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

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

Attn: Jeremy Picard

Project Number: 13606

Site: RAYTHEON WAYLAND

Laboratory Job Number: L0413792

Date Received: 09-DEC-2004

Date Reported: 15-DEC-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: L0413792
Date Reported: 15-DEC-2004

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0413792-01	MW-267B	WAYLAND
L0413792-02	MW-261S	WAYLAND
L0413792-03	MW-264M	WAYLAND
L0413792-04	MW-265M	WAYLAND
L0413792-05	HA-101	WAYLAND

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0413792

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.

Volatile Organics

L0413792-01 had a pH >2.

L0413792-02 through -04 have elevated limits of detection due to the following dilutions required by the elevated concentrations of target compounds in the samples:

L0413792-02: 100x

L0413792-03: 2x

L0413792-04: 40x

In reference to question E, the LCS/LCSD % recoveries for Dichlorodifluoromethane, a difficult analyte, associated with L0413792-03, are below the acceptance criteria for the method.

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: L0413792-01
MW-267B
Sample Matrix: WATER

Date Collected: 08-DEC-2004 10:20
Date Received : 09-DEC-2004
Date Reported : 15-DEC-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	DATE ANAL	ID
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Arsenic, Dissolved	ND	mg/l	0.005	60 6010B	1210 16:00	1213 16:43	RW
Volatile Organics by MCP 8260B				60 8260B		1213 19:52	SE
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: L0413792-01
MW-267B

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				60 8260B		1213 19:52	SE
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	104.	%	70-130				
Toluene-d8	100.	%	70-130				
4-Bromofluorobenzene	100.	%	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: L0413792-02
MW-261S
Sample Matrix: WATER

Date Collected: 08-DEC-2004 11:55
Date Received : 09-DEC-2004
Date Reported : 15-DEC-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				60 8260B		1213 20:28	SE
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	90.	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	4600	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

Laboratory Sample Number: L0413792-02
MW-261S

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				60 8260B		1213 20:28	SE
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	106.	%	70-130				
Toluene-d8	102.	%	70-130				
4-Bromofluorobenzene	102.	%	70-130				
Dibromofluoromethane	102.	%	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: L0413792-03
MW-264M
Sample Matrix: WATER

Date Collected: 08-DEC-2004 13:00
Date Received : 09-DEC-2004
Date Reported : 15-DEC-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				60 8260B		1214 10:31	SE
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	7.6	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	5.5	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	59.	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				
cis-1,2-Dichloroethene	71.	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				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0413792-03
MW-264M

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				60 8260B		1214 10:31	SE
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	106.	%	70-130				
Toluene-d8	102.	%	70-130				
4-Bromofluorobenzene	100.	%	70-130				
Dibromofluoromethane	101.	%	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: L0413792-04
MW-265M
Sample Matrix: WATER

Date Collected: 08-DEC-2004 14:40
Date Received : 09-DEC-2004
Date Reported : 15-DEC-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				60 8260B		1213 21:41	SE
Methylene chloride	ND	ug/l	200				
1,1-Dichloroethane	ND	ug/l	30.				
Chloroform	ND	ug/l	30.				
Carbon tetrachloride	ND	ug/l	20.				
1,2-Dichloropropane	ND	ug/l	70.				
Dibromochloromethane	ND	ug/l	20.				
1,1,2-Trichloroethane	ND	ug/l	30.				
Tetrachloroethene	31.	ug/l	20.				
Chlorobenzene	ND	ug/l	20.				
1,2-Dichloroethane	ND	ug/l	20.				
1,1,1-Trichloroethane	ND	ug/l	20.				
Bromodichloromethane	ND	ug/l	20.				
trans-1,3-Dichloropropene	ND	ug/l	20.				
cis-1,3-Dichloropropene	ND	ug/l	20.				
Bromoform	ND	ug/l	80.				
1,1,2,2-Tetrachloroethane	ND	ug/l	20.				
Chloromethane	ND	ug/l	100				
Vinyl chloride	160	ug/l	40.				
Chloroethane	ND	ug/l	40.				
1,1-Dichloroethene	ND	ug/l	20.				
trans-1,2-Dichloroethene	ND	ug/l	30.				
Trichloroethene	600	ug/l	20.				
1,2-Dichlorobenzene	ND	ug/l	100				
1,3-Dichlorobenzene	ND	ug/l	100				
1,4-Dichlorobenzene	ND	ug/l	100				
cis-1,2-Dichloroethene	1300	ug/l	20.				
Dichlorodifluoromethane	ND	ug/l	200				
1,2-Dibromoethane	ND	ug/l	80.				
1,3-Dichloropropane	ND	ug/l	100				
1,1,1,2-Tetrachloroethane	ND	ug/l	20.				
o-Chlorotoluene	ND	ug/l	100				
p-Chlorotoluene	ND	ug/l	100				
Hexachlorobutadiene	ND	ug/l	40.				
1,2,4-Trichlorobenzene	ND	ug/l	100				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0413792-04
MW-265M

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				60 8260B		1213 21:41	SE
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	106.	%	70-130				
Toluene-d8	101.	%	70-130				
4-Bromofluorobenzene	103.	%	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: L0413792-05
HA-101
Sample Matrix: WATER

Date Collected: 08-DEC-2004 16:30
Date Received : 09-DEC-2004
Date Reported : 15-DEC-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	DATE ANAL	ID
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Arsenic, Dissolved	0.033	mg/l	0.005	60 6010B	1210 16:00	1213 16:46	RW
Volatile Organics by MCP 8260B				60 8260B		1213 22:17	SE
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: L0413792-05
HA-101

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by MCP 8260B continued				60 8260B		1213 22:17	SE
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	110.	%	70-130				
Toluene-d8	102.	%	70-130				
4-Bromofluorobenzene	101.	%	70-130				
Dibromofluoromethane	100.	%	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: L0413792

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Dissolved Metals by MCP 6000/7000 series for sample(s) 01,05 (WG189105-2, WG189105)					
Arsenic, Dissolved	105	104	1	20	75-125
Volatile Organics by MCP 8260B for sample(s) 01-02,04-05 (WG189281-1, WG189281)					
Methylene chloride	104	100	4	25	70-130
1,1-Dichloroethane	109	103	6	25	70-130
Chloroform	104	98	6	25	70-130
Carbon tetrachloride	110	102	8	25	70-130
1,2-Dichloropropane	108	103	5	25	70-130
Dibromochloromethane	108	105	3	25	70-130
1,1,2-Trichloroethane	104	103	1	25	70-130
Tetrachloroethene	104	103	1	25	70-130
Chlorobenzene	106	104	2	25	70-130
Trichlorofluoromethane	111	104	7	25	70-130
1,2-Dichloroethane	108	107	1	25	70-130
1,1,1-Trichloroethane	107	103	4	25	70-130
Bromodichloromethane	105	100	5	25	70-130
trans-1,3-Dichloropropene	108	106	2	25	70-130
cis-1,3-Dichloropropene	106	102	4	25	70-130
1,1-Dichloropropene	112	105	6	25	70-130
Bromoform	99	101	2	50	70-130
1,1,2,2-Tetrachloroethane	102	99	3	25	70-130
Benzene	107	99	8	25	70-130
Toluene	105	100	5	25	70-130
Ethylbenzene	106	102	4	25	70-130
Chloromethane	100	89	12	50	70-130
Bromomethane	108	100	8	50	70-130
Vinyl chloride	99	88	12	25	70-130
Chloroethane	102	85	18	25	70-130
1,1-Dichloroethene	103	96	7	25	70-130
trans-1,2-Dichloroethene	110	102	8	25	70-130
Trichloroethene	107	99	8	25	70-130
1,2-Dichlorobenzene	104	98	6	25	70-130
1,3-Dichlorobenzene	105	100	5	25	70-130
1,4-Dichlorobenzene	105	100	5	25	70-130
Methyl tert butyl ether	103	106	3	25	70-130
p/m-Xylene	111	104	7	25	70-130
o-Xylene	107	102	5	25	70-130
cis-1,2-Dichloroethene	102	97	5	25	70-130
Dibromomethane	109	103	6	25	70-130
1,2,3-Trichloropropane	106	104	2	25	70-130
Styrene	111	106	5	25	70-130
Dichlorodifluoromethane	81	73	10	50	70-130
Acetone	113	107	5	50	70-130
Carbon disulfide	107	96	11	25	70-130
2-Butanone	110	104	6	50	70-130
4-Methyl-2-pentanone	102	98	4	50	70-130
2-Hexanone	114	112	2	50	70-130
Bromochloromethane	105	99	6	25	70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413792

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 01-02,04-05 (WG189281-1, WG189281)					
Tetrahydrofuran	110	108	2	25	70-130
2,2-Dichloropropane	106	101	5	25	70-130
1,2-Dibromoethane	106	104	2	25	70-130
1,3-Dichloropropane	106	105	1	25	70-130
1,1,1,2-Tetrachloroethane	109	106	3	25	70-130
Bromobenzene	104	98	6	25	70-130
n-Butylbenzene	107	100	7	25	70-130
sec-Butylbenzene	105	98	7	25	70-130
tert-Butylbenzene	105	99	6	25	70-130
o-Chlorotoluene	105	98	7	25	70-130
p-Chlorotoluene	104	100	4	25	70-130
1,2-Dibromo-3-chloropropane	110	108	2	50	70-130
Hexachlorobutadiene	99	94	5	25	70-130
Isopropylbenzene	109	105	4	25	70-130
p-Isopropyltoluene	107	100	7	25	70-130
Naphthalene	106	103	3	25	70-130
n-Propylbenzene	107	99	8	25	70-130
1,2,3-Trichlorobenzene	106	103	3	25	70-130
1,2,4-Trichlorobenzene	106	100	6	25	70-130
1,3,5-Trimethylbenzene	107	102	5	25	70-130
1,2,4-Trimethylbenzene	106	99	7	25	70-130
Ethyl ether	116	104	11	25	70-130
Isopropyl Ether	106	102	4	25	70-130
Ethyl-Tert-Butyl-Ether	105	100	5	25	70-130
Tertiary-Amyl Methyl Ether	102	101	1	25	70-130
1,4-Dioxane	110	111	1	50	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	105	107	2		70-130
Toluene-d8	101	103	2		70-130
4-Bromofluorobenzene	99	101	2		70-130
Dibromofluoromethane	104	104	0		70-130
Volatile Organics by MCP 8260B for sample(s) 03 (WG189281-4, WG189281)					
Methylene chloride	84	83	1	25	70-130
1,1-Dichloroethane	88	84	5	25	70-130
Chloroform	84	81	4	25	70-130
Carbon tetrachloride	89	85	5	25	70-130
1,2-Dichloropropane	88	85	3	25	70-130
Dibromochloromethane	87	86	1	25	70-130
1,1,2-Trichloroethane	86	84	2	25	70-130
Tetrachloroethene	85	82	4	25	70-130
Chlorobenzene	89	84	6	25	70-130
Trichlorofluoromethane	89	81	9	25	70-130
1,2-Dichloroethane	90	89	1	25	70-130
1,1,1-Trichloroethane	85	84	1	25	70-130
Bromodichloromethane	85	83	2	25	70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413792

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 03 (WG189281-4, WG189281)					
trans-1,3-Dichloropropene	86	85	1	25	70-130
cis-1,3-Dichloropropene	85	84	1	25	70-130
1,1-Dichloropropene	90	83	8	25	70-130
Bromoform	83	80	4	50	70-130
1,1,2,2-Tetrachloroethane	83	83	0	25	70-130
Benzene	86	82	5	25	70-130
Toluene	86	82	5	25	70-130
Ethylbenzene	88	83	6	25	70-130
Chloromethane	76	72	5	50	70-130
Bromomethane	85	84	1	50	70-130
Vinyl chloride	86	78	10	25	70-130
Chloroethane	89	80	11	25	70-130
1,1-Dichloroethene	83	77	8	25	70-130
trans-1,2-Dichloroethene	88	84	5	25	70-130
Trichloroethene	86	78	10	25	70-130
1,2-Dichlorobenzene	86	82	5	25	70-130
1,3-Dichlorobenzene	86	82	5	25	70-130
1,4-Dichlorobenzene	89	83	7	25	70-130
Methyl tert butyl ether	88	86	2	25	70-130
p/m-Xylene	88	84	5	25	70-130
o-Xylene	89	85	5	25	70-130
cis-1,2-Dichloroethene	82	79	4	25	70-130
Dibromomethane	86	85	1	25	70-130
1,2,3-Trichloropropane	87	88	1	25	70-130
Styrene	91	88	3	25	70-130
Dichlorodifluoromethane	66	60	10	50	70-130
Acetone	85	80	6	50	70-130
Carbon disulfide	83	76	9	25	70-130
2-Butanone	92	92	0	50	70-130
4-Methyl-2-pentanone	89	80	11	50	70-130
2-Hexanone	101	94	7	50	70-130
Bromochloromethane	84	80	5	25	70-130
Tetrahydrofuran	87	89	2	25	70-130
2,2-Dichloropropane	82	78	5	25	70-130
1,2-Dibromoethane	88	88	0	25	70-130
1,3-Dichloropropane	86	86	0	25	70-130
1,1,1,2-Tetrachloroethane	92	88	4	25	70-130
Bromobenzene	87	81	7	25	70-130
n-Butylbenzene	88	81	8	25	70-130
sec-Butylbenzene	87	80	8	25	70-130
tert-Butylbenzene	84	78	7	25	70-130
o-Chlorotoluene	87	82	6	25	70-130
p-Chlorotoluene	86	81	6	25	70-130
1,2-Dibromo-3-chloropropane	94	89	5	50	70-130
Hexachlorobutadiene	84	76	10	25	70-130
Isopropylbenzene	89	85	5	25	70-130
p-Isopropyltoluene	88	83	6	25	70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413792

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 03 (WG189281-4, WG189281)					
Naphthalene	84	85	1	25	70-130
n-Propylbenzene	87	80	8	25	70-130
1,2,3-Trichlorobenzene	84	84	0	25	70-130
1,2,4-Trichlorobenzene	84	84	0	25	70-130
1,3,5-Trimethylbenzene	88	83	6	25	70-130
1,2,4-Trimethylbenzene	89	83	7	25	70-130
Ethyl ether	82	82	0	25	70-130
Isopropyl Ether	82	81	1	25	70-130
Ethyl-Tert-Butyl-Ether	80	78	3	25	70-130
Tertiary-Amyl Methyl Ether	78	77	1	25	70-130
1,4-Dioxane	88	87	1	50	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	104	108	4		70-130
Toluene-d8	103	101	2		70-130
4-Bromofluorobenzene	98	98	0		70-130
Dibromofluoromethane	104	103	1		70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413792

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01,05 (WG189105-1)							
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Arsenic, Dissolved	ND	mg/l	0.005	60 6010B	1210 16:00	1213 15:36	RW
Blank Analysis for sample(s) 01-02,04-05 (WG189281-3)							
Volatile Organics by MCP 8260B				60 8260B		1213 17:28	SE
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				
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				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413792

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02,04-05 (WG189281-3)							
Volatile Organics by MCP 8260B continued				60 8260B		1213 17:28	SE
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				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	106.	%	70-130				
Toluene-d8	104.	%	70-130				
4-Bromofluorobenzene	101.	%	70-130				
Dibromofluoromethane	103.	%	70-130				
Blank Analysis for sample(s) 03 (WG189281-6)							
Volatile Organics by MCP 8260B				60 8260B		1214 09:24	SE
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				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413792

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 03 (WG189281-6)							
Volatile Organics by MCP 8260B continued				60 8260B		1214 09:24	SE
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				
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				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413792

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 03 (WG189281-6)							
Volatile Organics by MCP 8260B continued				60 8260B		1214 09:24	SE
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				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	108.	%	70-130				
Toluene-d8	102.	%	70-130				
4-Bromofluorobenzene	103.	%	70-130				
Dibromofluoromethane	102.	%	70-130				

REFERENCES

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.

ug/cart Micrograms per Cartridge.

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: L0413792

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
L0413792-01A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-01B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-01C	Plastic 250ml HNO3 preserved	A	<2	2.0 C	Y	Absent	MCP-AS-6010S
L0413792-02A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-02B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-03A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-03B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-04A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-04B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-05A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-05B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413792-05C	Plastic 250ml HNO3 preserved	A	<2	2.0 C	Y	Absent	MCP-AS-6010S

Container Comments

Container ID	Comments

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd In Lab: 12/9

ALPHA Job #: L0413792

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:
Fax:
Email:
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Raytheon-Wayland
Project Location: Wayland, MA
Project #: 13606
Project Manager: J. Reed
ALPHA Quote #:

Turn-Around Time

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

Date Due: 12/16 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	Arsenic *	Sample Specific Comments	TOTAL # BOTTLES
3792.1	MW-267B	12-8-04	1020	GW	BT	2	1	*Metals field	
2	MW-261S	12-8-04	1155	GW	BT	2		filtered using	
3	MW-264M	12-8-04	1300	GW	BT	2		0.45 micron filter	
4	MW-265M	12-8-04	1440	GW	BT	2			
5	HA-101	12-8-04	1630	GW	BT	2	1		

	8021B Chlorinated	Arsenic
Container Type	V	P
Preservative	B	C

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]		[signature]	12/9/04 1250
[signature]	12/9/04 1840	[signature]	12/9/04 1840

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 NO: 01-01