

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: L0413788  
Address: 399 Boylston Street  
6th Floor  
Boston, MA 02116 Date Received: 09-DEC-2004  
Attn: Jeremy Picard Date Reported: 29-DEC-2004  
Project Number: 13606 Delivery Method: Alpha  
Site: RAYTHEON WAYLAND

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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.

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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.

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Authorized by: Scott McLean  
This document electronically signed



ALPHA ANALYTICAL LABORATORIES

Laboratory Job Number: L0413788  
Date Reported: 29-DEC-2004

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ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0413788-01	MW-217S	WAYLAND
L0413788-02	MW-207D	WAYLAND
L0413788-03	MW-207S	WAYLAND
L0413788-04	MW-208S	WAYLAND
L0413788-05	MW-217M	WAYLAND
L0413788-06	MW-207M	WAYLAND
L0413788-07	MW-218S	WAYLAND
L0413788-08	MW-218M	WAYLAND

ALPHA ANALYTICAL LABORATORIES  
NARRATIVE REPORT

Laboratory Job Number: L0413788

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Report Submission

This report replaces the report issued December 14, 2004. At the client's request, the results for L0413788-01, -05, -07, and -08 have been removed and are reported under separate cover.

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

L0413788-06 has elevated limits of detection due to the 2x dilutions required by the elevated concentrations of target compounds in the sample.

L0413788-08 was re-analyzed on a 4x dilution in order to quantitate the sample within the range of the calibration. The result is reported as a greater than value for the compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound which exceeded the range of the calibration.

In reference to question E:

The WG188545-7,8 LCS,LCSD have low recoveries for acetone, 2-butanone, 2-hexanone and a high recovery for chloromethane (in the MS), all difficult analytes. Also low recoveries and an elevated RPD for 2,2-dichloropropane, but this analyte is not an analyte of concern in any associated samples.

The WG189173-1,2 LCS,LCSD have low recoveries for acetone, 2-hexanone and dichlorodifluoromethane and high recoveries for Bromomethane, all difficult analytes.



**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

<b>Laboratory Sample Number:</b> L0413788-02	<b>Date Collected:</b> 08-DEC-2004 11:40
MW-207D	<b>Date Received :</b> 09-DEC-2004
<b>Sample Matrix:</b> WATER	<b>Date Reported :</b> 29-DEC-2004
<b>Condition of Sample:</b> Satisfactory	<b>Field Prep:</b> None
<b>Number &amp; Type of Containers:</b> 2-Vial	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP    ANAL	ID
Volatile Organics by MCP 8260B				60 8260B	1211 21:12	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			
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			
Benzene	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	1.8	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			
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: L0413788-02  
MW-207D

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	1211	21:12	BT
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	121.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	101.	%		70-130			
Dibromofluoromethane	117.	%		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: L0413788-03	Date Collected: 08-DEC-2004 12:30
MW-207S	Date Received : 09-DEC-2004
Sample Matrix: WATER	Date Reported : 29-DEC-2004
Condition of Sample: Satisfactory	Field Prep: None
Number & Type of Containers: 2-Vial	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by MCP 8260B				60 8260B	1211 21:52	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	2.0	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	4.6	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			
Benzene	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	0.95	ug/l	0.50			
trans-1,2-Dichloroethene	ND	ug/l	0.75			
Trichloroethene	46.	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			
cis-1,2-Dichloroethene	0.62	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: L0413788-03  
 MW-207S

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	1211	21:52	BT
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	117.	%		70-130			
Toluene-d8	100.	%		70-130			
4-Bromofluorobenzene	104.	%		70-130			
Dibromofluoromethane	116.	%		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

<b>Laboratory Sample Number:</b> L0413788-04	<b>Date Collected:</b> 08-DEC-2004 15:30
MW-208S	<b>Date Received :</b> 09-DEC-2004
<b>Sample Matrix:</b> WATER	<b>Date Reported :</b> 29-DEC-2004
<b>Condition of Sample:</b> Satisfactory	<b>Field Prep:</b> None
<b>Number &amp; Type of Containers:</b> 6-Vial	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by MCP 8260B				60 8260B	1211 20:15 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	8.1	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			
Benzene	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	6.4	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			
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: L0413788-04  
 MW-208S

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	1211 20:15		BT
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	110.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	103.	%		70-130			
Dibromofluoromethane	103.	%		70-130			

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





ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0413788-06  
 MW-207M

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	1213 13:34		TT
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	122.	%		70-130			
Toluene-d8	100.	%		70-130			
4-Bromofluorobenzene	100.	%		70-130			
Dibromofluoromethane	122.	%		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: L0413788

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 06 (WG188545-7, WG188545)					
Methylene chloride	109	101	8	25	70-130
1,1-Dichloroethane	110	106	4	25	70-130
Chloroform	97	91	6	25	70-130
Carbon tetrachloride	109	100	9	25	70-130
1,2-Dichloropropane	105	105	0	25	70-130
Dibromochloromethane	102	100	2	25	70-130
1,1,2-Trichloroethane	107	106	1	25	70-130
Tetrachloroethene	99	93	6	25	70-130
Chlorobenzene	104	99	5	25	70-130
Trichlorofluoromethane	121	115	5	25	70-130
1,2-Dichloroethane	114	111	3	25	70-130
1,1,1-Trichloroethane	102	96	6	25	70-130
Bromodichloromethane	109	102	7	25	70-130
trans-1,3-Dichloropropene	100	95	5	25	70-130
cis-1,3-Dichloropropene	100	99	1	25	70-130
1,1-Dichloropropene	104	101	3	25	70-130
Bromoform	100	100	0	50	70-130
1,1,2,2-Tetrachloroethane	97	98	1	25	70-130
Benzene	110	104	6	25	70-130
Toluene	106	100	6	25	70-130
Ethylbenzene	110	104	6	25	70-130
Chloromethane	132	124	6	50	70-130
Bromomethane	110	110	0	50	70-130
Vinyl chloride	120	117	3	25	70-130
Chloroethane	113	107	5	25	70-130
1,1-Dichloroethene	106	104	2	25	70-130
trans-1,2-Dichloroethene	104	102	2	25	70-130
Trichloroethene	103	100	3	25	70-130
1,2-Dichlorobenzene	96	96	0	25	70-130
1,3-Dichlorobenzene	99	97	2	25	70-130
1,4-Dichlorobenzene	95	96	1	25	70-130
Methyl tert butyl ether	96	87	10	25	70-130
p/m-Xylene	111	107	4	25	70-130
o-Xylene	108	102	6	25	70-130
cis-1,2-Dichloroethene	109	104	5	25	70-130
Dibromomethane	108	102	6	25	70-130
1,2,3-Trichloropropane	101	101	0	25	70-130
Styrene	109	104	5	25	70-130
Dichlorodifluoromethane	125	118	6	50	70-130
Acetone	43	44	2	50	70-130
Carbon disulfide	101	96	5	25	70-130
2-Butanone	55	53	4	50	70-130
4-Methyl-2-pentanone	84	84	0	50	70-130
2-Hexanone	46	46	0	50	70-130
Bromochloromethane	100	97	3	25	70-130
Tetrahydrofuran	95	95	0	25	70-130
2,2-Dichloropropane	64	42	42	25	70-130
1,2-Dibromoethane	98	98	0	25	70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413788

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 06 (WG188545-7, WG188545)					
1,3-Dichloropropane	108	105	3	25	70-130
1,1,1,2-Tetrachloroethane	107	104	3	25	70-130
Bromobenzene	97	96	1	25	70-130
n-Butylbenzene	102	102	0	25	70-130
sec-Butylbenzene	106	104	2	25	70-130
tert-Butylbenzene	94	90	4	25	70-130
o-Chlorotoluene	103	101	2	25	70-130
p-Chlorotoluene	102	99	3	25	70-130
1,2-Dibromo-3-chloropropane	90	95	5	50	70-130
Hexachlorobutadiene	108	104	4	25	70-130
Isopropylbenzene	97	95	2	25	70-130
p-Isopropyltoluene	92	90	2	25	70-130
Naphthalene	89	97	9	25	70-130
n-Propylbenzene	104	101	3	25	70-130
1,2,3-Trichlorobenzene	93	100	7	25	70-130
1,2,4-Trichlorobenzene	86	95	10	25	70-130
1,3,5-Trimethylbenzene	106	103	3	25	70-130
1,2,4-Trimethylbenzene	107	103	4	25	70-130
Ethyl ether	97	97	0	25	70-130
Isopropyl Ether	97	97	0	25	70-130
Ethyl-Tert-Butyl-Ether	97	97	0	25	70-130
Tertiary-Amyl Methyl Ether	101	100	1	25	70-130
1,4-Dioxane	71	100	34	50	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	115	110	4		70-130
Toluene-d8	106	101	5		70-130
4-Bromofluorobenzene	102	103	1		70-130
Dibromofluoromethane	112	106	6		70-130
Volatile Organics by MCP 8260B for sample(s) 04 (WG189172-3, WG189172)					
Methylene chloride	87	94	8	25	70-130
1,1-Dichloroethane	90	100	11	25	70-130
Chloroform	83	94	12	25	70-130
Carbon tetrachloride	91	100	9	25	70-130
1,2-Dichloropropane	88	99	12	25	70-130
Dibromochloromethane	89	100	12	25	70-130
1,1,2-Trichloroethane	88	96	9	25	70-130
Tetrachloroethene	85	100	16	25	70-130
Chlorobenzene	90	98	9	25	70-130
1,2-Dichloroethane	91	102	11	25	70-130
1,1,1-Trichloroethane	86	100	15	25	70-130
Bromodichloromethane	88	102	15	25	70-130
trans-1,3-Dichloropropene	82	90	9	25	70-130
cis-1,3-Dichloropropene	88	100	13	25	70-130
Bromoform	82	97	17	50	70-130
1,1,2,2-Tetrachloroethane	84	98	15	25	70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413788

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 04 (WG189172-3, WG189172)					
Benzene	89	98	10	25	70-130
Chloromethane	101	116	14	50	70-130
Vinyl chloride	90	100	11	25	70-130
Chloroethane	89	106	17	25	70-130
1,1-Dichloroethene	85	98	14	25	70-130
trans-1,2-Dichloroethene	89	97	9	25	70-130
Trichloroethene	86	97	12	25	70-130
1,2-Dichlorobenzene	84	94	11	25	70-130
1,3-Dichlorobenzene	85	94	10	25	70-130
1,4-Dichlorobenzene	85	97	13	25	70-130
Methyl tert butyl ether	95	102	7	25	70-130
cis-1,2-Dichloroethene	92	99	7	25	70-130
Dichlorodifluoromethane	103	115	11	50	70-130
1,2-Dibromoethane	88	98	11	25	70-130
1,3-Dichloropropane	90	100	11	25	70-130
1,1,1,2-Tetrachloroethane	90	99	10	25	70-130
o-Chlorotoluene	86	97	12	25	70-130
p-Chlorotoluene	84	94	11	25	70-130
Hexachlorobutadiene	78	92	16	25	70-130
1,2,4-Trichlorobenzene	88	95	8	25	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	106	105	1		70-130
Toluene-d8	101	101	0		70-130
4-Bromofluorobenzene	99	100	1		70-130
Dibromofluoromethane	102	103	1		70-130
Volatile Organics by MCP 8260B for sample(s) 02-03 (WG189173-1, WG189173)					
Methylene chloride	115	109	5	25	70-130
1,1-Dichloroethane	119	111	7	25	70-130
Chloroform	103	98	5	25	70-130
Carbon tetrachloride	125	115	8	25	70-130
1,2-Dichloropropane	118	110	7	25	70-130
Dibromochloromethane	109	104	5	25	70-130
1,1,2-Trichloroethane	119	113	5	25	70-130
Tetrachloroethene	112	106	6	25	70-130
Chlorobenzene	116	108	7	25	70-130
Trichlorofluoromethane	124	110	12	25	70-130
1,2-Dichloroethane	122	116	5	25	70-130
1,1,1-Trichloroethane	117	109	7	25	70-130
Bromodichloromethane	112	106	6	25	70-130
trans-1,3-Dichloropropene	108	105	3	25	70-130
cis-1,3-Dichloropropene	112	108	4	25	70-130
1,1-Dichloropropene	117	111	5	25	70-130
Bromoform	101	105	4	50	70-130
1,1,2,2-Tetrachloroethane	104	109	5	25	70-130
Benzene	123	113	8	25	70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413788

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 02-03 (WG189173-1, WG189173)					
Toluene	118	111	6	25	70-130
Ethylbenzene	120	115	4	25	70-130
Chloromethane	95	88	8	50	70-130
Bromomethane	142	137	4	50	70-130
Vinyl chloride	104	99	5	25	70-130
Chloroethane	120	112	7	25	70-130
1,1-Dichloroethene	115	107	7	25	70-130
trans-1,2-Dichloroethene	116	109	6	25	70-130
Trichloroethene	114	106	7	25	70-130
1,2-Dichlorobenzene	107	106	1	25	70-130
1,3-Dichlorobenzene	110	108	2	25	70-130
1,4-Dichlorobenzene	108	107	1	25	70-130
Methyl tert butyl ether	112	112	0	25	70-130
p/m-Xylene	125	117	7	25	70-130
o-Xylene	120	114	5	25	70-130
cis-1,2-Dichloroethene	120	114	5	25	70-130
Dibromomethane	117	114	3	25	70-130
1,2,3-Trichloropropane	106	111	5	25	70-130
Styrene	120	114	5	25	70-130
Dichlorodifluoromethane	49	47	4	50	70-130
Acetone	64	59	8	50	70-130
Carbon disulfide	104	95	9	25	70-130
2-Butanone	72	73	1	50	70-130
4-Methyl-2-pentanone	93	92	1	50	70-130
2-Hexanone	57	56	2	50	70-130
Bromochloromethane	122	117	4	25	70-130
Tetrahydrofuran	103	99	4	25	70-130
2,2-Dichloropropane	114	106	7	25	70-130
1,2-Dibromoethane	108	108	0	25	70-130
1,3-Dichloropropane	119	116	3	25	70-130
1,1,1,2-Tetrachloroethane	113	109	4	25	70-130
Bromobenzene	108	111	3	25	70-130
n-Butylbenzene	119	114	4	25	70-130
sec-Butylbenzene	121	118	3	25	70-130
tert-Butylbenzene	107	106	1	25	70-130
o-Chlorotoluene	117	115	2	25	70-130
p-Chlorotoluene	114	113	1	25	70-130
1,2-Dibromo-3-chloropropane	90	100	11	50	70-130
Hexachlorobutadiene	114	112	2	25	70-130
Isopropylbenzene	111	112	1	25	70-130
p-Isopropyltoluene	108	104	4	25	70-130
Naphthalene	96	104	8	25	70-130
n-Propylbenzene	119	117	2	25	70-130
1,2,3-Trichlorobenzene	103	106	3	25	70-130
1,2,4-Trichlorobenzene	98	99	1	25	70-130
1,3,5-Trimethylbenzene	120	118	2	25	70-130
1,2,4-Trimethylbenzene	119	116	3	25	70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413788

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 02-03 (WG189173-1, WG189173)					
Ethyl ether	105	104	1	25	70-130
Isopropyl Ether	98	96	2	25	70-130
Ethyl-Tert-Butyl-Ether	98	97	1	25	70-130
Tertiary-Amyl Methyl Ether	100	100	0	25	70-130
1,4-Dioxane	102	109	7	50	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	108	103	5		70-130
Toluene-d8	104	101	3		70-130
4-Bromofluorobenzene	103	109	6		70-130
Dibromofluoromethane	106	101	5		70-130

ALPHA ANALYTICAL LABORATORIES  
 QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0413788

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Volatile Organics by MCP 8260B for sample(s) 04 (L0413788-04, WG189172)					
Methylene chloride	107	112	5	30	70-130
1,1-Dichloroethane	118	119	1	30	70-130
Chloroform	114	109	4	30	70-130
Carbon tetrachloride	128	123	4	30	70-130
1,2-Dichloropropane	116	117	1	30	70-130
Dibromochloromethane	117	121	3	30	70-130
1,1,2-Trichloroethane	113	112	1	30	70-130
Tetrachloroethene	115	115	0	30	70-130
Chlorobenzene	116	113	3	30	70-130
1,2-Dichloroethane	121	116	4	30	70-130
1,1,1-Trichloroethane	121	120	1	30	70-130
Bromodichloromethane	115	115	0	30	70-130
trans-1,3-Dichloropropene	116	116	0	30	70-130
cis-1,3-Dichloropropene	117	117	0	30	70-130
Bromoform	112	114	2	30	70-130
1,1,2,2-Tetrachloroethane	114	110	4	30	70-130
Benzene	115	114	1	30	70-130
Chloromethane	113	107	5	30	70-130
Vinyl chloride	112	111	1	30	70-130
Chloroethane	114	107	6	30	70-130
1,1-Dichloroethene	117	109	7	30	70-130
trans-1,2-Dichloroethene	121	114	6	30	70-130
Trichloroethene	125	117	7	30	70-130
1,2-Dichlorobenzene	110	110	0	30	70-130
1,3-Dichlorobenzene	110	111	1	30	70-130
1,4-Dichlorobenzene	114	111	3	30	70-130
Methyl tert butyl ether	116	114	2	30	70-130
cis-1,2-Dichloroethene	113	108	5	30	70-130
Dichlorodifluoromethane	98	94	4	30	70-130
1,2-Dibromoethane	116	116	0	30	70-130
1,3-Dichloropropane	115	117	2	30	70-130
1,1,1,2-Tetrachloroethane	118	122	3	30	70-130
o-Chlorotoluene	112	110	2	30	70-130
p-Chlorotoluene	113	111	2	30	70-130
Hexachlorobutadiene	109	106	3	30	70-130
1,2,4-Trichlorobenzene	109	113	4	30	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	107	108	1		70-130
Toluene-d8	101	101	0		70-130
4-Bromofluorobenzene	101	98	3		70-130
Dibromofluoromethane	106	103	3		70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413788

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 06 (WG188545-9)							
Volatile Organics by MCP 8260B				60 8260B		1213 12:14	TT
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				
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				

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413788

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 06 (WG188545-9)							
Volatile Organics by MCP 8260B continued				60 8260B		1213 12:14	TT
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	116.	%	70-130				
Toluene-d8	98.0	%	70-130				
4-Bromofluorobenzene	103.	%	70-130				
Dibromofluoromethane	117.	%	70-130				
Blank Analysis for sample(s) 04 (WG189172-5)							
Volatile Organics by MCP 8260B				60 8260B		1211 16:40	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				
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				



ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413788

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 04 (WG189172-5)							
Volatile Organics by MCP 8260B continued				60 8260B		1211 16:40	BT
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	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				
Methyl tert butyl ether	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	107.	%	70-130				
Toluene-d8	102.	%	70-130				
4-Bromofluorobenzene	103.	%	70-130				
Dibromofluoromethane	103.	%	70-130				
Blank Analysis for sample(s) 02-03 (WG189173-3)							
Volatile Organics by MCP 8260B				60 8260B		1211 12:38	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				

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413788

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 02-03 (WG189173-3)							
Volatile Organics by MCP 8260B continued				60 8260B	1211	12:38	BT
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				
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				

ALPHA ANALYTICAL LABORATORIES  
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413788

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 02-03 (WG189173-3)							
Volatile Organics by MCP 8260B continued				60 8260B		1211 12:38	BT
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	109.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	102.	%		70-130			
Dibromofluoromethane	108.	%		70-130			

**ALPHA ANALYTICAL LABORATORIES  
ADDENDUM I**

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**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: L0413788

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
L0413788-01A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-01B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-02A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-02B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-03A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-03B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-04A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-04B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-04C	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-04D	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-04E	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-04F	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-05A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-05B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-06A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-06B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	MCP-8260-04
L0413788-07A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-07B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-07C	Plastic 250ml unpreserved	A	=7	2.0 C	Y	Absent	HOLD
L0413788-08A	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-08B	Vial HCl preserved	A	N/A	2.0 C	Y	Absent	HOLD
L0413788-08C	Plastic 250ml unpreserved	A	=7	2.0 C	Y	Absent	HOLD

Container Comments

Container ID Comments