404510

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 02,04-05 (WG169895-1)								
Alkalinity, Total	ND	mg CaCO3/L	2.0	30	2320B		0506 16:17	ED
Blank Analysis for sample(s) 02,04-05 (WG169565-2)								
Chloride	ND	mg/l	1.0	1	9251		0503 20:37	DD
Blank Analysis for sample(s) 02,04-05 (WG169426-2)								
Nitrogen, Nitrate	ND	mg/l	0.10	30	4500NO3-F		0430 21:40	DD
Blank Analysis for sample(s) 02,04-05 (WG169909-1)								
Sulfate	ND	mg/l	10.	1	9038		0506 16:50	JT
Blank Analysis for sample(s) 01-02,04-05 (WG169601-1)								
Dissolved Metals								
Arsenic, Dissolved	ND	mg/l	0.005	54	6010B	0503 13:00	0504 14:22	MG
Iron, Dissolved	ND	mg/l	0.05	54	6010B	0503 13:00	0504 14:22	MG
Manganese, Dissolved	ND	mg/l	0.01	54	6010B	0503 13:00	0504 14:22	MG
Blank Analysis for sample(s) 02-03 (WG169846-4)								
Volatile Organics by MCP 8260B				54	8260B		0505 16:51	RY
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Chloroform	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,2-Dichloropropane	ND	ug/l	1.8					
Dibromochloromethane	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
Chlorobenzene	ND	ug/l	0.50					
Trichlorofluoromethane	ND	ug/l	2.5					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Bromodichloromethane	ND	ug/l	0.50					
trans-1,3-Dichloropropene	ND	ug/l	0.50					
cis-1,3-Dichloropropene	ND	ug/l	0.50					
1,1-Dichloropropene	ND	ug/l	2.5					
Bromoform	ND	ug/l	2.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Chloromethane	ND	ug/l	2.5					
Bromomethane	ND	ug/l	1.0					
Vinyl chloride	ND	ug/l	1.0					

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0404510

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 02-03 (WG169846-4)							
Volatile Organics by MCP 8260B continued				54 8260B		0505 16:51	RY
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Isopropyl Ether	ND	ug/l	2.0				
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0				
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0				
1,4-Dioxane	ND	ug/l	250				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0404510

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 02-03 (WG169846-4)							
Volatile Organics by MCP 8260B continued				54 8260B		0505 16:51	RY
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	97.0	%	70-130				
Toluene-d8	97.0	%	70-130				
4-Bromofluorobenzene	122.	%	70-130				
Dibromofluoromethane	98.0	%	70-130				
Blank Analysis for sample(s) 04-05 (WG169886-2)							
Volatile Organics by MCP 8260B				54 8260B		0506 09:44	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	93.0	%	70-130				
Toluene-d8	100.	%	70-130				
4-Bromofluorobenzene	121.	%	70-130				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0404510

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 04-05 (WG169886-2)							
Volatile Organics by MCP 8260B continued				54 8260B		0506 09:44	RY
Dibromofluoromethane	97.0	%	70-130				

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

54. Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods. MADEP BWSC. Final Methods. May 2003.

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.

ALPHA ANALYTICAL LABORATORIES
LOGIN SPECIFIC INFORMATION

Laboratory Job Number: L0404510

Were project specific reporting limits specified? NO

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0404510-01A	Plastic 120ml HNO3 preserved	A	<2	1.2 C	Y	Absent	AS-SI
L0404510-01B	Plastic 120ml HNO3 preserved	A	<2	1.2 C	Y	Absent	AS-SI
L0404510-01C	Plastic 120ml HNO3 preserved	A	<2	1.2 C	Y	Absent	AS-SI
L0404510-02A	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-02B	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-02C	Plastic 250ml unpreserved	A	7	1.2 C	Y	Absent	ALK-T-2320, CL-9251, NO3-4500, SO4-9038
L0404510-02D	Plastic 250ml HNO3 preserved	A	<2	1.2 C	Y	Absent	FE-SI, MN-SI
L0404510-03A	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-03B	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-04A	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-04B	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-04C	Plastic 250ml unpreserved	A	7	1.2 C	Y	Absent	ALK-T-2320, CL-9251, NO3-4500, SO4-9038
L0404510-04D	Plastic 250ml HNO3 preserved	A	<2	1.2 C	Y	Absent	FE-SI, MN-SI
L0404510-05A	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-05B	Vial HCl preserved	A	NA	1.2 C	Y	Absent	MCP-8260
L0404510-05C	Plastic 250ml unpreserved	A	7	1.2 C	Y	Absent	ALK-T-2320, CL-9251, NO3-4500, SO4-9038
L0404510-05D	Plastic 250ml HNO3 preserved	A	<2	1.2 C	Y	Absent	FE-SI, MN-SI

Container Comments

Container ID	Comments

CHAIN OF CUSTODY

PAGE 1 OF ___

Date Rec'd in Lab: 4/30/04

ALPHA Job #: L0404510

ALPHA
Eight Walkup Drive Westborough, MA 01581
TEL: 508-898-9220 FAX: 508-898-9193

Client Information

Client: ERM
Address: 399 Boylston St
Boston, MA
Phone: 617 646 7800
Fax: 617 267 6447
Email: [illegible]@erm.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Raytheon
Project Location: Wayland, MA
Project #: 0013606.03.02
Project Manager: J Ricard
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due: 5/7/04 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:

SAMPLE HANDLING

Filtration
☒ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: 8021B Chlorinated	Dissolved Gases	Cl, NO3, SO4, Alk	Diss Fe, Mn*	Diss Arsenic*	Sample Specific Comments	TOTAL # BOTTLES
C4510.1	WA-101	4-30-04	0900	GW	BT					3	*Filtered using	3
2	MW-2615	4-30-04	1140	GW	BT	2	2	1	1	*	0.45 micron	6
3	DUP-11	4-30-04	2400	GW	BT	2					filter	2
4	MW-264M	4-30-04	1315	GW	BT	2	2	1	1			6
5	MW-266M6	4-30-04	1530	GW	BT	2	2	1	1			6

Container Type	V	V	P	P	P
Preservative	B	B	A	C	C

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible signature]	4/30/04 1710	[illegible signature]	4/30/04 17:15
[illegible signature]	4/30/04 1845	[illegible signature]	4/30/04 18[illegible]

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.

FORM rO 07-03 sld