

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: L0309849
Address: 399 Boylston Street
6th Floor
Boston, MA 02116 Date Received: 01-OCT-2003
Attn: J. Picard Date Reported: 08-OCT-2003
Project Number: 1922.07.02 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? 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: L0309849
Date Reported: 08-OCT-2003

| ALPHA SAMPLE NUMBER | CLIENT IDENTIFICATION | SAMPLE LOCATION |
|---------------------|-----------------------|-----------------|
| L0309849-01 | MW-44M | WAYLAND, MA |
| L0309849-02 | MW-44D | WAYLAND, MA |
| L0309849-03 | MW-44S | WAYLAND, MA |

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0309849

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

In response to question E, the LCS has low recoveries for Bromomethane at 40%, and Naphthalene at 64%, and a high recovery for Acetone at 147% of which the associated samples are ND for the above mentioned analyte.

Dissolved Metals

Due to high Na concentrations, L0309849-01 and -03 were analyzed on a 5x dilution and L0309849-02 was analyzed on a 2x dilution.

**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: L0309849-01 | Date Collected: 01-OCT-2003 16:35 |
| MW-44M | Date Received : 01-OCT-2003 |
| Sample Matrix: WATER | Date Reported : 08-OCT-2003 |
| Condition of Sample: Satisfactory | Field Prep: Field Filtered |
| Number & Type of Containers: 2-Plastic,2-Vial | |

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|----------------------------------|--------|-------|------|------------|------------|------------|----|
| | | | | | PREP | ANAL | |
| Chloride | 69. | mg/l | 1.0 | 1 9251 | | 1003 19:47 | DD |
| Hexavalent Chromium by MCP 7196A | | | | | | | |
| Chromium, Hexavalent | ND | mg/l | 0.02 | 55 7196A | 1001 22:45 | 1001 22:45 | JT |
| Dissolved Metals | | | | | | | |
| Chromium, Dissolved | ND | mg/l | 0.01 | 54 6010B | | 1008 08:41 | RW |
| Manganese, Dissolved | 1.4 | mg/l | 0.01 | 54 6010B | | 1008 08:41 | RW |
| Sodium, Dissolved | 39. | mg/l | 10. | 54 6010B | | 1008 08:38 | RW |
| Sodium, Dissolved | >20 | mg/l | 2 | 54 6010B | | 1008 08:41 | RW |
| Volatile Organics by MCP 8260B | | | | | | | |
| Methylene chloride | ND | ug/l | 5.0 | 54 8260B | | 1003 19:35 | BT |
| 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 | | | | |
| 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 | | | | |

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0309849-01
MW-44M

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|--|----------|-------|------|-------------|------------|------|----|
| | | | | | PREP | ANAL | |
| Volatile Organics by MCP 8260B continued | | | | 54 8260B | 1003 19:35 | | BT |
| Dichlorodifluoromethane | ND | ug/l | 5.0 | | | | |
| 1,2-Dibromoethane | ND | ug/l | 2.5 | | | | |
| 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 | 2.5 | | | | |
| 1,2,4-Trichlorobenzene | ND | ug/l | 2.5 | | | | |
| Surrogate(s) | Recovery | | | QC Criteria | | | |
| 1,2-Dichloroethane-d4 | 91.0 | % | | 70-130 | | | |
| Toluene-d8 | 88.0 | % | | 70-130 | | | |
| 4-Bromofluorobenzene | 91.0 | % | | 70-130 | | | |
| Dibromofluoromethane | 85.0 | % | | 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: L0309849-02 | Date Collected: 01-OCT-2003 14:58 |
| MW-44D | Date Received : 01-OCT-2003 |
| Sample Matrix: WATER | Date Reported : 08-OCT-2003 |
| Condition of Sample: Satisfactory | Field Prep: Field Filtered |
| Number & Type of Containers: 2-Plastic,2-Vial | |

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|----------------------------------|--------|-------|------|------------|------|------------|---------------|
| | | | | | PREP | ANAL | |
| Chloride | 58. | mg/l | 1.0 | 1 9251 | | | 1003 18:39 DD |
| Hexavalent Chromium by MCP 7196A | | | | | | | |
| Chromium, Hexavalent | ND | mg/l | 0.02 | 55 7196A | | 1001 22:45 | 1001 22:45 JT |
| Dissolved Metals | | | | | | | |
| Chromium, Dissolved | ND | mg/l | 0.01 | 54 6010B | | | 1008 08:55 RW |
| Manganese, Dissolved | 0.01 | mg/l | 0.01 | 54 6010B | | | 1008 08:55 RW |
| Sodium, Dissolved | 18. | mg/l | 2.0 | 54 6010B | | | 1008 08:55 RW |
| Volatile Organics by MCP 8260B | | | | | | | |
| 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 | | | | |
| 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 | | | | |

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0309849-02
MW-44D

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|--|----------|-------|------|-------------|------------|------|----|
| | | | | | PREP | ANAL | |
| Volatile Organics by MCP 8260B continued | | | | 54 8260B | 1003 20:21 | | BT |
| 1,2-Dibromoethane | ND | ug/l | 2.5 | | | | |
| 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 | 2.5 | | | | |
| 1,2,4-Trichlorobenzene | ND | ug/l | 2.5 | | | | |
| Surrogate(s) | Recovery | | | QC Criteria | | | |
| 1,2-Dichloroethane-d4 | 89.0 | % | | 70-130 | | | |
| Toluene-d8 | 86.0 | % | | 70-130 | | | |
| 4-Bromofluorobenzene | 91.0 | % | | 70-130 | | | |
| Dibromofluoromethane | 85.0 | % | | 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: L0309849-03 | Date Collected: 01-OCT-2003 14:55 |
| MW-44S | Date Received : 01-OCT-2003 |
| Sample Matrix: WATER | Date Reported : 08-OCT-2003 |
| Condition of Sample: Satisfactory | Field Prep: Field Filtered |
| Number & Type of Containers: 2-Plastic,2-Vial | |

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|----------------------------------|--------|-------|------|------------|------|------|--------------------------|
| | | | | | PREP | ANAL | |
| Chloride | 69. | mg/l | 1.0 | 1 9251 | | | 1003 18:39 DD |
| Hexavalent Chromium by MCP 7196A | | | | | | | |
| Chromium, Hexavalent | ND | mg/l | 0.02 | 55 7196A | | | 1001 22:45 1001 22:45 JT |
| Dissolved Metals | | | | | | | |
| Chromium, Dissolved | ND | mg/l | 0.01 | 54 6010B | | | 1008 08:59 RW |
| Manganese, Dissolved | ND | mg/l | 0.01 | 54 6010B | | | 1008 08:59 RW |
| Sodium, Dissolved | >20 | mg/l | 2 | 54 6010B | | | 1008 08:59 RW |
| Sodium, Dissolved | 54. | mg/l | 10. | 54 6010B | | | 1008 09:37 RW |
| Volatile Organics by MCP 8260B | | | | | | | |
| 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 | | | | |
| 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 | 0.53 | 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 | | | | |

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

**ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0309849-03
MW-44S

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|--|----------|-------|------|-------------|------------|------|----|
| | | | | | PREP | ANAL | |
| Volatile Organics by MCP 8260B continued | | | | 54 8260B | 1003 21:07 | | BT |
| Dichlorodifluoromethane | ND | ug/l | 5.0 | | | | |
| 1,2-Dibromoethane | ND | ug/l | 2.5 | | | | |
| 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 | 2.5 | | | | |
| 1,2,4-Trichlorobenzene | ND | ug/l | 2.5 | | | | |
| Surrogate(s) | Recovery | | | QC Criteria | | | |
| 1,2-Dichloroethane-d4 | 92.0 | % | | 70-130 | | | |
| Toluene-d8 | 86.0 | % | | 70-130 | | | |
| 4-Bromofluorobenzene | 92.0 | % | | 70-130 | | | |
| Dibromofluoromethane | 86.0 | % | | 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: L0309849

| Parameter | Value 1 | Value 2 | Units | RPD | RPD Limits |
|--|---------|---------|-------|-----|------------|
| Chloride for sample(s) 01-03 (L0309781-15, WG152383) | | | | | |
| Chloride | 89. | 90. | mg/l | 1 | 7 |
| Hexavalent Chromium by MCP 7196A for sample(s) 01-03 (L0309849-01, WG152177) | | | | | |
| Chromium, Hexavalent | ND | ND | mg/l | NC | 20 |

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0309849

| Parameter | % Recovery | QC Criteria |
|---|------------|-------------|
| Chloride LCS for sample(s) 01-03 (WG152383) | | |
| Chloride | 100 | 84-110 |
| Hexavalent Chromium by MCP 7196A LCS for sample(s) 01-03 (WG152177) | | |
| Chromium, Hexavalent | 100 | 80-120 |
| Dissolved Metals LCS for sample(s) 01-03 (WG152591) | | |
| Chromium, Dissolved | 95 | 80-120 |
| Manganese, Dissolved | 96 | 80-120 |
| Sodium, Dissolved | 100 | 80-120 |
| Volatile Organics by MCP 8260B LCS for sample(s) 01-03 (WG152263) | | |
| Methylene chloride | 82 | 70-130 |
| 1,1-Dichloroethane | 97 | 70-130 |
| Chloroform | 93 | 70-130 |
| Carbon tetrachloride | 98 | 70-130 |
| 1,2-Dichloropropane | 97 | 70-130 |
| Dibromochloromethane | 99 | 70-130 |
| 1,1,2-Trichloroethane | 108 | 70-130 |
| Tetrachloroethene | 98 | 70-130 |
| Chlorobenzene | 102 | 70-130 |
| Trichlorofluoromethane | 102 | 70-130 |
| 1,2-Dichloroethane | 96 | 70-130 |
| 1,1,1-Trichloroethane | 98 | 70-130 |
| Bromodichloromethane | 96 | 70-130 |
| trans-1,3-Dichloropropene | 91 | 70-130 |
| cis-1,3-Dichloropropene | 91 | 70-130 |
| 1,1-Dichloropropene | 94 | 70-130 |
| Bromoform | 105 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 120 | 70-130 |
| Benzene | 86 | 70-130 |
| Toluene | 97 | 70-130 |
| Ethylbenzene | 101 | 70-130 |
| Chloromethane | 90 | 70-130 |
| Bromomethane | 40 | 70-130 |
| Vinyl chloride | 98 | 70-130 |
| Chloroethane | 96 | 70-130 |
| 1,1-Dichloroethene | 92 | 70-130 |
| trans-1,2-Dichloroethene | 93 | 70-130 |
| Trichloroethene | 96 | 70-130 |
| 1,2-Dichlorobenzene | 104 | 70-130 |
| 1,3-Dichlorobenzene | 101 | 70-130 |
| 1,4-Dichlorobenzene | 102 | 70-130 |
| Methyl tert butyl ether | 102 | 70-130 |
| p/m-Xylene | 101 | 70-130 |
| o-Xylene | 102 | 70-130 |
| cis-1,2-Dichloroethene | 98 | 70-130 |
| Dibromomethane | 99 | 70-130 |
| 1,2,3-Trichloropropane | 111 | 70-130 |

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0309849

Continued

| Parameter | % Recovery | QC Criteria |
|--|------------|-------------|
| Volatile Organics by MCP 8260B LCS for sample(s) 01-03 (WG152263) | | |
| Styrene | 106 | 70-130 |
| Dichlorodifluoromethane | 102 | 70-130 |
| Acetone | 147 | 70-130 |
| Carbon disulfide | 91 | 70-130 |
| 2-Butanone | 128 | 70-130 |
| 4-Methyl-2-pentanone | 102 | 70-130 |
| 2-Hexanone | 111 | 70-130 |
| Bromochloromethane | 99 | 70-130 |
| Tetrahydrofuran | 98 | 70-130 |
| 2,2-Dichloropropane | 96 | 70-130 |
| 1,2-Dibromoethane | 105 | 70-130 |
| 1,3-Dichloropropane | 103 | 70-130 |
| 1,1,1,2-Tetrachloroethane | 107 | 70-130 |
| Bromobenzene | 103 | 70-130 |
| n-Butylbenzene | 90 | 70-130 |
| sec-Butylbenzene | 99 | 70-130 |
| tert-Butylbenzene | 100 | 70-130 |
| o-Chlorotoluene | 102 | 70-130 |
| p-Chlorotoluene | 101 | 70-130 |
| 1,2-Dibromo-3-chloropropane | 108 | 70-130 |
| Hexachlorobutadiene | 101 | 70-130 |
| Isopropylbenzene | 96 | 70-130 |
| p-Isopropyltoluene | 98 | 70-130 |
| Naphthalene | 64 | 70-130 |
| n-Propylbenzene | 99 | 70-130 |
| 1,2,3-Trichlorobenzene | 91 | 70-130 |
| 1,2,4-Trichlorobenzene | 92 | 70-130 |
| 1,3,5-Trimethylbenzene | 101 | 70-130 |
| 1,2,4-Trimethylbenzene | 103 | 70-130 |
| Ethyl ether | 99 | 70-130 |
| Isopropyl Ether | 91 | 70-130 |
| Ethyl-Tert-Butyl-Ether | 92 | 70-130 |
| Tertiary-Amyl Methyl Ether | 97 | 70-130 |
| 1,4-Dioxane | 105 | 70-130 |
| Surrogate(s) | | |
| 1,2-Dichloroethane-d4 | 93 | 70-130 |
| Toluene-d8 | 90 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |
| Dibromofluoromethane | 92 | 70-130 |
| Chloride SPIKE for sample(s) 01-03 (L0309781-15, WG152383) | | |
| Chloride | 100 | 58-140 |
| Hexavalent Chromium by MCP 7196A SPIKE for sample(s) 01-03 (L0309849-01, WG152177) | | |
| Chromium, Hexavalent | 80 | 75-125 |

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0309849

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|---|--------|-------|------|------------|------|------------|---------------|
| | | | | | PREP | ANAL | |
| Blank Analysis for sample(s) 01-03 (WG152383-2) | | | | | | | |
| Chloride | ND | mg/l | 1.0 | 1 9251 | | 1003 17:38 | DD |
| Blank Analysis for sample(s) 01-03 (WG152177-1) | | | | | | | |
| Hexavalent Chromium by MCP 7196A | | | | | | | |
| Chromium, Hexavalent | ND | mg/l | 0.02 | 55 7196A | | 1001 22:45 | 1001 22:45 JT |
| Blank Analysis for sample(s) 01-03 (WG152591-1) | | | | | | | |
| Dissolved Metals | | | | | | | |
| Chromium, Dissolved | ND | mg/l | 0.01 | 54 6010B | | 1008 08:30 | RW |
| Manganese, Dissolved | ND | mg/l | 0.01 | 54 6010B | | 1008 08:30 | RW |
| Sodium, Dissolved | ND | mg/l | 2.0 | 54 6010B | | 1008 08:30 | RW |
| Blank Analysis for sample(s) 01-03 (WG152263-8) | | | | | | | |
| Volatile Organics by MCP 8260B | | | | | | | |
| | | | | 54 8260B | | 1003 14:57 | BT |
| 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 | | | | |
| 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 | | | | |

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0309849

Continued

| PARAMETER | RESULT | UNITS | RDL | REF METHOD | DATE | | ID |
|---|----------|-------|-------------|------------|------|------------|----|
| | | | | | PREP | ANAL | |
| Blank Analysis for sample(s) 01-03 (WG152263-8) | | | | | | | |
| Volatile Organics by MCP 8260B continued | | | | 54 8260B | | 1003 14:57 | BT |
| 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 | 2.5 | | | | |
| 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 | 2.5 | | | | |
| 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 | | | | |
| Surrogate(s) | Recovery | | QC Criteria | | | | |
| 1,2-Dichloroethane-d4 | 96.0 | % | 70-130 | | | | |
| Toluene-d8 | 93.0 | % | 70-130 | | | | |
| 4-Bromofluorobenzene | 102. | % | 70-130 | | | | |
| Dibromofluoromethane | 87.0 | % | 70-130 | | | | |

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: L0309849

Were project specific reporting limits specified? YES

Cooler Information

| Cooler | Custody Seal |
|--------|--------------|
| A | Absent |

Container Information

| Container ID | Container Type | Cooler | pH | Temp | Pres | Seal | Analysis |
|--------------|------------------------------|--------|-----|-------|------|--------|-------------------------|
| L0309849-01A | Vial HCl preserved | A | N/A | 1.3 C | Y | Absent | MCP-8260 |
| L0309849-01B | Vial HCl preserved | A | N/A | 1.3 C | Y | Absent | MCP-8260 |
| L0309849-01C | Plastic 250ml unpreserved | A | =7 | 1.3 C | Y | Absent | CL-9251, MCP-HEXCR-7196 |
| L0309849-01D | Plastic 250ml HNO3 preserved | A | <2 | 1.3 C | Y | Absent | CR-SI, MN-SI, NA-SI |
| L0309849-02A | Vial HCl preserved | A | N/A | 1.3 C | Y | Absent | MCP-8260 |
| L0309849-02B | Vial HCl preserved | A | N/A | 1.3 C | Y | Absent | MCP-8260 |
| L0309849-02C | Plastic 250ml unpreserved | A | =7 | 1.3 C | Y | Absent | CL-9251, MCP-HEXCR-7196 |
| L0309849-02D | Plastic 250ml HNO3 preserved | A | <2 | 1.3 C | Y | Absent | CR-SI, MN-SI, NA-SI |
| L0309849-03A | Vial HCl preserved | A | N/A | 1.3 C | Y | Absent | MCP-8260 |
| L0309849-03B | Vial HCl preserved | A | N/A | 1.3 C | Y | Absent | MCP-8260 |
| L0309849-03C | Plastic 250ml unpreserved | A | =7 | 1.3 C | Y | Absent | CL-9251, MCP-HEXCR-7196 |
| L0309849-03D | Plastic 250ml HNO3 preserved | A | <2 | 1.3 C | Y | Absent | CR-SI, MN-SI, NA-SI |

Container Comments

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



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 Boylston St Fl 6
Boston MA 02116
Phone: 617 267 8377
Fax: 617 267 6447
Email:

Project Information

Project Name: Raytheon
Project Location: Wayland MA
Project #: 192207.2
Project Manager: J. Picard
ALPHA Quote #:

Turn-Around Time

Standard RUSH (only confirmed if pre-approved)
Date Due: 10/8 Time:

These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab: 10/1

ALPHA Job #: Lo 3090419

Report Information - Data Deliverables

FAX EMAIL
 ADEX Add'l Deliverables copy

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?

| ALPHA Lab D (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler's Initials | ANALYSIS | TOTAL # BOTTLES | Sample Specific Comments |
|----------------------------|---------------|-----------------|-----------------|---------------|--------------------|--------------|-----------------|--|
| | <u>MW-44M</u> | <u>10/1/03</u> | <u>1635</u> | <u>GW</u> | <u>JTF</u> | <u>8021C</u> | <u>4</u> | <u>sample filtered w/ 0.45 micron filter</u> |
| | <u>MW-44D</u> | <u>10/1/03</u> | <u>1458</u> | <u>GW</u> | <u>JTF</u> | | <u>4</u> | |
| | <u>MW-44S</u> | <u>10/1/03</u> | <u>1455</u> | <u>GW</u> | <u>WIS</u> | | <u>4</u> | |

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP?

Container Type V R P
Preservative B A C
Date/Time Received By: 10/1/03 1719 Steve Gagliardi
10/1/03 1805 Julie Pearson

Relinquished By: Steve Gagliardi
Julie Pearson

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.