

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
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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: L0404378
Address: 399 Boylston Street
6th Floor
Boston, MA 02116 Date Received: 28-APR-2004
Attn: Jeremy Picard Date Reported: 05-MAY-2004
Project Number: 0013606.06 Delivery Method: Alpha
Site: RAYTHEON-WAYLAND

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: James Todaro
This document electronically signed

ALPHA ANALYTICAL LABORATORIES

Laboratory Job Number: L0404378
Date Reported: 05-MAY-2004

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0404378-01	MW-204M	WAYLAND, MA
L0404378-02	MW-204S	WAYLAND, MA
L0404378-03	MW-204D	WAYLAND, MA
L0404378-04	MW-202M	WAYLAND, MA
L0404378-05	DUP-5	WAYLAND, MA
L0404378-06	MW-202S	WAYLAND, MA
L0404378-07	MW-203S	WAYLAND, MA

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0404378

MCP Related Narratives:

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.

Metals

L0404378-01, -02, and -07 required a 5x dilution. Dilution was necessary due to the concentration of sodium in the sample.

L0404378-03 through -05 required a 2x dilution. Dilution was necessary due to the concentration of sodium in the sample.

L0404378-06 required a 20x dilution. Dilution was necessary due to the concentration of sodium in the sample.

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: L0404378-01 Date Collected: 27-APR-2004 16:15
MW-204M Date Received : 28-APR-2004
Sample Matrix: WATER Date Reported : 05-MAY-2004
Condition of Sample: Satisfactory Field Prep: Field Filtered
Number & Type of Containers: 2-Plastic

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Chloride	66.	mg/l	1.0	1 9251		0429 23:45	DD
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A	0428 21:30	0428 21:30	JT
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:11	RW
Manganese, Dissolved	0.13	mg/l	0.01	54 6010B		0503 13:11	RW
Sodium, Dissolved	30.	mg/l	10.	54 6010B		0503 16:26	RW

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: L0404378-02 Date Collected: 27-APR-2004 16:20
 MW-204S Date Received : 28-APR-2004
 Sample Matrix: WATER Date Reported : 05-MAY-2004
 Condition of Sample: Satisfactory Field Prep: Field Filtered
 Number & Type of Containers: 2-Plastic

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Chloride	73.	mg/l	1.0	1 9251		0429 21:19	DD
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A	0428 21:30	0428 21:30	JT
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:14	RW
Manganese, Dissolved	0.03	mg/l	0.01	54 6010B		0503 13:14	RW
Sodium, Dissolved	62.	mg/l	10.	54 6010B		0503 16:29	RW

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: L0404378-03	Date Collected: 28-APR-2004 10:35
MW-204D	Date Received : 28-APR-2004
Sample Matrix: WATER	Date Reported : 05-MAY-2004
Condition of Sample: Satisfactory	Field Prep: Field Filtered
Number & Type of Containers: 2-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Chloride	74.	mg/l	1.0	1 9251		0429 21:19	DD
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A		0428 21:30	0428 21:30 JT
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:17	RW
Manganese, Dissolved	0.69	mg/l	0.01	54 6010B		0503 13:17	RW
Sodium, Dissolved	30.	mg/l	4.0	54 6010B		0503 16:32	RW

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: L0404378-04 Date Collected: 28-APR-2004 14:00
MW-202M Date Received: 28-APR-2004
Sample Matrix: WATER Date Reported: 05-MAY-2004
Condition of Sample: Satisfactory Field Prep: Field Filtered
Number & Type of Containers: 2-Plastic

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Chloride	33.	mg/l	1.0	1 9251		0429 21:20	DD
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A	0428 21:30	0428 21:30	JT
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:20	RW
Manganese, Dissolved	0.13	mg/l	0.01	54 6010B		0503 13:20	RW
Sodium, Dissolved	20.	mg/l	4.0	54 6010B		0503 16:34	RW

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: L0404378-05	Date Collected: 28-APR-2004 00:00
DUP-5	Date Received : 28-APR-2004
Sample Matrix: WATER	Date Reported : 05-MAY-2004
Condition of Sample: Satisfactory	Field Prep: Field Filtered
Number & Type of Containers: 2-Plastic	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Chloride	31.	mg/l	1.0	1 9251		0429 21:20	DD
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A	0428 21:30	0428 21:30	JT
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:22	RW
Manganese, Dissolved	0.12	mg/l	0.01	54 6010B		0503 13:22	RW
Sodium, Dissolved	20.	mg/l	4.0	54 6010B		0503 16:37	RW

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: L0404378-06 Date Collected: 28-APR-2004 15:17
MW-202S Date Received : 28-APR-2004
Sample Matrix: WATER Date Reported : 05-MAY-2004
Condition of Sample: Satisfactory Field Prep: Field Filtered
Number & Type of Containers: 2-Plastic

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Chloride	98.	mg/l	1.0	1 9251		0429 21:23 DD	
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A		0428 21:30 0428 21:30 JT	
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:34 RW	
Manganese, Dissolved	0.01	mg/l	0.01	54 6010B		0503 13:34 RW	
Sodium, Dissolved	140	mg/l	40.	54 6010B		0503 16:40 RW	

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: L0404378-07
 Date Collected: 28-APR-2004 17:00
 MW-203S
 Date Received : 28-APR-2004
 Sample Matrix: WATER
 Date Reported : 05-MAY-2004
 Condition of Sample: Satisfactory
 Field Prep: Field Filtered
 Number & Type of Containers: 2-Plastic

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Chloride	16.	mg/l	1.0	1 9251		0429 23:46	DD
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A	0428 21:30	0428 21:30	JT
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:37	RW
Manganese, Dissolved	ND	mg/l	0.01	54 6010B		0503 13:37	RW
Sodium, Dissolved	61.	mg/l	10.	54 6010B		0503 13:41	RW

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0404378

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Chloride for sample(s) 01-07 (L0404322-06, WG169288)					
Chloride	260	260	mg/l	0	7
Hexavalent Chromium by MCP 7196A for sample(s) 01-07 (L0404378-05, WG169146)					
Chromium, Hexavalent	ND	ND	mg/l	NC	20

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0404378

Parameter	% Recovery	QC Criteria
Chloride LCS for sample(s) 01-07 (WG169288)		
Chloride	100	84-110
Hexavalent Chromium by MCP 7196A LCS for sample(s) 01-07 (WG169146)		
Chromium, Hexavalent	105	80-120
Dissolved Metals LCS for sample(s) 01-07 (WG169492)		
Chromium, Dissolved	100	80-120
Manganese, Dissolved	98	80-120
Sodium, Dissolved	98	80-120
Chloride SPIKE for sample(s) 01-07 (L0404322-06, WG169288)		
Chloride	100	58-140
Hexavalent Chromium by MCP 7196A SPIKE for sample(s) 01-07 (L0404378-06, WG169146)		
Chromium, Hexavalent	100	75-125

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0404378

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-07 (WG169288-2)							
Chloride	ND	mg/l	1.0	1 9251		0429 21:05	DD
Blank Analysis for sample(s) 01-07 (WG169146-1)							
Hexavalent Chromium by MCP 7196A							
Chromium, Hexavalent	ND	mg/l	0.02	55 7196A		0428 21:30	0428 21:30 JT
Blank Analysis for sample(s) 01-07 (WG169492-1)							
Dissolved Metals							
Chromium, Dissolved	ND	mg/l	0.01	54 6010B		0503 12:26	RW
Manganese, Dissolved	ND	mg/l	0.01	54 6010B		0503 12:26	RW
Sodium, Dissolved	ND	mg/l	2.0	54 6010B		0503 12:26	RW

**ALPHA ANALYTICAL LABORATORIES
ADDENDUM I**

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
54. Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods. MADEP BWSC. Final Methods. May 2003.
55. Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods. MADEP BWSC. Final Methods. 30 July 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: L0404378

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
L0404378-01A	Plastic 250ml unpreserved	A	7	1.7 C	Y	Absent	CL-9251, MCP-HEXCR-7196
L0404378-01B	Plastic 120ml HNO3 preserved	A	<2	1.7 C	Y	Absent	CR-SI, MN-SI, NA-SI
L0404378-02A	Plastic 250ml unpreserved	A	7	1.7 C	Y	Absent	CL-9251, MCP-HEXCR-7196
L0404378-02B	Plastic 120ml HNO3 preserved	A	<2	1.7 C	Y	Absent	CR-SI, MN-SI, NA-SI
L0404378-03A	Plastic 250ml unpreserved	A	7	1.7 C	Y	Absent	CL-9251, MCP-HEXCR-7196
L0404378-03B	Plastic 120ml HNO3 preserved	A	<2	1.7 C	Y	Absent	CR-SI, MN-SI, NA-SI
L0404378-04A	Plastic 250ml unpreserved	A	7	1.7 C	Y	Absent	CL-9251, MCP-HEXCR-7196
L0404378-04B	Plastic 120ml HNO3 preserved	A	<2	1.7 C	Y	Absent	CR-SI, MN-SI, NA-SI
L0404378-05A	Plastic 250ml unpreserved	A	7	1.7 C	Y	Absent	CL-9251, MCP-HEXCR-7196
L0404378-05B	Plastic 120ml HNO3 preserved	A	<2	1.7 C	Y	Absent	CR-SI, MN-SI, NA-SI
L0404378-06A	Plastic 250ml unpreserved	A	7	1.7 C	Y	Absent	CL-9251, MCP-HEXCR-7196
L0404378-06B	Plastic 120ml HNO3 preserved	A	<2	1.7 C	Y	Absent	CR-SI, MN-SI, NA-SI
L0404378-07A	Plastic 250ml unpreserved	A	7	1.7 C	Y	Absent	CL-9251, MCP-HEXCR-7196
L0404378-07B	Plastic 120ml HNO3 preserved	A	<2	1.7 C	Y	Absent	CR-SI, MN-SI, NA-SI

Container Comments

Container ID	Comments
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CHAIN OF CUSTODY

PAGE 1 OF 1

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

Client Information

Client: **ERM**

Address: **399 Boston St. G5 Fl. Boston, MA 02116**

Phone: **617-646-7500**

Fax: **617-262-6447**

Email: **Theresa.Kennedy**

Other Project Specific Requirements/Comments/Detection Limits:

Project Information

Project Name: **Raytheon - Weyland**

Project Location: **Weyland, MA**

Project #: **0013606.06**

Project Manager: **Jerry Reed**

ALPHA Quote #:

Turn-Around Time

Standard RUSH (only confirmed if pre-approved!)

Date Due: **5/5/01** Time:

Date Rec'd in Lab: **4/28/01**

Report Information - Data Deliverables

FAX EMAIL

ADDEX Add'l 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 #: 10404378

Billing Information PO #:

Same as Client info

A.PHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials
01378 1	MW-204M	4/27/01	1615	GW	MH
2	MW-204S	4/27/01	1620	GW	LE
3	MW-204b	4/27/01	1635	GW	NG
4	MW-202m	4/27/01	1400	GW	NG
5	DUP-S	4/27/01	2400	GW	NG
6	MW-202S	4/27/01	1517	GW	NG
7	MW-202S	4/27/01	1705	GW	NG

Sample Specific Comments
ANALYSIS CL, Hex Cr Diss. Na, Cr, Mn
SAMPLE HANDLING Filtration <input checked="" type="checkbox"/> Done Not needed <input type="checkbox"/> Lab to do <input type="checkbox"/> Preservation <input type="checkbox"/> Lab to do <input type="checkbox"/> (please specify below)

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT

MCP ?

Relinquished By:	Date/Time	Container Type	Preservative	Received By:	Date/Time
<i>Will G. [Signature]</i>	4/28/01	P	P	<i>Theresa Kennedy</i>	4/28/01
<i>Theresa Kennedy</i>	4/28/01	A	C	<i>Will G. [Signature]</i>	4/28/01

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.