

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 Laboratory Job Number: L0404523
Address: 399 Boylston Street
6th Floor
Boston, MA 02116 Date Received: 30-APR-2004
Attn: Jeremy Picard Date Reported: 07-MAY-2004
Project Number: 13606.03.02 Delivery Method: Alpha
Site: RAYTHEON

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? YES
- 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: L0404523
Date Reported: 07-MAY-2004

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0404523-01	MW-45D	WAYLAND, MA
L0404523-02	MW-45B	WAYLAND, MA
L0404523-03	MW-45M	WAYLAND, MA
L0404523-04	MW-45S	WAYLAND, MA

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0404523

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

L0404523-01 has elevated limits of detection due to the 2x dilutions required by the elevated concentrations of target compounds in the sample.

L0404523-03 has elevated limits of detection due to the 2.5x dilutions required by the elevated concentrations of target compounds in the sample.

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0404523-01
 MW-45D

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				54 8260B	0506 20:48 RY		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	99.0	%		70-130			
Toluene-d8	99.0	%		70-130			
4-Bromofluorobenzene	124.	%		70-130			
Dibromofluoromethane	100.	%		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: L0404523-02	Date Collected: 30-APR-2004 11:57
MW-45B	Date Received : 30-APR-2004
Sample Matrix: WATER	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 ANAL	ID
Volatile Organics by MCP 8260B				54 8260B	0506 21:25 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	63.	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	3.6	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			

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0404523-02
MW-45B

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				54 8260B	0506 21:25 RY		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	97.0	%		70-130			
Toluene-d8	98.0	%		70-130			
4-Bromofluorobenzene	129.	%		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**

Laboratory Sample Number: L0404523-03
MW-45M

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				54 8260B	0506 22:02 RY		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	95.0	%		70-130			
Toluene-d8	98.0	%		70-130			
4-Bromofluorobenzene	124.	%		70-130			
Dibromofluoromethane	96.0	%		70-130			

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0404523-04
MW-45S

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				54 8260B	0506 22:39 RY		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	98.0	%		70-130			
Toluene-d8	96.0	%		70-130			
4-Bromofluorobenzene	129.	%		70-130			
Dibromofluoromethane	97.0	%		70-130			

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0404523

Parameter	% Recovery	QC Criteria
Volatile Organics by MCP 8260B LCS for sample(s) 01-04 (WG169886)		
Methylene chloride	92	70-130
1,1-Dichloroethane	102	70-130
Chloroform	90	70-130
Carbon tetrachloride	95	70-130
1,2-Dichloropropane	93	70-130
Dibromochloromethane	77	70-130
1,1,2-Trichloroethane	79	70-130
Tetrachloroethene	83	70-130
Chlorobenzene	89	70-130
1,2-Dichloroethane	90	70-130
1,1,1-Trichloroethane	93	70-130
Bromodichloromethane	89	70-130
trans-1,3-Dichloropropene	72	70-130
cis-1,3-Dichloropropene	86	70-130
Bromoform	72	70-130
1,1,2,2-Tetrachloroethane	89	70-130
Chloromethane	86	70-130
Vinyl chloride	89	70-130
Chloroethane	91	70-130
1,1-Dichloroethene	85	70-130
trans-1,2-Dichloroethene	89	70-130
Trichloroethene	93	70-130
1,2-Dichlorobenzene	87	70-130
1,3-Dichlorobenzene	89	70-130
1,4-Dichlorobenzene	88	70-130
cis-1,2-Dichloroethene	95	70-130
Dichlorodifluoromethane	77	70-130
1,2-Dibromoethane	90	70-130
1,3-Dichloropropane	83	70-130
1,1,1,2-Tetrachloroethane	82	70-130
o-Chlorotoluene	93	70-130
p-Chlorotoluene	96	70-130
Hexachlorobutadiene	106	70-130
1,2,4-Trichlorobenzene	103	70-130
Surrogate(s)		
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130
Dibromofluoromethane	100	70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0404523

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-04 (WG169886-4)							
Volatile Organics by MCP 8260B				54 8260B	0506 17:06 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	98.0	%	70-130				
Toluene-d8	99.0	%	70-130				
4-Bromofluorobenzene	121.	%	70-130				
Dibromofluoromethane	99.0	%	70-130				

**ALPHA ANALYTICAL LABORATORIES
ADDENDUM I**

REFERENCES

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: L0404523

Were project specific reporting limits specified? NO

Cooler Information

Cooler Custody Seal

B Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0404523-01A	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260
L0404523-01B	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260
L0404523-02A	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260
L0404523-02B	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260
L0404523-03A	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260
L0404523-03B	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260
L0404523-04A	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260
L0404523-04B	Vial HCl preserved	B	NA	0.8 C	Y	Absent	MCP-8260

Container Comments

Container ID Comments



CHAIN OF CUSTODY

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

Client Information

Client: **ERM**

Address: **399 Baylston St. Fl. 6 Boston, MA 02116**

Phone: **617-646-7800**

Fax: **617-267-6447**

Email: **theresa.kennedy@erm.com**

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Project Information

Project Name: **Raytheon**

Project Location: **Newland, MA**

Project # **13606.03.02**

Project Manager: **J Piroard**

ALPHA Quote #:

Turn-Around Time

Standard

Date Due: **5/7/04** Time:

RUSH (only confirmed if pre-approved!)

Date Recd in Lab: **4/30/04**

Report Information - Data Deliverables

FAX EMAIL

ADEX Addl Deliverables

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?

ALPHA Job #: **LCYCH523**

Billing Information

Same as Client info PO #:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		

ANALYSIS		80218. CHROMATED	
<input type="checkbox"/> Filtration <input type="checkbox"/> Done <input checked="" type="checkbox"/> Not needed <input type="checkbox"/> Lab to do <input type="checkbox"/> Preservation <input type="checkbox"/> Lab to do <small>(Please specify below)</small>			
Sample Specific Comments			

CH523.1	MW-45 D	4/30/04	1022	GU	N6	2			
2	MW-45 B	4/30/04	1157	GU	N6	2			
3	MW-45 M	4/30/04	1557	GU	N6	2			
4	MW-45 S	4/30/04	1312	GU	N6	2			

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

Container Type Preservative	B
Relinquished By:	[Signature]
Date/Time	4/30/04 4:30 PM
Received By:	[Signature]
Date/Time	4/30/04 4:30 PM

IS YOUR PROJECT MCP ?

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.