

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: L0407879
Address: 399 Boylston Street
6th Floor
Boston, MA 02116 Date Received: 20-JUL-2004
Attn: Jeremy Picard Date Reported: 26-JUL-2004
Project Number: 13606 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: Scott McLean
This document electronically signed



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: 390 Boston St
Boston, MA

Phone: _____
Fax: _____
Email: _____

These samples have been previously analyzed by Alpha
Other Project: Specific Requirements/Comments/Detection Limits:

Project Information

Project Name: Rathburn
Project Location: Westford, MA
Project #: 13000
Project Manager: S. Ricard
ALP-14 Quote #: _____

Turn-Around Time

Standard RUSH (only confirmed if pre-approved)
Date Due: 7/27 Time: _____

Date Rec'd In Lab: 7/20

ALPHA Job #: 10407879

Report Information - Data Deliverables

FAX EMAIL
 INDEX 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?

SAMPLE HANDLING

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

ANALYSIS
Check for lead
As Pb

Sample Specific Comments

* Verify field
Lead only
analysis
OK

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Time | Sample Matrix | Sampler's Initials |
|--------------------------------|----------------|-----------------|-------------|---------------|--------------------|
| | <u>1179.1</u> | <u>7/20/04</u> | <u>1330</u> | <u>SOB</u> | <u>BT</u> |
| | <u>1179.2</u> | | | | |
| | <u>1179.3</u> | | | | |
| | <u>1179.4</u> | | | | |
| | <u>1179.5</u> | | | | |
| | <u>1179.6</u> | | | | |
| | <u>1179.7</u> | | | | |
| | <u>1179.8</u> | | | | |
| | <u>1179.9</u> | | | | |
| | <u>1179.10</u> | | | | |
| | <u>1179.11</u> | | | | |
| | <u>1179.12</u> | | | | |
| | <u>1179.13</u> | | | | |
| | <u>1179.14</u> | | | | |
| | <u>1179.15</u> | | | | |
| | <u>1179.16</u> | | | | |
| | <u>1179.17</u> | | | | |
| | <u>1179.18</u> | | | | |
| | <u>1179.19</u> | | | | |
| | <u>1179.20</u> | | | | |
| | <u>1179.21</u> | | | | |
| | <u>1179.22</u> | | | | |
| | <u>1179.23</u> | | | | |
| | <u>1179.24</u> | | | | |
| | <u>1179.25</u> | | | | |
| | <u>1179.26</u> | | | | |
| | <u>1179.27</u> | | | | |
| | <u>1179.28</u> | | | | |
| | <u>1179.29</u> | | | | |
| | <u>1179.30</u> | | | | |

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP?

| | | | |
|------------------------|------------------|---------------------------|-------------------------|
| Relinquished By: _____ | Date/Time: _____ | Container Type: <u>NP</u> | Preservative: <u>BC</u> |
| Relieved By: _____ | Date/Time: _____ | | |

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

Laboratory Job Number: L0407879

Date Reported: 26-JUL-2004

| ALPHA SAMPLE NUMBER | CLIENT IDENTIFICATION | SAMPLE LOCATION |
|---------------------|-----------------------|-----------------|
| L0407879-01 | MW-267B | WAYLAND, MA |

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0407879

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.

**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: L0407879-01 | Date Collected: 20-JUL-2004 15:30 |
| MW-267B | Date Received : 20-JUL-2004 |
| Sample Matrix: WATER | Date Reported : 26-JUL-2004 |
| Condition of Sample: Satisfactory | Field Prep: Field Filtered |
| Number & Type of Containers: 1-Plastic,2-Vial | |

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE PREP ANAL | ID |
|--|--------|-------|--------|------------|--------------------------|----|
| Dissolved Metals by MCP 6000/7000 series | | | | | | |
| Arsenic, Dissolved | ND | mg/l | 0.0010 | 54 6020A | 0721 11:40 0723 13:14 | RW |
| Volatile Organics by MCP 8260B | | | | 60 8260B | 0725 16:46 | 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 | | | |

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0407879-01
MW-267B

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|--|----------|-------|-----|-------------|------------|------|----|
| | | | | | PREP | ANAL | |
| Volatile Organics by MCP 8260B continued | | | | 60 8260B | 0725 16:46 | | RY |
| Surrogate(s) | Recovery | | | QC Criteria | | | |
| 1,2-Dichloroethane-d4 | 119. | % | | 70-130 | | | |
| Toluene-d8 | 98.0 | % | | 70-130 | | | |
| 4-Bromofluorobenzene | 107. | % | | 70-130 | | | |
| Dibromofluoromethane | 112. | % | | 70-130 | | | |

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0407879

| Parameter | LCS % | LCSD % | RPD | RPD Limit | QC Limits |
|--|-------|--------|-----|-----------|-----------|
| Dissolved Metals by MCP 6000/7000 series for sample(s) 01 (WG176327-2, WG176327) | | | | | |
| Arsenic, Dissolved | 86 | 90 | 5 | | 75-125 |
| Volatile Organics by MCP 8260B for sample(s) 01 (WG176636-1, WG176636) | | | | | |
| Methylene chloride | 103 | 103 | 0 | 25 | 70-130 |
| 1,1-Dichloroethane | 106 | 109 | 3 | 25 | 70-130 |
| Chloroform | 109 | 110 | 1 | 25 | 70-130 |
| Carbon tetrachloride | 100 | 108 | 8 | 25 | 70-130 |
| 1,2-Dichloropropane | 102 | 105 | 3 | 25 | 70-130 |
| Dibromochloromethane | 94 | 100 | 6 | 25 | 70-130 |
| 1,1,2-Trichloroethane | 102 | 104 | 2 | 25 | 70-130 |
| Tetrachloroethene | 106 | 108 | 2 | 25 | 70-130 |
| Chlorobenzene | 103 | 105 | 2 | 25 | 70-130 |
| Trichlorofluoromethane | 117 | 112 | 4 | 25 | 70-130 |
| 1,2-Dichloroethane | 117 | 118 | 1 | 25 | 70-130 |
| 1,1,1-Trichloroethane | 108 | 112 | 4 | 25 | 70-130 |
| Bromodichloromethane | 106 | 108 | 2 | 25 | 70-130 |
| trans-1,3-Dichloropropene | 102 | 104 | 2 | 25 | 70-130 |
| cis-1,3-Dichloropropene | 101 | 103 | 2 | 25 | 70-130 |
| 1,1-Dichloropropene | 103 | 109 | 6 | 25 | 70-130 |
| Bromoform | 95 | 101 | 6 | 50 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 99 | 99 | 0 | 25 | 70-130 |
| Benzene | 103 | 105 | 2 | 25 | 70-130 |
| Toluene | 101 | 104 | 3 | 25 | 70-130 |
| Ethylbenzene | 106 | 109 | 3 | 25 | 70-130 |
| Chloromethane | 90 | 100 | 11 | 50 | 70-130 |
| Bromomethane | 52 | 81 | 44 | 50 | 70-130 |
| Vinyl chloride | 116 | 116 | 0 | 25 | 70-130 |
| Chloroethane | 118 | 123 | 4 | 25 | 70-130 |
| 1,1-Dichloroethene | 95 | 104 | 9 | 25 | 70-130 |
| trans-1,2-Dichloroethene | 102 | 107 | 5 | 25 | 70-130 |
| Trichloroethene | 106 | 108 | 2 | 25 | 70-130 |
| 1,2-Dichlorobenzene | 101 | 103 | 2 | 25 | 70-130 |
| 1,3-Dichlorobenzene | 102 | 104 | 2 | 25 | 70-130 |
| 1,4-Dichlorobenzene | 100 | 102 | 2 | 25 | 70-130 |
| Methyl tert butyl ether | 92 | 95 | 3 | 25 | 70-130 |
| p/m-Xylene | 105 | 108 | 3 | 25 | 70-130 |
| o-Xylene | 108 | 110 | 2 | 25 | 70-130 |
| cis-1,2-Dichloroethene | 108 | 111 | 3 | 25 | 70-130 |
| Dibromomethane | 108 | 108 | 0 | 25 | 70-130 |
| 1,2,3-Trichloropropane | 100 | 100 | 0 | 25 | 70-130 |
| Styrene | 109 | 110 | 1 | 25 | 70-130 |
| Dichlorodifluoromethane | 98 | 102 | 4 | 50 | 70-130 |
| Acetone | 122 | 104 | 16 | 50 | 70-130 |
| Carbon disulfide | 97 | 101 | 4 | 25 | 70-130 |
| 2-Butanone | 98 | 96 | 2 | 50 | 70-130 |
| 4-Methyl-2-pentanone | 90 | 91 | 1 | 50 | 70-130 |
| 2-Hexanone | 103 | 102 | 1 | 50 | 70-130 |
| Bromochloromethane | 111 | 109 | 2 | 25 | 70-130 |

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0407879

Continued

| Parameter | LCS % | LCSD % | RPD | RPD Limit | QC Limits |
|--|-------|--------|-----|-----------|-----------|
| Volatile Organics by MCP 8260B for sample(s) 01 (WG176636-1, WG176636) | | | | | |
| Tetrahydrofuran | 128 | 121 | 6 | 25 | 70-130 |
| 2,2-Dichloropropane | 108 | 111 | 3 | 25 | 70-130 |
| 1,2-Dibromoethane | 99 | 100 | 1 | 25 | 70-130 |
| 1,3-Dichloropropane | 100 | 101 | 1 | 25 | 70-130 |
| 1,1,1,2-Tetrachloroethane | 105 | 109 | 4 | 25 | 70-130 |
| Bromobenzene | 103 | 104 | 1 | 25 | 70-130 |
| n-Butylbenzene | 90 | 92 | 2 | 25 | 70-130 |
| sec-Butylbenzene | 99 | 102 | 3 | 25 | 70-130 |
| tert-Butylbenzene | 99 | 103 | 4 | 25 | 70-130 |
| o-Chlorotoluene | 104 | 108 | 4 | 25 | 70-130 |
| p-Chlorotoluene | 102 | 103 | 1 | 25 | 70-130 |
| 1,2-Dibromo-3-chloropropane | 94 | 97 | 3 | 50 | 70-130 |
| Hexachlorobutadiene | 102 | 104 | 2 | 25 | 70-130 |
| Isopropylbenzene | 106 | 109 | 3 | 25 | 70-130 |
| p-Isopropyltoluene | 95 | 98 | 3 | 25 | 70-130 |
| Naphthalene | 73 | 75 | 3 | 25 | 70-130 |
| n-Propylbenzene | 101 | 104 | 3 | 25 | 70-130 |
| 1,2,3-Trichlorobenzene | 81 | 84 | 4 | 25 | 70-130 |
| 1,2,4-Trichlorobenzene | 79 | 79 | 0 | 25 | 70-130 |
| 1,3,5-Trimethylbenzene | 98 | 101 | 3 | 25 | 70-130 |
| 1,2,4-Trimethylbenzene | 94 | 97 | 3 | 25 | 70-130 |
| Ethyl ether | 96 | 100 | 4 | 25 | 70-130 |
| Isopropyl Ether | 98 | 98 | 0 | 25 | 70-130 |
| Ethyl-Tert-Butyl-Ether | 93 | 96 | 3 | 25 | 70-130 |
| Tertiary-Amyl Methyl Ether | 92 | 94 | 2 | 25 | 70-130 |
| 1,4-Dioxane | 101 | 106 | 5 | 50 | 70-130 |
| Surrogate(s) | | | | | |
| 1,2-Dichloroethane-d4 | 114 | 111 | 3 | | 70-130 |
| Toluene-d8 | 100 | 99 | 1 | | 70-130 |
| 4-Bromofluorobenzene | 101 | 101 | 0 | | 70-130 |
| Dibromofluoromethane | 111 | 107 | 4 | | 70-130 |

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0407879

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|--|--------|-------|--------|------------|------------|------------|----|
| | | | | | PREP | ANAL | |
| Blank Analysis for sample(s) 01 (WG176327-1) | | | | | | | |
| Dissolved Metals by MCP 6000/7000 series | | | | | | | |
| Arsenic, Dissolved | ND | mg/l | 0.0010 | 54 6020A | 0721 11:40 | 0723 12:02 | RW |

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.
60. Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

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: L0407879

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 |
|--------------|------------------------------|--------|-----|-------|------|--------|--------------|
| L0407879-01A | Vial HCl preserved | A | N/A | 0.8 C | Y | Absent | MCP-8260-04 |
| L0407879-01B | Vial HCl preserved | A | N/A | 0.8 C | Y | Absent | MCP-8260-04 |
| L0407879-01C | Plastic 250ml HNO3 preserved | A | <2 | 0.8 C | Y | Absent | MCP-AS-6020S |

Container Comments

| Container ID | Comments |
|--------------|----------|
|--------------|----------|
