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Laboratory Report Number: L09050044

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories.

Review and compilation of your report was completed by Microbac's Sales and Service Team. If you have questions, comments or require further assistance regarding this report, please contact your team member noted in the reviewed box below at 800-373-4071. Team member e-mail addresses also appear here for your convenience.

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This report was reviewed on May 20, 2009.

A handwritten signature in cursive script that reads "Kathy Albertson".

Kathy Albertson - Team Chemist/Data Specialist

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories.

This report was certified on May 20, 2009.

A handwritten signature in cursive script that reads "David E. Vandenberg".

David Vandenberg - Managing Director

State of origin: New York

Accrediting authority: Department of Health ID:10861

QAPP: Microbac OVD

This report contains a total of 487 pages.

Look closer. Go further. Do more.



Microbac REPORT L09050044
PREPARED FOR CH2MHILL, Inc
WORK ID:

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1.0 Introduction

Microbac Laboratories Inc.
REPORT NARRATIVE

Microbac Login No: L09050044

CHAIN OF CUSTODY: The chain of custody number was 10483.

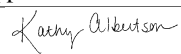
SHIPMENT CONDITIONS: The chain of custody forms were received sealed in a cooler. The cooler temperatures were 1 and 2 degrees C.

SAMPLE MANAGEMENT: All samples received were intact.

L09050044-01	BBLD-PIT-SSP-050109
L09050044-02	BBLD-PIT-SSP-050109
L09050044-03	MW-01-050109
L09050044-04	MW-01-050109
L09050044-05	MW-03-050109
L09050044-06	MW-03-050109
L09050044-07	DUP-GW-050109
L09050044-08	DUP-GW-050109
L09050044-09	TB-050109

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: KRA

Approved: 05-MAY-09


2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data



Loginnum: L09050044

Department: Volatiles -GC/MS

Analyst: Franci Bolden

METHOD

Preparation SW-846 5030B

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All reporting limit criteria were met, except for the following analytes:

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
WG301434-01	HPMS6	05/04/2009	TOLUENE-D8	SURR		87.6	88	110

Laboratory Control Sample: All analytes met the LCS acceptance criteria for % recovery and relative percent difference, except those listed below.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
WG301541-02	HPMS6	05/05/2009	TRANS-1,2-DICHLOROETHENE	REG		128	80	127
WG301541-03	HPMS6	05/05/2009	TRANS-1,2-DICHLOROETHENE	REG		129	80	127

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: All surrogate compounds met the acceptance criteria for % recovery, except for the following samples.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050044-05	HPMS6	05/04/2009	TOLUENE-D8	SURR		85.9	88	110
L09050044-07	HPMS6	05/04/2009	TOLUENE-D8	SURR		87.1	88	110

Other: Sample 01 required a dilution analysis.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

LABORATORY REPORT

L09050044

05/20/09 11:23

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	8260B	10	02-MAY-09
BBLD-PIT-SSP-050109	L09050044-01	8260B	100	02-MAY-09
MW-01-050109	L09050044-03	8260B	1	02-MAY-09
MW-03-050109	L09050044-05	8260B	1	02-MAY-09
DUP-GW--050109	L09050044-07	8260B	1	02-MAY-09
TB-050109	L09050044-09	8260B	1	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
 Client ID: **BBLD-PIT-SSP-050109**
 Matrix: **Water**
 Workgroup Number: **WG301434**
 Collect Date: **05/01/2009 09:00**
 Sample Tag: **DL01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **MES**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS6**
 Prep Date: **05/04/2009 21:07**
 Cal Date: **03/19/2009 14:09**
 Run Date: **05/04/2009 21:07**
 File ID: **6M83243**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	1290		100	25.0
Acrylonitrile	107-13-1		U	50.0	25.0
Benzene	71-43-2	2.65	J	10.0	1.25
Bromodichloromethane	75-27-4		U	10.0	2.50
Bromoform	75-25-2		U	10.0	5.00
Bromomethane	74-83-9		U	10.0	5.00
2-Butanone	78-93-3	27.4	J	100	25.0
Carbon disulfide	75-15-0	106		10.0	5.00
Carbon tetrachloride	56-23-5		U	10.0	2.50
Chlorobenzene	108-90-7	31.6		10.0	1.25
Chlorodibromomethane	124-48-1		U	10.0	2.50
Chloroethane	75-00-3		U	10.0	5.00
Chloroform	67-66-3	2680	E	10.0	1.25
Chloromethane	74-87-3		U	10.0	2.50
1,1-Dichloroethane	75-34-3	4.71	J	10.0	1.25
1,2-Dichloroethane	107-06-2		U	10.0	2.50
1,1-Dichloroethene	75-35-4		U	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	6.61	J	10.0	2.50
trans-1,2-Dichloroethene	156-60-5		U	10.0	2.50
1,2-Dichloropropane	78-87-5		U	10.0	2.00
cis-1,3-Dichloropropene	10061-01-5		U	10.0	2.50
trans-1,3-Dichloropropene	10061-02-6		U	10.0	5.00
Ethylbenzene	100-41-4		U	10.0	2.50
2-Hexanone	591-78-6		U	50.0	25.0
4-Methyl-2-pentanone	108-10-1	10400	E	50.0	25.0
Methylene chloride	75-09-2	122		20.0	2.50
Styrene	100-42-5		U	10.0	1.25
1,1,2,2-Tetrachloroethane	79-34-5		U	10.0	1.25
Tetrachloroethene	127-18-4		U	10.0	2.50
Toluene	108-88-3	123		10.0	2.50
1,1,1-Trichloroethane	71-55-6		U	10.0	2.50
1,1,2-Trichloroethane	79-00-5		U	10.0	2.50
Trichloroethene	79-01-6		U	10.0	2.50
Vinyl chloride	75-01-4		U	10.0	2.50
Xylene (Total)	1330-20-7	6.74	J	20.0	2.50
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	95.2	86	118		
1,2-Dichloroethane-d4	85.7	80	120		
Toluene-d8	90.5	88	110		
4-Bromofluorobenzene	102	86	115		

J The analyte was positively identified, but the quantitation was below the RL
 E Semiquantitative result (out of instrument calibration range)
 U Not detected at or above the reporting limit (RL).
 NF Not found by library search

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
 Client ID: **BBLD-PIT-SSP-050109**
 Matrix: **Water**
 Workgroup Number: **WG301541**
 Collect Date: **05/01/2009 09:00**
 Sample Tag: **DL02**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **FJB**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS6**
 Prep Date: **05/05/2009 12:13**
 Cal Date: **03/19/2009 14:09**
 Run Date: **05/05/2009 12:13**
 File ID: **6M83253**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	1550		1000	250
Acrylonitrile	107-13-1		U	500	250
Benzene	71-43-2		U	100	12.5
Bromodichloromethane	75-27-4		U	100	25.0
Bromoform	75-25-2		U	100	50.0
Bromomethane	74-83-9		U	100	50.0
2-Butanone	78-93-3		U	1000	250
Carbon disulfide	75-15-0	139		100	50.0
Carbon tetrachloride	56-23-5		U	100	25.0
Chlorobenzene	108-90-7	31.8	J	100	12.5
Chlorodibromomethane	124-48-1		U	100	25.0
Chloroethane	75-00-3		U	100	50.0
Chloroform	67-66-3	2610		100	12.5
Chloromethane	74-87-3		U	100	25.0
1,1-Dichloroethane	75-34-3		U	100	12.5
1,2-Dichloroethane	107-06-2		U	100	25.0
1,1-Dichloroethene	75-35-4		U	100	50.0
cis-1,2-Dichloroethene	156-59-2		U	100	25.0
trans-1,2-Dichloroethene	156-60-5		U	100	25.0
1,2-Dichloropropane	78-87-5		U	100	20.0
cis-1,3-Dichloropropene	10061-01-5		U	100	25.0
trans-1,3-Dichloropropene	10061-02-6		U	100	50.0
Ethylbenzene	100-41-4		U	100	25.0
2-Hexanone	591-78-6		U	500	250
4-Methyl-2-pentanone	108-10-1	8740		500	250
Methylene chloride	75-09-2	122	J	200	25.0
Styrene	100-42-5		U	100	12.5
1,1,2,2-Tetrachloroethane	79-34-5		U	100	12.5
Tetrachloroethene	127-18-4		U	100	25.0
Toluene	108-88-3	115		100	25.0
1,1,1-Trichloroethane	71-55-6		U	100	25.0
1,1,2-Trichloroethane	79-00-5		U	100	25.0
Trichloroethene	79-01-6		U	100	25.0
Vinyl chloride	75-01-4		U	100	25.0
Xylene (Total)	1330-20-7		U	200	25.0
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	105	86	118		
1,2-Dichloroethane-d4	97.2	80	120		
Toluene-d8	97.1	88	110		
4-Bromofluorobenzene	105	86	115		

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

NF Not found by library search

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
 Client ID: **MW-01-050109**
 Matrix: **Water**
 Workgroup Number: **WG301434**
 Collect Date: **05/01/2009 10:55**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **MES**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS6**
 Prep Date: **05/04/2009 19:30**
 Cal Date: **03/19/2009 14:09**
 Run Date: **05/04/2009 19:30**
 File ID: **6M83240**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	4.11	J	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3	1.82		1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	104	86	118		
1,2-Dichloroethane-d4	99.0	80	120		
Toluene-d8	95.6	88	110		
4-Bromofluorobenzene	109	86	115		

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

NF Not found by library search

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
 Client ID: **MW-03-050109**
 Matrix: **Water**
 Workgroup Number: **WG301434**
 Collect Date: **05/01/2009 09:37**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **MES**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS6**
 Prep Date: **05/04/2009 20:03**
 Cal Date: **03/19/2009 14:09**
 Run Date: **05/04/2009 20:03**
 File ID: **6M83241**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1		U	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2	1.65		1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0	0.648	J	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7	4.85		1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3	1.68		1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.48		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	0.713	J	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4	0.960	J	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1	3.55	J	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3	9.05		1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7	5.08		2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	103	86	118		
1,2-Dichloroethane-d4	98.0	80	120		
Toluene-d8	85.9	88	110	*	
4-Bromofluorobenzene	106	86	115		

J The analyte was positively identified, but the quantitation was below the RL

* Surrogate or spike compound out of range

U Not detected at or above the reporting limit (RL).

NF Not found by library search

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-07**
 Client ID: **DUP-GW--050109**
 Matrix: **Water**
 Workgroup Number: **WG301434**
 Collect Date: **05/01/2009 00:01**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **MES**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS6**
 Prep Date: **05/04/2009 20:35**
 Cal Date: **03/19/2009 14:09**
 Run Date: **05/04/2009 20:35**
 File ID: **6M83242**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1		U	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2	1.62		1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0	0.744	J	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7	4.79		1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3	1.59		1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.29		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	0.688	J	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4	0.949	J	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1	3.54	J	5.00	2.50
Methylene chloride	75-09-2		U	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3	9.08		1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5	1.47		1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7	5.13		2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	97.6	86	118		
1,2-Dichloroethane-d4	91.7	80	120		
Toluene-d8	87.1	88	110	*	
4-Bromofluorobenzene	104	86	115		

J The analyte was positively identified, but the quantitation was below the RL

* Surrogate or spike compound out of range

U Not detected at or above the reporting limit (RL).

NF Not found by library search

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-09**
 Client ID: **TB-050109**
 Matrix: **Water**
 Workgroup Number: **WG301434**
 Collect Date: **05/01/2009 00:01**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **5030B**
 Analytical Method: **8260B**
 Analyst: **MES**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS6**
 Prep Date: **05/04/2009 13:36**
 Cal Date: **03/19/2009 14:09**
 Run Date: **05/04/2009 13:36**
 File ID: **6M83229**

Analyte	CAS. Number	Result	Qual	RL	MDL
Epichlorohydrin	106-89-8		NF		
Acetone	67-64-1	4.94	J	10.0	2.50
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
2-Butanone	78-93-3		U	10.0	2.50
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,1-Dichloroethene	75-35-4		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Ethylbenzene	100-41-4		U	1.00	0.250
2-Hexanone	591-78-6		U	5.00	2.50
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Methylene chloride	75-09-2	0.344	J	2.00	0.250
Styrene	100-42-5		U	1.00	0.125
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.125
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
Trichloroethene	79-01-6		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250
Xylene (Total)	1330-20-7		U	2.00	0.250
Surrogate	% Recovery	Lower	Upper	Qual	
Dibromofluoromethane	98.8	86	118		
1,2-Dichloroethane-d4	90.7	80	120		
Toluene-d8	95.5	88	110		
4-Bromofluorobenzene	108	86	115		

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

NF Not found by library search

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

$$RF = [(Ax) (Cis)] / [(Ais) (Cx)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100

RF = Calculated Response Factor **1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

$$Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	3122498
Cis = Concentration of the specific internal standard (ug/L)	25
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	611048
RF = Average RF from the ICAL	1.004
Vs = Purge volume of sample (mL)	10
Vn = Nominal purge volume of sample (mL) (10.0 mL)	10
Cx = Concentration of the compound in the sample being measured (ug/L)	127.2428

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

$$Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	3122498
Cis = Concentration of the specific internal standard (ug/L)	25
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	611048
RF = Average RF from the ICAL	1.004
Ws = Weight of sample purged (g)	5
Wn = Nominal purge weight (g) (5.0 g)	5
Cx = Concentration of the compound in the sample being measured (ug/L)	127.2428

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	254.4856

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, $y = mx + b$

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

$$y = 86550/593147 = 0.1459$$

Step 3: Solve for x

$$x = (y - b)/m = [(0.1459 - (-0.00642))/0.213] = 0.7152$$

Step 4: Solve for analyte concentration Cx

$$Cx = Cis (x) = (25.0)(0.7152) = 17.88$$

Example Spreadsheet Calculation:

Slope from curve, m:	0.213
Intercept from curve, b:	-0.00642
Area of analyte, Ax:	86550
Area of Internal Standard, Ais:	593147
Concentration of IS, Cis	25.00
Response Ratio:	0.145917
Amount Ratio:	0.715195
Concentration:	17.87988
Units of Internal Standard:	ug/L

5.0 Concentration from Quadratic Regression**Step 1 - Retrieve Curve Data from Plot, $y = Ax^2 + Bx + C$**

Where:

$$Ax^2 + Bx + (C - y) = 0$$

A, B, C = constants from the ICAL quadratic regression

y = Response ratio = Area of analyte/Area of internal standard (IS)

x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

$$y = Ax/Ais$$

Step 3: Solve for x using the quadratic formula

$$Ax^2 + Bx + C - y = 0$$

$$x = \frac{b \pm \sqrt{(b^2 - 4a(c - y))}}{2a} \quad (\text{Two possible solutions})$$

Step 4: Solve for analyte concentration Cx

$$Cx = (Cis)(\text{Amount ratio})$$

Example Spreadsheet Calculation:

Value of A from plot:	-0.00629
Value of B from plot:	0.511
Value of C from plot:	-0.0276
Area of unknown from quantitation report:	293821
Area of IS from quantitation report:	784848
Response ratio, y:	0.374367
C - y:	-0.40197
Root 1 - Computed amount ratio, X1:	80.44567
Root 2 - Computed amount ratio, X2:	0.794396 use this solution
Concentration of IS, Cis:	25.00
Concentration of analyte, Cx:	19.86 ug/L

Microbac Laboratories Inc.
Instrument Run Log

Instrument: HPMS6 Dataset: 031909
 Analyst1: MES Analyst2: NA
 Method: 8260B SOP: MSV01 Rev: 12
 Method: 624 SOP: MSV10 Rev: 7
 Method: 5030/5035 SOP: PAT01 Rev: 11
 Maintenance Log ID: 27140

Internal Standard: STD31689 Surrogate Standard: STD31866
 CCV: STD31874 LCS: STD31848 MS/MSD: NA
 Column 1 ID: RTX502.2 Column 2 ID: NA
 Workgroups: WG297666

Comments: Not reporting second tune-archon errored.

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	6M82294	BLANK	NA	1	1		03/19/09 07:38
2	6M82295	WG297666-01 50NG BFB STD 8260	NA	1	1	STD31709	03/19/09 08:08
3	6M82296	WG297666-02 0.3ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 08:39
4	6M82297	WG297666-03 0.4ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 09:12
5	6M82298	WG297666-04 1 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 09:44
6	6M82299	WG297666-05 2 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 10:53
7	6M82300	WG297666-06 5 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 11:25
8	6M82301	WG297666-07 20 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 12:01
9	6M82302	WG297666-08 50 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 12:33
10	6M82303	WG297666-09 100 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 13:05
11	6M82304	WG297666-10 200 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 13:37
12	6M82305	WG297666-11 300 ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 14:09
13	6M82306	SYSTEM BLANK	NA	1	1		03/19/09 14:44
14	6M82307	WG297666-12 20ug/L ALT SOURCE	NA	1	1	STD31848	03/19/09 15:21
15	6M82308	WG297666-13 100ug/L ALT SOURCE	NA	1	1	STD31848	03/19/09 15:54
16	6M82309	WG297666-12 20ug/L ALT SOURCE	NA	1	1	STD31848	03/19/09 16:26
17	6M82310	WG297778-01 50NG BFB STD 8260	NA	1	1	STD31709	03/19/09 16:54
18	6M82311	WG297778-02 50ug/L WATER STD 8260	NA	1	1	STD31874	03/19/09 17:20
19	6M82312	WG297779-01 VBLK0319 BLANK 8260	NA	1	1		03/19/09 17:52
20	6M82313	WG297779-01 VBLK0319 BLANK 8260	NA	1	1		03/19/09 18:24
21	6M82314	WG297779-02 20ug/L LCS 8260	NA	1	1	STD31848	03/19/09 18:57
22	6M82315	L09030327-16 A 826-SPE	NA	1	1		03/19/09 19:29
23	6M82316	L09030424-08 A 826-A9	NA	1	1		03/19/09 20:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
File ID: 6M82307				
RR for SS.				

Approved: March 20, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HPMS6 Dataset: 050409
 Analyst1: MES Analyst2: NA
 Method: 8260B SOP: MSV01 Rev: 12
 Method: 50305035 SOP: PAT01 Rev: 11

Maintenance Log ID: 28601

Internal Standard: STD32171 Surrogate Standard: STD32264
 CCV: STD32569 LCS: STD32631 MS/MSD: NA
 Column 1 ID: RTX502.2 Column 2 ID: NA
 Workgroups: WG301434

Comments: INSTRUMENT WAS FOAMED IN PREVIOUS RUN

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	6M83221	WG301433-01 50NG BFB STD 8260	NA	1	1	STD32213	05/04/09 09:17
2	6M83222	WG301433-02 50ug/L WATER STD 8260	NA	1	1	STD32480	05/04/09 09:43
3	6M83223	WG301433-02 50ug/L WATER STD 8260	NA	1	1	STD32480	05/04/09 10:21
4	6M83224	WG301434-01 VBLK0504 BLANK 8260	NA	1	1		05/04/09 10:54
5	6M83225	WG301434-01 VBLK0504 BLANK 8260	NA	1	1		05/04/09 11:26
6	6M83226	WG301434-02 20ug/L LCS 8260	NA	1	1	STD32589	05/04/09 12:00
7	6M83227	WG301434-03 20ug/L LCSDUP 8260	NA	1	1	STD32589	05/04/09 12:32
8	6M83228	WG301434-04 SPLP BLANK 4/28	NA	1	1		05/04/09 13:04
9	6M83229	L09050044-09 A 826-SPE	<2	1	1		05/04/09 13:36
10	6M83230	L09050038-01 A 826-BETX	<2	1	1		05/04/09 14:08
11	6M83231	L09050037-01 A 826-BETX	<2	1	1		05/04/09 14:40
12	6M83232	L09050030-05 A 826-SPE	<2	1	1		05/04/09 15:12
13	6M83233	L09050043-01 1000X 8260	7	12	1000		05/04/09 15:45
14	6M83234	L09040724-02 B 2X 826-SPE5	<2	1	2		05/04/09 16:17
15	6M83235	L09050043-01 2X 8260	7	12	2		05/04/09 16:49
16	6M83236	L09040672-01 B 100X 826-TC	NA	17	100		05/04/09 17:22
17	6M83237	L09040716-01 B 100X 826-LOW	<2	1	100		05/04/09 17:54
18	6M83238	L09040716-02 B 100X 826-LOW	<2	1	100		05/04/09 18:26
19	6M83239	L09040716-03 B 826-LOW	<2	1	1		05/04/09 18:58
20	6M83240	L09050044-03 A 826-SPE	<2	1	1		05/04/09 19:30
21	6M83241	L09050044-05 A 826-SPE	<2	1	1		05/04/09 20:03
22	6M83242	L09050044-07 A 826-SPE	<2	1	1		05/04/09 20:35
23	6M83243	L09050044-01 A 10X 826-SPE	5	1	10		05/04/09 21:07
24	6M83244	SYSTEM BLANK	NA	1	1		05/04/09 21:40
25	6M83245	SYSTEM BLANK	NA	1	1		05/04/09 22:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M83222				
BROMOMETHANE LOW				
4	X		Carry-over contamination	
File ID: 6M83224				

Approved: May 05, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HPMS6 Dataset: 050409
 Analyst1: MES Analyst2: NA
 Method: 8260B SOP: MSV01 Rev: 12
 Method: 50305035 SOP: PAT01 Rev: 11

Maintenance Log ID: 28601

Internal Standard: STD32171 Surrogate Standard: STD32264
 CCV: STD32569 LCS: STD32631 MS/MSD: NA
 Column 1 ID: RTX502.2 Column 2 ID: NA
 Workgroups: WG301434

Comments: INSTRUMENT WAS FOAMED IN PREVIOUS RUN

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	2	Analyzed too dilute	
File ID: 6M83233				
DNR, RERUN IN THIS WG				
15	X	2	Carry-over contamination	ACETONE
File ID: 6M83235				
REPORT BECAUSE DUE 5/5 F1, RERUN AT 2X, NOT MORE CONCENTRATED DUE TO PARTICULATE IN SAMPLE				
23	X	100	Over Calibration Range	4 METHYL 2 PENTANONE, CHLOROFORM
File ID: 6M83243				

Approved: May 05, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HPMS6 Dataset: 050509
 Analyst1: FJB Analyst2: NA
 Method: 8260B SOP: MSV01 Rev: 12
 Method: 5030B/5035 SOP: PAT01 Rev: 11

Maintenance Log ID: 28615

Internal Standard: STD32171 Surrogate Standard: STD32264
 CCV: STD32569 LCS: STD32631 MS/MSD: NA
 Column 1 ID: RTX502.2 Column 2 ID: NA
 Workgroups: WG301541

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	6M83247	WG301540-01 50NG BFB STD 8260	NA	1	1	STD32213	05/05/09 09:07
2	6M83248	WG301540-02 50ug/L WATER STD 8260	NA	1	1	STD32480	05/05/09 09:31
3	6M83249	WG301560-01 100ug/L WATER STD A9	NA	1	1	STD32626	05/05/09 10:04
4	6M83250	WG301541-01 VBLK0505 BLANK 8260	NA	1	1		05/05/09 10:36
5	6M83251	WG301541-02 20ug/L LCS 8260	NA	1	1	STD32631	05/05/09 11:08
6	6M83252	WG301541-03 20ug/L LCS DUP 8260	NA	1	1	STD32631	05/05/09 11:41
7	6M83253	L09050044-01 100X B 826-SPE	5	1	100		05/05/09 12:13
8	6M83254	L09050043-01 2X 8260	7	12	2		05/05/09 12:46
9	6M83255	L09040716-04 B 826-LOW	<2	1	1		05/05/09 13:18
10	6M83256	L09050033-05 10X B 826-SPE	7	1	10		05/05/09 13:50
11	6M83257	L09050033-06 10X B 826-SPE	7	1	10		05/05/09 14:22
12	6M83258	L09050075-09 A 826-SPE	<2	1	1		05/05/09 14:55
13	6M83259	L09050069-01 A 826-SPE	<2	1	1		05/05/09 15:27
14	6M83260	L09050052-07 A 826-SPE	<2	1	1		05/05/09 15:59
15	6M83261	L09050066-01 A 826-SPE	<2	1	1		05/05/09 16:32
16	6M83262	L09050066-02 A 826-SPE	<2	1	1		05/05/09 17:03
17	6M83263	L09050066-03 A 826-SPE	<2	1	1		05/05/09 17:36
18	6M83264	L09050066-04 A 826-SPE	<2	1	1		05/05/09 18:09
19	6M83265	L09050075-01 A 826-SPE	<2	1	1		05/05/09 18:41
20	6M83266	L09050075-03 A 826-SPE	<2	1	1		05/05/09 19:14
21	6M83267	L09050075-05 A 826-SPE	<2	1	1		05/05/09 19:46
22	6M83268	L09050069-02 A 826-SPE	<2	1	1		05/05/09 20:18
23	6M83269	L09050075-07 10X A 826-SPE	11	1	10		05/05/09 20:51
24	6M83270	SYSTEM BLANK	NA	1	1		05/05/09 21:23
25	6M83271	SYSTEM BLANK	NA	1	1		05/05/09 21:56
26	6M83272	WG301541-04 624 BLANK	NA	1	1		05/05/09 22:28
27	6M83273	L09050067-01 A 624-SPE	7	2	1		05/05/09 23:00
28	6M83274	SYSTEM BLANK	NA	2	1		05/05/09 23:33
29	6M83275	SYSTEM BLANK	NA	2	1		05/06/09 00:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				

Approved: May 07, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HPMS6 Dataset: 050509
 Analyst1: FJB Analyst2: NA
 Method: 8260B SOP: MSV01 Rev: 12
 Method: 5030B/5035 SOP: PAT01 Rev: 11

Maintenance Log ID: 28615

Internal Standard: STD32171 Surrogate Standard: STD32264
 CCV: STD32569 LCS: STD32631 MS/MSD: NA
 Column 1 ID: RTX502.2 Column 2 ID: NA
 Workgroups: WG301541

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M83249				
DECIDED NOT TO RUN A9FOO DUE TO DIOXANE PROBLEMS FROM BEING FOAMED				
8				
File ID: 6M83254				
DNR - CONF only				
CANNOT RUN MORE CONCENTRATED DUE TO PARTICULATE				
17	X	10	Over Calibration Range	TCE
File ID: 6M83263				
22	X	10	Over Calibration Range	C TET
File ID: 6M83268				

Approved: May 07, 2009

Page: 2





Microbac Laboratories Inc.

Data Checklist

Date: 19-MAR-2009

Analyst: MES

Analyst: NA

Method: 8260/624

Instrument: HPMS6

Curve Workgroup: NA

Runlog ID: 27140

Analytical Workgroups: WG297666

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	MES
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-MAR-2009



Secondary Reviewer:
20-MAR-2009



Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2009

Analyst: MES

Analyst: NA

Method: 8260B

Instrument: HPMS6

Curve Workgroup: NA

Runlog ID: 27912

Analytical Workgroups: WG301434

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	X
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
05-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: MES

Analyst: NA

Method: 8260B

Instrument: HPMS6

Curve Workgroup: NA

Runlog ID: 27931

Analytical Workgroups: WG301541

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	X
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-MAY-2009



Secondary Reviewer:
07-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG301434

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-03-050109	05/01/09	05/02/09	05/04/09	14	3.43	05/04/09	14	3.43	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/04/09	14	3.50	05/04/09	14	3.50	
MW-01-050109	05/01/09	05/02/09	05/04/09	14	3.36	05/04/09	14	3.36	
TB-050109	05/01/09	05/02/09	05/04/09	14	3.57	05/04/09	14	3.57	
DUP-GW--050109	05/01/09	05/02/09	05/04/09	14	3.86	05/04/09	14	3.86	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1385994
Report generated 05/07/2009 12:54



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B
Login Number: L09050044

AAB#: WG301541

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	14	4.13	05/05/09	14	4.13	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS



Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L09050044
Instrument Id: HPMS6
Workgroup (AAB#): WG301541

Method: 8260
CAL ID: HPMS6 - 19-MAR-09
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L09050044-01	100	DL02	97.2	105	105	97.1
WG301541-01	1.00	01	94.2	98.9	101	94.0
WG301541-02	1.00	01	95.0	101	97.2	92.2
WG301541-03	1.00	01	95.6	99.9	101	93.4
WG301541-04	1.00	01	<u>121</u>	115	107	98.1

Surrogates	Surrogate Limits
1 - 1,2-Dichloroethane-d4	80 - 120
2 - Dibromofluoromethane	86 - 118
3 - 4-Bromofluorobenzene	86 - 115
4 - Toluene-d8	88 - 110

Underline = Result out of surrogate limits

DL = surrogate diluted out

ND = surrogate not detected

**Microbac Laboratories Inc.
SURROGATE STANDARDS**

Login Number: L09050044
Instrument Id: HPMS6
Workgroup (AAB#): WG301434

Method: 8260
CAL ID: HPMS6 - 19-MAR-09
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L09050044-01	10.0	DL01	85.7	95.2	102	90.5
L09050044-03	1.00	01	99.0	104	109	95.6
L09050044-05	1.00	01	98.0	103	106	85.9
L09050044-07	1.00	01	91.7	97.6	104	87.1
L09050044-09	1.00	01	90.7	98.8	108	95.5
WG301434-01	1.00	01	84.9	90.9	98.5	87.6
WG301434-02	1.00	01	88.2	94.7	98.2	89.8
WG301434-03	1.00	01	86.6	94.2	101	90.3
WG301434-04	1.00	01	90.1	97.6	107	95.0

Surrogates	Surrogate Limits
1 - 1,2-Dichloroethane-d4	80 - 120
2 - Dibromofluoromethane	86 - 118
3 - 4-Bromofluorobenzene	86 - 115
4 - Toluene-d8	88 - 110

Underline = Result out of surrogate limits

DL = surrogate diluted out

ND = surrogate not detected

METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: 6M83225
 Prep Date: 05/04/09 11:26
 Analyzed Date: 05/04/09 11:26
 Analyst: MES

Work Group: WG301434
 Blank Sample ID: WG301434-01
 Instrument ID: HPMS6
 Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301434-02	6M83226	05/04/09 12:00	01
LCS2	WG301434-03	6M83227	05/04/09 12:32	01
FBLK	WG301434-04	6M83228	05/04/09 13:04	01
TB-050109	L09050044-09	6M83229	05/04/09 13:36	01
MW-01-050109	L09050044-03	6M83240	05/04/09 19:30	01
MW-03-050109	L09050044-05	6M83241	05/04/09 20:03	01
DUP-GW--050109	L09050044-07	6M83242	05/04/09 20:35	01
BBLD-PIT-SSP-050109	L09050044-01	6M83243	05/04/09 21:07	DL01

METHOD BLANK SUMMARY

Login Number: <u>L09050044</u>	Work Group: <u>WG301541</u>
Blank File ID: <u>6M83250</u>	Blank Sample ID: <u>WG301541-01</u>
Prep Date: <u>05/05/09 10:36</u>	Instrument ID: <u>HPMS6</u>
Analyzed Date: <u>05/05/09 10:36</u>	Method: <u>8260B</u>
Analyst: <u>FJB</u>	

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301541-02	6M83251	05/05/09 11:08	01
LCS2	WG301541-03	6M83252	05/05/09 11:41	01
BBLD-PIT-SSP-050109	L09050044-01	6M83253	05/05/09 12:13	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 1385993
Report generated 05/07/2009 12:54



METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/04/09 11:26 Sample ID: WG301434-01
 Instrument ID: HPMS6 Run Date: 05/04/09 11:26 Prep Method: 5030B
 File ID: 6M83225 Analyst: MES Method: 8260B
 Workgroup (AAB#): WG301434 Matrix: Water Units: ug/L
 Contract #: _____ Cal ID: HPMS6 - 19-MAR-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Acrylonitrile	2.50	5.00	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	1.00	0.500	1	U
Bromomethane	0.500	1.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
Carbon disulfide	0.500	1.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	1.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	1.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	5.00	2.50	1	U
4-Methyl-2-pentanone	2.50	5.00	2.50	1	U
Methylene chloride	0.250	2.00	0.250	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,2,2-Tetrachloroethane	0.125	1.00	0.125	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
Xylene (Total)	0.250	2.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	90.9	86 - 118	PASS
1,2-Dichloroethane-d4	84.9	80 - 120	PASS
Toluene-d8	87.6	88 - 110	FAIL
4-Bromofluorobenzene	98.5	86 - 115	PASS

MDL Method Detection Limit

Report Name: BLANK

PDF ID: 1385995

07-MAY-2009 12:54



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/04/09 11:26 Sample ID: WG301434-01
Instrument ID: HPMS6 Run Date: 05/04/09 11:26 Prep Method: 5030B
File ID: 6M83225 Analyst: MES Method: 8260B
Workgroup (AAB#): WG301434 Matrix: Water Units: ug/L
Contract #: _____ Cal ID: HPMS6 - 19-MAR-09

RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 1385995
07-MAY-2009 12:54



METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 10:36 Sample ID: WG301541-01
 Instrument ID: HPMS6 Run Date: 05/05/09 10:36 Prep Method: 5030B
 File ID: 6M83250 Analyst: FJB Method: 8260B
 Workgroup (AAB#): WG301541 Matrix: Water Units: ug/L
 Contract #: _____ Cal ID: HPMS6 - 19-MAR-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Acrylonitrile	2.50	5.00	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	1.00	0.500	1	U
Bromomethane	0.500	1.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
Carbon disulfide	0.500	1.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	1.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	1.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	5.00	2.50	1	U
4-Methyl-2-pentanone	2.50	5.00	2.50	1	U
Methylene chloride	0.250	2.00	0.250	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,2,2-Tetrachloroethane	0.125	1.00	0.125	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
Xylene (Total)	0.250	2.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.9	86 - 118	PASS
1,2-Dichloroethane-d4	94.2	80 - 120	PASS
Toluene-d8	94.0	88 - 110	PASS
4-Bromofluorobenzene	101	86 - 115	PASS

MDL Method Detection Limit

Report Name: BLANK

PDF ID: 1385995

07-MAY-2009 12:54



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number:	L09050044	Prep Date:	05/05/09 10:36	Sample ID:	WG301541-01
Instrument ID:	HPMS6	Run Date:	05/05/09 10:36	Prep Method:	5030B
File ID:	6M83250	Analyst:	FJB	Method:	8260B
Workgroup (AAB#):	WG301541	Matrix:	Water	Units:	ug/L
Contract #:			Cal ID:	HPMS6 - 19-MAR-09	

RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name:BLANK
PDF ID: 1385995
07-MAY-2009 12:54



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: <u>L09050044</u>	Analyst: <u>FJB</u>	Prep Method: <u>5030B</u>
Instrument ID: <u>HPMS6</u>	Matrix: <u>Water</u>	Method: <u>8260B</u>
Workgroup (AAB#): <u>WG301541</u>		Units: <u>ug/L</u>
QC Key: <u>STD</u>	Lot #: <u>STD32631</u>	

Sample ID: <u>WG301541-02 LCS</u>	File ID: <u>6M83251</u>	Run Date: <u>05/05/2009 11:08</u>
Sample ID: <u>WG301541-03 LCS2</u>	File ID: <u>6M83252</u>	Run Date: <u>05/05/2009 11:41</u>

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Acetone	20.0	21.1	106	20.0	21.1	106	0.115	40 - 142	20	
Acrylonitrile	20.0	20.7	104	20.0	21.6	108	4.12	50 - 150	20	
Benzene	20.0	21.9	109	20.0	22.0	110	0.458	80 - 121	20	
Bromodichloromethane	20.0	23.1	115	20.0	23.3	116	0.818	80 - 131	20	
Bromoform	20.0	18.3	91.6	20.0	18.8	94.0	2.60	70 - 130	20	
Bromomethane	20.0	11.8	58.9	20.0	13.2	66.1	11.6	30 - 145	20	
2-Butanone	20.0	19.5	97.5	20.0	21.3	107	9.09	30 - 150	20	
Carbon disulfide	20.0	19.3	96.3	20.0	19.3	96.5	0.148	58 - 138	20	
Carbon tetrachloride	20.0	20.2	101	20.0	19.7	98.3	2.78	65 - 140	20	
Chlorobenzene	20.0	19.6	97.8	20.0	19.8	99.0	1.23	80 - 120	20	
Chlorodibromomethane	20.0	21.3	106	20.0	21.4	107	0.741	60 - 135	20	
Chloroethane	20.0	20.1	100	20.0	21.0	105	4.35	60 - 135	20	
Chloroform	20.0	22.4	112	20.0	22.2	111	0.788	80 - 125	20	
Chloromethane	20.0	23.4	117	20.0	23.2	116	0.812	40 - 125	20	
1,1-Dichloroethane	20.0	22.2	111	20.0	22.2	111	0.0135	80 - 125	20	
1,2-Dichloroethane	20.0	21.5	108	20.0	21.5	108	0.128	80 - 129	20	
1,1-Dichloroethene	20.0	21.5	108	20.0	21.3	107	0.928	80 - 132	20	
cis-1,2-Dichloroethene	20.0	23.4	117	20.0	23.6	118	0.969	70 - 125	20	
trans-1,2-Dichloroethene	20.0	25.5	128	20.0	25.7	129	0.939	80 - 127	20	*
1,2-Dichloropropane	20.0	23.1	115	20.0	23.6	118	1.95	80 - 120	20	
cis-1,3-Dichloropropene	20.0	22.8	114	20.0	23.0	115	0.793	70 - 130	20	
trans-1,3-Dichloropropene	20.0	18.6	93.2	20.0	18.9	94.3	1.22	80 - 130	20	
Ethylbenzene	20.0	19.9	99.5	20.0	20.1	100	0.970	80 - 122	20	
2-Hexanone	20.0	17.7	88.5	20.0	18.8	94.1	6.17	55 - 130	20	
4-Methyl-2-pentanone	20.0	19.9	99.6	20.0	21.2	106	6.06	64 - 140	20	
Methylene chloride	20.0	19.9	99.7	20.0	20.2	101	1.17	80 - 123	20	
Styrene	20.0	17.9	89.6	20.0	18.1	90.3	0.778	80 - 123	20	
1,1,2,2-Tetrachloroethane	20.0	19.9	99.3	20.0	20.9	105	5.23	79 - 125	20	
Tetrachloroethene	20.0	20.3	101	20.0	20.2	101	0.325	80 - 124	20	
Toluene	20.0	20.3	101	20.0	20.4	102	0.874	80 - 124	20	
1,1,1-Trichloroethane	20.0	21.9	109	20.0	21.5	108	1.48	80 - 134	20	
1,1,2-Trichloroethane	20.0	21.7	109	20.0	22.4	112	3.11	80 - 125	20	
Trichloroethene	20.0	23.0	115	20.0	23.1	115	0.225	80 - 122	20	
Vinyl chloride	20.0	21.2	106	20.0	20.6	103	3.05	65 - 140	20	
Xylene (Total)	60.0	60.5	101	60.0	60.9	101	0.608	80 - 121	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 1383560
Report generated: 05/07/2009 12:54



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: FJB Prep Method: 5030B
 Instrument ID: HPMS6 Matrix: Water Method: 8260B
 Workgroup (AAB#): WG301541 Units: ug/L
 QC Key: STD Lot #: STD32631
 Sample ID: WG301541-02 LCS File ID: 6M83251 Run Date: 05/05/2009 11:08
 Sample ID: WG301541-03 LCS2 File ID: 6M83252 Run Date: 05/05/2009 11:41

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	95.0	95.6	80 - 120	PASS
Dibromofluoromethane	101	99.9	86 - 118	PASS
4-Bromofluorobenzene	97.2	101	86 - 115	PASS
Toluene-d8	92.2	93.4	88 - 110	PASS

* FAILS %REC LIMIT

FAILS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
 PDF File ID: 1383560
 Report generated: 05/07/2009 12:54



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: MES Prep Method: 5030B
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG301434 Units: ug/L
QC Key: STD Lot #: STD32589

Sample ID: WG301434-02 LCS File ID: 6M83226 Run Date: 05/04/2009 12:00
Sample ID: WG301434-03 LCS2 File ID: 6M83227 Run Date: 05/04/2009 12:32

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Acetone	20.0	23.6	118	20.0	23.8	119	0.632	40 - 142	20	
Acrylonitrile	20.0	21.8	109	20.0	22.4	112	2.89	50 - 150	20	
Benzene	20.0	21.1	106	20.0	20.3	102	3.76	80 - 121	20	
Bromodichloromethane	20.0	21.8	109	20.0	20.9	104	4.17	80 - 131	20	
Bromoform	20.0	18.8	94.0	20.0	18.7	93.6	0.472	70 - 130	20	
Bromomethane	20.0	13.1	65.7	20.0	13.6	68.1	3.56	30 - 145	20	
2-Butanone	20.0	23.2	116	20.0	23.5	118	1.55	30 - 150	20	
Carbon disulfide	20.0	17.4	86.8	20.0	16.4	82.1	5.51	58 - 138	20	
Carbon tetrachloride	20.0	17.1	85.3	20.0	16.2	81.0	5.08	65 - 140	20	
Chlorobenzene	20.0	19.2	95.8	20.0	18.3	91.7	4.42	80 - 120	20	
Chlorodibromomethane	20.0	20.0	99.8	20.0	19.5	97.6	2.22	60 - 135	20	
Chloroethane	20.0	21.0	105	20.0	20.0	100	4.76	60 - 135	20	
Chloroform	20.0	21.2	106	20.0	20.4	102	4.05	80 - 125	20	
Chloromethane	20.0	24.3	121	20.0	22.6	113	7.04	40 - 125	20	
1,1-Dichloroethane	20.0	21.6	108	20.0	20.6	103	4.74	80 - 125	20	
1,2-Dichloroethane	20.0	20.7	104	20.0	20.1	100	3.20	80 - 129	20	
1,1-Dichloroethene	20.0	20.1	101	20.0	18.6	93.2	7.55	80 - 132	20	
cis-1,2-Dichloroethene	20.0	22.8	114	20.0	21.8	109	4.17	70 - 125	20	
trans-1,2-Dichloroethene	20.0	24.6	123	20.0	23.9	119	2.75	80 - 127	20	
1,2-Dichloropropane	20.0	23.0	115	20.0	22.2	111	3.17	80 - 120	20	
cis-1,3-Dichloropropene	20.0	22.9	114	20.0	22.1	111	3.46	70 - 130	20	
trans-1,3-Dichloropropene	20.0	18.4	92.1	20.0	17.9	89.5	2.83	80 - 130	20	
Ethylbenzene	20.0	19.5	97.3	20.0	18.7	93.5	3.94	80 - 122	20	
2-Hexanone	20.0	19.9	99.4	20.0	20.3	102	2.35	55 - 130	20	
4-Methyl-2-pentanone	20.0	21.6	108	20.0	22.3	112	3.48	64 - 140	20	
Methylene chloride	20.0	19.7	98.4	20.0	18.7	93.3	5.30	80 - 123	20	
Styrene	20.0	17.6	88.2	20.0	16.9	84.7	4.00	80 - 123	20	
1,1,2,2-Tetrachloroethane	20.0	20.9	104	20.0	21.1	105	0.984	79 - 125	20	
Tetrachloroethene	20.0	18.9	94.5	20.0	18.0	89.9	4.96	80 - 124	20	
Toluene	20.0	19.4	96.9	20.0	18.7	93.5	3.58	80 - 124	20	
1,1,1-Trichloroethane	20.0	20.2	101	20.0	19.0	95.2	5.83	80 - 134	20	
1,1,2-Trichloroethane	20.0	21.9	109	20.0	21.4	107	1.91	80 - 125	20	
Trichloroethene	20.0	22.4	112	20.0	21.2	106	5.28	80 - 122	20	
Vinyl chloride	20.0	18.7	93.3	20.0	17.4	87.2	6.84	65 - 140	20	
Xylene (Total)	60.0	58.7	97.8	60.0	56.0	93.4	4.61	80 - 121	20	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: MES Prep Method: 5030B
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG301434 Units: ug/L
QC Key: STD Lot #: STD32589
Sample ID: WG301434-02 LCS File ID: 6M83226 Run Date: 05/04/2009 12:00
Sample ID: WG301434-03 LCS2 File ID: 6M83227 Run Date: 05/04/2009 12:32

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	88.2	86.6	80 - 120	PASS
Dibromofluoromethane	94.7	94.2	86 - 118	PASS
4-Bromofluorobenzene	98.2	101	86 - 115	PASS
Toluene-d8	89.8	90.3	88 - 110	PASS

* FAILS %REC LIMIT

FAILS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L09050044
Instrument: HPMS6
Analyst: MES
Workgroup: WG297666

Tune ID: WG297666-01
Run Date: 03/19/2009
Run Time: 08:08
File ID: 6M82295

Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.6	11981	PASS
75.0	95.0	30.0	60.0	51.4	27264	PASS
95.0	95.0	100	100	100	53002	PASS
96.0	95.0	5.00	9.00	6.66	3531	PASS
173	174	0	2.00	0.525	206	PASS
174	95.0	50.0	100	74.0	39226	PASS
175	174	5.00	9.00	7.55	2963	PASS
176	174	95.0	101	98.3	38552	PASS
177	176	5.00	9.00	6.43	2479	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG297666-02	STD	01	03/19/2009 08:39	
WG297666-03	STD	01	03/19/2009 09:12	
WG297666-04	STD	01	03/19/2009 09:44	
WG297666-05	STD	01	03/19/2009 10:53	
WG297666-06	STD	01	03/19/2009 11:25	
WG297666-07	STD	01	03/19/2009 12:01	
WG297666-08	STD-CCV	01	03/19/2009 12:33	
WG297666-09	STD	01	03/19/2009 13:05	
WG297666-10	STD	01	03/19/2009 13:37	
WG297666-11	STD	01	03/19/2009 14:09	
WG297666-13	SSCV	01	03/19/2009 15:54	
WG297666-12	SSCV	01	03/19/2009 16:26	

* Sample past 12 hour tune limit

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L09050044
Instrument: HPMS6
Analyst: MES
Workgroup: WG301433

Tune ID: WG301433-01
Run Date: 05/04/2009
Run Time: 09:17
File ID: 6M83221

Cal ID: HPMS6 - 19-MAR-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	9133	PASS
75.0	95.0	30.0	60.0	49.9	23730	PASS
95.0	95.0	100	100	100	47568	PASS
96.0	95.0	5.00	9.00	6.86	3263	PASS
173	174	0	2.00	0.391	147	PASS
174	95.0	50.0	100	79.1	37605	PASS
175	174	5.00	9.00	6.86	2579	PASS
176	174	95.0	101	96.0	36088	PASS
177	176	5.00	9.00	6.62	2390	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG301433-02	CCV	01	05/04/2009 10:21	
WG301434-01	BLANK	01	05/04/2009 11:26	
WG301434-02	LCS	01	05/04/2009 12:00	
WG301434-03	LCS2	01	05/04/2009 12:32	
WG301434-04	FBLK	01	05/04/2009 13:04	
L09050044-09	TB-050109	01	05/04/2009 13:36	
L09050044-03	MW-01-050109	01	05/04/2009 19:30	
L09050044-05	MW-03-050109	01	05/04/2009 20:03	
L09050044-07	DUP-GW--050109	01	05/04/2009 20:35	
L09050044-01	BBLD-PIT-SSP-050109	DL01	05/04/2009 21:07	

* Sample past 12 hour tune limit

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L09050044
Instrument: HPMS6
Analyst: FJB
Workgroup: WG301540

Tune ID: WG301540-01
Run Date: 05/05/2009
Run Time: 09:07
File ID: 6M83247

Cal ID: HPMS6 - 19-MAR-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.3	10851	PASS
75.0	95.0	30.0	60.0	51.2	26018	PASS
95.0	95.0	100	100	100	50850	PASS
96.0	95.0	5.00	9.00	6.85	3483	PASS
173	174	0	2.00	0.352	140	PASS
174	95.0	50.0	100	78.1	39730	PASS
175	174	5.00	9.00	7.25	2881	PASS
176	174	95.0	101	95.7	38013	PASS
177	176	5.00	9.00	6.96	2646	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG301540-02	CCV	01	05/05/2009 09:31	
WG301541-01	BLANK	01	05/05/2009 10:36	
WG301541-02	LCS	01	05/05/2009 11:08	
WG301541-03	LCS2	01	05/05/2009 11:41	
L09050044-01	BBLD-PIT-SSP-050109	DL02	05/05/2009 12:13	
WG301541-04	BLANK2	01	05/05/2009 22:28	*

* Sample past 12 hour tune limit

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050044
Analytical Method: 8260B
ICAL Workgroup: WG297666

Instrument ID: HPMS6
Initial Calibration Date: 19-MAR-09 14:09
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
1,1-Dichloroethene	CCC	0.4149	3.89		
1,2-Dichloropropane	CCC	0.2157	8.34		
Chloroform	CCC	0.5369	4.81		
Ethylbenzene	CCC	0.4508	7.74		
Toluene	CCC	1.178	7.46		
Vinyl Chloride	CCC	0.3085	20.9		1.00000
1,1,2,2-Tetrachloroethane	SPCC	0.3701	6.63		
1,1-Dichloroethane	SPCC	0.4764	2.88		
Bromoform	SPCC	0.1705	16.1	1.00000	
Chlorobenzene	SPCC	0.8634	4.49		
Chloromethane	SPCC	0.3499	13.7		
1,1,1-Trichloroethane		0.5079	4.28		
1,1,2-Trichloroethane		0.1997	8.94		
1,2-Dichloroethane		0.4087	6.30		
2-Butanone		0.06572	7.80		
2-Hexanone		0.1105	5.66		
4-Methyl-2-Pentanone		0.04957	9.41		
Acetone		0.04855	8.06		
Acrylonitrile		0.05240	8.13		
Benzene		0.9502	3.75		
Bromodichloromethane		0.3788	4.59		
Bromomethane		0.1899	8.62		
Carbon Disulfide		0.7977	3.57		
Carbon Tetrachloride		0.4486	4.60		
Chloroethane		0.1792	4.78		
Dibromochloromethane		0.2809	11.2		
Methylene Chloride		0.3532	39.9	1.00000	
Styrene		0.8897	16.7		1.00000
Tetrachloroethene		0.3191	5.30		
Trichloroethene		0.2518	6.60		
cis-1,2-Dichloroethene		0.2584	7.64		
cis-1,3-Dichloropropene		0.3610	13.9		
m-,p-Xylene		0.5677	8.16		
o-Xylene		0.5236	13.5		
trans-1,2-Dichloroethene		0.2380	10.1		
trans-1,3-Dichloropropene		0.4283	11.0		

R = Correlation coefficient; 0.995 minimum
R² = Coefficient of determination; 0.99 minimum

If the %RSD is greater than the limit specified by the method or project QAP, then linear or quadratic equations will be used.

INT_CAL - Modified 03/06/2008
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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: 8260B

Instrument ID: HPMS6
Initial Calibration Date: 19-MAR-09 14:09
Column ID: F

Analyte	WG297666-02			WG297666-03			WG297666-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,1-Dichloroethene	NA	NA	NA	0.400	4765.00000	0.4056	1.00	12012.00000	0.3972
1,2-Dichloropropane	NA	NA	NA	0.400	2083.00000	0.1773	1.00	6489.00000	0.2146
Chloroform	0.300	4806.00000	0.4925	0.400	6554.00000	0.5579	1.00	16609.00000	0.5492
Ethylbenzene	NA	NA	NA	0.400	3943.00000	0.3850	1.00	11625.00000	0.4373
Toluene	NA	NA	NA	0.400	11017.00000	1.076	1.00	29078.00000	1.094
Vinyl Chloride	NA	NA	NA	0.400	4796.00000	0.4082	1.00	10937.00000	0.3616
1,1,2,2-Tetrachloroethane	NA	NA	NA	0.400	2063.00000	0.3293	1.00	5927.00000	0.3597
1,1-Dichloroethane	NA	NA	NA	0.400	5385.00000	0.4584	1.00	14185.00000	0.4690
Bromoform	NA	NA	NA	NA	NA	NA	1.00	3506.00000	0.1319
Chlorobenzene	NA	NA	NA	0.400	9211.00000	0.8993	1.00	23929.00000	0.9002
Chloromethane	NA	NA	NA	NA	NA	NA	1.00	11851.00000	0.3919
1,1,1-Trichloroethane	NA	NA	NA	0.400	6021.00000	0.5125	1.00	15778.00000	0.5217
1,1,2-Trichloroethane	NA	NA	NA	0.400	1629.00000	0.1590	1.00	5257.00000	0.1978
1,2-Dichloroethane	NA	NA	NA	0.400	5091.00000	0.4333	1.00	12897.00000	0.4264
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	0.400	11369.00000	0.9677	1.00	28760.00000	0.9510
Bromodichloromethane	NA	NA	NA	0.400	4269.00000	0.3634	1.00	11138.00000	0.3683
Bromomethane	NA	NA	NA	NA	NA	NA	1.00	4889.00000	0.1617
Carbon Disulfide	NA	NA	NA	NA	NA	NA	1.00	22769.00000	0.7529
Carbon Tetrachloride	NA	NA	NA	0.400	5091.00000	0.4333	1.00	14345.00000	0.4743
Chloroethane	NA	NA	NA	NA	NA	NA	1.00	5413.00000	0.1790
Dibromochloromethane	NA	NA	NA	0.400	2355.00000	0.2299	1.00	6955.00000	0.2616
Methylene Chloride	NA	NA	NA	0.400	7857.00000	0.6688	1.00	12525.00000	0.4141
Styrene	NA	NA	NA	0.400	6646.00000	0.6488	1.00	19123.00000	0.7194
Tetrachloroethene	NA	NA	NA	0.400	2941.00000	0.2871	1.00	8743.00000	0.3289
Trichloroethene	NA	NA	NA	0.400	2668.00000	0.2271	1.00	7882.00000	0.2606
cis-1,2-Dichloroethene	NA	NA	NA	0.400	2755.00000	0.2345	1.00	6836.00000	0.2260
cis-1,3-Dichloropropene	NA	NA	NA	0.400	3332.00000	0.2836	1.00	9866.00000	0.3262
m-,p-Xylene	NA	NA	NA	0.800	10483.00000	0.5117	2.00	28196.00000	0.5303
o-Xylene	NA	NA	NA	0.400	4261.00000	0.4160	1.00	11681.00000	0.4394
trans-1,2-Dichloroethene	NA	NA	NA	0.400	2212.00000	0.1883	1.00	7156.00000	0.2366
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	1.00	9597.00000	0.3610

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: 8260B

Instrument ID: HPMS6
Initial Calibration Date: 19-MAR-09 14:09
Column ID: F

Analyte	WG297666-05			WG297666-06			WG297666-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,1-Dichloroethene	2.00	25393.0000	0.4226	5.00	63335.0000	0.4004	20.0	296729.000	0.4464
1,2-Dichloropropane	2.00	12643.0000	0.2104	5.00	33065.0000	0.2091	20.0	152553.000	0.2295
Chloroform	2.00	33599.0000	0.5592	5.00	86559.0000	0.5473	20.0	375841.000	0.5654
Ethylbenzene	2.00	23798.0000	0.4566	5.00	59650.0000	0.4333	20.0	287584.000	0.5000
Toluene	2.00	60707.0000	1.165	5.00	160942.000	1.169	20.0	761485.000	1.324
Vinyl Chloride	2.00	20348.0000	0.3386	5.00	44348.0000	0.2804	20.0	195803.000	0.2945
1,1,2,2-Tetrachloroethane	2.00	11131.0000	0.3433	5.00	31812.0000	0.3718	20.0	141927.000	0.3967
1,1-Dichloroethane	2.00	28686.0000	0.4774	5.00	74338.0000	0.4700	20.0	336110.000	0.5056
Bromoform	2.00	7175.00000	0.1377	5.00	21692.0000	0.1576	20.0	110202.000	0.1916
Chlorobenzene	2.00	45297.0000	0.8691	5.00	114501.000	0.8317	20.0	519728.000	0.9037
Chloromethane	2.00	25223.0000	0.4198	5.00	56601.0000	0.3579	20.0	244090.000	0.3672
1,1,1-Trichloroethane	2.00	29713.0000	0.4945	5.00	78391.0000	0.4956	20.0	362621.000	0.5455
1,1,2-Trichloroethane	2.00	10257.0000	0.1968	5.00	27709.0000	0.2013	20.0	125039.000	0.2174
1,2-Dichloroethane	2.00	24474.0000	0.4073	5.00	66677.0000	0.4216	20.0	289231.000	0.4351
2-Butanone	NA	NA	NA	5.00	11652.0000	0.07370	20.0	40964.0000	0.06160
2-Hexanone	NA	NA	NA	5.00	14098.0000	0.1024	20.0	61496.0000	0.1069
4-Methyl-2-Pentanone	NA	NA	NA	5.00	6623.00000	0.04190	20.0	31030.0000	0.04670
Acetone	NA	NA	NA	5.00	8246.00000	0.05210	20.0	36407.0000	0.05480
Acrylonitrile	NA	NA	NA	5.00	7173.00000	0.04540	20.0	34951.0000	0.05260
Benzene	2.00	56215.0000	0.9355	5.00	144197.000	0.9117	20.0	670547.000	1.009
Bromodichloromethane	2.00	21529.0000	0.3583	5.00	58577.0000	0.3704	20.0	272867.000	0.4105
Bromomethane	2.00	12103.0000	0.2014	5.00	27160.0000	0.1717	20.0	129472.000	0.1948
Carbon Disulfide	2.00	48535.0000	0.8077	5.00	127916.000	0.8088	20.0	559429.000	0.8415
Carbon Tetrachloride	2.00	27291.0000	0.4542	5.00	68679.0000	0.4342	20.0	318185.000	0.4786
Chloroethane	2.00	11298.0000	0.1880	5.00	25614.0000	0.1620	20.0	123075.000	0.1851
Dibromochloromethane	2.00	13064.0000	0.2506	5.00	37666.0000	0.2736	20.0	179020.000	0.3113
Methylene Chloride	2.00	23194.0000	0.3860	5.00	46393.0000	0.2933	20.0	186298.000	0.2802
Styrene	2.00	43431.0000	0.8333	5.00	123130.000	0.8944	20.0	609095.000	1.059
Tetrachloroethene	2.00	16567.0000	0.3179	5.00	42895.0000	0.3116	20.0	197690.000	0.3437
Trichloroethene	2.00	14089.0000	0.2345	5.00	37204.0000	0.2352	20.0	177374.000	0.2668
cis-1,2-Dichloroethene	2.00	15544.0000	0.2587	5.00	39917.0000	0.2524	20.0	187625.000	0.2822
cis-1,3-Dichloropropene	2.00	18828.0000	0.3133	5.00	54305.0000	0.3434	20.0	270786.000	0.4073
m-,p-Xylene	4.00	59601.0000	0.5718	10.0	153946.000	0.5591	40.0	735984.000	0.6399
o-Xylene	2.00	25854.0000	0.4960	5.00	70863.0000	0.5147	20.0	350176.000	0.6089
trans-1,2-Dichloroethene	2.00	13573.0000	0.2259	5.00	36316.0000	0.2296	20.0	173908.000	0.2616
trans-1,3-Dichloropropene	2.00	19722.0000	0.3784	5.00	55519.0000	0.4033	20.0	276796.000	0.4813

INT_CAL - Modified 03/06/2008
PDF File ID: 1385996
Report generated 05/07/2009 12:54



Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: 8260B

Instrument ID: HPMS6
Initial Calibration Date: 19-MAR-09 14:09
Column ID: F

Analyte	WG297666-08			WG297666-09			WG297666-10		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,1-Dichloroethene	50.0	794754.000	0.4199	100	1700228.00	0.4215	200	3515000.00	0.4053
1,2-Dichloropropane	50.0	421300.000	0.2226	100	937564.000	0.2324	200	1992209.00	0.2297
Chloroform	50.0	1007525.00	0.5323	100	2124705.00	0.5268	200	4352108.00	0.5019
Ethylbenzene	50.0	774809.000	0.4736	100	1659010.00	0.4767	200	3364428.00	0.4439
Toluene	50.0	2049095.00	1.252	100	4307987.00	1.238	200	8356830.00	1.103
Vinyl Chloride	50.0	479217.000	0.2532	100	900434.000	0.2232	NA	NA	NA
1,1,2,2-Tetrachloroethane	50.0	385573.000	0.3767	100	844618.000	0.3863	200	1829474.00	0.3968
1,1-Dichloroethane	50.0	901542.000	0.4763	100	1942999.00	0.4817	200	4100398.00	0.4728
Bromoform	50.0	305732.000	0.1869	100	675675.000	0.1941	200	1467329.00	0.1936
Chlorobenzene	50.0	1398300.00	0.8547	100	2979637.00	0.8561	200	6003701.00	0.7921
Chloromethane	50.0	605459.000	0.3199	100	1235266.00	0.3063	200	2484614.00	0.2865
1,1,1-Trichloroethane	50.0	972964.000	0.5140	100	2049997.00	0.5082	200	4088858.00	0.4715
1,1,2-Trichloroethane	50.0	336769.000	0.2058	100	733066.000	0.2106	200	1585664.00	0.2092
1,2-Dichloroethane	50.0	753713.000	0.3982	100	1558956.00	0.3865	200	3132726.00	0.3613
2-Butanone	50.0	112603.000	0.05950	100	258334.000	0.06400	200	595354.000	0.06870
2-Hexanone	50.0	174498.000	0.1067	100	391409.000	0.1125	200	876467.000	0.1156
4-Methyl-2-Pentanone	50.0	93794.0000	0.04960	100	207483.000	0.05140	200	470077.000	0.05420
Acetone	50.0	88043.0000	0.04650	100	186332.000	0.04620	200	401136.000	0.04630
Acrylonitrile	50.0	98383.0000	0.05200	100	221992.000	0.05500	200	503779.000	0.05810
Benzene	50.0	1823494.00	0.9634	100	3902330.00	0.9675	200	7766872.00	0.8957
Bromodichloromethane	50.0	738015.000	0.3899	100	1577051.00	0.3910	200	3281948.00	0.3785
Bromomethane	50.0	377386.000	0.1994	100	821723.000	0.2037	200	1701848.00	0.1963
Carbon Disulfide	50.0	1501626.00	0.7933	100	3252820.00	0.8065	200	6704614.00	0.7732
Carbon Tetrachloride	50.0	856589.000	0.4525	100	1784696.00	0.4425	200	3631513.00	0.4188
Chloroethane	50.0	337456.000	0.1783	100	742878.000	0.1842	200	1539345.00	0.1775
Dibromochloromethane	50.0	492598.000	0.3011	100	1082979.00	0.3112	200	2332525.00	0.3078
Methylene Chloride	50.0	490177.000	0.2590	100	1058306.00	0.2624	200	2268112.00	0.2616
Styrene	50.0	1668821.00	1.020	100	3553600.00	1.021	200	6983576.00	0.9214
Tetrachloroethene	50.0	535081.000	0.3270	100	1137665.00	0.3269	200	2344915.00	0.3094
Trichloroethene	50.0	492817.000	0.2604	100	1082783.00	0.2684	200	2268633.00	0.2616
cis-1,2-Dichloroethene	50.0	510963.000	0.2699	100	1104030.00	0.2737	200	2341333.00	0.2700
cis-1,3-Dichloropropene	50.0	754690.000	0.3987	100	1655621.00	0.4105	200	3509454.00	0.4047
m-,p-Xylene	100	1990421.00	0.6083	200	4188402.00	0.6017	400	7862457.00	0.5187
o-Xylene	50.0	953145.000	0.5826	100	2042713.00	0.5869	200	4126708.00	0.5445
trans-1,2-Dichloroethene	50.0	479096.000	0.2531	100	1027509.00	0.2547	200	2207206.00	0.2545
trans-1,3-Dichloropropene	50.0	755054.000	0.4615	100	1621741.00	0.4660	200	3382522.00	0.4463

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Login Number: L09050044
Analytical Method: 8260B

Instrument ID: HPMS6
Initial Calibration Date: 19-MAR-09 14:09
Column ID: F

Analyte	WG297666-11		
	CONC	RESP	RF
1,1-Dichloroethene	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA
Chloroform	NA	NA	NA
Ethylbenzene	NA	NA	NA
Toluene	NA	NA	NA
Vinyl Chloride	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA
Bromoform	NA	NA	NA
Chlorobenzene	NA	NA	NA
Chloromethane	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA
2-Butanone	300	894282.000	0.06680
2-Hexanone	300	1321877.00	0.1190
4-Methyl-2-Pentanone	300	717844.000	0.05360
Acetone	300	607882.000	0.04540
Acrylonitrile	300	686484.000	0.05130
Benzene	NA	NA	NA
Bromodichloromethane	NA	NA	NA
Bromomethane	NA	NA	NA
Carbon Disulfide	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA
Chloroethane	NA	NA	NA
Dibromochloromethane	NA	NA	NA
Methylene Chloride	NA	NA	NA
Styrene	NA	NA	NA
Tetrachloroethene	NA	NA	NA
Trichloroethene	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA
m-,p-Xylene	NA	NA	NA
o-Xylene	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA

INT_CAL - Modified 03/06/2008
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: <u>L09050044</u>	Run Date: <u>03/19/2009</u>	Sample ID: <u>WG297666-12</u>
Instrument ID: <u>HPMS6</u>	Run Time: <u>16:26</u>	Method: <u>8260B</u>
File ID: <u>6M82309</u>	Analyst: <u>MES</u>	QC Key: <u>STD</u>
Ical Workgroup: <u>WG297666</u>	Cal ID: <u>HPMS6 - 19-MAR-09</u>	

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	18.7	ug/L	0.502	6.50	30	
1,1-Dichloroethene	CCC	20.0	19.7	ug/L	0.409	1.50	30	
1,2-Dichloropropane	CCC	20.0	20.0	ug/L	0.216	0.200	30	
Ethylbenzene	CCC	20.0	21.0	ug/L	0.473	4.90	30	
Toluene	CCC	20.0	20.9	ug/L	1.23	4.50	30	
Vinyl Chloride	CCC	20.0	18.8	ug/L	0.263	6.00	30	
Bromoform	SPCC	20.0	16.4	ug/L	0.153	18.0	30	
Chlorobenzene	SPCC	20.0	19.6	ug/L	0.847	1.90	30	
Chloromethane	SPCC	20.0	20.5	ug/L	0.358	2.30	30	
1,1-Dichloroethane	SPCC	20.0	19.3	ug/L	0.460	3.50	30	
1,1,2,2-Tetrachloroethane	SPCC	20.0	19.0	ug/L	0.352	5.00	30	
Acetone		20.0	19.4	ug/L	0.0470	3.20	30	
Acrylonitrile		20.0	19.5	ug/L	0.0512	2.30	30	
Benzene		20.0	19.6	ug/L	0.933	1.80	30	
Bromodichloromethane		20.0	19.1	ug/L	0.363	4.30	30	
Bromomethane		20.0	21.1	ug/L	0.201	5.60	30	
2-Butanone		20.0	17.7	ug/L	0.0581	11.6	30	
Carbon Disulfide		20.0	19.7	ug/L	0.786	1.40	30	
Carbon Tetrachloride		20.0	18.4	ug/L	0.413	7.90	30	
Dibromochloromethane		20.0	18.7	ug/L	0.262	6.60	30	
Chloroethane		20.0	21.0	ug/L	0.188	4.90	30	
1,2-Dichloroethane		20.0	17.6	ug/L	0.360	11.8	30	
cis-1,2-Dichloroethene		20.0	20.7	ug/L	0.267	3.30	30	
trans-1,2-Dichloroethene		20.0	20.2	ug/L	0.240	0.800	30	
cis-1,3-Dichloropropene		20.0	19.9	ug/L	0.359	0.400	30	
trans-1,3-Dichloropropene		20.0	17.0	ug/L	0.364	15.0	30	
2-Hexanone		20.0	17.8	ug/L	0.0981	11.2	30	
4-Methyl-2-Pentanone		20.0	18.6	ug/L	0.0462	6.80	30	
Methylene Chloride		20.0	19.9	ug/L	0.268	0.700	30	
Styrene		20.0	18.6	ug/L	0.983	6.80	30	
Tetrachloroethene		20.0	19.7	ug/L	0.315	1.30	30	
1,1,1-Trichloroethane		20.0	18.5	ug/L	0.471	7.30	30	
1,1,2-Trichloroethane		20.0	19.3	ug/L	0.193	3.50	30	
Trichloroethene		20.0	19.7	ug/L	0.248	1.70	30	
Xylenes		60.0	64.0	ug/L	0.585	6.70	30	
o-Xylene		20.0	21.7	ug/L	0.569	8.60	30	
1,2-Dichloroethene		40.0	40.8	ug/L	0.254	2.10	30	
m-,p-Xylene		40.0	42.3	ug/L	0.601	5.80	30	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 1385997
Report generated 05/07/2009 12:54



CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/04/2009	Sample ID: WG301433-02
Instrument ID: HPMS6	Run Time: 10:21	Method: 8260B
File ID: 6M83223	Analyst: MES	QC Key: STD
Workgroup (AAB#): WG301434	Cal ID: HPMS6 - 19-MAR-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.5	ug/L	0.563	4.91	20	
1,1-Dichloroethene	CCC	50.0	50.4	ug/L	0.418	0.757	20	
1,2-Dichloropropane	CCC	50.0	58.1	ug/L	0.251	16.3	20	
Ethylbenzene	CCC	50.0	48.7	ug/L	0.439	2.68	20	
Toluene	CCC	50.0	48.5	ug/L	1.14	3.08	20	
Vinyl Chloride	CCC	50.0	43.0	ug/L	0.225	14.1	20	
Bromoform	SPCC	50.0	50.3	ug/L	0.193	0.510	40	
Chlorobenzene	SPCC	50.0	48.2	ug/L	0.832	3.60	40	
Chloromethane	SPCC	50.0	59.7	ug/L	0.418	19.3	40	
1,1-Dichloroethane	SPCC	50.0	53.1	ug/L	0.506	6.22	40	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.1	ug/L	0.400	8.18	40	
Acetone		50.0	55.7	ug/L	0.0540	11.3	40	
Acrylonitrile		50.0	54.7	ug/L	0.0573	9.33	40	
Benzene		50.0	52.8	ug/L	1.00	5.65	40	
Bromodichloromethane		50.0	53.0	ug/L	0.402	6.01	40	
Bromomethane		50.0	32.7	ug/L	0.124	34.5	40	
2-Butanone		50.0	56.5	ug/L	0.0743	13.0	40	
Carbon Disulfide		50.0	52.6	ug/L	0.838	5.10	40	
Carbon Tetrachloride		50.0	42.2	ug/L	0.379	15.5	40	
Dibromochloromethane		50.0	52.4	ug/L	0.294	4.71	40	
Chloroethane		50.0	51.9	ug/L	0.186	3.83	40	
1,2-Dichloroethane		50.0	51.0	ug/L	0.417	2.05	40	
cis-1,2-Dichloroethene		50.0	55.0	ug/L	0.285	10.1	40	
trans-1,2-Dichloroethene		50.0	54.6	ug/L	0.260	9.22	40	
cis-1,3-Dichloropropene		50.0	60.5	ug/L	0.437	21.0	40	
trans-1,3-Dichloropropene		50.0	53.3	ug/L	0.457	6.65	40	
2-Hexanone		50.0	54.9	ug/L	0.121	9.87	40	
4-Methyl-2-Pentanone		50.0	60.7	ug/L	0.0601	21.4	40	
Methylene Chloride		50.0	48.7	ug/L	0.257	2.58	40	
Styrene		50.0	45.0	ug/L	0.948	9.94	40	
Tetrachloroethene		50.0	48.4	ug/L	0.309	3.26	40	
1,1,1-Trichloroethane		50.0	50.3	ug/L	0.511	0.626	40	
1,1,2-Trichloroethane		50.0	54.6	ug/L	0.218	9.14	40	
Trichloroethene		50.0	55.9	ug/L	0.281	11.7	40	
Xylenes		150	147	ug/L	0.541	1.78	40	
1,2-Dichloroethene		100	110	ug/L	0.272	9.66	40	
m-, p-Xylene		100	96.2	ug/L	0.546	3.80	40	
o-Xylene		50.0	51.1	ug/L	0.536	2.27	40	

* Exceeds %D Criteria

CCC Calibration Check Compounds
 SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/05/2009	Sample ID: WG301540-02
Instrument ID: HPMS6	Run Time: 09:31	Method: 8260B
File ID: 6M83248	Analyst: FJB	QC Key: STD
Workgroup (AAB#): WG301541	Cal ID: HPMS6 - 19-MAR-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.2	ug/L	0.561	4.40	20	
1,1-Dichloroethene	CCC	50.0	52.1	ug/L	0.432	4.12	20	
1,2-Dichloropropane	CCC	50.0	56.3	ug/L	0.243	12.7	20	
Ethylbenzene	CCC	50.0	48.0	ug/L	0.433	3.95	20	
Toluene	CCC	50.0	48.9	ug/L	1.15	2.13	20	
Vinyl Chloride	CCC	50.0	46.2	ug/L	0.239	7.70	20	
Bromoform	SPCC	50.0	45.3	ug/L	0.174	9.33	40	
Chlorobenzene	SPCC	50.0	47.1	ug/L	0.814	5.76	40	
Chloromethane	SPCC	50.0	48.9	ug/L	0.342	2.14	40	
1,1-Dichloroethane	SPCC	50.0	53.6	ug/L	0.511	7.19	40	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.2	ug/L	0.350	5.52	40	
Acetone		50.0	59.9	ug/L	0.0582	19.9	40	
Acrylonitrile		50.0	46.3	ug/L	0.0485	7.43	40	
Benzene		50.0	52.0	ug/L	0.989	4.04	40	
Bromodichloromethane		50.0	53.7	ug/L	0.407	7.47	40	
Bromomethane		50.0	30.2	ug/L	0.115	39.5	40	
2-Butanone		50.0	44.8	ug/L	0.0589	10.4	40	
Carbon Disulfide		50.0	57.3	ug/L	0.914	14.6	40	
Carbon Tetrachloride		50.0	48.9	ug/L	0.439	2.12	40	
Dibromochloromethane		50.0	52.9	ug/L	0.297	5.80	40	
Chloroethane		50.0	49.6	ug/L	0.178	0.823	40	
1,2-Dichloroethane		50.0	49.8	ug/L	0.407	0.404	40	
cis-1,2-Dichloroethene		50.0	55.0	ug/L	0.284	9.91	40	
trans-1,2-Dichloroethene		50.0	55.1	ug/L	0.262	10.2	40	
cis-1,3-Dichloropropene		50.0	57.1	ug/L	0.413	14.3	40	
trans-1,3-Dichloropropene		50.0	51.4	ug/L	0.441	2.89	40	
2-Hexanone		50.0	43.4	ug/L	0.0959	13.3	40	
4-Methyl-2-Pentanone		50.0	48.4	ug/L	0.0479	3.29	40	
Methylene Chloride		50.0	47.7	ug/L	0.252	4.54	40	
Styrene		50.0	43.5	ug/L	0.916	13.0	40	
Tetrachloroethene		50.0	48.7	ug/L	0.311	2.51	40	
1,1,1-Trichloroethane		50.0	51.8	ug/L	0.526	3.52	40	
1,1,2-Trichloroethane		50.0	50.7	ug/L	0.203	1.38	40	
Trichloroethene		50.0	56.0	ug/L	0.282	11.9	40	
Xylenes		150	145	ug/L	0.533	3.17	40	
1,2-Dichloroethene		100	110	ug/L	0.273	10.1	40	
m-, p-Xylene		100	95.0	ug/L	0.540	4.97	40	
o-Xylene		50.0	50.2	ug/L	0.526	0.434	40	

* Exceeds %D Criteria

CCC Calibration Check Compounds
 SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS6
Workgroup (AAB#): WG301434

CCV Number: WG301433-02
CAL ID: HPMS6 - 19-MAR-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG301433-02	NA	NA	634664	988982	1048717
Upper Limit	NA	NA	1269328	1977964	2097434
Lower Limit	NA	NA	317332	494491	524359
<u>L09050044-01</u>	<u>10.0</u>	<u>DL01</u>	<u>526998</u>	<u>831466</u>	<u>870095</u>
L09050044-03	1.00	01	421137	674267	720342
L09050044-05	1.00	01	509724	797102	742018
L09050044-07	1.00	01	542041	861200	840136
L09050044-09	1.00	01	480308	777173	838433
WG301434-01	1.00	01	561250	901898	963470
WG301434-02	1.00	01	585465	915345	956357
WG301434-03	1.00	01	580065	917750	964809

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS6
Workgroup (AAB#): WG301541

CCV Number: WG301540-02
CAL ID: HPMS6 - 19-MAR-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG301540-02	NA	NA	603427	979753	1050439
Upper Limit	NA	NA	1206854	1959506	2100878
Lower Limit	NA	NA	301714	489877	525220
L09050044-01	100	DL02	474644	789124	835495
WG301541-01	1.00	01	486410	796950	857625
WG301541-02	1.00	01	528976	843499	890533
WG301541-03	1.00	01	525494	859406	905712
WG301541-04	1.00	01	318282	515292	531510

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS6
Workgroup (AAB#): WG301434

CCV Number: WG301433-02
CAL ID: HPMS6 - 19-MAR-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG301433-02	NA	NA	18.61	15.06	10.59
Upper Limit	NA	NA	19.11	15.56	11.09
Lower Limit	NA	NA	18.11	14.56	10.09
<u>L09050044-01</u>	<u>10.0</u>	<u>DL01</u>	<u>18.6</u>	<u>15.06</u>	<u>10.59</u>
L09050044-03	1.00	01	18.61	15.06	10.6
L09050044-05	1.00	01	18.61	15.06	10.59
L09050044-07	1.00	01	18.6	15.06	10.6
L09050044-09	1.00	01	18.6	15.06	10.59
WG301434-01	1.00	01	18.61	15.06	10.59
WG301434-02	1.00	01	18.6	15.06	10.59
WG301434-03	1.00	01	18.6	15.06	10.59

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS6
Workgroup (AAB#): WG301541

CCV Number: WG301540-02
CAL ID: HPMS6 - 19-MAR-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG301540-02	NA	NA	18.61	15.07	10.6
Upper Limit	NA	NA	19.11	15.57	11.1
Lower Limit	NA	NA	18.11	14.57	10.1
L09050044-01	100	DL02	18.6	15.06	10.6
WG301541-01	1.00	01	18.6	15.06	10.6
WG301541-02	1.00	01	18.6	15.06	10.59
WG301541-03	1.00	01	18.6	15.06	10.59
WG301541-04	1.00	01	18.6	15.06	10.6

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac Laboratories Inc.
GC VOLATILE ORGANICS - RSK-175

Microbac Login No: L09050044

METHOD

Analysis: RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Samples: Samples 01 and 05 required dilution analyses.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: ADC

Approved: 11-MAY-09


LABORATORY REPORT

L09050044

05/20/09 11:23

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	RSK175	20	02-MAY-09
BBLD-PIT-SSP-050109	L09050044-01	RSK175	1	02-MAY-09
MW-01-050109	L09050044-03	RSK175	1	02-MAY-09
MW-03-050109	L09050044-05	RSK175	1	02-MAY-09
MW-03-050109	L09050044-05	RSK175	25	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301718**
Collect Date: **05/01/2009 09:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **20**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/06/2009 15:21**
Cal Date: **04/17/2009 16:29**
Run Date: **05/06/2009 15:21**
File ID: **16619071**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	5300		100	20
Carbon Dioxide	124-38-9	480000		200000	50000

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301593**
Collect Date: **05/01/2009 09:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/05/2009 17:58**
Cal Date: **04/17/2009 16:29**
Run Date: **05/05/2009 17:58**
File ID: **16619057**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	5900	E	5.0	1.0
Carbon Dioxide	124-38-9	530000	E	10000	2500

E Semiquantitative result (out of instrument calibration range)

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301593**
Collect Date: **05/01/2009 10:55**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/05/2009 18:10**
Cal Date: **04/17/2009 16:29**
Run Date: **05/05/2009 18:10**
File ID: **16619058**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	48		5.0	1.0
Carbon Dioxide	124-38-9	11000		10000	2500

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
Client ID: **MW-03-050109**
Matrix: **Water**
Workgroup Number: **WG301593**
Collect Date: **05/01/2009 09:37**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **1**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/05/2009 18:22**
Cal Date: **04/17/2009 16:29**
Run Date: **05/05/2009 18:22**
File ID: **16619059**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	11000	E	5.0	1.0
Carbon Dioxide	124-38-9	310000	E	10000	2500

E Semiquantitative result (out of instrument calibration range)

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
Client ID: **MW-03-050109**
Matrix: **Water**
Workgroup Number: **WG301718**
Collect Date: **05/01/2009 09:37**
Sample Tag: **DL02**

PrePrep Method: **NONE**
Prep Method: **5021**
Analytical Method: **RSK175**
Analyst: **ADC**
Dilution: **25**
Units: **ug/L**

Instrument: **HP16**
Prep Date: **05/06/2009 15:45**
Cal Date: **04/17/2009 16:29**
Run Date: **05/06/2009 15:45**
File ID: **16619073**

Analyte	CAS. Number	Result	Qual	RL	MDL
Methane	74-82-8	8500		130	25
Carbon Dioxide	124-38-9	210000	J	250000	63000

J The analyte was positively identified, but the quantitation was below the RL

2.1.2.2 QC Summary Data

Microbac Laboratories Inc.
GC VOLATILE ORGANICS - RSK-175

Microbac Login No: L09050044

METHOD

Analysis: RSK-175

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes/Sample Duplicates: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualifications.

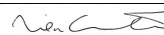
SAMPLES

Samples: Samples 01 and 05 required dilution analyses.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: ADC

Approved: 11-MAY-09



Microbac Laboratories Inc.

Data Checklist

Date: 17-APR-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27652

Analytical Workgroups: WG300127, WG299991

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-APR-2009



Secondary Reviewer:
20-APR-2009




Microbac Laboratories Inc.

Data Checklist

Date: 20-APR-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27668

Analytical Workgroups: WG299991

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
21-APR-2009



Secondary Reviewer:
21-APR-2009




Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27963

Analytical Workgroups: WG301593

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-MAY-2009



Secondary Reviewer:
07-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 06-MAY-2009

Analyst: ADC

Analyst: NA

Method: RSK175

Instrument: HP16

Curve Workgroup: NA

Runlog ID: 27966

Analytical Workgroups: WG301718

System Performance Check	NA
BFB	NA
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Excel Spreadsheets	X
Case Narrative	X
Narrative Summary	NA
Results Reporting/Data Qualifiers	X
Client Data Package Assembly	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-MAY-2009



Secondary Reviewer:
08-MAY-2009



RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r	RF
1.67	19901	11917
6.67	69174	10371
16.7	176923	10594
66.7	685135	10272
133	1324853	9961
300	2845104	9484
Average RF:		10433

Where:

ICAL_x = the ICAL concentration

ICAL_r = the ICAL response (area)

RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r]^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		1.03557E+13	1078884393

Agilent Linear Regression Constant : 9598.567853
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report

a = average RF (or Agilent regression constant)

Cx = y/a

1157414
10433.00
110.9377935

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract

MW = molecular weight of analyte

TF = temperature factor = (22.4)(313/273)

HS = headspace volume

S = sample volume remaining after headspace removal

DF = dilution factor

Cs = calculated sample concentration

110.9377935 umol/mol
16.04 ug/umol
25.68 L/mol
0.015 L
0.00547 L
2
380.034301 ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression ($y = Ax^2 + Bx + C$)

$$Ax^2 + Bx + (C - y) = 0$$

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:

Value of A from plot:	0.916
Value of B from plot:	1540
Value of C from plot:	0
Response for methane from quantitation report (y):	8763828
Value of C - y	-8763828

Solving for Cx using the quadratic formula:

Root 1 - Computed Cx1:	2364.716284 umol/mol
Root 2 - Computed Cx2:	-4045.938991

Step 2 - Calculate the concentration in sample

$$Cs = Cx (MW/Tf) (HS/S) (DF)$$

Where:

Cx = Concentration in extract :	2364.716284 umol/mol
MW = molecular weight of analyte:	44.0 ug/umol
TF = temperature factor = $(22.4)(313/273)$:	25.68 L/mol
HS = initial headspace volume (extraction log):	0.015 L
S = final volume (extraction log):	0.00547 L
DF = dilution factor:	10
Cs = calculated sample concentration:	111106.798 ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	MW (g/mol)
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 041709
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28412

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG300127, CURVE - WG299991

Comments: Secondary Source Calibration Verification analyzed on 20-Apr-2009.

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G18930	WG300126-01 133 ug/L CCV STD	NA	1	1	STD29606	04/17/09 13:01
2	16G18931	WG300127-01 BLANK	NA	1	1		04/17/09 13:13
3	16G18932	WG300127-02 67 ug/L LCS	NA	1	1	STD29606	04/17/09 13:25
4	16G18933	WG300127-03 67 ug/L LCSDUP	NA	1	1	STD29606	04/17/09 13:37
5	16G18934	L09040395-05 A	7	1	1		04/17/09 13:50
6	16G18935	L09040395-06 A	7	1	1		04/17/09 14:02
7	16G18936	L09040395-07 A	7	1	1		04/17/09 14:14
8	16G18937	L09040395-08 A	7	1	1		04/17/09 14:26
9	16G18938	L09040363-08 B 50X	7	1	50		04/17/09 14:39
10	16G18939	L09040363-10 B 25X	7	1	25		04/17/09 14:51
11	16G18940	WG300126-02 133 ug/L CCV STD	NA	1	1	STD29606	04/17/09 15:03
12	16G18941	BLANK	NA	1	1		04/17/09 15:16
13	16G18942	WG299991-01 1.67 ug/L STD	NA	1	1	STD29606	04/17/09 15:28
14	16G18943	WG299991-02 6.67 ug/L STD	NA	1	1	STD29606	04/17/09 15:40
15	16G18944	WG299991-03 16.67 ug/L STD	NA	1	1	STD29606	04/17/09 15:52
16	16G18945	WG299991-04 67.7 ug/L STD	NA	1	1	STD29606	04/17/09 16:05
17	16G18946	WG299991-05 133 ug/L STD	NA	1	1	STD29606	04/17/09 16:17
18	16G18947	WG299991-06 300 ug/L STD	NA	1	1	STD29606	04/17/09 16:29
19	16G18948	BLANK	NA	1	1		04/17/09 16:41

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6				
File ID: 16G18935				
Client cancelled sample.				
8				
File ID: 16G18937				
Client cancelled sample.				

Approved: April 20, 2009

Page: 1

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 042009
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28425

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG299991

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G18949	BLANK	NA	1	1		04/20/09 08:22
2	16G18950	WG299991-07 133 ug/L SSCV	NA	1	1	STD29606	04/20/09 08:34
3	16G18951	WG300271-01 133 ug/L CCV	NA	1	1	STD29606	04/20/09 14:59
4	16G18952	WG299991-07 133 ug/L SSCV	NA	1	1	STD29606	04/20/09 15:11
5	16G18953	WG300271-02 133 ug/L CCV	NA	1	1	STD29606	04/20/09 15:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 16G18950				
Not reported. Not bracketed by CCVs				

Approved: April 21, 2009

Page: 1





Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 050509
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28642

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG301593

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G19040	WG301592-01 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 14:29
2	16G19041	WG301593-01 BLANK	NA	1	1		05/05/09 14:42
3	16G19042	WG301593-02 67 umol/mol LCS	NA	1	1	STD29606	05/05/09 14:54
4	16G19043	WG301593-03 67 umol/mol LCSDUP	NA	1	1	STD29606	05/05/09 15:06
5	16G19044	L09050029-01 B 2X	7	1	2		05/05/09 15:18
6	16G19045	L09050029-09 B 5X	7	1	5		05/05/09 15:31
7	16G19046	L09050029-11 A 25X	7	1	25		05/05/09 15:43
8	16G19047	L09050031-02 B 5X	7	1	5		05/05/09 15:55
9	16G19048	L09050031-07 B 2X	7	1	2		05/05/09 16:07
10	16G19049	L09050031-10 B 10X	7	1	10		05/05/09 16:20
11	16G19050	L09050033-06 B 50X	7	1	50		05/05/09 16:32
12	16G19051	WG301592-02 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 16:44
13	16G19052	L09050047-02 A	7	1	1		05/05/09 16:56
14	16G19053	L09050047-03 A	7	1	1		05/05/09 17:09
15	16G19054	L09050047-04 A	7	1	1		05/05/09 17:21
16	16G19055	L09050047-05 A	7	1	1		05/05/09 17:33
17	16G19056	L09050047-07 A	7	1	1		05/05/09 17:46
18	16G19057	L09050044-01 A	7	1	1		05/05/09 17:58
19	16G19058	L09050044-03 A	7	1	1		05/05/09 18:10
20	16G19059	L09050044-05 A	7	1	1		05/05/09 18:22
21	16G19060	L09050057-02 A	7	1	1		05/05/09 18:35
22	16G19061	L09050057-05 A	7	1	1		05/05/09 18:47
23	16G19062	WG301592-03 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 18:59
24	16G19063	L09050057-08 A	7	1	1		05/05/09 19:11
25	16G19064	L09050057-09 A	7	1	1		05/05/09 19:24
26	16G19065	WG301592-04 133 umol/mol CCV STD	NA	1	1	STD29606	05/05/09 19:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7				
File ID: 16G19046				
Sample came with only fraction A. Dilution analysis performed on sample with headspace in vial.				
14	X	25	Over Calibration Range	CH4

Approved: May 07, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 050509
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 28642

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG301593

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G19053				
18	X	20	Over Calibration Range	CH4
File ID: 16G19057				
20	X	5	Over Calibration Range	CH4, CO2
File ID: 16G19059				
21	X	10	Over Calibration Range	CH4
File ID: 16G19060				
22	X	50	Over Calibration Range	CH4
File ID: 16G19061				
24	X	50	Over Calibration Range	CH4
File ID: 16G19063				

Approved: May 07, 2009

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: HP16 Dataset: 050609
 Analyst1: ADC Analyst2: NA
 Method: RSK175 SOP: RSK01 Rev: 10
 Method: 5021 SOP: RSK01 Rev: 10

Maintenance Log ID: 27945

Internal Standard: NA Surrogate Standard: NA
 CCV: STD29606 LCS: STD29606 MS/MSD: NA
 Column 1 ID: RTQPLOT Column 2 ID: RTQPLOT
 Workgroups: WG301718

Comments:

Seq.	File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
1	16G19066	WG301715-01 133 umol/mol CCV STD	NA	1	1	STD29606	05/06/09 14:19
2	16G19067	WG301718-01 BLANK	NA	1	1		05/06/09 14:32
3	16G19068	WG301718-02 67 umol/mol LCS	NA	1	1	STD29606	05/06/09 14:44
4	16G19069	WG301718-03 67 umol/mol LCSDUP	NA	1	1	STD29606	05/06/09 14:56
5	16G19070	L09050047-03 B 25X	7	1	25		05/06/09 15:09
6	16G19071	L09050044-01 B 20X	7	1	20		05/06/09 15:21
7	16G19072	L09050044-05 B 5X	7	1	5		05/06/09 15:33
8	16G19073	L09050044-05 B 25X	7	1	25		05/06/09 15:45
9	16G19074	L09050057-02 B 10X	7	1	10		05/06/09 15:58
10	16G19075	L09050057-05 B 50X	7	1	50		05/06/09 16:10
11	16G19076	L09050057-08 B 50X	7	1	50		05/06/09 16:22
12	16G19077	WG301715-02 133 umol/mol CCV STD	NA	1	1	STD29606	05/06/09 16:35
13	16G19078	L09050075-01 A	7	1	1		05/06/09 16:47
14	16G19079	L09050075-03 A	7	1	1		05/06/09 16:59
15	16G19080	L09050075-05 A	7	1	1		05/06/09 17:11
16	16G19081	L09050075-07 A	11	1	1		05/06/09 17:24
17	16G19082	SYSTEM BLANK	NA	1	1		05/06/09 17:36
18	16G19083	WG301715-03 133 umol/mol CCV STD	NA	1	1	STD29606	05/06/09 17:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	25	Over Calibration Range	CH4
File ID: 16G19072				
13	X	2	Over Calibration Range	CO2
File ID: 16G19078				
14	X	2	Over Calibration Range	CO2
File ID: 16G19079				
16	X	20	Over Calibration Range	CH4
File ID: 16G19081				
Sample out of acceptable pH range.				

Approved: May 08, 2009

Page: 1

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Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175

AAB#: WG301593

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-03-050109	05/01/09	05/02/09	05/05/09	14	4.36	05/05/09	14	4.36	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	14	4.37	05/05/09	14	4.37	
MW-01-050109	05/01/09	05/02/09	05/05/09	14	4.30	05/05/09	14	4.30	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1388731
Report generated 05/11/2009 13:39



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175

AAB#: WG301718

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-03-050109	05/01/09	05/02/09	05/06/09	14	5.26	05/06/09	14	5.26	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/06/09	14	5.26	05/06/09	14	5.26	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS



METHOD BLANK SUMMARY

Login Number: <u>L09050044</u>	Work Group: <u>WG301593</u>
Blank File ID: <u>16G19041</u>	Blank Sample ID: <u>WG301593-01</u>
Prep Date: <u>05/05/09 14:42</u>	Instrument ID: <u>HP16</u>
Analyzed Date: <u>05/05/09 14:42</u>	Method: <u>RSK175</u>
Analyst: <u>ADC</u>	

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301593-02	16G19042	05/05/09 14:54	01
LCS2	WG301593-03	16G19043	05/05/09 15:06	01
BBLD-PIT-SSP-050109	L09050044-01	16G19057	05/05/09 17:58	01
MW-01-050109	L09050044-03	16G19058	05/05/09 18:10	01
MW-03-050109	L09050044-05	16G19059	05/05/09 18:22	01



METHOD BLANK SUMMARY

Login Number: <u>L09050044</u>	Work Group: <u>WG301718</u>
Blank File ID: <u>16G19067</u>	Blank Sample ID: <u>WG301718-01</u>
Prep Date: <u>05/06/09 14:32</u>	Instrument ID: <u>HP16</u>
Analyzed Date: <u>05/06/09 14:32</u>	Method: <u>RSK175</u>
Analyst: <u>ADC</u>	

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301718-02	16G19068	05/06/09 14:44	01
LCS2	WG301718-03	16G19069	05/06/09 14:56	01
BBLD-PIT-SSP-050109	L09050044-01	16G19071	05/06/09 15:21	DL01
MW-03-050109	L09050044-05	16G19073	05/06/09 15:45	DL02



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 14:42 Sample ID: WG301593-01
Instrument ID: HP16 Run Date: 05/05/09 14:42 Prep Method: 5021
File ID: 16G19041 Analyst: ADC Method: RSK175
Workgroup (AAB#): WG301593 Matrix: Water Units: ug/L
Contract #: _____ Cal ID: HP16 - 17-APR-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Methane	1.00	5.0	1.00	1	U
Carbon Dioxide	2500	10000	2500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1385941

15-MAY-2009 09:17



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/06/09 14:32 Sample ID: WG301718-01
Instrument ID: HP16 Run Date: 05/06/09 14:32 Prep Method: 5021
File ID: 16G19067 Analyst: ADC Method: RSK175
Workgroup (AAB#): WG301718 Matrix: Water Units: ug/L
Contract #: _____ Cal ID: HP16 - 17-APR-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Methane	1.00	5.0	1.00	1	U
Carbon Dioxide	2500	10000	2500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1385941

15-MAY-2009 09:17



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 **Analyst:** ADC **Prep Method:** 5021
Instrument ID: HP16 **Matrix:** Water **Method:** RSK175
Workgroup (AAB#): WG301593 **Units:** ug/L
QC Key: STD **Lot #:** STD29606
Sample ID: WG301593-02 LCS **File ID:** 16G19042 **Run Date:** 05/05/2009 14:54
Sample ID: WG301593-03 LCS2 **File ID:** 16G19043 **Run Date:** 05/05/2009 15:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	104	91.0	114	108	94.6	3.87	56 - 140	40	
Carbon Dioxide	31300	29700	94.8	31300	30400	97.2	2.54	10 - 200	40	



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: ADC Prep Method: 5021
 Instrument ID: HP16 Matrix: Water Method: RSK175
 Workgroup (AAB#): WG301718 Units: ug/L
 QC Key: STD Lot #: STD29606
 Sample ID: WG301718-02 LCS File ID: 16G19068 Run Date: 05/06/2009 14:44
 Sample ID: WG301718-03 LCS2 File ID: 16G19069 Run Date: 05/06/2009 14:56

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	112	98.4	114	111	97.6	0.791	56 - 140	40	
Carbon Dioxide	31300	32700	104	31300	30400	97.0	7.24	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
 PDF File ID: 1385942
 Report generated: 05/11/2009 13:39



Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050044
Analytical Method: RSK175
ICAL Workgroup: WG299991

Instrument ID: HP16
Initial Calibration Date: 17-APR-09 16:29
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
carbon dioxide		264.1	8.53		
methane		8383	9.60		

R = Correlation coefficient; 0.995 minimum

R² = Coefficient of determination; 0.99 minimum

If the %RSD is greater than the limit specified by the method or project QAP, then linear or quadratic equations will be used.

INT_CAL - Modified 03/06/2008
PDF File ID: 1388732
Report generated 05/11/2009 13:39



Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: RSK175

Instrument ID: HP16
Initial Calibration Date: 17-APR-09 16:29
Column ID: F

Analyte	WG299991-01			WG299991-02			WG299991-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
carbon dioxide	2000	610703.000	305.4	3330	899851.000	270.0	6670	1741865.00	261.3
methane	1.67	15957.0000	9555	6.67	61441.0000	9212	16.7	133460.000	8006

INT_CAL - Modified 03/06/2008
PDF File ID: 1388732
Report generated 05/11/2009 13:39



Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: RSK175

Instrument ID: HP16
Initial Calibration Date: 17-APR-09 16:29
Column ID: F

Analyte	WG299991-04			WG299991-05			WG299991-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
carbon dioxide	10000	2534886.00	253.5	13300	3395733.00	254.7	20000	4795756.00	239.8
methane	66.7	523403.000	7851	133	1082502.00	8119	300	2267482.00	7558

INT_CAL - Modified 03/06/2008
PDF File ID: 1388732
Report generated 05/11/2009 13:39



Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L09050044 Run Date: 04/20/2009 Sample ID: WG299991-07
Instrument ID: HP16 Run Time: 15:11 Method: RSK175
File ID: 16G18952 Analyst: ADC QC Key: STD
ICal Workgroup: WG299991 Cal ID: HP16 - 17-APR-09

Analyte		Expected	Found	Units	RF	%D	UCL	Q
methane		228	232	ug/L	8510	1.50	30	
carbon dioxide		62700	49700	ug/L	210	20.6	60	

* Exceeds %D Limit

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/05/2009 Sample ID: WG301592-01
Instrument ID: HP16 Run Time: 14:29 Method: RSK175
File ID: 16G19040 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301593 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	217	ug/L	7980	4.85	25	
carbon dioxide		62700	43200	ug/L	182	31.1	60	

* Exceeds %D Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/05/2009 Sample ID: WG301592-02
Instrument ID: HP16 Run Time: 16:44 Method: RSK175
File ID: 16G19051 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301593 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	216	ug/L	7940	5.24	25	
carbon dioxide		62700	43700	ug/L	184	30.3	60	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 1385943
Report generated 05/11/2009 13:39



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/05/2009 Sample ID: WG301592-03
Instrument ID: HP16 Run Time: 18:59 Method: RSK175
File ID: 16G19062 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301593 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	222	ug/L	8160	2.65	25	
carbon dioxide		62700	42500	ug/L	179	32.1	60	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 1385943
Report generated 05/11/2009 13:39



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: <u>L09050044</u>	Run Date: <u>05/06/2009</u>	Sample ID: <u>WG301715-01</u>
Instrument ID: <u>HP16</u>	Run Time: <u>14:19</u>	Method: <u>RSK175</u>
File ID: <u>16G19066</u>	Analyst: <u>ADC</u>	QC Key: <u>STD</u>
Workgroup (AAB#): <u>WG301718</u>	Cal ID: <u>HP16 - 17-APR-09</u>	
Matrix: <u>WATER</u>		

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	250	ug/L	9190	9.57	25	
carbon dioxide		62700	43800	ug/L	184	30.2	60	

* Exceeds %D Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/06/2009 Sample ID: WG301715-02
Instrument ID: HP16 Run Time: 16:35 Method: RSK175
File ID: 16G19077 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301718 Cal ID: HP16 - 17-APR-09
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	216	ug/L	7920	5.57	25	
carbon dioxide		62700	42700	ug/L	180	31.8	60	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 1385943
Report generated 05/11/2009 13:39



2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (8270)

2.2.1.1 Summary Data



Loginnum: L09050044

Department: Semivolatiles - GC/MS

Analyst: Cassie A. Augenstein

METHOD

Preparation 3510C

Analysis SW-846 8270C/40 CFR 264 App. IX

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All analytes met the LCS acceptance criteria for % recovery and relative percent difference, except those listed below.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
WG301563-03	HPMS12	05/13/2009	DI-N-BUTYLPHthalate	REG		131	55	118

Di-n-butyl phthalate was not detected in the associated samples.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: Sample 01 was run at a dilution to be within calibration range.

Internal Standards: All acceptance criteria were met, except for the following analytes:

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050044-01	HPMS12	05/17/2009	NAPHTHALENE-D8	ISTD		237000	568855.5	2275422.0

The internal standard failure was due to sample matrix interference. The 5x dilution of the sample yielded acceptable areas.

Surrogates: All surrogate compounds met the acceptance criteria for % recovery, except for the following samples.

Sample	Instrument	Date	Analyte	AType	CType	Result	Lower	Upper
L09050044-01	HPMS12	05/17/2009	NITROBENZENE-D5	SURR		424	35	114

The surrogate failure was due to sample matrix interference with the internal standard. All surrogates passed when the sample was analyzed at a dilution.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

LABORATORY REPORT

L09050044

05/20/09 11:23

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	8270C	1	02-MAY-09
BBLD-PIT-SSP-050109	L09050044-01	8270C	5	02-MAY-09
MW-01-050109	L09050044-03	8270C	1	02-MAY-09
MW-03-050109	L09050044-05	8270C	1	02-MAY-09
DUP-GW--050109	L09050044-07	8270C	1	02-MAY-09



Report Number: L09050044

Report Date : May 20, 2009

Sample Number: L09050044-01
 Client ID: BBLD-PIT-SSP-050109
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 05/01/2009 09:00
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: ECL
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/17/2009 21:16
 File ID: 12M25899

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2	10.3		5.26	2.63
Bis(2-Chloroethyl)ether	111-44-4		U	5.26	2.63
2-Chlorophenol	95-57-8		U	5.26	2.63
1,3-Dichlorobenzene	541-73-1		U	5.26	2.63
1,4-Dichlorobenzene	106-46-7		U	5.26	2.63
1,2-Dichlorobenzene	95-50-1		U	5.26	2.63
2-Methylphenol	95-48-7		U	5.26	2.63
3-,4-Methylphenol	106-44-5	198	E	5.26	2.63
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.26	2.63
N-Nitroso-di-n-propylamine	621-64-7		U	5.26	2.63
Hexachloroethane	67-72-1		U	5.26	2.63
Nitrobenzene	98-95-3		U	5.26	2.63
Isophorone	78-59-1		U	5.26	2.63
2-Nitrophenol	88-75-5		U	5.26	2.63
2,4-Dimethylphenol	105-67-9		U	5.26	2.63
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.26	2.63
2,4-Dichlorophenol	120-83-2		U	5.26	2.63
1,2,4-Trichlorobenzene	120-82-1		U	5.26	2.63
Naphthalene	91-20-3		U	5.26	2.63
4-Chloroaniline	106-47-8		U	5.26	2.63
Hexachlorobutadiene	87-68-3		U	5.26	2.63
4-Chloro-3-methylphenol	59-50-7		U	5.26	2.63
2-Methylnaphthalene	91-57-6		U	5.26	2.63
Hexachlorocyclopentadiene	77-47-4		U	5.26	2.63
2,4,6-Trichlorophenol	88-06-2		U	5.26	2.63
2,4,5-Trichlorophenol	95-95-4		U	5.26	2.63
2-Chloronaphthalene	91-58-7		U	5.26	2.63
2-Nitroaniline	88-74-4		U	26.3	2.63
Dimethylphthalate	131-11-3		U	5.26	2.63
Acenaphthylene	208-96-8		U	5.26	2.63
2,6-Dinitrotoluene	606-20-2		U	5.26	2.63
3-Nitroaniline	99-09-2		U	26.3	2.63
Acenaphthene	83-32-9		U	5.26	2.63
2,4-Dinitrophenol	51-28-5		U	26.3	13.2
4-Nitrophenol	100-02-7		U	26.3	2.63
Dibenzofuran	132-64-9		U	5.26	2.63
2,4-Dinitrotoluene	121-14-2		U	5.26	2.63
Diethylphthalate	84-66-2		U	5.26	2.63
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.26	2.63
Fluorene	86-73-7		U	5.26	2.63
4-Nitroaniline	100-01-6		U	26.3	2.63
4,6-Dinitro-2-methylphenol	534-52-1		U	26.3	13.2
N-Nitrosodiphenylamine	86-30-6		U	5.26	2.63
4-Bromophenyl-phenylether	101-55-3		U	5.26	2.63
Hexachlorobenzene	118-74-1		U	5.26	2.63
Pentachlorophenol	87-86-5		U	26.3	2.63
Phenanthrene	85-01-8		U	5.26	2.63
Anthracene	120-12-7		U	5.26	2.63
Di-N-Butylphthalate	84-74-2		U	5.26	2.63
Fluoranthene	206-44-0		U	5.26	2.63
Pyrene	129-00-0		U	5.26	2.63
Butylbenzylphthalate	85-68-7		U	5.26	2.63
3,3'-Dichlorobenzidine	91-94-1		U	10.5	2.63
Benzo(a)anthracene	56-55-3		U	5.26	2.63
Chrysene	218-01-9		U	5.26	2.63
bis(2-Ethylhexyl)phthalate	117-81-7	5.70		5.26	2.63
Di-n-octylphthalate	117-84-0		U	5.26	2.63
Benzo(b)fluoranthene	205-99-2		U	5.26	2.63
Benzo(k)fluoranthene	207-08-9		U	5.26	2.63

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Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
 Client ID: **BBLD-PIT-SSP-050109**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **05/01/2009 09:00**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **ECL**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/17/2009 21:16**
 File ID: **12M25899**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.26	2.63
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.26	2.63
Dibenzo(a,h)Anthracene	53-70-3		U	5.26	2.63
Benzo(g,h,i)Perylene	191-24-2		U	5.26	2.63
Carbazole	86-74-8		U	5.26	2.63
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	60.1	21	100		
Phenol-d5	41.4	10	94		
Nitrobenzene-d5	424	35	114	*	
2-Fluorobiphenyl	90.5	43	116		
2,4,6-Tribromophenol	104	10	123		
p-Terphenyl-d14	94.9	33	141		

E Semiquantitative result (out of instrument calibration range)

* Surrogate or spike compound out of range

U Not detected at or above the reporting limit (RL).

Report Number: L09050044

Report Date : May 20, 2009

Sample Number: L09050044-01
 Client ID: BBLD-PIT-SSP-050109
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 05/01/2009 09:00
 Sample Tag: DL01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: CAA/MDC
 Dilution: 5
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/19/2009 01:09
 File ID: 12M25930

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	26.3	13.2
Bis(2-Chloroethyl)ether	111-44-4		U	26.3	13.2
2-Chlorophenol	95-57-8		U	26.3	13.2
1,3-Dichlorobenzene	541-73-1		U	26.3	13.2
1,4-Dichlorobenzene	106-46-7		U	26.3	13.2
1,2-Dichlorobenzene	95-50-1		U	26.3	13.2
2-Methylphenol	95-48-7		U	26.3	13.2
3-,4-Methylphenol	106-44-5	181		26.3	13.2
bis(2-Chloroisopropyl)ether	39638-32-9		U	26.3	13.2
N-Nitroso-di-n-propylamine	621-64-7		U	26.3	13.2
Hexachloroethane	67-72-1		U	26.3	13.2
Nitrobenzene	98-95-3		U	26.3	13.2
Isophorone	78-59-1		U	26.3	13.2
2-Nitrophenol	88-75-5		U	26.3	13.2
2,4-Dimethylphenol	105-67-9		U	26.3	13.2
Bis(2-Chloroethoxy)Methane	111-91-1		U	26.3	13.2
2,4-Dichlorophenol	120-83-2		U	26.3	13.2
1,2,4-Trichlorobenzene	120-82-1		U	26.3	13.2
Naphthalene	91-20-3		U	26.3	13.2
4-Chloroaniline	106-47-8		U	26.3	13.2
Hexachlorobutadiene	87-68-3		U	26.3	13.2
4-Chloro-3-methylphenol	59-50-7		U	26.3	13.2
2-Methylnaphthalene	91-57-6		U	26.3	13.2
Hexachlorocyclopentadiene	77-47-4		U	26.3	13.2
2,4,6-Trichlorophenol	88-06-2		U	26.3	13.2
2,4,5-Trichlorophenol	95-95-4		U	26.3	13.2
2-Chloronaphthalene	91-58-7		U	26.3	13.2
2-Nitroaniline	88-74-4		U	132	13.2
Dimethylphthalate	131-11-3		U	26.3	13.2
Acenaphthylene	208-96-8		U	26.3	13.2
2,6-Dinitrotoluene	606-20-2		U	26.3	13.2
3-Nitroaniline	99-09-2		U	132	13.2
Acenaphthene	83-32-9		U	26.3	13.2
2,4-Dinitrophenol	51-28-5		U	132	65.8
4-Nitrophenol	100-02-7		U	132	13.2
Dibenzofuran	132-64-9		U	26.3	13.2
2,4-Dinitrotoluene	121-14-2		U	26.3	13.2
Diethylphthalate	84-66-2		U	26.3	13.2
4-Chlorophenyl-phenyl ether	7005-72-3		U	26.3	13.2
Fluorene	86-73-7		U	26.3	13.2
4-Nitroaniline	100-01-6		U	132	13.2
4,6-Dinitro-2-methylphenol	534-52-1		U	132	65.8
N-Nitrosodiphenylamine	86-30-6		U	26.3	13.2
4-Bromophenyl-phenylether	101-55-3		U	26.3	13.2
Hexachlorobenzene	118-74-1		U	26.3	13.2
Pentachlorophenol	87-86-5		U	132	13.2
Phenanthrene	85-01-8		U	26.3	13.2
Anthracene	120-12-7		U	26.3	13.2
Di-N-Butylphthalate	84-74-2		U	26.3	13.2
Fluoranthene	206-44-0		U	26.3	13.2
Pyrene	129-00-0		U	26.3	13.2
Butylbenzylphthalate	85-68-7		U	26.3	13.2
3,3'-Dichlorobenzidine	91-94-1		U	52.6	13.2
Benzo(a)anthracene	56-55-3		U	26.3	13.2
Chrysene	218-01-9		U	26.3	13.2
bis(2-Ethylhexyl)phthalate	117-81-7		U	26.3	13.2
Di-n-octylphthalate	117-84-0		U	26.3	13.2
Benzo(b)fluoranthene	205-99-2		U	26.3	13.2
Benzo(k)fluoranthene	207-08-9		U	26.3	13.2

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Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
 Client ID: **BBLD-PIT-SSP-050109**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **05/01/2009 09:00**
 Sample Tag: **DL01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **CAA/MDC**
 Dilution: **5**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/19/2009 01:09**
 File ID: **12M25930**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	26.3	13.2
Indeno(1,2,3-cd)pyrene	193-39-5		U	26.3	13.2
Dibenzo(a,h)Anthracene	53-70-3		U	26.3	13.2
Benzo(g,h,i)Perylene	191-24-2		U	26.3	13.2
Carbazole	86-74-8		U	26.3	13.2
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	55.9	21	100		
Phenol-d5	40.1	10	94		
Nitrobenzene-d5	101	35	114		
2-Fluorobiphenyl	101	43	116		
2,4,6-Tribromophenol	110	10	123		
p-Terphenyl-d14	94.4	33	141		

U Not detected at or above the reporting limit (RL).

Report Number: L09050044

Report Date : May 20, 2009

Sample Number: L09050044-03
 Client ID: MW-01-050109
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 05/01/2009 10:55
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: ECL
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/17/2009 19:37
 File ID: 12M25896

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.32	2.66
Bis(2-Chloroethyl)ether	111-44-4		U	5.32	2.66
2-Chlorophenol	95-57-8		U	5.32	2.66
1,3-Dichlorobenzene	541-73-1		U	5.32	2.66
1,4-Dichlorobenzene	106-46-7		U	5.32	2.66
1,2-Dichlorobenzene	95-50-1		U	5.32	2.66
2-Methylphenol	95-48-7		U	5.32	2.66
3-,4-Methylphenol	106-44-5		U	5.32	2.66
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.32	2.66
N-Nitroso-di-n-propylamine	621-64-7		U	5.32	2.66
Hexachloroethane	67-72-1		U	5.32	2.66
Nitrobenzene	98-95-3		U	5.32	2.66
Isophorone	78-59-1		U	5.32	2.66
2-Nitrophenol	88-75-5		U	5.32	2.66
2,4-Dimethylphenol	105-67-9		U	5.32	2.66
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.32	2.66
2,4-Dichlorophenol	120-83-2		U	5.32	2.66
1,2,4-Trichlorobenzene	120-82-1		U	5.32	2.66
Naphthalene	91-20-3		U	5.32	2.66
4-Chloroaniline	106-47-8		U	5.32	2.66
Hexachlorobutadiene	87-68-3		U	5.32	2.66
4-Chloro-3-methylphenol	59-50-7		U	5.32	2.66
2-Methylnaphthalene	91-57-6		U	5.32	2.66
Hexachlorocyclopentadiene	77-47-4		U	5.32	2.66
2,4,6-Trichlorophenol	88-06-2		U	5.32	2.66
2,4,5-Trichlorophenol	95-95-4		U	5.32	2.66
2-Chloronaphthalene	91-58-7		U	5.32	2.66
2-Nitroaniline	88-74-4		U	26.6	2.66
Dimethylphthalate	131-11-3		U	5.32	2.66
Acenaphthylene	208-96-8		U	5.32	2.66
2,6-Dinitrotoluene	606-20-2		U	5.32	2.66
3-Nitroaniline	99-09-2		U	26.6	2.66
Acenaphthene	83-32-9		U	5.32	2.66
2,4-Dinitrophenol	51-28-5		U	26.6	13.3
4-Nitrophenol	100-02-7		U	26.6	2.66
Dibenzofuran	132-64-9		U	5.32	2.66
2,4-Dinitrotoluene	121-14-2		U	5.32	2.66
Diethylphthalate	84-66-2		U	5.32	2.66
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.32	2.66
Fluorene	86-73-7		U	5.32	2.66
4-Nitroaniline	100-01-6		U	26.6	2.66
4,6-Dinitro-2-methylphenol	534-52-1		U	26.6	13.3
N-Nitrosodiphenylamine	86-30-6		U	5.32	2.66
4-Bromophenyl-phenylether	101-55-3		U	5.32	2.66
Hexachlorobenzene	118-74-1		U	5.32	2.66
Pentachlorophenol	87-86-5		U	26.6	2.66
Phenanthrene	85-01-8		U	5.32	2.66
Anthracene	120-12-7		U	5.32	2.66
Di-N-Butylphthalate	84-74-2		U	5.32	2.66
Fluoranthene	206-44-0		U	5.32	2.66
Pyrene	129-00-0		U	5.32	2.66
Butylbenzylphthalate	85-68-7		U	5.32	2.66
3,3'-Dichlorobenzidine	91-94-1		U	10.6	2.66
Benzo(a)anthracene	56-55-3		U	5.32	2.66
Chrysene	218-01-9		U	5.32	2.66
bis(2-Ethylhexyl)phthalate	117-81-7	2.80	J	5.32	2.66
Di-n-octylphthalate	117-84-0		U	5.32	2.66
Benzo(b)fluoranthene	205-99-2		U	5.32	2.66
Benzo(k)fluoranthene	207-08-9		U	5.32	2.66

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Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
 Client ID: **MW-01-050109**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **05/01/2009 10:55**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **ECL**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/17/2009 19:37**
 File ID: **12M25896**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.32	2.66
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.32	2.66
Dibenzo(a,h)Anthracene	53-70-3		U	5.32	2.66
Benzo(g,h,i)Perylene	191-24-2		U	5.32	2.66
Carbazole	86-74-8		U	5.32	2.66
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	36.1	21	100		
Phenol-d5	23.7	10	94		
Nitrobenzene-d5	58.3	35	114		
2-Fluorobiphenyl	58.3	43	116		
2,4,6-Tribromophenol	76.8	10	123		
p-Terphenyl-d14	108	33	141		

J The analyte was positively identified, but the quantitation was below the RL
 U Not detected at or above the reporting limit (RL).

Report Number: L09050044

Report Date : May 20, 2009

Sample Number: L09050044-05
 Client ID: MW-03-050109
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 05/01/2009 09:37
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: ECL
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/17/2009 20:10
 File ID: 12M25897

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.32	2.66
Bis(2-Chloroethyl)ether	111-44-4		U	5.32	2.66
2-Chlorophenol	95-57-8		U	5.32	2.66
1,3-Dichlorobenzene	541-73-1		U	5.32	2.66
1,4-Dichlorobenzene	106-46-7		U	5.32	2.66
1,2-Dichlorobenzene	95-50-1		U	5.32	2.66
2-Methylphenol	95-48-7		U	5.32	2.66
3-,4-Methylphenol	106-44-5		U	5.32	2.66
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.32	2.66
N-Nitroso-di-n-propylamine	621-64-7		U	5.32	2.66
Hexachloroethane	67-72-1		U	5.32	2.66
Nitrobenzene	98-95-3		U	5.32	2.66
Isophorone	78-59-1		U	5.32	2.66
2-Nitrophenol	88-75-5		U	5.32	2.66
2,4-Dimethylphenol	105-67-9		U	5.32	2.66
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.32	2.66
2,4-Dichlorophenol	120-83-2		U	5.32	2.66
1,2,4-Trichlorobenzene	120-82-1		U	5.32	2.66
Naphthalene	91-20-3		U	5.32	2.66
4-Chloroaniline	106-47-8		U	5.32	2.66
Hexachlorobutadiene	87-68-3		U	5.32	2.66
4-Chloro-3-methylphenol	59-50-7		U	5.32	2.66
2-Methylnaphthalene	91-57-6		U	5.32	2.66
Hexachlorocyclopentadiene	77-47-4		U	5.32	2.66
2,4,6-Trichlorophenol	88-06-2		U	5.32	2.66
2,4,5-Trichlorophenol	95-95-4		U	5.32	2.66
2-Chloronaphthalene	91-58-7		U	5.32	2.66
2-Nitroaniline	88-74-4		U	26.6	2.66
Dimethylphthalate	131-11-3		U	5.32	2.66
Acenaphthylene	208-96-8		U	5.32	2.66
2,6-Dinitrotoluene	606-20-2		U	5.32	2.66
3-Nitroaniline	99-09-2		U	26.6	2.66
Acenaphthene	83-32-9		U	5.32	2.66
2,4-Dinitrophenol	51-28-5		U	26.6	13.3
4-Nitrophenol	100-02-7		U	26.6	2.66
Dibenzofuran	132-64-9		U	5.32	2.66
2,4-Dinitrotoluene	121-14-2		U	5.32	2.66
Diethylphthalate	84-66-2		U	5.32	2.66
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.32	2.66
Fluorene	86-73-7		U	5.32	2.66
4-Nitroaniline	100-01-6		U	26.6	2.66
4,6-Dinitro-2-methylphenol	534-52-1		U	26.6	13.3
N-Nitrosodiphenylamine	86-30-6		U	5.32	2.66
4-Bromophenyl-phenylether	101-55-3		U	5.32	2.66
Hexachlorobenzene	118-74-1		U	5.32	2.66
Pentachlorophenol	87-86-5		U	26.6	2.66
Phenanthrene	85-01-8		U	5.32	2.66
Anthracene	120-12-7		U	5.32	2.66
Di-N-Butylphthalate	84-74-2		U	5.32	2.66
Fluoranthene	206-44-0		U	5.32	2.66
Pyrene	129-00-0		U	5.32	2.66
Butylbenzylphthalate	85-68-7		U	5.32	2.66
3,3'-Dichlorobenzidine	91-94-1		U	10.6	2.66
Benzo(a)anthracene	56-55-3		U	5.32	2.66
Chrysene	218-01-9		U	5.32	2.66
bis(2-Ethylhexyl)phthalate	117-81-7	28.0		5.32	2.66
Di-n-octylphthalate	117-84-0		U	5.32	2.66
Benzo(b)fluoranthene	205-99-2		U	5.32	2.66
Benzo(k)fluoranthene	207-08-9		U	5.32	2.66

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Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
 Client ID: **MW-03-050109**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **05/01/2009 09:37**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **ECL**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/17/2009 20:10**
 File ID: **12M25897**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.32	2.66
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.32	2.66
Dibenzo(a,h)Anthracene	53-70-3		U	5.32	2.66
Benzo(g,h,i)Perylene	191-24-2		U	5.32	2.66
Carbazole	86-74-8		U	5.32	2.66
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	36.8	21	100		
Phenol-d5	25.0	10	94		
Nitrobenzene-d5	59.5	35	114		
2-Fluorobiphenyl	59.6	43	116		
2,4,6-Tribromophenol	107	10	123		
p-Terphenyl-d14	103	33	141		

U Not detected at or above the reporting limit (RL).

Report Number: L09050044

Report Date : May 20, 2009

Sample Number: L09050044-07
 Client ID: DUP-GW--050109
 Matrix: Water
 Workgroup Number: WG302017
 Collect Date: 05/01/2009 00:01
 Sample Tag: 01

PrePrep Method: NONE
 Prep Method: 3510C
 Analytical Method: 8270C
 Analyst: ECL
 Dilution: 1
 Units: ug/L

Instrument: HPMS12
 Prep Date: 05/05/2009 10:30
 Cal Date: 05/13/2009 18:16
 Run Date: 05/17/2009 20:43
 File ID: 12M25898

Analyte	CAS. Number	Result	Qual	RL	MDL
Phenol	108-95-2		U	5.00	2.50
Bis(2-Chloroethyl)ether	111-44-4		U	5.00	2.50
2-Chlorophenol	95-57-8		U	5.00	2.50
1,3-Dichlorobenzene	541-73-1		U	5.00	2.50
1,4-Dichlorobenzene	106-46-7		U	5.00	2.50
1,2-Dichlorobenzene	95-50-1		U	5.00	2.50
2-Methylphenol	95-48-7		U	5.00	2.50
3-,4-Methylphenol	106-44-5		U	5.00	2.50
bis(2-Chloroisopropyl)ether	39638-32-9		U	5.00	2.50
N-Nitroso-di-n-propylamine	621-64-7		U	5.00	2.50
Hexachloroethane	67-72-1		U	5.00	2.50
Nitrobenzene	98-95-3		U	5.00	2.50
Isophorone	78-59-1		U	5.00	2.50
2-Nitrophenol	88-75-5		U	5.00	2.50
2,4-Dimethylphenol	105-67-9		U	5.00	2.50
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.00	2.50
2,4-Dichlorophenol	120-83-2		U	5.00	2.50
1,2,4-Trichlorobenzene	120-82-1		U	5.00	2.50
Naphthalene	91-20-3		U	5.00	2.50
4-Chloroaniline	106-47-8		U	5.00	2.50
Hexachlorobutadiene	87-68-3		U	5.00	2.50
4-Chloro-3-methylphenol	59-50-7		U	5.00	2.50
2-Methylnaphthalene	91-57-6		U	5.00	2.50
Hexachlorocyclopentadiene	77-47-4		U	5.00	2.50
2,4,6-Trichlorophenol	88-06-2		U	5.00	2.50
2,4,5-Trichlorophenol	95-95-4		U	5.00	2.50
2-Chloronaphthalene	91-58-7		U	5.00	2.50
2-Nitroaniline	88-74-4		U	25.0	2.50
Dimethylphthalate	131-11-3		U	5.00	2.50
Acenaphthylene	208-96-8		U	5.00	2.50
2,6-Dinitrotoluene	606-20-2		U	5.00	2.50
3-Nitroaniline	99-09-2		U	25.0	2.50
Acenaphthene	83-32-9		U	5.00	2.50
2,4-Dinitrophenol	51-28-5		U	25.0	12.5
4-Nitrophenol	100-02-7		U	25.0	2.50
Dibenzofuran	132-64-9		U	5.00	2.50
2,4-Dinitrotoluene	121-14-2		U	5.00	2.50
Diethylphthalate	84-66-2		U	5.00	2.50
4-Chlorophenyl-phenyl ether	7005-72-3		U	5.00	2.50
Fluorene	86-73-7		U	5.00	2.50
4-Nitroaniline	100-01-6		U	25.0	2.50
4,6-Dinitro-2-methylphenol	534-52-1		U	25.0	12.5
N-Nitrosodiphenylamine	86-30-6		U	5.00	2.50
4-Bromophenyl-phenylether	101-55-3		U	5.00	2.50
Hexachlorobenzene	118-74-1		U	5.00	2.50
Pentachlorophenol	87-86-5		U	25.0	2.50
Phenanthrene	85-01-8		U	5.00	2.50
Anthracene	120-12-7		U	5.00	2.50
Di-N-Butylphthalate	84-74-2		U	5.00	2.50
Fluoranthene	206-44-0		U	5.00	2.50
Pyrene	129-00-0		U	5.00	2.50
Butylbenzylphthalate	85-68-7		U	5.00	2.50
3,3'-Dichlorobenzidine	91-94-1		U	10.0	2.50
Benzo(a)anthracene	56-55-3		U	5.00	2.50
Chrysene	218-01-9		U	5.00	2.50
bis(2-Ethylhexyl)phthalate	117-81-7	25.7		5.00	2.50
Di-n-octylphthalate	117-84-0		U	5.00	2.50
Benzo(b)fluoranthene	205-99-2		U	5.00	2.50
Benzo(k)fluoranthene	207-08-9		U	5.00	2.50

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Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-07**
 Client ID: **DUP-GW--050109**
 Matrix: **Water**
 Workgroup Number: **WG302017**
 Collect Date: **05/01/2009 00:01**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3510C**
 Analytical Method: **8270C**
 Analyst: **ECL**
 Dilution: **1**
 Units: **ug/L**

Instrument: **HPMS12**
 Prep Date: **05/05/2009 10:30**
 Cal Date: **05/13/2009 18:16**
 Run Date: **05/17/2009 20:43**
 File ID: **12M25898**

Analyte	CAS. Number	Result	Qual	RL	MDL
Benzo(a)pyrene	50-32-8		U	5.00	2.50
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.00	2.50
Dibenzo(a,h)Anthracene	53-70-3		U	5.00	2.50
Benzo(g,h,i)Perylene	191-24-2		U	5.00	2.50
Carbazole	86-74-8		U	5.00	2.50
Surrogate	% Recovery	Lower	Upper	Qual	
2-Fluorophenol	35.6	21	100		
Phenol-d5	23.7	10	94		
Nitrobenzene-d5	60.1	35	114		
2-Fluorobiphenyl	60.3	43	116		
2,4,6-Tribromophenol	96.3	10	123		
p-Terphenyl-d14	95.7	33	141		

U Not detected at or above the reporting limit (RL).

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

$$RF = [(Ax) (Cis)] / [(Ais) (Cx)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	1.65935

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

$$Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	16.947

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

$$Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	576.7627

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	1153.525 ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, $y = mx + b$

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

$$x = (y - b)/m = [(0.02139 - (-0.0435))/0.0783] = 0.829$$

Step 4: Solve for analyte concentration Cx

$$Cx = Cis (x) = (25.0)(0.829) = 20.72 \text{ ug/L}$$

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783
Intercept from curve, b:	-0.0435
Area of analyte, Ax:	16790
Area of Internal Standard, Ais:	784484
Concentration of IS, Cis	25.00 ug/L
Response Ratio (y) :	0.021403
Amount Ratio:	0.828897
Concentration (Cx):	20.72241 ug/L

5.0 Concentration from Quadratic Regression**Step 1 - Retrieve Curve Data from Plot, $y = Ax^2 + Bx + C$**

Where:

$$Ax^2 + Bx + (C - y) = 0$$

A, B, C = constants from the ICAL quadratic regression

y = Response ratio = Area of analyte/Area of internal standard (IS)

x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

$$y = Ax/Ais$$

Step 3: Solve for x using the quadratic formula

$$Ax^2 + Bx + C - y = 0$$

$$x = \frac{b \pm \sqrt{b^2 - 4a(c - y)}}{2a} \quad (\text{Two possible solutions})$$

Step 4: Solve for analyte concentration Cx

$$Cx = (Cis)(\text{Amount ratio})$$

Example Spreadsheet Calculation:

Value of A from plot:	0.0259
Value of B from plot:	0.0596
Value of C from plot:	-0.0165
Area of analyte from quantitation report:	203233
Area of IS from quantitation report:	1425653
Response ratio, y:	0.142554
C - y:	-0.15905
Root 1 - Computed amount ratio, X1:	-3.88278
Root 2 - Computed amount ratio, X2:	1.581623 use this solution
Concentration of IS, Cis:	40.00
Concentration of analyte, Cx:	63.26 ug/L

Microbac Laboratories Inc.
Sample Extract Log

Workgroup: WG301563
Analyst: CSH
Spike Analyst: CAF
Method: 3510C
Run Date: 05/05/2009 10:30
SOP: EXB08 Revision 11
Spike Witness: CAF
Surr Solution: STD31690
Spike Solution: STD32027

Methylene Chloride Lot #: COA13832
Fortified Solution Lot #: RGT13805
1:1 H2SO4 Lot #: RGT13708
10N NaOH Lot #: RGT13802
Sodium Sulfate, Anhydrous, Granular (Lot #: COA13689

	SAMPLE #	Type	Prod	Initial Amnt	Surr Amount	Spike Amount	Final Volume	Color
1	L09050029-01	RS01	827-SPE	960 mL	.5 mL		1 mL	Transparent
2	L09050029-03	MS01	827-SPE	940 mL	.5 mL	.5 mL	1 mL	Colored
3	L09050029-05	SD01	827-SPE	920 mL	.5 mL	.5 mL	1 mL	Colored
4	L09050029-07	SAMP	827-SPE	860 mL	.5 mL		1 mL	Transparent
5	L09050029-09	SAMP	827-SPE	900 mL	.5 mL		1 mL	Transparent
6	L09050029-11	SAMP	827-SPE	980 mL	.5 mL		1 mL	Transparent
7	L09050029-13	SAMP	827-SPE	940 mL	.5 mL		1 mL	Colored
8	L09050044-01	SAMP	827-SPE	950 mL	.5 mL		1 mL	Colored
9	L09050044-03	SAMP	827-SPE	940 mL	.5 mL		1 mL	Transparent
10	L09050044-05	SAMP	827-SPE	940 mL	.5 mL		1 mL	Colored
11	L09050044-07	SAMP	827-SPE	1000 mL	.5 mL		1 mL	Colored
12	WG301563-01	REF	827-SPE	960 mL	.5 mL		1 mL	Transparent
13	WG301563-02	BLANK	827-SPE	1000 mL	.5 mL		1 mL	Transparent
14	WG301563-03	LCS	827-SPE	1000 mL	.5 mL	.5 mL	1 mL	Colored
15	WG301563-04	MS	827-SPE	940 mL	.5 mL	.5 mL	1 mL	Colored
16	WG301563-05	MSD	827-SPE	920 mL	.5 mL	.5 mL	1 mL	Colored

Analyst: Chris Hill

Reviewer: Cheryl A. Flowers

Microbac Laboratories Inc. Instrument Run Log

Instrument: <u>HPMS12</u>	Dataset: <u>051309</u>	
Analyst1: <u>MDC</u>	Analyst2: <u>NA</u>	
Method: <u>8270C</u>	SOP: <u>MSS01</u>	Rev: <u>14</u>
Method: <u>625</u>	SOP: <u>MSS02</u>	Rev: <u>8</u>

Maintenance Log ID: 28685

Workgroups: Column 1 ID: RXI-5MS Column 2 ID: NA

Internal STD: COA13725 Surrogate STD: STD31690 Calibration STD: _____

Comments: ICAL: #49 only calibrated to 100ppm

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	12M25815	WG302078-01 50ppm DFTPP STD	1	1	STD31842	05/13/09 14:04
2	12M25816	WG302078-02 50ppm Megamix STD	1	1	STD31920	05/13/09 14:22
3	12M25817	WG302078-03 3ppm Megamix STD	1	1	STD31920	05/13/09 14:55
4	12M25818	WG302078-04 10ppm Megamix STD	1	1	STD31920	05/13/09 15:29
5	12M25819	WG302078-05 15ppm Megamix STD	1	1	STD31920	05/13/09 16:03
6	12M25820	WG302078-06 25ppm Megamix STD	1	1	STD31920	05/13/09 16:36
7	12M25821	WG302078-07 80ppm Megamix STD	1	1	STD31920	05/13/09 17:10
8	12M25822	WG302078-08 100ppm Megamix STD	1	1	STD31920	05/13/09 17:43
9	12M25823	WG302078-09 120ppm Megamix STD	1	1	STD31920	05/13/09 18:16
10	12M25824	WG302078-10 50ppm Alt source	1	1	STD31858	05/13/09 18:49
11	12M25825	WG302078-11 50ppm A9 Alt source	1	1	STD30677	05/13/09 19:22
12	12M25826	WG302078-12 50ppm 1,4-dioxane Alt source	1	1	STD30264	05/13/09 19:54
13	12M25827	WG301951-02 BLK 5/11	1	1		05/13/09 20:27
14	12M25828	WG301951-03 LCS 5/11	1	1		05/13/09 21:00
15	12M25829	WG301563-02 BLK 5/5	1	1		05/13/09 21:33
16	12M25830	WG301563-03 LCS 5/5	1	1		05/13/09 22:05
17	12M25831	WG301563-01 L09050029-01	1	1		05/13/09 22:38
18	12M25832	WG301563-04 L09050029-03 MS	1	1		05/13/09 23:11
19	12M25833	WG301563-05 L09050029-05 MSD	1	1		05/13/09 23:44
20	12M25834	L09050029-07	1	1		05/14/09 00:16
21	12M25835	L09050029-09	1	1		05/14/09 00:49
22	12M25836	L09040617-05 RE 2X	1	2		05/14/09 01:22
23	12M25837	L09050029-11	1	1		05/14/09 01:55
24	12M25838	BAKEOUT	1	1		05/14/09 02:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11				
			#78, 110, 122 >30%D.	
22				
			Surr. FBP, TPH < LCL.	

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Approved: 14-MAY-09




Microbac Laboratories Inc.
Instrument Run Log

Instrument: <u>HPMS12</u>	Dataset: <u>051709</u>	
Analyst1: <u>ECL</u>	Analyst2: <u>NA</u>	
Method: <u>8270C</u>	SOP: <u>MSS01</u>	Rev: <u>14</u>
Method: <u>625</u>	SOP: <u>MSS02</u>	Rev: <u>8</u>

Maintenance Log ID: 28750

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG301563, WG301951

Internal STD: COA13725 Surrogate STD: STD32481 Calibration STD: _____

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	12M25882	WG302498-01 50ppm DFTPP STD	1	1	STD31842	05/17/09 12:13
2	12M25883	WG302498-02 50ppm Megamix STD	1	1	STD31920	05/17/09 12:32
3	12M25884	L09050190-01	1	1		05/17/09 13:04
4	12M25885	L09050190-02	1	1		05/17/09 13:37
5	12M25886	L09050190-03	1	1		05/17/09 14:09
6	12M25887	L09050190-04	1	1		05/17/09 14:42
7	12M25888	L09050190-05	1	1		05/17/09 15:15
8	12M25889	L09050190-06	1	1		05/17/09 15:48
9	12M25890	L09050190-07	1	1		05/17/09 16:20
10	12M25891	L09050151-01	1	1		05/17/09 16:53
11	12M25892	L09050151-03	1	1		05/17/09 17:26
12	12M25893	L09050151-05	1	1		05/17/09 17:59
13	12M25894	L09050151-09	1	1		05/17/09 18:31
14	12M25895	L09050151-11	1	1		05/17/09 19:04
15	12M25896	L09050044-03	1	1		05/17/09 19:37
16	12M25897	L09050044-05	1	1		05/17/09 20:10
17	12M25898	L09050044-07	1	1		05/17/09 20:43
18	12M25899	L09050044-01	1	1		05/17/09 21:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18	X	5	Over Calibration Range	#23
			L09050044-01: IS NPT failed low and SS NBZ failed high due to SMI.	

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Approved: 18-MAY-09




Microbac Laboratories Inc. Instrument Run Log

Instrument: <u>HPMS12</u>	Dataset: <u>051809</u>	
Analyst1: <u>CAA</u>	Analyst2: <u>NA</u>	
Method: <u>8270C</u>	SOP: <u>MSS01</u>	Rev: <u>14</u>
Method: <u>625</u>	SOP: <u>MSS02</u>	Rev: <u>8</u>

Maintenance Log ID: 28776

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG302680, WG302682, WG302017, WG302302, WG302222, WG302245

Internal STD: COA13725 Surrogate STD: NA Calibration STD: _____

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	12M25900	WG302519-01 50ppm DFTPP STD	1	1	STD31842	05/18/09 08:41
2	12M25901	WG302519-02 50ppm Megamix STD	1	1	STD31920	05/18/09 09:00
3	12M25902	WG302095-01 BLK 5/12	1	1		05/18/09 09:33
4	12M25903	WG302383-02 BLK 5/15	1	1		05/18/09 10:06
5	12M25904	WG302383-03 LCS 5/15	1	1		05/18/09 10:38
6	12M25905	WG302369-01 FBLK	17	1		05/18/09 11:11
7	12M25906	WG301992-01 BLK 5/11	1	1		05/18/09 11:44
8	12M25907	L09050327-01	17	1		05/18/09 12:17
9	12M25908	L09050327-02	17	1		05/18/09 12:50
10	12M25909	L09050266-01 20X	10	20		05/18/09 13:23
11	12M25910	L09050266-01 2X	10	2		05/18/09 13:55
12	12M25911	L09050266-02 5X	10	5		05/18/09 14:28
13	12M25912	L09050266-05 5X	10	5		05/18/09 15:00
14	12M25913	L09050266-05 20X	10	20		05/18/09 15:33
15	12M25914	L09050266-06 100X	10	100		05/18/09 16:05
16	12M25915	L09050266-07 5X	10	5		05/18/09 16:38
17	12M25916	L09050165-08	1	1		05/18/09 17:11
18	12M25917	L09050165-10	1	1		05/18/09 17:44
19	12M25918	L09050165-02 2X	1	2		05/18/09 18:16
20	12M25919	L09050165-04 5X	1	5		05/18/09 18:49
21	12M25920	L09050165-06 2X	1	2		05/18/09 19:22
22	12M25921	WG302579-01 50ppm DFTPP STD	1	1	STD31842	05/18/09 20:32
23	12M25922	WG302579-01 50ppm DFTPP STD	1	1	STD31842	05/18/09 21:17
24	12M25923	WG302579-02 50ppm Megamix STD	1	1	STD31920	05/18/09 21:35
25	12M25924	PRIMER	1	1	STD31920	05/18/09 22:08
26	12M25925	PRIMER	1	1	STD31920	05/18/09 22:41
27	12M25926	WG302579-01 50ppm DFTPP STD	1	1	STD31842	05/18/09 23:12
28	12M25927	WG302579-02 50ppm Megamix STD	1	1	STD31920	05/18/09 23:31
29	12M25928	WG302455-02 BLK 5/15	7	1	SOIL	05/19/09 00:03
30	12M25929	WG302455-03 LCS 5/15	7	1	SOIL	05/19/09 00:36
31	12M25930	L09050044-01 5X	1	5		05/19/09 01:09
32	12M25931	L09050369-04	7	1	SOIL	05/19/09 01:42
33	12M25932	L09050369-05	7	1	SOIL	05/19/09 02:14
34	12M25933	L09050369-06	7	1	SOIL	05/19/09 02:47
35	12M25934	L09050369-10 5X	7	5	SOIL	05/19/09 03:20

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Approved: 19-MAY-09




Microbac Laboratories Inc. Instrument Run Log

Instrument: HPMS12	Dataset: 051809	
Analyst1: CAA	Analyst2: NA	
Method: 8270C	SOP: MSS01	Rev: 14
Method: 625	SOP: MSS02	Rev: 8

Maintenance Log ID: 28776

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG302680, WG302682, WG302017, WG302302, WG302222, WG302245

Internal STD: COA13725 Surrogate STD: NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
36	12M25935	L09050369-11	7	1	SOIL	05/19/09 03:52
37	12M25936	L09050369-13	7	1	SOIL	05/19/09 04:24
38	12M25937	L09050369-14	7	1	SOIL	05/19/09 04:57
39	12M25938	L09050369-15	7	1	SOIL	05/19/09 05:29
40	12M25939	L09050369-16	7	1	SOIL	05/19/09 06:02
41	12M25940	L09050369-17	7	1	SOIL	05/19/09 06:34
42	12M25941	L09050369-19	7	1	SOIL	05/19/09 07:06
43	12M25942	L09050369-07 5X	7	5	SOIL	05/19/09 07:39
44	12M25943	L09050369-18 10X	7	10	SOIL	05/19/09 08:12
45	12M25944	L09050369-02 20X	7	20	SOIL	05/19/09 08:45
46	12M25945	L09050369-08 10X	7	10	SOIL	05/19/09 09:17
47	12M25946	L09050369-01 20X	7	20	SOIL	05/19/09 09:50
48	12M25947	L09050369-03 20X	7	20	SOIL	05/19/09 10:23
49	12M25948	L09050369-09 20X	7	20	SOIL	05/19/09 10:57
50	12M25949	L09050261-03 2X	2	2		05/19/09 11:29
51	12M25950	L09050261-01 10X	2	10		05/19/09 12:02

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4	X			
			WG302383-02 BLK 5/15 - Blank needs reran with TCL std.	
12				
			L09050266-02 5X - SS TBP low.	
15	X	10	Analyzed too dilute	#42
			L09050266-06 100X	
19				
			L09050165-02 2X - Analyzed at a dilution due to extract color.	
20				
			L09050165-04 5X - Sample looked oily, analyzed at a dilution.	
21				
			L09050165-06 2X - Analyzed at a dilution due to extract color.	
22	X			
			WG302579-01 50ppm DFTPP STD - No PCP - See maintenance log.	
24	X			
			WG302579-02 50ppm Megamix STD - PCP fails low.	
32				
			L09050369-04 - SS FBP low - needs re-extracted.	

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Approved: 19-MAY-09




Microbac Laboratories Inc. Instrument Run Log

Instrument: <u>HPMS12</u>	Dataset: <u>051809</u>	
Analyst1: <u>CAA</u>	Analyst2: <u>NA</u>	
Method: <u>8270C</u>	SOP: <u>MSS01</u>	Rev: <u>14</u>
Method: <u>625</u>	SOP: <u>MSS02</u>	Rev: <u>8</u>

Maintenance Log ID: 28776

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG302680, WG302682, WG302017, WG302302, WG302222, WG302245

Internal STD: COA13725 Surrogate STD: NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
35				
			L09050369-10 5X - SS FBP, NBZ low, needs re-extracted; analyzed at a dilution due to extract viscosity and color.	
36				
			L09050369-11 - SS NBZ low.	
43				
			L09050369-07 5X - SS TBP low - Needs re-extracted; Analyzed at a diluton due to extract apperance and color.	
44				
			L09050369-18 10X - SS TBP, NBZ low - Needs re-extracted; Analyzed at a diluton due to extract color and viscosity.	
45				
			L09050369-02 20X - Analyzed at a dilution due to extract color and viscosity.	
46				
			L09050369-08 10X - Analyzed at a diluton due to extract and apperance and viscosity.	
47				
			L09050369-01 20X - Analyzed at a diluton due to extract and apperance and viscosity.	
48				
			L09050369-03 20X - Analyzed at a diluton due to extract and apperance and viscosity.	
49				
			L09050369-09 20X - Analyzed at a diluton due to extract and apperance and viscosity.	
50				
			L09050261-03 2X - Analyzed at dilution due to extract color.	
51				
			L09050261-01 10X - Analyzed at a dilution due to extract color.	




Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2009

Analyst: MDC

Analyst: NA

Method: 8270

Instrument: HPMS12

Curve Workgroup: NA

Runlog ID: 28076

Analytical Workgroups: L09040617 RE, L09050029

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MDC
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
14-MAY-2009



Secondary Reviewer:
14-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2009

Analyst: ECL

Analyst: NA

Method: 8270

Instrument: HPMS12

Curve Workgroup: NA

Runlog ID: 28117

Analytical Workgroups: L09050190, L09050151, L09050044

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	ECL
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
18-MAY-2009



Secondary Reviewer:
18-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 18-MAY-2009

Analyst: CAA

Analyst: MDC

Method: 8270

Instrument: HPMS12

Curve Workgroup: NA

Runlog ID: 28147

Analytical Workgroups: L09050327, 050266, 050165, 050044, 050369, 050261

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	CAA
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
19-MAY-2009

Cassio D. Augenstein

Secondary Reviewer:
19-MAY-2009

Eir C. Zimm

Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270C

AAB#: WG302017

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	7	4.06	05/17/09	40	12.4	
MW-03-050109	05/01/09	05/02/09	05/05/09	7	4.04	05/17/09	40	12.4	
MW-01-050109	05/01/09	05/02/09	05/05/09	7	3.98	05/17/09	40	12.4	
DUP-GW--050109	05/01/09	05/02/09	05/05/09	7	4.44	05/17/09	40	12.4	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	7	4.06	05/19/09	40	13.6	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L09050044
Instrument Id: HPMS12
Workgroup (AAB#): WG302017

Method: 8270
CAL ID: HPMS12 - 13-MAY-09
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4	5	6
L09050044-01	1.00	01	104	90.5	60.1	<u>424</u>	94.9	41.4
L09050044-01	5.00	DL01	110	101	55.9	101	94.4	40.1
L09050044-03	1.00	01	76.8	58.3	36.1	58.3	108	23.7
L09050044-05	1.00	01	107	59.6	36.8	59.5	103	25.0
L09050044-07	1.00	01	96.3	60.3	35.6	60.1	95.7	23.7
WG301563-02	1.00	01	82.2	64.9	38.4	64.5	99.6	25.0
WG301563-03	1.00	01	98.5	79.0	45.2	77.7	99.6	30.0

Surrogates	Surrogate Limits		
1 - 2,4,6-Tribromophenol	10	-	123
2 - 2-Fluorobiphenyl	43	-	116
3 - 2-Fluorophenol	21	-	100
4 - Nitrobenzene-d5	35	-	114
5 - p-Terphenyl-d14	33	-	141
6 - Phenol-d5	10	-	94

Underline = Result out of surrogate limits

DL = surrogate diluted out

ND = surrogate not detected

METHOD BLANK SUMMARY

Login Number: <u>L09050044</u>	Work Group: <u>WG302017</u>
Blank File ID: <u>12M25829</u>	Blank Sample ID: <u>WG301563-02</u>
Prep Date: <u>05/05/09 10:30</u>	Instrument ID: <u>HPMS12</u>
Analyzed Date: <u>05/13/09 21:33</u>	Method: <u>8270C</u>
Analyst: <u>MDC</u>	

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301563-03	12M25830	05/13/09 22:05	01
MW-01-050109	L09050044-03	12M25896	05/17/09 19:37	01
MW-03-050109	L09050044-05	12M25897	05/17/09 20:10	01
DUP-GW--050109	L09050044-07	12M25898	05/17/09 20:43	01
BBLD-PIT-SSP-050109	L09050044-01	12M25899	05/17/09 21:16	01
BBLD-PIT-SSP-050109	L09050044-01	12M25930	05/19/09 01:09	DL01

Report Name: BLANK_SUMMARY
 PDF File ID: 1394874
 Report generated 05/19/2009 16:58



METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 10:30 Sample ID: WG301563-02
 Instrument ID: HPMS12 Run Date: 05/13/09 21:33 Prep Method: 3510C
 File ID: 12M25829 Analyst: MDC Method: 8270C
 Workgroup (AAB#): WG302017 Matrix: Water Units: ug/L
 Contract #: _____ Cal ID: HPMS12 - 13-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Phenol	2.50	5.00	2.50	1	U
Bis(2-Chloroethyl)ether	2.50	5.00	2.50	1	U
2-Chlorophenol	2.50	5.00	2.50	1	U
1,3-Dichlorobenzene	2.50	5.00	2.50	1	U
1,4-Dichlorobenzene	2.50	5.00	2.50	1	U
1,2-Dichlorobenzene	2.50	5.00	2.50	1	U
2-Methylphenol	2.50	5.00	2.50	1	U
3-,4-Methylphenol	2.50	5.00	2.50	1	U
bis(2-Chloroisopropyl)ether	2.50	5.00	2.50	1	U
N-Nitroso-di-n-propylamine	2.50	5.00	2.50	1	U
Hexachloroethane	2.50	5.00	2.50	1	U
Nitrobenzene	2.50	5.00	2.50	1	U
Isophorone	2.50	5.00	2.50	1	U
2-Nitrophenol	2.50	5.00	2.50	1	U
2,4-Dimethylphenol	2.50	5.00	2.50	1	U
Bis(2-Chloroethoxy)Methane	2.50	5.00	2.50	1	U
2,4-Dichlorophenol	2.50	5.00	2.50	1	U
1,2,4-Trichlorobenzene	2.50	5.00	2.50	1	U
Naphthalene	2.50	5.00	2.50	1	U
4-Chloroaniline	2.50	5.00	2.50	1	U
Hexachlorobutadiene	2.50	5.00	2.50	1	U
4-Chloro-3-methylphenol	2.50	5.00	2.50	1	U
2-Methylnaphthalene	2.50	5.00	2.50	1	U
Hexachlorocyclopentadiene	2.50	5.00	2.50	1	U
2,4,6-Trichlorophenol	2.50	5.00	2.50	1	U
2,4,5-Trichlorophenol	2.50	5.00	2.50	1	U
2-Chloronaphthalene	2.50	5.00	2.50	1	U
2-Nitroaniline	2.50	25.0	2.50	1	U
Dimethylphthalate	2.50	5.00	2.50	1	U
Acenaphthylene	2.50	5.00	2.50	1	U
2,6-Dinitrotoluene	2.50	5.00	2.50	1	U
3-Nitroaniline	2.50	25.0	2.50	1	U
Acenaphthene	2.50	5.00	2.50	1	U
2,4-Dinitrophenol	12.5	25.0	12.5	1	U
4-Nitrophenol	2.50	25.0	2.50	1	U
Dibenzofuran	2.50	5.00	2.50	1	U
2,4-Dinitrotoluene	2.50	5.00	2.50	1	U
Diethylphthalate	2.50	5.00	2.50	1	U
4-Chlorophenyl-phenyl ether	2.50	5.00	2.50	1	U
Fluorene	2.50	5.00	2.50	1	U
4-Nitroaniline	2.50	25.0	2.50	1	U
4,6-Dinitro-2-methylphenol	12.5	25.0	12.5	1	U

Report Name: BLANK

PDF ID: 1394875

19-MAY-2009 16:58



METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 10:30 Sample ID: WG301563-02
 Instrument ID: HPMS12 Run Date: 05/13/09 21:33 Prep Method: 3510C
 File ID: 12M25829 Analyst: MDC Method: 8270C
 Workgroup (AAB#): WG302017 Matrix: Water Units: ug/L
 Contract #: _____ Cal ID: HPMS12 - 13-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
N-Nitrosodiphenylamine	2.50	5.00	2.50	1	U
4-Bromophenyl-phenylether	2.50	5.00	2.50	1	U
Hexachlorobenzene	2.50	5.00	2.50	1	U
Pentachlorophenol	2.50	25.0	2.50	1	U
Phenanthrene	2.50	5.00	2.50	1	U
Anthracene	2.50	5.00	2.50	1	U
Di-N-Butylphthalate	2.50	5.00	2.50	1	U
Fluoranthene	2.50	5.00	2.50	1	U
Pyrene	2.50	5.00	2.50	1	U
Butylbenzylphthalate	2.50	5.00	2.50	1	U
3,3'-Dichlorobenzidine	2.50	10.0	2.50	1	U
Benzo(a)anthracene	2.50	5.00	2.50	1	U
Chrysene	2.50	5.00	2.50	1	U
bis(2-Ethylhexyl)phthalate	2.50	5.00	2.50	1	U
Di-n-octylphthalate	2.50	5.00	2.50	1	U
Benzo(b)fluoranthene	2.50	5.00	2.50	1	U
Benzo(k)fluoranthene	2.50	5.00	2.50	1	U
Benzo(a)pyrene	2.50	5.00	2.50	1	U
Indeno(1,2,3-cd)pyrene	2.50	5.00	2.50	1	U
Dibenzo(a,h)Anthracene	2.50	5.00	2.50	1	U
Benzo(g,h,i)Perylene	2.50	5.00	2.50	1	U
Carbazole	2.50	5.00	2.50	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
2-Fluorophenol	38.4	21 - 100	PASS
Phenol-d5	25.0	10 - 94	PASS
Nitrobenzene-d5	64.5	35 - 114	PASS
2-Fluorobiphenyl	64.9	43 - 116	PASS
2,4,6-Tribromophenol	82.2	10 - 123	PASS
p-Terphenyl-d14	99.6	33 - 141	PASS

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1394875

19-MAY-2009 16:58



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: <u>L09050044</u>	Run Date: <u>05/13/2009</u>	Sample ID: <u>WG301563-03</u>
Instrument ID: <u>HPMS12</u>	Run Time: <u>22:05</u>	Prep Method: <u>3510C</u>
File ID: <u>12M25830</u>	Analyst: <u>MDC</u>	Method: <u>8270C</u>
Workgroup (AAB#): <u>WG302017</u>	Matrix: <u>Water</u>	Units: <u>ug/L</u>
QC Key: <u>STD</u>	Lot#: <u>STD32027</u>	Cal ID: <u>HPMS12 - 13-MAY-09</u>

Analytes	Expected	Found	% Rec	LCS Limits		Q
Phenol	50.0	15.9	31.8	10	- 120	
Bis(2-Chloroethyl)ether	50.0	41.2	82.3	25	- 110	
2-Chlorophenol	50.0	33.7	67.4	25	- 110	
1,3-Dichlorobenzene	50.0	34.7	69.3	25	- 110	
1,4-Dichlorobenzene	50.0	34.8	69.5	25	- 110	
1,2-Dichlorobenzene	50.0	35.8	71.6	25	- 110	
2-Methylphenol	50.0	32.3	64.5	20	- 110	
3-,4-Methylphenol	50.0	34.0	68.0	20	- 110	
bis(2-Chloroisopropyl)ether	50.0	41.4	82.7	20	- 110	
N-Nitroso-di-n-propylamine	50.0	44.9	89.8	28	- 120	
Hexachloroethane	50.0	32.8	65.5	25	- 95	
Nitrobenzene	50.0	38.4	76.8	30	- 110	
Isophorone	50.0	39.9	79.7	30	- 110	
2-Nitrophenol	50.0	37.8	75.5	20	- 115	
2,4-Dimethylphenol	50.0	38.7	77.4	20	- 120	
Bis(2-Chloroethoxy)Methane	50.0	34.1	68.2	20	- 105	
2,4-Dichlorophenol	50.0	38.6	77.1	20	- 110	
1,2,4-Trichlorobenzene	50.0	35.8	71.5	25	- 105	
Naphthalene	50.0	37.9	75.9	25	- 110	
4-Chloroaniline	50.0	38.3	76.6	25	- 120	
Hexachlorobutadiene	50.0	37.3	74.5	24	- 105	
4-Chloro-3-methylphenol	50.0	41.3	82.7	25	- 110	
2-Methylnaphthalene	50.0	43.0	85.9	25	- 120	
Hexachlorocyclopentadiene	50.0	33.0	66.1	20	- 143	
2,4,6-Trichlorophenol	50.0	41.9	83.7	30	- 120	
2,4,5-Trichlorophenol	50.0	44.5	89.0	35	- 120	
2-Chloronaphthalene	50.0	35.4	70.7	25	- 120	
2-Nitroaniline	50.0	48.6	97.1	45	- 115	
Dimethylphthalate	50.0	50.3	101	25	- 112	
Acenaphthylene	50.0	42.8	85.5	30	- 120	
2,6-Dinitrotoluene	50.0	46.5	93.1	50	- 120	
3-Nitroaniline	50.0	51.9	104	40	- 120	
Acenaphthene	50.0	43.5	87.0	30	- 120	
2,4-Dinitrophenol	50.0	40.8	81.6	20	- 140	
4-Nitrophenol	50.0	21.7	43.4	10	- 132	
Dibenzofuran	50.0	45.5	90.9	35	- 115	
2,4-Dinitrotoluene	50.0	52.1	104	50	- 139	
Diethylphthalate	50.0	52.4	105	45	- 120	
4-Chlorophenyl-phenyl ether	50.0	46.6	93.2	35	- 120	
Fluorene	50.0	46.4	92.7	40	- 120	
4-Nitroaniline	50.0	51.9	104	53	- 135	

LCS - Modified 03/06/2008
PDF File ID: 1394876
Report generated: 05/19/2009 16:58



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044	Run Date: 05/13/2009	Sample ID: WG301563-03
Instrument ID: HPMS12	Run Time: 22:05	Prep Method: 3510C
File ID: 12M25830	Analyst: MDC	Method: 8270C
Workgroup (AAB#): WG302017	Matrix: Water	Units: ug/L
QC Key: STD	Lot#: STD32027	Cal ID: HPMS12 - 13-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits		Q
4,6-Dinitro-2-methylphenol	50.0	48.6	97.2	40	- 145	
N-Nitrosodiphenylamine	50.0	45.8	91.7	40	- 110	
4-Bromophenyl-phenylether	50.0	50.4	101	40	- 115	
Hexachlorobenzene	50.0	49.1	98.3	50	- 130	
Pentachlorophenol	50.0	63.3	127	40	- 140	
Phenanthrene	50.0	51.8	104	55	- 120	
Anthracene	50.0	53.0	106	55	- 130	
Di-N-Butylphthalate	50.0	65.7	131	55	- 118	*
Fluoranthene	50.0	55.4	111	50	- 137	
Pyrene	50.0	64.9	130	55	- 130	
Butylbenzylphthalate	50.0	73.1	146	55	- 150	
3,3'-Dichlorobenzidine	50.0	50.6	101	30	- 140	
Benzo(a)anthracene	50.0	53.1	106	60	- 130	
Chrysene	50.0	54.8	110	55	- 130	
bis(2-Ethylhexyl)phthalate	50.0	59.3	119	50	- 150	
Di-n-octylphthalate	50.0	61.1	122	40	- 146	
Benzo(b)fluoranthene	50.0	53.3	107	45	- 125	
Benzo(k)fluoranthene	50.0	56.5	113	55	- 140	
Benzo(a)pyrene	50.0	53.2	106	55	- 135	
Indeno(1,2,3-cd)pyrene	50.0	52.6	105	50	- 135	
Dibenzo(a,h)Anthracene	50.0	53.2	106	45	- 125	
Benzo(g,h,i)Perylene	50.0	54.1	108	45	- 140	
Carbazole	50.0	53.0	106	50	- 130	

Surrogates	% Recovery	Surrogate Limits		Qualifier
2-Fluorophenol	45.2	21	- 100	PASS
Phenol-d5	30.0	10	- 94	PASS
Nitrobenzene-d5	77.7	35	- 114	PASS
2-Fluorobiphenyl	79.0	43	- 116	PASS
2,4,6-Tribromophenol	98.5	10	- 123	PASS
p-Terphenyl-d14	99.6	33	- 141	PASS

* FAILS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L09050044
Instrument: HPMS12
Analyst: MDC
Workgroup: WG302078

Tune ID: WG302078-01
Run Date: 05/13/2009
Run Time: 14:04
File ID: 12M25815
Cal ID: HPMS12 - 13-MAY-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.9	107573	PASS
68.0	69.0	0	2.00	0	0	PASS
69.0	198	0	100	31.7	87567	PASS
70.0	69.0	0	2.00	0.287	251	PASS
127	198	40.0	60.0	45.5	125644	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	276202	PASS
199	198	5.00	9.00	6.78	18731	PASS
275	198	10.0	30.0	23.6	65066	PASS
365	198	1.00	100	2.59	7142	PASS
441	443	0.0100	100	73.6	28565	PASS
442	198	40.0	100	70.1	193733	PASS
443	442	17.0	23.0	20.0	38821	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG302078-02	STD-CCV	01	05/13/2009 14:22	
WG302078-03	STD	01	05/13/2009 14:55	
WG302078-04	STD	01	05/13/2009 15:29	
WG302078-05	STD	01	05/13/2009 16:03	
WG302078-06	STD	01	05/13/2009 16:36	
WG302078-07	STD	01	05/13/2009 17:10	
WG302078-08	STD	01	05/13/2009 17:43	
WG302078-09	STD	01	05/13/2009 18:16	
WG302078-10	SSCV	01	05/13/2009 18:49	
WG302078-11	SSCV	01	05/13/2009 19:22	
WG302078-12	SSCV	01	05/13/2009 19:54	
WG301563-02	BLANK	01	05/13/2009 21:33	
WG301563-03	LCS	01	05/13/2009 22:05	
WG301563-01	REF	01	05/13/2009 22:38	
WG301563-04	MS	01	05/13/2009 23:11	
WG301563-05	MSD	01	05/13/2009 23:44	

* Sample past 12 hour tune limit

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L09050044

Instrument: HPMS12

Analyst: ECL

Workgroup: WG302498

Tune ID: WG302498-01

Run Date: 05/17/2009

Run Time: 12:13

File ID: 12M25882

Cal ID: HPMS12 - 13-MAY-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.6	118637	PASS
68.0	69.0	0	2.00	0	0	PASS
69.0	198	0	100	37.8	96066	PASS
70.0	69.0	0	2.00	0.621	597	PASS
127	198	40.0	60.0	47.9	121856	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	254400	PASS
199	198	5.00	9.00	6.84	17409	PASS
275	198	10.0	30.0	22.6	57621	PASS
365	198	1.00	100	2.56	6520	PASS
441	443	0.0100	100	78.0	26517	PASS
442	198	40.0	100	69.7	177229	PASS
443	442	17.0	23.0	19.2	34005	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG302498-02	CCV	01	05/17/2009 12:32	
L09050044-03	MW-01-050109	01	05/17/2009 19:37	
L09050044-05	MW-03-050109	01	05/17/2009 20:10	
L09050044-07	DUP-GW--050109	01	05/17/2009 20:43	
L09050044-01	BBLD-PIT-SSP-050109	01	05/17/2009 21:16	

* Sample past 12 hour tune limit

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L09050044

Instrument: HPMS12

Analyst: CAA/MDC

Workgroup: WG302579

Tune ID: WG302579-01

Run Date: 05/18/2009

Run Time: 23:12

File ID: 12M25926

Cal ID: HPMS12 - 13-MAY-09

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.1	154511	PASS
68.0	69.0	0	2.00	0	0	PASS
69.0	198	0	100	32.8	129952	PASS
70.0	69.0	0	2.00	0.342	445	PASS
127	198	40.0	60.0	44.8	177344	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	395605	PASS
199	198	5.00	9.00	6.74	26661	PASS
275	198	10.0	30.0	24.0	94922	PASS
365	198	1.00	100	2.73	10794	PASS
441	443	0.0100	100	75.6	46061	PASS
442	198	40.0	100	78.0	308437	PASS
443	442	17.0	23.0	19.8	60960	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG302579-02	CCV	01	05/18/2009 23:31	
L09050044-01	BBLD-PIT-SSP-050109	DL01	05/19/2009 01:09	

* Sample past 12 hour tune limit

Login Number: L09050044
Analytical Method: 8270C
ICAL Workgroup: WG302078

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
1,4-Dichlorobenzene	CCC	1.617	7.05		
2,4,6-Trichlorophenol	CCC	0.4310	5.40		
2,4-Dichlorophenol	CCC	0.3068	5.24		
2-Nitrophenol	CCC	0.2075	5.24		
4-Chloro-3-Methylphenol	CCC	0.3160	6.46		
Acenaphthene	CCC	1.266	10.4		
Benzo[a]pyrene	CCC	1.177	4.50		
Di-n-Octyl Phthalate	CCC	1.508	10.5		
Fluoranthene	CCC	1.295	11.8		
Hexachlorobutadiene	CCC	0.2057	6.92		
Pentachlorophenol	CCC	0.1520	8.50		
Phenol	CCC	1.512	6.28		
2,4-Dinitrophenol	SPCC	0.1414	30.7	0.99600	
4-Nitrophenol	SPCC	0.2452	5.02		
Hexachlorocyclopentadiene	SPCC	0.2859	10.9		
n-Nitrosodipropylamine	SPCC	0.7901	12.5		
1,2,4-Trichlorobenzene		0.3577	6.87		
1,2-Dichlorobenzene		1.472	6.94		
1,3-Dichlorobenzene		1.576	6.34		
2,4,5-Trichlorophenol		0.4526	5.34		
2,4-Dimethylphenol		0.3305	4.93		
2,4-Dinitrotoluene		0.4753	7.27		
2,6-Dinitrotoluene		0.3717	5.25		
2-Chloronaphthalene		1.437	9.03		
2-Chlorophenol		1.356	5.25		
2-Methylnaphthalene		0.6959	8.30		
2-Methylphenol		1.041	4.87		
2-Nitroaniline		0.3520	5.36		
3,3'-Dichlorobenzidine		0.4245	5.53		
3-Nitroaniline		0.3790	3.61		
4,6-Dinitro-2-Methylphenol		0.1373	17.4	0.99700	
4-Bromophenyl Phenyl Ether		0.2540	6.45		
4-Chloroaniline		0.4378	5.73		
4-Chlorophenyl Phenyl Ether		0.7747	10.0		
4-Nitroaniline		0.3790	3.61		
Acenaphthylene		2.055	11.2		
Anthracene		1.258	12.3		
Benzo[a]anthracene		1.242	8.69		
Benzo[b]fluoranthene		1.337	6.92		
Benzo[ghi]perylene		1.023	4.51		
Benzo[k]fluoranthene		1.088	14.7		
Butyl Benzyl Phthalate		0.6038	17.1	0.99200	
Carbazole		1.105	9.32		
Chrysene		1.153	8.97		
Di-n-Butyl Phthalate		1.447	15.1	0.99300	

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Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050044
Analytical Method: 8270C
ICAL Workgroup: WG302078

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte	AVG RF	% RSD	LINEAR (R ²)	QUAD(R ²)
Dibenz[ah]anthracene	1.032	3.82		
Dibenzofuran	1.768	12.0		
Diethylphthalate	1.569	10.5		
Dimethylphthalate	1.525	9.16		
Fluorene	1.506	11.8		
Hexachlorobenzene	0.2503	7.30		
Hexachloroethane	0.5730	5.69		
Indeno[1,2,3-cd]pyrene	1.239	3.84		
Isophorone	0.6627	7.52		
Naphthalene	1.043	9.70		
Nitrobenzene	0.3482	7.01		
Phenanthrene	1.246	12.5		
Pyrene	1.272	16.3	0.99300	
bis(2-Chloroethoxy)methane	0.4944	10.4		
bis(2-Chloroethyl)ether	0.8852	10.5		
bis(2-Chloroisopropyl)ether	1.849	6.63		
bis(2-Ethylhexyl)phthalate	0.8860	11.0		

R = Correlation coefficient; 0.995 minimum
R² = Coefficient of determination; 0.99 minimum

If the %RSD is greater than the limit specified by the method or project QAP, then linear or quadratic equations will be used.

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: 8270C

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte	WG302078-02			WG302078-03			WG302078-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	50.0	536540.000	1.536	3.00	39791.0000	1.860	10.0	101817.000	1.596
2,4,6-Trichlorophenol	50.0	315571.000	0.4184	3.00	21076.0000	0.4784	10.0	56306.0000	0.4175
2,4-Dichlorophenol	50.0	402975.000	0.2976	3.00	27330.0000	0.3392	10.0	73409.0000	0.3005
2-Nitrophenol	50.0	275753.000	0.2036	3.00	18349.0000	0.2277	10.0	47368.0000	0.1939
4-Chloro-3-Methylphenol	50.0	414909.000	0.3064	3.00	28519.0000	0.3539	10.0	76541.0000	0.3133
Acenaphthene	50.0	951126.000	1.261	3.00	64232.0000	1.458	10.0	175134.000	1.299
Benzo[a]pyrene	50.0	1792932.00	1.168	3.00	105889.000	1.281	10.0	287085.000	1.142
Di-n-Octyl Phthalate	50.0	2234316.00	1.455	3.00	146500.000	1.772	10.0	395589.000	1.574
Fluoranthene	50.0	1792562.00	1.272	3.00	123125.000	1.533	10.0	331149.000	1.356
Hexachlorobutadiene	50.0	271906.000	0.2008	3.00	18726.0000	0.2324	10.0	51357.0000	0.2102
Pentachlorophenol	50.0	222027.000	0.1575	NA	NA	NA	10.0	31105.0000	0.1274
Phenol	50.0	497726.000	1.425	3.00	36561.0000	1.709	10.0	94137.0000	1.475
2,4-Dinitrophenol	50.0	108602.000	0.1440	NA	NA	NA	NA	NA	NA
4-Nitrophenol	50.0	176277.000	0.2337	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	50.0	231654.000	0.3071	3.00	10886.0000	0.2471	10.0	34858.0000	0.2585
n-Nitrosodipropylamine	50.0	266047.000	0.7614	3.00	19948.0000	0.9325	10.0	53441.0000	0.8375
1,2,4-Trichlorobenzene	50.0	466604.000	0.3445	3.00	32994.0000	0.4095	10.0	87061.0000	0.3563
1,2-Dichlorobenzene	50.0	493416.000	1.412	3.00	36010.0000	1.683	10.0	92589.0000	1.451
1,3-Dichlorobenzene	50.0	524967.000	1.502	3.00	38155.0000	1.784	10.0	98765.0000	1.548
2,4,5-Trichlorophenol	50.0	333838.000	0.4426	3.00	21975.0000	0.4988	10.0	57472.0000	0.4262
2,4-Dimethylphenol	50.0	429727.000	0.3173	3.00	29415.0000	0.3651	10.0	80344.0000	0.3289
2,4-Dinitrotoluene	50.0	361944.000	0.4799	3.00	23053.0000	0.5233	10.0	63039.0000	0.4674
2,6-Dinitrotoluene	50.0	273808.000	0.3630	3.00	17971.0000	0.4079	10.0	48325.0000	0.3583
2-Chloronaphthalene	50.0	1056729.00	1.401	3.00	73500.0000	1.669	10.0	193566.000	1.435
2-Chlorophenol	50.0	448334.000	1.283	3.00	32221.0000	1.506	10.0	83980.0000	1.316
2-Methylnaphthalene	50.0	919749.000	0.6791	3.00	64711.0000	0.8031	10.0	172063.000	0.7043
2-Methylphenol	50.0	345940.000	0.9901	3.00	24271.0000	1.135	10.0	65844.0000	1.032
2-Nitroaniline	50.0	255414.000	0.3386	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	50.0	640187.000	0.4233	3.00	39186.0000	0.4672	10.0	100170.000	0.3945
3-Nitroaniline	50.0	284644.000	0.3774	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-Methylphenol	50.0	192294.000	0.1364	NA	NA	NA	NA	NA	NA
4-Bromophenyl Phenyl Ether	50.0	349148.000	0.2477	3.00	23127.0000	0.2880	10.0	61825.0000	0.2532
4-Chloroaniline	50.0	568334.000	0.4197	3.00	39348.0000	0.4883	10.0	104422.000	0.4274
4-Chlorophenyl Phenyl Ether	50.0	576067.000	0.7638	3.00	39524.0000	0.8972	10.0	106542.000	0.7900
4-Nitroaniline	50.0	284644.000	0.3774	NA	NA	NA	NA	NA	NA
Acenaphthylene	50.0	1521417.00	2.017	3.00	107063.000	2.430	10.0	286159.000	2.122
Anthracene	50.0	1754395.00	1.245	3.00	120140.000	1.496	10.0	324451.000	1.329
Benzo[a]anthracene	50.0	1857649.00	1.228	3.00	121750.000	1.452	10.0	314968.000	1.241
Benzo[b]fluoranthene	50.0	1982048.00	1.291	3.00	127414.000	1.541	10.0	326320.000	1.298
Benzo[ghi]perylene	50.0	1571047.00	1.023	3.00	90518.0000	1.095	10.0	241801.000	0.9619
Benzo[k]fluoranthene	50.0	1624029.00	1.058	3.00	107614.000	1.301	10.0	275920.000	1.098
Butyl Benzyl Phthalate	50.0	886785.000	0.5864	3.00	63355.0000	0.7553	10.0	169881.000	0.6691

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number:L09050044
Analytical Method:8270C

Instrument ID:HPMS12
Initial Calibration Date:13-MAY-09 18:16
Column ID:F

Analyte	WG302078-02			WG302078-03			WG302078-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Carbazole	50.0	1549559.00	1.099	3.00	102589.000	1.278	10.0	269561.000	1.104
Chrysene	50.0	1733562.00	1.146	3.00	112121.000	1.337	10.0	297438.000	1.172
Di-n-Butyl Phthalate	50.0	1979165.00	1.404	3.00	143408.000	1.786	10.0	380941.000	1.560
Dibenz[ah]anthracene	50.0	1605016.00	1.045	3.00	88484.0000	1.070	10.0	242445.000	0.9644
Dibenzofuran	50.0	1322444.00	1.753	3.00	91968.0000	2.088	10.0	246567.000	1.828
Diethylphthalate	50.0	1143645.00	1.516	3.00	81824.0000	1.857	10.0	214780.000	1.593
Dimethylphthalate	50.0	1116800.00	1.481	3.00	78072.0000	1.772	10.0	208047.000	1.543
Fluorene	50.0	1118281.00	1.483	3.00	78797.0000	1.789	10.0	211759.000	1.570
Hexachlorobenzene	50.0	346419.000	0.2457	3.00	23022.0000	0.2867	10.0	62186.0000	0.2547
Hexachloroethane	50.0	194423.000	0.5564	3.00	13629.0000	0.6371	10.0	35757.0000	0.5604
Indeno[1,2,3-cd]pyrene	50.0	1922576.00	1.252	3.00	108148.000	1.308	10.0	296524.000	1.180
Isophorone	50.0	850006.000	0.6276	3.00	61044.0000	0.7576	10.0	161395.000	0.6606
Naphthalene	50.0	1364728.00	1.008	3.00	98690.0000	1.225	10.0	261154.000	1.069
Nitrobenzene	50.0	446039.000	0.3294	3.00	31892.0000	0.3958	10.0	85103.0000	0.3483
Phenanthrene	50.0	1715716.00	1.217	3.00	121111.000	1.508	10.0	317787.000	1.302
Pyrene	50.0	1876248.00	1.241	3.00	134129.000	1.599	10.0	348804.000	1.374
bis(2-Chloroethoxy)methane	50.0	651025.000	0.4807	3.00	46618.0000	0.5786	10.0	124464.000	0.5094
bis(2-Chloroethyl)ether	50.0	290851.000	0.8324	3.00	22607.0000	1.057	10.0	57279.0000	0.8976
bis(2-Chloroisopropyl)ether	50.0	592316.000	1.695	3.00	43990.0000	2.056	10.0	118037.000	1.850
bis(2-Ethylhexyl)phthalate	50.0	1303448.00	0.8620	3.00	87774.0000	1.047	10.0	232161.000	0.9144

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: 8270C

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte	WG302078-05			WG302078-06			WG302078-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	15.0	178921.000	1.691	25.0	215814.000	1.614	80.0	967280.000	1.560
2,4,6-Trichlorophenol	15.0	98455.0000	0.4505	25.0	120824.000	0.4248	80.0	561104.000	0.4189
2,4-Dichlorophenol	15.0	129832.000	0.3216	25.0	155198.000	0.2990	80.0	721773.000	0.2968
2-Nitrophenol	15.0	86762.0000	0.2149	25.0	104626.000	0.2016	80.0	495667.000	0.2038
4-Chloro-3-Methylphenol	15.0	135954.000	0.3367	25.0	165841.000	0.3195	80.0	736979.000	0.3030
Acenaphthene	15.0	308283.000	1.411	25.0	374212.000	1.316	80.0	1552886.00	1.159
Benzo[a]pyrene	15.0	523262.000	1.221	25.0	631349.000	1.172	80.0	3085269.00	1.147
Di-n-Octyl Phthalate	15.0	702006.000	1.639	25.0	847194.000	1.572	80.0	3741903.00	1.391
Fluoranthene	15.0	582199.000	1.432	25.0	707993.000	1.352	80.0	2919669.00	1.189
Hexachlorobutadiene	15.0	87437.0000	0.2166	25.0	107000.000	0.2061	80.0	472618.000	0.1943
Pentachlorophenol	15.0	61186.0000	0.1505	25.0	76011.0000	0.1451	80.0	391686.000	0.1595
Phenol	15.0	167753.000	1.586	25.0	203157.000	1.519	80.0	912105.000	1.471
2,4-Dinitrophenol	15.0	18686.0000	0.08550	25.0	25963.0000	0.09130	80.0	220893.000	0.1649
4-Nitrophenol	15.0	57622.0000	0.2636	25.0	70012.0000	0.2462	80.0	314421.000	0.2348
Hexachlorocyclopentadiene	15.0	70608.0000	0.3231	25.0	86283.0000	0.3034	80.0	410823.000	0.3067
n-Nitrosodipropylamine	15.0	93125.0000	0.8803	25.0	113449.000	0.8483	80.0	441740.000	0.7126
1,2,4-Trichlorobenzene	15.0	150872.000	0.3737	25.0	184850.000	0.3561	80.0	833267.000	0.3426
1,2-Dichlorobenzene	15.0	164298.000	1.553	25.0	197753.000	1.479	80.0	876272.000	1.414
1,3-Dichlorobenzene	15.0	174863.000	1.653	25.0	211468.000	1.581	80.0	946153.000	1.526
2,4,5-Trichlorophenol	15.0	103766.000	0.4748	25.0	127732.000	0.4491	80.0	597406.000	0.4460
2,4-Dimethylphenol	15.0	138019.000	0.3418	25.0	169883.000	0.3273	80.0	775101.000	0.3187
2,4-Dinitrotoluene	15.0	113339.000	0.5186	25.0	138978.000	0.4886	80.0	611077.000	0.4562
2,6-Dinitrotoluene	15.0	86215.0000	0.3945	25.0	103621.000	0.3643	80.0	483979.000	0.3614
2-Chloronaphthalene	15.0	342908.000	1.569	25.0	415064.000	1.459	80.0	1808200.00	1.350
2-Chlorophenol	15.0	147897.000	1.398	25.0	181850.000	1.360	80.0	826534.000	1.333
2-Methylnaphthalene	15.0	302236.000	0.7485	25.0	363480.000	0.7002	80.0	1590639.00	0.6540
2-Methylphenol	15.0	115291.000	1.090	25.0	140896.000	1.054	80.0	621927.000	1.003
2-Nitroaniline	15.0	84000.0000	0.3843	25.0	102727.000	0.3612	80.0	463218.000	0.3459
3,3'-Dichlorobenzidine	15.0	190168.000	0.4468	25.0	227983.000	0.4165	80.0	1114052.00	0.4181
3-Nitroaniline	15.0	87639.0000	0.4010	25.0	107447.000	0.3778	80.0	499347.000	0.3728
4,6-Dinitro-2-Methylphenol	15.0	43373.0000	0.1067	25.0	57902.0000	0.1105	80.0	371453.000	0.1513
4-Bromophenyl Phenyl Ether	15.0	108196.000	0.2662	25.0	131168.000	0.2504	80.0	600297.000	0.2445
4-Chloroaniline	15.0	186095.000	0.4609	25.0	225051.000	0.4336	80.0	1031768.00	0.4242
4-Chlorophenyl Phenyl Ether	15.0	186881.000	0.8550	25.0	227580.000	0.8002	80.0	968076.000	0.7228
4-Nitroaniline	15.0	87639.0000	0.4010	25.0	107447.000	0.3778	80.0	499347.000	0.3728
Acenaphthylene	15.0	497567.000	2.277	25.0	604333.000	2.125	80.0	2521954.00	1.883
Anthracene	15.0	564810.000	1.389	25.0	692070.000	1.321	80.0	2821494.00	1.149
Benzo[a]anthracene	15.0	568132.000	1.335	25.0	679661.000	1.242	80.0	3106873.00	1.166
Benzo[b]fluoranthene	15.0	599350.000	1.399	25.0	712127.000	1.322	80.0	3396892.00	1.262
Benzo[ghi]perylene	15.0	453179.000	1.058	25.0	540651.000	1.003	80.0	2756082.00	1.024
Benzo[k]fluoranthene	15.0	537911.000	1.256	25.0	654144.000	1.214	80.0	2633407.00	0.9785
Butyl Benzyl Phthalate	15.0	293203.000	0.6889	25.0	356390.000	0.6511	80.0	1380873.00	0.5183

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number:L09050044
Analytical Method:8270C

Instrument ID:HPMS12
Initial Calibration Date:13-MAY-09 18:16
Column ID:F

Analyte	WG302078-05			WG302078-06			WG302078-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Carbazole	15.0	490991.000	1.208	25.0	593274.000	1.133	80.0	2553053.00	1.040
Chrysene	15.0	530368.000	1.246	25.0	637101.000	1.164	80.0	2858907.00	1.073
Di-n-Butyl Phthalate	15.0	662143.000	1.629	25.0	805132.000	1.537	80.0	3158526.00	1.286
Dibenz[ah]anthracene	15.0	456006.000	1.064	25.0	547991.000	1.017	80.0	2790029.00	1.037
Dibenzofuran	15.0	432406.000	1.978	25.0	528546.000	1.858	80.0	2152002.00	1.607
Diethylphthalate	15.0	378234.000	1.731	25.0	458776.000	1.613	80.0	1938293.00	1.447
Dimethylphthalate	15.0	362386.000	1.658	25.0	443745.000	1.560	80.0	1897927.00	1.417
Fluorene	15.0	365806.000	1.674	25.0	445303.000	1.566	80.0	1827071.00	1.364
Hexachlorobenzene	15.0	106850.000	0.2629	25.0	128004.000	0.2444	80.0	583442.000	0.2376
Hexachloroethane	15.0	64037.0000	0.6054	25.0	76134.0000	0.5693	80.0	345028.000	0.5566
Indeno[1,2,3-cd]pyrene	15.0	549886.000	1.284	25.0	656138.000	1.218	80.0	3316882.00	1.233
Isophorone	15.0	285449.000	0.7070	25.0	351550.000	0.6773	80.0	1525988.00	0.6274
Naphthalene	15.0	455366.000	1.128	25.0	556676.000	1.072	80.0	2356727.00	0.9690
Nitrobenzene	15.0	149319.000	0.3698	25.0	181282.000	0.3492	80.0	809699.000	0.3329
Phenanthrene	15.0	558870.000	1.375	25.0	678057.000	1.295	80.0	2776802.00	1.131
Pyrene	15.0	610798.000	1.435	25.0	744541.000	1.360	80.0	2948104.00	1.107
bis(2-Chloroethoxy)methane	15.0	218957.000	0.5423	25.0	267132.000	0.5146	80.0	1108454.00	0.4558
bis(2-Chloroethyl)ether	15.0	101562.000	0.9601	25.0	123439.000	0.9230	80.0	511019.000	0.8244
bis(2-Chloroisopropyl)ether	15.0	207954.000	1.966	25.0	256117.000	1.915	80.0	1109527.00	1.790
bis(2-Ethylhexyl)phthalate	15.0	417199.000	0.9803	25.0	500951.000	0.9152	80.0	2167226.00	0.8134

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Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L09050044
Analytical Method: 8270C

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte	WG302078-08			WG302078-09		
	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	100	1317091.00	1.580	120	1217249.00	1.496
2,4,6-Trichlorophenol	100	770778.000	0.4338	120	718498.000	0.4060
2,4-Dichlorophenol	100	995113.000	0.3090	120	928188.000	0.2910
2-Nitrophenol	100	691534.000	0.2147	120	636858.000	0.1996
4-Chloro-3-Methylphenol	100	982002.000	0.3049	120	927044.000	0.2906
Acenaphthene	100	2025313.00	1.140	120	1923667.00	1.087
Benzo[a]pyrene	100	4189430.00	1.179	120	3853100.00	1.109
Di-n-Octyl Phthalate	100	4831287.00	1.360	120	4534644.00	1.305
Fluoranthene	100	3697689.00	1.139	120	3507146.00	1.083
Hexachlorobutadiene	100	639092.000	0.1984	120	595808.000	0.1868
Pentachlorophenol	100	544211.000	0.1676	120	505188.000	0.1561
Phenol	100	1241611.00	1.489	120	1159506.00	1.425
2,4-Dinitrophenol	100	325494.000	0.1832	120	317762.000	0.1796
4-Nitrophenol	100	454533.000	0.2558	120	419934.000	0.2373
Hexachlorocyclopentadiene	100	530618.000	0.2987	120	429737.000	0.2428
n-Nitrosodipropylamine	100	566489.000	0.6795	120	544057.000	0.6687
1,2,4-Trichlorobenzene	100	1128307.00	0.3503	120	1048980.00	0.3288
1,2-Dichlorobenzene	100	1189753.00	1.427	120	1107112.00	1.361
1,3-Dichlorobenzene	100	1288124.00	1.545	120	1195908.00	1.470
2,4,5-Trichlorophenol	100	808635.000	0.4552	120	757805.000	0.4282
2,4-Dimethylphenol	100	1058090.00	0.3285	120	1008471.00	0.3161
2,4-Dinitrotoluene	100	787931.000	0.4435	120	751692.000	0.4248
2,6-Dinitrotoluene	100	661728.000	0.3725	120	621855.000	0.3514
2-Chloronaphthalene	100	2385453.00	1.343	120	2243637.00	1.268
2-Chlorophenol	100	1128484.00	1.354	120	1054156.00	1.296
2-Methylnaphthalene	100	2109832.00	0.6551	120	1987247.00	0.6229
2-Methylphenol	100	859396.000	1.031	120	806600.000	0.9914
2-Nitroaniline	100	622952.000	0.3506	120	586114.000	0.3312
3,3'-Dichlorobenzidine	100	1508398.00	0.4282	120	1388592.00	0.4016
3-Nitroaniline	100	684286.000	0.3852	120	636586.000	0.3597
4,6-Dinitro-2-Methylphenol	100	529381.000	0.1630	120	503830.000	0.1556
4-Bromophenyl Phenyl Ether	100	804649.000	0.2478	120	758333.000	0.2343
4-Chloroaniline	100	1407159.00	0.4369	120	1313376.00	0.4117
4-Chlorophenyl Phenyl Ether	100	1244931.00	0.7007	120	1181670.00	0.6678
4-Nitroaniline	100	684286.000	0.3852	120	636586.000	0.3597
Acenaphthylene	100	3259765.00	1.835	120	3103487.00	1.754
Anthracene	100	3538722.00	1.090	120	3388620.00	1.047
Benzo[a]anthracene	100	4092921.00	1.162	120	3848503.00	1.113
Benzo[b]fluoranthene	100	4644398.00	1.307	120	4423663.00	1.273
Benzo[ghi]perylene	100	3738007.00	1.052	120	3348870.00	0.9635
Benzo[k]fluoranthene	100	3352326.00	0.9435	120	2970452.00	0.8546
Butyl Benzyl Phthalate	100	1718536.00	0.4878	120	1637928.00	0.4737

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Login Number: L09050044
Analytical Method: 8270C

Instrument ID: HPMS12
Initial Calibration Date: 13-MAY-09 18:16
Column ID: F

Analyte	WG302078-08			WG302078-09		
	CONC	RESP	RF	CONC	RESP	RF
Carbazole	100	3289144.00	1.013	120	3116275.00	0.9627
Chrysene	100	3748386.00	1.064	120	3528065.00	1.020
Di-n-Butyl Phthalate	100	3935978.00	1.212	120	3761095.00	1.162
Dibenz[ah]anthracene	100	3801337.00	1.070	120	3432796.00	0.9876
Dibenzofuran	100	2747172.00	1.546	120	2628808.00	1.486
Diethylphthalate	100	2543887.00	1.432	120	2410188.00	1.362
Dimethylphthalate	100	2519776.00	1.418	120	2386907.00	1.349
Fluorene	100	2359564.00	1.328	120	2262582.00	1.279
Hexachlorobenzene	100	791959.000	0.2439	120	732556.000	0.2263
Hexachloroethane	100	470604.000	0.5645	120	434665.000	0.5342
Indeno[1,2,3-cd]pyrene	100	4489737.00	1.264	120	4078662.00	1.173
Isophorone	100	2050908.00	0.6368	120	1938255.00	0.6076
Naphthalene	100	3092709.00	0.9602	120	2920386.00	0.9154
Nitrobenzene	100	1095416.00	0.3401	120	1021297.00	0.3201
Phenanthrene	100	3542160.00	1.091	120	3389751.00	1.047
Pyrene	100	3678308.00	1.044	120	3503884.00	1.013
bis(2-Chloroethoxy)methane	100	1436512.00	0.4460	120	1363769.00	0.4275
bis(2-Chloroethyl)ether	100	672429.000	0.8065	120	635280.000	0.7808
bis(2-Chloroisopropyl)ether	100	1490359.00	1.788	120	1411173.00	1.735
bis(2-Ethylhexyl)phthalate	100	2796834.00	0.7939	120	2634623.00	0.7620

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L09050044	Run Date: 05/13/2009	Sample ID: WG302078-10
Instrument ID: HPMS12	Run Time: 18:49	Method: 8270C
File ID: 12M25824	Analyst: MDC	QC Key: STD
ICal Workgroup: WG302078	Cal ID: HPMS12 - 13-MAY-09	

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Phenol	CCC	50000	49500	ug/L	1.50	1.10	30	
1,4-Dichlorobenzene	CCC	50000	49600	ug/L	1.60	0.800	30	
2-Nitrophenol	CCC	50000	53200	ug/L	0.221	6.40	30	
2,4-Dichlorophenol	CCC	50000	48900	ug/L	0.300	2.20	30	
Hexachlorobutadiene	CCC	50000	52000	ug/L	0.214	4.10	30	
4-Chloro-3-Methylphenol	CCC	50000	49000	ug/L	0.310	2.10	30	
2,4,6-Trichlorophenol	CCC	50000	50700	ug/L	0.437	1.40	30	
Acenaphthene	CCC	50000	50800	ug/L	1.29	1.60	30	
n-Nitrosodiphenylamine	CCC	50000	50000	ug/L	0.711	0.100	30	
Pentachlorophenol	CCC	50000	65000	ug/L	0.198	30.0	40	
Fluoranthene	CCC	50000	51500	ug/L	1.33	3.00	30	
Di-n-Octyl Phthalate	CCC	50000	48800	ug/L	1.47	2.40	30	
Benzo[a]pyrene	CCC	50000	52200	ug/L	1.23	4.40	30	
n-Nitrosodipropylamine	SPCC	50000	51600	ug/L	0.815	3.10	30	
Hexachlorocyclopentadiene	SPCC	50000	58900	ug/L	0.337	17.9	40	
2,4-Dinitrophenol	SPCC	50000	60100	ug/L	0.193	20.2	40	
4-Nitrophenol	SPCC	50000	45500	ug/L	0.223	9.00	40	
bis(2-Chloroethyl)ether		50000	49000	ug/L	0.868	2.00	30	
2-Chlorophenol		50000	48600	ug/L	1.32	2.70	30	
1,3-Dichlorobenzene		50000	50100	ug/L	1.58	0.100	30	
1,2-Dichlorobenzene		50000	50700	ug/L	1.49	1.50	30	
2-Methylphenol		50000	49200	ug/L	1.02	1.60	30	
3-,4-Methylphenol		50000	49200	ug/L	1.35	1.60	30	
bis(2-Chloroisopropyl)ether		50000	48500	ug/L	1.79	3.00	30	
Hexachloroethane		50000	48900	ug/L	0.560	2.20	30	
Nitrobenzene		50000	49700	ug/L	0.346	0.700	30	
Isophorone		50000	48700	ug/L	0.646	2.60	30	
2,4-Dimethylphenol		50000	48800	ug/L	0.323	2.40	30	
bis(2-Chloroethoxy)methane		50000	38900	ug/L	0.385	22.2	30	
1,2,4-Trichlorobenzene		50000	49600	ug/L	0.355	0.800	30	
Naphthalene		50000	51000	ug/L	1.06	1.90	30	
4-Chloroaniline		50000	49400	ug/L	0.433	1.20	40	
2-Methylnaphthalene		50000	53500	ug/L	0.745	7.00	30	
2,4,5-Trichlorophenol		50000	51800	ug/L	0.469	3.60	30	
2-Chloronaphthalene		50000	43700	ug/L	1.26	12.6	30	
2-Nitroaniline		50000	54200	ug/L	0.381	8.40	40	
Dimethylphthalate		50000	46500	ug/L	1.42	7.00	30	
Acenaphthylene		50000	50300	ug/L	2.07	0.600	30	
2,6-Dinitrotoluene		50000	50100	ug/L	0.372	0.100	30	
3-Nitroaniline		50000	49000	ug/L	0.372	1.90	40	
Dibenzofuran		50000	50600	ug/L	1.79	1.20	30	
2,4-Dinitrotoluene		50000	51600	ug/L	0.490	3.10	30	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 1394878
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: <u>L09050044</u>	Run Date: <u>05/13/2009</u>	Sample ID: <u>WG302078-10</u>
Instrument ID: <u>HPMS12</u>	Run Time: <u>18:49</u>	Method: <u>8270C</u>
File ID: <u>12M25824</u>	Analyst: <u>MDC</u>	QC Key: <u>STD</u>
ICal Workgroup: <u>WG302078</u>	Cal ID: <u>HPMS12 - 13-MAY-09</u>	

Analyte	Expected	Found	Units	RF	%D	UCL	Q
Diethylphthalate	50000	45400	ug/L	1.42	9.30	30	
4-Chlorophenyl Phenyl Ether	50000	47000	ug/L	0.728	6.00	30	
Fluorene	50000	51000	ug/L	1.54	2.00	30	
4-Nitroaniline	50000	49000	ug/L	0.372	1.90	40	
4,6-Dinitro-2-Methylphenol	50000	57800	ug/L	0.170	15.5	30	
Hexachlorobenzene	50000	50600	ug/L	0.254	1.30	30	
Phenanthrene	50000	50100	ug/L	1.25	0.100	30	
Anthracene	50000	50900	ug/L	1.28	1.80	30	
Di-n-Butyl Phthalate	50000	50400	ug/L	1.29	0.800	30	
Pyrene	50000	59600	ug/L	1.31	19.1	30	
Butyl Benzyl Phthalate	50000	57800	ug/L	0.599	15.6	30	
Benzo[a]anthracene	50000	51400	ug/L	1.28	2.90	30	
Chrysene	50000	51600	ug/L	1.19	3.30	30	
bis(2-Ethylhexyl)phthalate	50000	48800	ug/L	0.865	2.30	30	
Benzo[b]fluoranthene	50000	49800	ug/L	1.33	0.300	30	
Benzo[k]fluoranthene	50000	54400	ug/L	1.18	8.80	30	
Indeno[1,2,3-cd]pyrene	50000	50300	ug/L	1.25	0.600	30	
Dibenz[ah]anthracene	50000	51300	ug/L	1.06	2.70	30	
Benzo[ghi]perylene	50000	51300	ug/L	1.05	2.70	30	
Carbazole	50000	51100	ug/L	1.13	2.20	30	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L09050044 Run Date: 05/13/2009 Sample ID: WG302078-11
Instrument ID: HPMS12 Run Time: 19:22 Method: 8270C
File ID: 12M25825 Analyst: MDC QC Key: STD
ICal Workgroup: WG302078 Cal ID: HPMS12 - 13-MAY-09

Analyte		Expected	Found	Units	RF	%D	UCL	Q
3,3'-Dichlorobenzidine		50000	51800	ug/L	0.440	3.50	40	

* Exceeds %D Limit

CCC Calibration Check Compounds

SPCC System Performance Check Compounds

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/17/2009	Sample ID: WG302498-02
Instrument ID: HPMS12	Run Time: 12:32	Method: 8270C
File ID: 12M25883	Analyst: ECL	QC Key: STD
Workgroup (AAB#): WG302017	Cal ID: HPMS12 - 13-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Phenol	CCC	50000	50400	ug/L	1.52	0.744	20	
1,4-Dichlorobenzene	CCC	50000	48300	ug/L	1.56	3.50	20	
2-Nitrophenol	CCC	50000	48900	ug/L	0.203	2.28	20	
2,4-Dichlorophenol	CCC	50000	47100	ug/L	0.289	5.89	20	
Hexachlorobutadiene	CCC	50000	45900	ug/L	0.189	8.11	20	
4-Chloro-3-Methylphenol	CCC	50000	49300	ug/L	0.311	1.46	20	
2,4,6-Trichlorophenol	CCC	50000	48500	ug/L	0.418	3.03	20	
Acenaphthene	CCC	50000	49500	ug/L	1.25	0.929	20	
n-Nitrosodiphenylamine	CCC	50000	49100	ug/L	0.698	1.82	20	
Pentachlorophenol	CCC	50000	49000	ug/L	0.149	1.92	20	
Fluoranthene	CCC	50000	48600	ug/L	1.26	2.82	20	
Di-n-Octyl Phthalate	CCC	50000	49300	ug/L	1.49	1.46	20	
Benzo[a]pyrene	CCC	50000	49300	ug/L	1.16	1.31	20	
n-Nitrosodipropylamine	SPCC	50000	50400	ug/L	0.797	0.816	40	
Hexachlorocyclopentadiene	SPCC	50000	56800	ug/L	0.325	13.5	40	
2,4-Dinitrophenol	SPCC	50000	44800	ug/L	0.132	10.4	40	
4-Nitrophenol	SPCC	50000	49900	ug/L	0.245	0.122	40	
bis(2-Chloroethyl)ether		50000	50400	ug/L	0.892	0.807	40	
2-Chlorophenol		50000	48700	ug/L	1.32	2.67	40	
1,3-Dichlorobenzene		50000	48200	ug/L	1.52	3.66	40	
1,2-Dichlorobenzene		50000	48400	ug/L	1.43	3.14	40	
2-Methylphenol		50000	49300	ug/L	1.03	1.41	40	
3-,4-Methylphenol		50000	49600	ug/L	1.36	0.835	40	
bis(2-Chloroisopropyl)ether		50000	52900	ug/L	1.96	5.84	40	
Hexachloroethane		50000	49100	ug/L	0.562	1.88	40	
Nitrobenzene		50000	49800	ug/L	0.347	0.330	40	
Isophorone		50000	49800	ug/L	0.660	0.488	40	
2,4-Dimethylphenol		50000	49100	ug/L	0.325	1.80	40	
bis(2-Chloroethoxy)methane		50000	48800	ug/L	0.482	2.44	40	
1,2,4-Trichlorobenzene		50000	47200	ug/L	0.338	5.67	40	
Naphthalene		50000	48500	ug/L	1.01	3.04	40	
4-Chloroaniline		50000	48100	ug/L	0.422	3.72	40	
2-Methylnaphthalene		50000	48300	ug/L	0.672	3.39	40	
2,4,5-Trichlorophenol		50000	48400	ug/L	0.438	3.18	40	
2-Chloronaphthalene		50000	48800	ug/L	1.40	2.46	40	
2-Nitroaniline		50000	51700	ug/L	0.364	3.36	40	
Dimethylphthalate		50000	48500	ug/L	1.48	3.06	40	
Acenaphthylene		50000	49200	ug/L	2.02	1.61	40	
2,6-Dinitrotoluene		50000	48900	ug/L	0.364	2.18	40	
3-Nitroaniline		50000	49300	ug/L	0.374	1.38	40	
Dibenzofuran		50000	49200	ug/L	1.74	1.54	40	
2,4-Dinitrotoluene		50000	50400	ug/L	0.479	0.757	40	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/17/2009 Sample ID: WG302498-02
 Instrument ID: HPMS12 Run Time: 12:32 Method: 8270C
 File ID: 12M25883 Analyst: ECL QC Key: STD
 Workgroup (AAB#): WG302017 Cal ID: HPMS12 - 13-MAY-09
 Matrix: WATER

Analyte	Expected	Found	UNITS	RF	%D	UCL	Q
Diethylphthalate	50000	48200	ug/L	1.51	3.69	40	
4-Chlorophenyl Phenyl Ether	50000	48100	ug/L	0.746	3.72	40	
Fluorene	50000	48400	ug/L	1.46	3.29	40	
4-Nitroaniline	50000	49300	ug/L	0.374	1.38	40	
4,6-Dinitro-2-Methylphenol	50000	48400	ug/L	0.138	3.27	40	
4-Bromophenyl Phenyl Ether	50000	47400	ug/L	0.241	5.24	40	
Hexachlorobenzene	50000	47300	ug/L	0.237	5.32	40	
Phenanthrene	50000	48800	ug/L	1.22	2.42	40	
Anthracene	50000	48800	ug/L	1.23	2.36	40	
Di-n-Butyl Phthalate	50000	55100	ug/L	1.40	10.2	40	
Pyrene	50000	56500	ug/L	1.25	13.0	40	
Butyl Benzyl Phthalate	50000	56400	ug/L	0.586	12.8	40	
3,3'-Dichlorobenzidine	50000	49000	ug/L	0.416	1.96	40	
Benzo[a]anthracene	50000	48900	ug/L	1.22	2.17	40	
Chrysene	50000	49000	ug/L	1.13	1.93	40	
bis(2-Ethylhexyl)phthalate	50000	49000	ug/L	0.868	2.09	40	
Benzo[b]fluoranthene	50000	47200	ug/L	1.26	5.63	40	
Benzo[k]fluoranthene	50000	54100	ug/L	1.18	8.26	40	
Indeno[1,2,3-cd]pyrene	50000	50200	ug/L	1.24	0.487	40	
Dibenz[ah]anthracene	50000	50500	ug/L	1.04	0.966	40	
Benzo[ghi]perylene	50000	50100	ug/L	1.02	0.157	40	
Carbazole	50000	49900	ug/L	1.10	0.220	40	

* Exceeds %D Criteria

CCC Calibration Check Compounds
 SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
 PDF File ID: 1394880
 Report generated 05/19/2009 16:59



CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/18/2009	Sample ID: WG302579-02
Instrument ID: HPMS12	Run Time: 23:31	Method: 8270C
File ID: 12M25927	Analyst: CAA/MDC	QC Key: STD
Workgroup (AAB#): WG302017	Cal ID: HPMS12 - 13-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Phenol	CCC	50000	48800	ug/L	1.48	2.46	20	
1,4-Dichlorobenzene	CCC	50000	47600	ug/L	1.54	4.81	20	
2-Nitrophenol	CCC	50000	48500	ug/L	0.201	2.96	20	
2,4-Dichlorophenol	CCC	50000	47700	ug/L	0.292	4.70	20	
Hexachlorobutadiene	CCC	50000	47000	ug/L	0.193	5.96	20	
4-Chloro-3-Methylphenol	CCC	50000	48900	ug/L	0.309	2.13	20	
2,4,6-Trichlorophenol	CCC	50000	47300	ug/L	0.408	5.36	20	
Acenaphthene	CCC	50000	50600	ug/L	1.28	1.15	20	
n-Nitrosodiphenylamine	CCC	50000	49900	ug/L	0.710	0.174	20	
Pentachlorophenol	CCC	50000	44200	ug/L	0.134	11.7	20	
Fluoranthene	CCC	50000	50000	ug/L	1.29	0.0996	20	
Di-n-Octyl Phthalate	CCC	50000	50800	ug/L	1.53	1.53	20	
Benzo[a]pyrene	CCC	50000	50000	ug/L	1.18	0.0254	20	
n-Nitrosodipropylamine	SPCC	50000	50400	ug/L	0.797	0.827	40	
Hexachlorocyclopentadiene	SPCC	50000	50900	ug/L	0.291	1.74	40	
2,4-Dinitrophenol	SPCC	50000	45900	ug/L	0.137	8.12	40	
4-Nitrophenol	SPCC	50000	51000	ug/L	0.250	1.93	40	
bis(2-Chloroethyl)ether		50000	50100	ug/L	0.887	0.162	40	
2-Chlorophenol		50000	47800	ug/L	1.30	4.37	40	
1,3-Dichlorobenzene		50000	47600	ug/L	1.50	4.76	40	
1,2-Dichlorobenzene		50000	47900	ug/L	1.41	4.16	40	
2-Methylphenol		50000	48600	ug/L	1.01	2.81	40	
3-,4-Methylphenol		50000	48500	ug/L	1.33	3.04	40	
bis(2-Chloroisopropyl)ether		50000	51500	ug/L	1.90	2.94	40	
Hexachloroethane		50000	47300	ug/L	0.542	5.34	40	
Nitrobenzene		50000	48800	ug/L	0.340	2.36	40	
Isophorone		50000	49600	ug/L	0.658	0.745	40	
2,4-Dimethylphenol		50000	48800	ug/L	0.322	2.44	40	
bis(2-Chloroethoxy)methane		50000	49800	ug/L	0.493	0.329	40	
1,2,4-Trichlorobenzene		50000	47500	ug/L	0.340	4.96	40	
Naphthalene		50000	49000	ug/L	1.02	2.07	40	
4-Chloroaniline		50000	48600	ug/L	0.426	2.76	40	
2-Methylnaphthalene		50000	48300	ug/L	0.672	3.43	40	
2,4,5-Trichlorophenol		50000	47000	ug/L	0.425	6.06	40	
2-Chloronaphthalene		50000	48700	ug/L	1.40	2.63	40	
2-Nitroaniline		50000	51000	ug/L	0.359	1.92	40	
Dimethylphthalate		50000	48700	ug/L	1.48	2.70	40	
Acenaphthylene		50000	49700	ug/L	2.04	0.680	40	
2,6-Dinitrotoluene		50000	48600	ug/L	0.361	2.78	40	
3-Nitroaniline		50000	50400	ug/L	0.382	0.709	40	
Dibenzofuran		50000	49400	ug/L	1.75	1.13	40	
2,4-Dinitrotoluene		50000	49200	ug/L	0.467	1.70	40	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/18/2009 Sample ID: WG302579-02
 Instrument ID: HPMS12 Run Time: 23:31 Method: 8270C
 File ID: 12M25927 Analyst: CAA/MDC QC Key: STD
 Workgroup (AAB#): WG302017 Cal ID: HPMS12 - 13-MAY-09
 Matrix: WATER

Analyte	Expected	Found	UNITS	RF	%D	UCL	Q
Diethylphthalate	50000	47900	ug/L	1.50	4.29	40	
4-Chlorophenyl Phenyl Ether	50000	49100	ug/L	0.760	1.87	40	
Fluorene	50000	49600	ug/L	1.49	0.773	40	
4-Nitroaniline	50000	50400	ug/L	0.382	0.709	40	
4,6-Dinitro-2-Methylphenol	50000	46700	ug/L	0.132	6.66	40	
4-Bromophenyl Phenyl Ether	50000	47700	ug/L	0.243	4.54	40	
Hexachlorobenzene	50000	47300	ug/L	0.237	5.41	40	
Phenanthrene	50000	49700	ug/L	1.24	0.551	40	
Anthracene	50000	50200	ug/L	1.26	0.372	40	
Di-n-Butyl Phthalate	50000	56700	ug/L	1.44	13.3	40	
Pyrene	50000	59000	ug/L	1.30	18.1	40	
Butyl Benzyl Phthalate	50000	58200	ug/L	0.603	16.5	40	
3,3'-Dichlorobenzidine	50000	49500	ug/L	0.421	0.964	40	
Benzo[a]anthracene	50000	49400	ug/L	1.23	1.24	40	
Chrysene	50000	49400	ug/L	1.14	1.21	40	
bis(2-Ethylhexyl)phthalate	50000	49600	ug/L	0.879	0.738	40	
Benzo[b]fluoranthene	50000	50000	ug/L	1.34	0.0500	40	
Benzo[k]fluoranthene	50000	54800	ug/L	1.19	9.50	40	
Indeno[1,2,3-cd]pyrene	50000	49800	ug/L	1.23	0.471	40	
Dibenz[ah]anthracene	50000	50300	ug/L	1.04	0.619	40	
Benzo[ghi]perylene	50000	49100	ug/L	1.00	1.85	40	
Carbazole	50000	50300	ug/L	1.11	0.663	40	

* Exceeds %D Criteria

CCC Calibration Check Compounds
 SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
 PDF File ID: 1394880
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Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302078-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302078-02	NA	NA	279529	603406	1209765	1083422	1228497	1127786
Upper Limit	NA	NA	559058	1206812	2419530	2166844	2456994	2255572
Lower Limit	NA	NA	139765	301703	604883	541711	614249	563893
WG301563-01	1.00	01	212525	439796	772534	837466	755105	773709
WG301563-02	1.00	01	238668	482213	863368	901304	840142	855752
WG301563-03	1.00	01	209866	445961	844864	805628	827472	804434
WG301563-04	1.00	01	292993	624843	1187943	1149795	1196014	1122812
WG301563-05	1.00	01	205873	435206	810985	815344	800970	775564

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302498-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302498-02	NA	NA	292752	617568	1190265	1137711	1199086	1138584
Upper Limit	NA	NA	585504	1235136	2380530	2275422	2398172	2277168
Lower Limit	NA	NA	146376	308784	595133	568856	599543	569292
L09050044-01	1.00	01	176595	453179	795819	<u>237223</u>	671332	764284
L09050044-03	1.00	01	178234	363819	676628	677614	655008	650852
L09050044-05	1.00	01	252223	550613	1051347	996602	1025148	983785
L09050044-07	1.00	01	193945	416858	772684	758655	737707	738422

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302579-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302579-02	NA	NA	220292	454315	864672	836538	838765	826771
Upper Limit	NA	NA	440584	908630	1729344	1673076	1677530	1653542
Lower Limit	NA	NA	110146	227158	432336	418269	419383	413386
<u>L09050044-01</u>	<u>5.00</u>	<u>DL01</u>	<u>274186</u>	<u>572846</u>	<u>1094053</u>	<u>1089792</u>	<u>1068114</u>	<u>1018166</u>

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits



Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302078-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302078-02	NA	NA	8.48	12.15	16.66	10.07	19.3	13.76
Upper Limit	NA	NA	8.98	12.65	17.16	10.57	19.8	14.26
Lower Limit	NA	NA	7.98	11.65	16.16	9.57	18.8	13.26
WG301563-01	1.00	01	8.48	12.15	16.653	10.072	19.282	13.747
WG301563-02	1.00	01	8.48	12.15	16.653	10.061	19.282	13.747
WG301563-03	1.00	01	8.48	12.15	16.659	10.061	19.282	13.752
WG301563-04	1.00	01	8.48	12.15	16.675	10.082	19.308	13.752
WG301563-05	1.00	01	8.479	12.15	16.664	10.071	19.292	13.752

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302498-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302498-02	NA	NA	8.48	12.15	16.7	10.06	19.34	13.75
Upper Limit	NA	NA	8.98	12.65	17.2	10.56	19.84	14.25
Lower Limit	NA	NA	7.98	11.65	16.2	9.56	18.84	13.25
L09050044-01	1.00	01	8.48	12.171	16.653	10.061	19.282	13.758
L09050044-03	1.00	01	8.48	12.144	16.653	10.061	19.276	13.747
L09050044-05	1.00	01	8.48	12.15	16.653	10.061	19.282	13.752
L09050044-07	1.00	01	8.48	12.15	16.653	10.061	19.276	13.752

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L09050044
Instrument ID: HPMS12
Workgroup (AAB#): WG302017

CCV Number: WG302579-02
CAL ID: HPMS12 - 13-MAY-09
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG302579-02	NA	NA	8.42	12.09	16.59	10	19.16	13.69
Upper Limit	NA	NA	8.92	12.59	17.09	10.5	19.66	14.19
Lower Limit	NA	NA	7.92	11.59	16.09	9.5	18.66	13.19
L09050044-01	5.00	DL01	8.421	12.096	16.578	10.002	19.148	13.694

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Acenaphthene-d10
IS-3 - Chrysene-d12
IS-4 - Naphthalene-d8
IS-5 - Perylene-d12
IS-6 - Phenanthrene-d10

Underline = Response outside limits

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac Laboratories Inc.
METALS

Microbac Login No: L09050044

METHOD

Preparation: SW-846 3005A

Analysis: SW-846 6010

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibrations: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Samples: All acceptance criteria were met.

Continuing Calibration: WG301762(6010) - Due to continuing calibration blank failure for sodium on 07-MAY-2009 at 19:14, client samples 02, 04, 06 and 08 and all batch QA/QC were reanalyzed on 08-MAY-2009 for sodium.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spike: WG301762(6010) - All acceptance criteria were met.

SAMPLES

WG301762(6010) - Client samples 02, 06 and 08 required dilution analyses in order to obtain results for sodium within the linear range.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: EDA

Shir L. Pappas

LABORATORY REPORT

L09050044

05/20/09 11:23

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-02	6010B	1	02-MAY-09
BBLD-PIT-SSP-050109	L09050044-02	6010B	100	02-MAY-09
MW-01-050109	L09050044-04	6010B	1	02-MAY-09
MW-01-050109	L09050044-04	6010B	1	02-MAY-09
MW-03-050109	L09050044-06	6010B	1	02-MAY-09
MW-03-050109	L09050044-06	6010B	100	02-MAY-09
DUP-GW--050109	L09050044-08	6010B	100	02-MAY-09
DUP-GW--050109	L09050044-08	6010B	1	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-02**
 Client ID: **BBLD-PIT-SSP-050109**
 Matrix: **Water**
 Workgroup Number: **WG301762**
 Collect Date: **05/01/2009 09:00**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERM02**
 Prep Date: **05/05/2009 07:13**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 18:18**
 File ID: **T2.050709.181849**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	2.16		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.00314		0.000500	0.000250
Calcium, Dissolved	7440-70-2	685		0.200	0.100
Chromium, Dissolved	7440-47-3	0.286		0.00500	0.00250
Cobalt, Dissolved	7440-48-4	0.00470	J	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	0.0384	J	0.100	0.0250
Lead, Dissolved	7439-92-1	0.00800		0.00500	0.00250
Magnesium, Dissolved	7439-95-4	314		0.500	0.250
Manganese, Dissolved	7439-96-5	0.0965		0.0100	0.00500
Nickel, Dissolved	7440-02-0	0.0972		0.0400	0.00500
Potassium, Dissolved	7440-09-7	64.5		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2	0.0314		0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.0230		0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-02**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301762**
Collect Date: **05/01/2009 09:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **100**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/05/2009 07:13**
Cal Date: **05/08/2009 11:53**
Run Date: **05/08/2009 16:31**
File ID: **T2.050809.163152**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	818		50.0	25.0

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-04**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301762**
Collect Date: **05/01/2009 10:55**
Sample Tag: **02**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **1**
Units: **mg/L**

Instrument: **ICP-THERM02**Prep Date: **05/05/2009 07:13**Cal Date: **05/08/2009 11:53**Run Date: **05/08/2009 16:37**File ID: **T2.050809.163757**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	41.7		0.500	0.250

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-04**
 Client ID: **MW-01-050109**
 Matrix: **Water**
 Workgroup Number: **WG301762**
 Collect Date: **05/01/2009 10:55**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/05/2009 07:13**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 18:25**
 File ID: **T2.050709.182507**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	0.0462		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.000650		0.000500	0.000250
Calcium, Dissolved	7440-70-2	61.2		0.200	0.100
Chromium, Dissolved	7440-47-3		U	0.00500	0.00250
Cobalt, Dissolved	7440-48-4		U	0.0200	0.00250
Copper, Dissolved	7440-50-8	0.00804		0.00500	0.00250
Iron, Dissolved	7439-89-6		U	0.100	0.0250
Lead, Dissolved	7439-92-1	0.00418	J	0.00500	0.00250
Magnesium, Dissolved	7439-95-4	7.54		0.500	0.250
Manganese, Dissolved	7439-96-5	0.0310		0.0100	0.00500
Nickel, Dissolved	7440-02-0		U	0.0400	0.00500
Potassium, Dissolved	7440-09-7	2.70		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2		U	0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.0209		0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-06**
 Client ID: **MW-03-050109**
 Matrix: **Water**
 Workgroup Number: **WG301762**
 Collect Date: **05/01/2009 09:37**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**Prep Date: **05/05/2009 07:13**Cal Date: **05/07/2009 11:19**Run Date: **05/07/2009 18:31**File ID: **T2.050709.183110**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	1.47		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.00263		0.000500	0.000250
Calcium, Dissolved	7440-70-2	156		0.200	0.100
Chromium, Dissolved	7440-47-3	0.0202		0.00500	0.00250
Cobalt, Dissolved	7440-48-4	0.00347	J	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	0.593		0.100	0.0250
Lead, Dissolved	7439-92-1	0.00388	J	0.00500	0.00250
Magnesium, Dissolved	7439-95-4	158		0.500	0.250
Manganese, Dissolved	7439-96-5	0.208		0.0100	0.00500
Nickel, Dissolved	7440-02-0	0.0226	J	0.0400	0.00500
Potassium, Dissolved	7440-09-7	31.9		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2	0.00796	J	0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.0168	J	0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-06**
Client ID: **MW-03-050109**
Matrix: **Water**
Workgroup Number: **WG301762**
Collect Date: **05/01/2009 09:37**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **100**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/05/2009 07:13**
Cal Date: **05/08/2009 11:53**
Run Date: **05/08/2009 16:44**
File ID: **T2.050809.164401**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	415		50.0	25.0

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-08**
Client ID: **DUP-GW--050109**
Matrix: **Water**
Workgroup Number: **WG301762**
Collect Date: **05/01/2009 00:01**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **3005A**
Analytical Method: **6010B**
Analyst: **EDA**
Dilution: **100**
Units: **mg/L**

Instrument: **ICP-THERM02**
Prep Date: **05/05/2009 07:13**
Cal Date: **05/08/2009 11:53**
Run Date: **05/08/2009 16:50**
File ID: **T2.050809.165005**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sodium, Dissolved	7440-23-5	417		50.0	25.0

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-08**
 Client ID: **DUP-GW--050109**
 Matrix: **Water**
 Workgroup Number: **WG301762**
 Collect Date: **05/01/2009 00:01**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3005A**
 Analytical Method: **6010B**
 Analyst: **EDA**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ICP-THERMO2**
 Prep Date: **05/05/2009 07:13**
 Cal Date: **05/07/2009 11:19**
 Run Date: **05/07/2009 18:37**
 File ID: **T2.050709.183712**

Analyte	CAS. Number	Result	Qual	RL	MDL
Aluminum, Dissolved	7429-90-5		U	0.100	0.0500
Barium, Dissolved	7440-39-3	1.47		0.0100	0.00250
Beryllium, Dissolved	7440-41-7		U	0.00200	0.000500
Cadmium, Dissolved	7440-43-9	0.00268		0.000500	0.000250
Calcium, Dissolved	7440-70-2	156		0.200	0.100
Chromium, Dissolved	7440-47-3	0.0208		0.00500	0.00250
Cobalt, Dissolved	7440-48-4	0.00320	J	0.0200	0.00250
Copper, Dissolved	7440-50-8		U	0.00500	0.00250
Iron, Dissolved	7439-89-6	0.569		0.100	0.0250
Lead, Dissolved	7439-92-1	0.00289	J	0.00500	0.00250
Magnesium, Dissolved	7439-95-4	159		0.500	0.250
Manganese, Dissolved	7439-96-5	0.202		0.0100	0.00500
Nickel, Dissolved	7440-02-0	0.0219	J	0.0400	0.00500
Potassium, Dissolved	7440-09-7	31.7		1.00	0.250
Silver, Dissolved	7440-22-4		U	0.0100	0.00500
Vanadium, Dissolved	7440-62-2	0.00804	J	0.0100	0.00500
Zinc, Dissolved	7440-66-6	0.0129	J	0.0200	0.00500

J The analyte was positively identified, but the quantitation was below the RL
 U Not detected at or above the reporting limit (RL).

2.3.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system in ug/mL (ppm)

Vf = Final volume (mL)

Vi = Initial volume (mL)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/mL (mg/L)

Example:

0.1

50

50

1

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (mg/L) (ppm)

Vf = Final volume (mL)

Vi = Initial weight (g)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/g (mg/kg)

Example:

0.1

50

1

1

5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (mg/kg)

Example:

5

80

6.25

Example 6010 Calculations
Thermo Scientific IRIS Advantage

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system in ug/mL (ppm)

Vf = Final volume (mL)

Vi = Initial volume (mL)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/mL (mg/L)

Example:

0.1

50

50

1

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (mg/L) (ppm)

Vf = Final volume (mL)

Vi = Initial weight (g)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/g (mg/kg)

Example:

0.1

50

1

1

5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (mg/kg)

Example:

5

80

6.25

Example 6010 Calculations
Thermo Scientific iCAP 6500

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system in ug/mL (ppm)

Vf = Final volume (mL)

Vi = Initial volume (mL)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/mL (mg/L)

Example:

0.1

50

50

1

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (mg/L) (ppm)

Vf = Final volume (mL)

Vi = Initial weight (g)

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in ug/g (mg/kg)

Example:

0.1

50

1

1

5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (mg/kg)

Example:

5

80

6.25

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG301530

Analyst: REK

Spike Analyst: REK

Method: 3005A

Run Date: 05/05/2009 07:13

Hotblock Start Temp: 95.1 @ 06:10

Hotblock End Temp: 95.2 @ 10:10

SOP: ME401 Revision 13

Spike Solution: STD27613

Spike Witness: VC

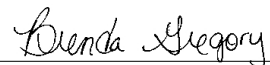
HN03 Lot #: COA13771

HCL Lot #: COA13815

Digest tubes Lot #: COA13830

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG301530-02	BLANK	1	50 mL	50 mL		
2	WG301530-03	LCS	1	50 mL	50 mL	5 mL	
3	L09050044-02	SAMP	1	50 mL	50 mL		05/18/09
4	L09050044-04	SAMP	1	50 mL	50 mL		05/18/09
5	L09050044-06	SAMP	1	50 mL	50 mL		05/18/09
6	L09050044-08	SAMP	1	50 mL	50 mL		05/18/09
7	L09050046-01	SAMP	1	50 mL	50 mL		05/08/09
8	L09050047-02	SAMP	1	50 mL	50 mL		05/18/09
9	L09050047-03	SAMP	1	50 mL	50 mL		05/18/09
10	L09050047-04	SAMP	1	50 mL	50 mL		05/18/09
11	L09050047-05	SAMP	1	50 mL	50 mL		05/18/09
12	L09050047-07	SAMP	1	50 mL	50 mL		05/18/09
13	L09050051-01	SAMP	1	50 mL	50 mL		05/15/09
14	WG301530-01	REF	1	50 mL	50 mL		
15	L09050057-02	RS01	1	50 mL	50 mL		05/18/09
16	WG301530-04	MS	1	50 mL	50 mL	5 mL	
17	WG301530-05	MSD	1	50 mL	50 mL	5 mL	
18	L09050057-05	SAMP	1	50 mL	50 mL		05/18/09
19	L09050057-08	SAMP	1	50 mL	50 mL		05/18/09
20	L09050057-09	SAMP	1	50 mL	50 mL		05/18/09

Analyst: 

Reviewer: 

Microbac Laboratories Inc. **Instrument Run Log**

Instrument: ICP-THERMO2 Dataset: 050709T2.2
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28641

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301749, 301760, 301762

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T2.050709.105551	WG301810-01	Calibration Point		1		05/07/09 10:55
2	T2.050709.110155	WG301810-02	Calibration Point		1		05/07/09 11:01
3	T2.050709.110801	WG301810-03	Calibration Point		1		05/07/09 11:08
4	T2.050709.111407	WG301810-04	Calibration Point		1		05/07/09 11:14
5	T2.050709.111956	WG301810-05	Calibration Point		1		05/07/09 11:19
6	T2.050709.112544	WG301810-06	Initial Calibration Verification		1		05/07/09 11:25
7	T2.050709.113134	WG301810-07	Initial Calib Blank		1		05/07/09 11:31
8	T2.050709.113740	WG301810-08	Interference Check		1		05/07/09 11:37
9	T2.050709.114341	WG301810-09	Interference Check		1		05/07/09 11:43
10	T2.050709.114935	WG301810-10	CCV		1		05/07/09 11:49
11	T2.050709.115525	WG301810-11	CCB		1		05/07/09 11:55
12	T2.050709.120131	WG301401-02	Method/Prep Blank	50/50	1		05/07/09 12:01
13	T2.050709.120735	WG301401-03	Laboratory Control S	50/50	1		05/07/09 12:07
14	T2.050709.121327	WG301401-01	Reference Sample		1	L09050029-02	05/07/09 12:13
15	T2.050709.121938	WG301401-04	Matrix Spike	50/50	1	L09050029-02	05/07/09 12:19
16	T2.050709.122537	WG301401-05	Matrix Spike Duplica	50/50	1	L09050029-02	05/07/09 12:25
17	T2.050709.123137	L09050029-08	MW-13-043009	50/50	1		05/07/09 12:31
18	T2.050709.123740	WG301711-01	Post Digestion Spike		1	L09050029-08	05/07/09 12:37
19	T2.050709.124334	WG301711-02	Serial Dilution		5	L09050029-08	05/07/09 12:43
20	T2.050709.124938	L09050037-01	SE-3037P	50/50	1		05/07/09 12:49
21	T2.050709.125540	L09050037-02	SE-3037F	50/50	1		05/07/09 12:55
22	T2.050709.130143	WG301810-12	CCV		1		05/07/09 13:01
23	T2.050709.130733	WG301810-13	CCB		1		05/07/09 13:07
24	T2.050709.131339	L09050038-01	SE-3026-P	50/50	1		05/07/09 13:13
25	T2.050709.131941	L09050038-02	SE-3026-F	50/50	1		05/07/09 13:19
26	T2.050709.132544	WG301401-01	Reference Sample		2	L09050029-02	05/07/09 13:25
27	T2.050709.133508	WG301401-01	Reference Sample		5	L09050029-02	05/07/09 13:35
28	T2.050709.134112	WG301401-04	Matrix Spike	50/50	5	L09050029-02	05/07/09 13:41
29	T2.050709.134713	WG301401-05	Matrix Spike Duplica	50/50	5	L09050029-02	05/07/09 13:47
30	T2.050709.135314	WG301810-14	CCV		1		05/07/09 13:53
31	T2.050709.135904	WG301810-15	CCB		1		05/07/09 13:59
32	T2.050709.140511	WG301287-02	Method/Prep Blank	5/50	1		05/07/09 14:05
33	T2.050709.141116	WG301287-03	Laboratory Control S	5/50	1		05/07/09 14:11
34	T2.050709.141709	WG301225-01	Fluid Blank		1		05/07/09 14:17
35	T2.050709.142313	L09040671-01	GM09020	5/50	1		05/07/09 14:23
36	T2.050709.142916	L09040671-02	GM09021	5/50	1		05/07/09 14:29
37	T2.050709.143518	L09040671-03	GM09022	5/50	1		05/07/09 14:35

Page: 1 Approved: May 08, 2009

Maren Beery



Microbac Laboratories Inc. Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050709T2.2
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28641

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301749, 301760, 301762

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	T2.050709.144123	L09040671-05	GM09024	5/50	1		05/07/09 14:41
39	T2.050709.144727	L09040672-01	GM090001	5/50	1		05/07/09 14:47
40	T2.050709.145330	L09040673-01	GT090038	5/50	1		05/07/09 14:53
41	T2.050709.145935	WG301749-01	Post Digestion Spike		1	L09040673-01	05/07/09 14:59
42	T2.050709.150530	WG301810-16	CCV		1		05/07/09 15:05
43	T2.050709.151119	WG301810-17	CCB		1		05/07/09 15:11
44	T2.050709.151726	WG301749-02	Serial Dilution		5	L09040673-01	05/07/09 15:17
45	T2.050709.152332	L09040673-02	GT090039	5/50	1		05/07/09 15:23
46	T2.050709.152933	WG301287-01	Reference Sample		1	L09040673-03	05/07/09 15:29
47	T2.050709.153537	WG301287-04	Matrix Spike	5/50	1	L09040673-03	05/07/09 15:35
48	T2.050709.154128	WG301287-05	Matrix Spike Duplica	5/50	1	L09040673-03	05/07/09 15:41
49	T2.050709.154722	WG301810-18	CCV		1		05/07/09 15:47
50	T2.050709.155312	WG301810-19	CCB		1		05/07/09 15:53
51	T2.050709.155917	L09050029-10	MW-19-043009	50/50	1		05/07/09 15:59
52	T2.050709.160518	L09050029-12	PZ-01-043009	50/50	1		05/07/09 16:05
53	T2.050709.161123	L09050029-14	PZ-03-043009	50/50	1		05/07/09 16:11
54	T2.050709.161733	L09050033-02	SAR-MW832-003	50/50	1		05/07/09 16:17
55	T2.050709.162352	L09050033-03	SAR-MW844-003	50/50	1		05/07/09 16:23
56	T2.050709.163000	L09050033-04	SAR-MW823-003	50/50	1		05/07/09 16:30
57	T2.050709.163615	L09050033-05	SAR-MW843-003	50/50	1		05/07/09 16:36
58	T2.050709.164227	L09050033-06	SAR-MW840-003	50/50	1		05/07/09 16:42
59	T2.050709.164838	L09050033-07	SAR-MW841-003	50/50	1		05/07/09 16:48
60	T2.050709.165455	WG301810-20	CCV		1		05/07/09 16:54
61	T2.050709.170045	WG301810-21	CCB		1		05/07/09 17:00
62	T2.050709.170651	WG301745-01	Method/Prep Blank	1/50	1		05/07/09 17:06
63	T2.050709.171256	WG301745-02	Laboratory Control S	1/50	1		05/07/09 17:12
64	T2.050709.171849	WG301745-03	Laboratory Control S	1/50	1		05/07/09 17:18
65	T2.050709.172443	L09050113-01	C10732 CAT	1/50	1		05/07/09 17:24
66	T2.050709.173045	WG301760-01	Post Digestion Spike		1	L09050113-01	05/07/09 17:30
67	T2.050709.173640	WG301760-02	Serial Dilution		5	L09050113-01	05/07/09 17:36
68	T2.050709.174245	L09050114-01	C10863 PLATE	1/50	1		05/07/09 17:42
69	T2.050709.174850	L09050115-01	C10733 VASE	1/50	1		05/07/09 17:48
70	T2.050709.175454	WG301810-22	CCV		1		05/07/09 17:54
71	T2.050709.180044	WG301810-23	CCB		1		05/07/09 18:00
72	T2.050709.180652	WG301530-02	Method/Prep Blank	50/50	1		05/07/09 18:06
73	T2.050709.181257	WG301530-03	Laboratory Control S	50/50	1		05/07/09 18:12
74	T2.050709.181849	L09050044-02	BBLD-PIT-SSP-050109	50/50	1		05/07/09 18:18

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050709T2.2
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28641

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301749, 301760, 301762

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
75	T2.050709.182507	L09050044-04	MW-01-050109	50/50	1		05/07/09 18:25
76	T2.050709.183110	L09050044-06	MW-03-050109	50/50	1		05/07/09 18:31
77	T2.050709.183712	L09050044-08	DUP-GW--050109	50/50	1		05/07/09 18:37
78	T2.050709.184313	L09050046-01	904-306		1		05/07/09 18:43
79	T2.050709.184917	L09050047-02	SAR-MW839-003	50/50	1		05/07/09 18:49
80	T2.050709.185543	L09050047-03	SAR-MW838-003	50/50	1		05/07/09 18:55
81	T2.050709.190153	L09050047-04	SAR-MW834-003	50/50	1		05/07/09 19:01
82	T2.050709.190821	WG301810-24	CCV		1		05/07/09 19:08
83	T2.050709.191410	WG301810-25	CCB		1		05/07/09 19:14
84	T2.050709.192017	L09050047-05	SAR-MW613-003	50/50	1		05/07/09 19:20
85	T2.050709.192629	L09050047-07	SAR-MW614-003	50/50	1		05/07/09 19:26
86	T2.050709.193241	L09050051-01	OHIO RIVER \#1	50/50	1		05/07/09 19:32
87	T2.050709.193914	WG301530-01	Reference Sample		1	L09050057-02	05/07/09 19:39
88	T2.050709.194515	WG301530-04	Matrix Spike	50/50	1	L09050057-02	05/07/09 19:45
89	T2.050709.195107	WG301530-05	Matrix Spike Duplica	50/50	1	L09050057-02	05/07/09 19:51
90	T2.050709.195658	L09050057-05	SAR-MW835-003	50/50	1		05/07/09 19:56
91	T2.050709.200308	WG301762-01	Post Digestion Spike		1	L09050057-05	05/07/09 20:03
92	T2.050709.200907	WG301762-02	Serial Dilution		5	L09050057-05	05/07/09 20:09
93	T2.050709.201510	L09050057-08	SAR-MW837-003	50/50	1		05/07/09 20:15
94	T2.050709.202121	WG301810-26	CCV		1		05/07/09 20:21
95	T2.050709.202711	WG301810-27	CCB		1		05/07/09 20:27
96	T2.050709.203318	L09050057-09	SAR-MW824-003	50/50	1		05/07/09 20:33
97	T2.050709.203935	WG301810-28	CCV		1		05/07/09 20:39
98	T2.050709.204525	WG301810-29	CCB		1		05/07/09 20:45

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Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050809T2.1
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28658

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301906, 301710, 301762, 301907

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T2.050809.112910	WG301912-01	Calibration Point		1		05/08/09 11:29
2	T2.050809.113514	WG301912-02	Calibration Point		1		05/08/09 11:35
3	T2.050809.114119	WG301912-03	Calibration Point		1		05/08/09 11:41
4	T2.050809.114725	WG301912-04	Calibration Point		1		05/08/09 11:47
5	T2.050809.115312	WG301912-05	Calibration Point		1		05/08/09 11:53
6	T2.050809.115902	WG301912-06	Initial Calibration Verification		1		05/08/09 11:59
7	T2.050809.120453	WG301912-07	Initial Calib Blank		1		05/08/09 12:04
8	T2.050809.121059	WG301912-08	Interference Check		1		05/08/09 12:10
9	T2.050809.121700	WG301912-09	Interference Check		1		05/08/09 12:17
10	T2.050809.122255	WG301912-10	CCV		1		05/08/09 12:22
11	T2.050809.122845	WG301912-11	CCB		1		05/08/09 12:28
12	T2.050809.123452	L09050029-10	MW-19-043009	50/50	1		05/08/09 12:34
13	T2.050809.124054	L09050029-12	PZ-01-043009	50/50	1		05/08/09 12:40
14	T2.050809.124657	L09050029-14	PZ-03-043009	50/50	100		05/08/09 12:46
15	T2.050809.125302	WG301843-02	Method/Prep Blank	50/50	1		05/08/09 12:53
16	T2.050809.125908	WG301843-03	Laboratory Control S	50/50	1		05/08/09 12:59
17	T2.050809.130502	L09050142-01	STORMWATER/OUTLET 00	50/50	1		05/08/09 13:05
18	T2.050809.131102	WG301906-01	Post Digestion Spike		1	L09050142-01	05/08/09 13:11
19	T2.050809.131656	WG301906-02	Serial Dilution		5	L09050142-01	05/08/09 13:16
20	T2.050809.132302	WG301912-12	CCV		1		05/08/09 13:23
21	T2.050809.132852	WG301912-13	CCB		1		05/08/09 13:28
22	T2.050809.133459	WG301843-01	Reference Sample		1	L09050142-02	05/08/09 13:34
23	T2.050809.134103	WG301843-04	Matrix Spike	50/50	1	L09050142-02	05/08/09 13:41
24	T2.050809.134654	WG301843-05	Matrix Spike Duplica	50/50	1	L09050142-02	05/08/09 13:46
25	T2.050809.135458	L09050140-01	INLET CHILLER	50/50	1		05/08/09 13:54
26	T2.050809.140057	WG301912-14	CCV		1		05/08/09 14:00
27	T2.050809.140648	WG301912-15	CCB		1		05/08/09 14:06
28	T2.050809.141351	WG301657-02	Method/Prep Blank	5/50	1		05/08/09 14:13
29	T2.050809.141952	WG301657-03	Laboratory Control S	5/50	1		05/08/09 14:19
30	T2.050809.142546	WG301604-01	Fluid Blank		1		05/08/09 14:25
31	T2.050809.143150	L09050056-01	BIOBAG SLUDGE	5/50	1		05/08/09 14:31
32	T2.050809.143752	L09050064-01	KA3104	5/50	1		05/08/09 14:37
33	T2.050809.144357	WG301710-03	Post Digestion Spike		1	L09050064-01	05/08/09 14:43
34	T2.050809.144952	WG301710-04	Serial Dilution		5	L09050064-01	05/08/09 14:49
35	T2.050809.145557	WG301657-01	Reference Sample		1	L09050064-03	05/08/09 14:55
36	T2.050809.150202	WG301657-04	Matrix Spike	5/50	1	L09050064-03	05/08/09 15:02
37	T2.050809.150758	WG301657-05	Matrix Spike Duplica	5/50	1	L09050064-03	05/08/09 15:07

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Microbac Laboratories Inc.
Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050809T2.1
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28658

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301906, 301710, 301762, 301907

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	T2.050809.151354	WG301912-16	CCV		1		05/08/09 15:13
39	T2.050809.151945	WG301912-17	CCB		1		05/08/09 15:19
40	T2.050809.152552	WG301530-02	Method/Prep Blank	50/50	1		05/08/09 15:25
41	T2.050809.153157	WG301530-03	Laboratory Control S	50/50	1		05/08/09 15:31
42	T2.050809.153751	WG301530-01	Reference Sample		1	L09050057-02	05/08/09 15:37
43	T2.050809.154353	WG301530-04	Matrix Spike	50/50	1	L09050057-02	05/08/09 15:43
44	T2.050809.154947	WG301530-05	Matrix Spike Duplica	50/50	1	L09050057-02	05/08/09 15:49
45	T2.050809.155540	L09050057-05	SAR-MW835-003	50/50	100		05/08/09 15:55
46	T2.050809.160148	WG301762-01	Post Digestion Spike		100	L09050057-05	05/08/09 16:01
47	T2.050809.160744	WG301762-02	Serial Dilution		500	L09050057-05	05/08/09 16:07
48	T2.050809.161349	L09050046-01	904-306		100		05/08/09 16:13
49	T2.050809.161955	WG301912-18	CCV		1		05/08/09 16:19
50	T2.050809.162546	WG301912-19	CCB		1		05/08/09 16:25
51	T2.050809.163152	L09050044-02	BBLD-PIT-SSP-050109	50/50	100		05/08/09 16:31
52	T2.050809.163757	L09050044-04	MW-01-050109	50/50	1		05/08/09 16:37
53	T2.050809.164401	L09050044-06	MW-03-050109	50/50	100		05/08/09 16:44
54	T2.050809.165005	L09050044-08	DUP-GW--050109	50/50	100		05/08/09 16:50
55	T2.050809.165612	WG301912-20	CCV		1		05/08/09 16:56
56	T2.050809.170201	WG301912-21	CCB		1		05/08/09 17:02
57	T2.050809.170808	L09050135-02	MW#1	50/50	1		05/08/09 17:08
58	T2.050809.171410	L09050135-04	MW#2	50/50	1		05/08/09 17:14
59	T2.050809.172011	L09050135-06	MW#3	50/50	1		05/08/09 17:20
60	T2.050809.172614	L09050135-08	MW#4	50/50	1		05/08/09 17:26
61	T2.050809.173216	L09050135-10	MW#6	50/50	1		05/08/09 17:32
62	T2.050809.173818	L09050135-12	MW#7	50/50	1		05/08/09 17:38
63	T2.050809.174422	L09050135-14	FIELD BLANK	50/50	1		05/08/09 17:44
64	T2.050809.175029	L09050135-16	DUPLICATE	50/50	1		05/08/09 17:50
65	T2.050809.175632	L09050139-05	001/COMP.	50/50	1		05/08/09 17:56
66	T2.050809.180236	WG301912-22	CCV		1		05/08/09 18:02
67	T2.050809.180827	WG301912-23	CCB		1		05/08/09 18:08
68	T2.050809.181433	WG301842-02	Method/Prep Blank	5/50	1		05/08/09 18:14
69	T2.050809.182036	WG301842-03	Laboratory Control S	5/50	1		05/08/09 18:20
70	T2.050809.182630	WG301698-01	Fluid Blank		1		05/08/09 18:26
71	T2.050809.183234	WG301806-01	Fluid Blank		1		05/08/09 18:32
72	T2.050809.183838	L09050130-04	KA3161	5/50	1		05/08/09 18:38
73	T2.050809.184443	WG301907-01	Post Digestion Spike		1	L09050130-04	05/08/09 18:44
74	T2.050809.185037	WG301907-02	Serial Dilution		5	L09050130-04	05/08/09 18:50

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Maren Beery



Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 050809T2.1
 Analyst1: EDA Analyst2: N/A
 Method: 6010B SOP: ME600G Rev: 8
 Maintenance Log ID: 28658

Calibration Std: STD32446 ICV/CCV Std: STD32680 Post Spike: STD27612
 ICSA: STD32624 ICSAB: STD32155 Int. Std: STD32604

Workgroups: 301711, 301906, 301710, 301762, 301907

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
75	T2.050809.185643	WG301842-01	Reference Sample		1	L09050130-05	05/08/09 18:56
76	T2.050809.190249	WG301842-04	Matrix Spike	5/50	1	L09050130-05	05/08/09 19:02
77	T2.050809.190844	WG301842-05	Matrix Spike Duplica	5/50	1	L09050130-05	05/08/09 19:08
78	T2.050809.191440	WG301912-24	CCV		1		05/08/09 19:14
79	T2.050809.192029	WG301912-25	CCB		1		05/08/09 19:20
80	T2.050809.192636	L09040699-01	WITCONATE 90		10		05/08/09 19:26
81	T2.050809.193242	L09050071-01	USED FLUE BRICK	5/50	1		05/08/09 19:32
82	T2.050809.193848	WG301912-26	CCV		1		05/08/09 19:38
83	T2.050809.194438	WG301912-27	CCB		1		05/08/09 19:44

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Maren Berry



Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2009

Analyst: EDA

Analyst: NA

Method: 6010B

Instrument: ICP-THERM02

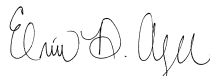
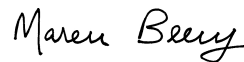
Curve Workgroup: 301810

Runlog ID: 27960

Analytical Workgroups: 301711, 301749, 301760, 301762

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	
Case Narrative	029, 033, 057, 044, 047
Client Forms	
Level X	
Level 3	029, 044
Level 4	033, 057, 047
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	EDA
Secondary Reviewer	MMB
Comments	

Primary Reviewer:


Secondary Reviewer:
08-MAY-2009


Microbac Laboratories Inc.

Data Checklist

Date: 08-MAY-2009

Analyst: EDA

Analyst: NA

Method: 6010B

Instrument: ICP-THERM02

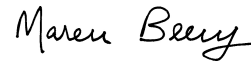
Curve Workgroup: 301912

Runlog ID: 27987

Analytical Workgroups: 301711, 301906, 301710, 301762, 301907

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	
Case Narrative	029, 044, 046, 057, 130
Client Forms	
Level X	
Level 3	029, 044
Level 4	057, 130
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	EDA
Secondary Reviewer	MMB
Comments	

Primary Reviewer:


Secondary Reviewer:
11-MAY-2009


Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010B

AAB#: WG301762

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-01-050109	05/01/09	05/02/09	05/05/09	180	3.85	05/08/09	180	3.39	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	180	3.93	05/08/09	180	3.39	
MW-01-050109	05/01/09	05/02/09	05/05/09	180	3.85	05/07/09	180	2.47	
MW-03-050109	05/01/09	05/02/09	05/05/09	180	3.90	05/07/09	180	2.47	
MW-03-050109	05/01/09	05/02/09	05/05/09	180	3.90	05/08/09	180	3.40	
DUP-GW--050109	05/01/09	05/02/09	05/05/09	180	4.30	05/08/09	180	3.40	
DUP-GW--050109	05/01/09	05/02/09	05/05/09	180	4.30	05/07/09	180	2.47	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	180	3.93	05/07/09	180	2.46	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
 PDF File ID: 1386876
 Report generated 05/11/2009 09:37



METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: T2.050709.180652
 Prep Date: 05/05/09 07:13
 Analyzed Date: 05/07/09 18:06
 Analyst: EDA

Work Group: WG301762
 Blank Sample ID: WG301530-02
 Instrument ID: ICP-THERM02
 Method: 6010B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301530-03	T2.050709.181257	05/07/09 18:12	01
BBLD-PIT-SSP-050109	L09050044-02	T2.050709.181849	05/07/09 18:18	01
MW-01-050109	L09050044-04	T2.050709.182507	05/07/09 18:25	01
MW-03-050109	L09050044-06	T2.050709.183110	05/07/09 18:31	01
DUP-GW--050109	L09050044-08	T2.050709.183712	05/07/09 18:37	01
LCS	WG301530-03	T2.050809.153157	05/08/09 15:31	02
BBLD-PIT-SSP-050109	L09050044-02	T2.050809.163152	05/08/09 16:31	DL01
MW-01-050109	L09050044-04	T2.050809.163757	05/08/09 16:37	02
MW-03-050109	L09050044-06	T2.050809.164401	05/08/09 16:44	DL01
DUP-GW--050109	L09050044-08	T2.050809.165005	05/08/09 16:50	DL01



METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: T2.050809.152552
 Prep Date: 05/05/09 07:13
 Analyzed Date: 05/08/09 15:25
 Analyst: EDA

Work Group: WG301762
 Blank Sample ID: WG301530-02
 Instrument ID: ICP-THERM02
 Method: 6010B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301530-03	T2.050709.181257	05/07/09 18:12	01
BBLD-PIT-SSP-050109	L09050044-02	T2.050709.181849	05/07/09 18:18	01
MW-01-050109	L09050044-04	T2.050709.182507	05/07/09 18:25	01
MW-03-050109	L09050044-06	T2.050709.183110	05/07/09 18:31	01
DUP-GW--050109	L09050044-08	T2.050709.183712	05/07/09 18:37	01
LCS	WG301530-03	T2.050809.153157	05/08/09 15:31	02
BBLD-PIT-SSP-050109	L09050044-02	T2.050809.163152	05/08/09 16:31	DL01
MW-01-050109	L09050044-04	T2.050809.163757	05/08/09 16:37	02
MW-03-050109	L09050044-06	T2.050809.164401	05/08/09 16:44	DL01
DUP-GW--050109	L09050044-08	T2.050809.165005	05/08/09 16:50	DL01



METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 07:13 Sample ID: WG301530-02
 Instrument ID: ICP-THERM02 Run Date: 05/07/09 18:06 Prep Method: 3005A
 File ID: T2.050709.180652 Analyst: EDA Method: 6010B
 Workgroup (AAB#): WG301762 Matrix: Water Units: mg/L
 Contract #: _____ Cal ID: ICP-TH - 07-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Aluminum, Dissolved	0.0500	0.100	0.0500	1	U
Barium, Dissolved	0.00250	0.0100	0.00250	1	U
Beryllium, Dissolved	0.000500	0.00200	0.000500	1	U
Cadmium, Dissolved	0.000250	0.000500	0.000250	1	U
Calcium, Dissolved	0.100	0.200	0.100	1	U
Chromium, Dissolved	0.00250	0.00500	0.00250	1	U
Cobalt, Dissolved	0.00250	0.0200	0.00250	1	U
Copper, Dissolved	0.00250	0.00500	0.00250	1	U
Iron, Dissolved	0.0250	0.100	0.0250	1	U
Lead, Dissolved	0.00250	0.00500	-0.00288	1	U
Magnesium, Dissolved	0.250	0.500	0.250	1	U
Manganese, Dissolved	0.00500	0.0100	0.00500	1	U
Nickel, Dissolved	0.00500	0.0400	0.00500	1	U
Potassium, Dissolved	0.250	1.00	0.250	1	U
Silver, Dissolved	0.00500	0.0100	0.00500	1	U
Vanadium, Dissolved	0.00500	0.0100	0.00500	1	U
Zinc, Dissolved	0.00500	0.0200	0.00500	1	U

MDL Method Detection Limit
 RL Reporting/Practical Quantitation Limit
 ND Analyte Not detected at or above reporting limit
 * |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386878

11-MAY-2009 09:37



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 07:13 Sample ID: WG301530-02
Instrument ID: ICP-THERM02 Run Date: 05/08/09 15:25 Prep Method: 3005A
File ID: T2.050809.152552 Analyst: EDA Method: 6010B
Workgroup (AAB#): WG301762 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: ICP-TH - 08-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Sodium, Dissolved	0.250	0.500	0.250	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386878

11-MAY-2009 09:37



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: <u>L09050044</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301530-03</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>18:12</u>	Prep Method: <u>3005A</u>
File ID: <u>T2.050709.181257</u>	Analyst: <u>EDA</u>	Method: <u>6010B</u>
Workgroup (AAB#): <u>WG301762</u>	Matrix: <u>Water</u>	Units: <u>mg/L</u>
QC Key: <u>STD</u>	Lot#: <u>STD27613</u>	Cal ID: <u>ICP-TH - 07-MAY-09</u>

Analytes	Expected	Found	% Rec	LCS Limits			Q
Aluminum, Dissolved	5.00	5.19	104	85	-	115	
Barium, Dissolved	0.500	0.515	103	85	-	115	
Beryllium, Dissolved	0.0250	0.0257	103	85	-	115	
Cadmium, Dissolved	0.0250	0.0257	103	85	-	115	
Calcium, Dissolved	5.00	5.14	103	85	-	115	
Chromium, Dissolved	0.250	0.260	104	85	-	115	
Cobalt, Dissolved	0.100	0.104	104	85	-	115	
Copper, Dissolved	0.250	0.266	107	85	-	115	
Iron, Dissolved	2.00	2.08	104	85	-	115	
Lead, Dissolved	0.250	0.261	104	85	-	115	
Magnesium, Dissolved	5.00	5.16	103	85	-	115	
Manganese, Dissolved	0.250	0.260	104	85	-	115	
Nickel, Dissolved	0.250	0.264	106	85	-	115	
Potassium, Dissolved	25.0	25.3	101	85	-	115	
Silver, Dissolved	0.200	0.209	104	85	-	115	
Vanadium, Dissolved	0.500	0.521	104	85	-	115	
Zinc, Dissolved	0.500	0.514	103	85	-	115	

LCS - Modified 03/06/2008
 PDF File ID: 1386879
 Report generated: 05/11/2009 09:37



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG301530-03
Instrument ID: ICP-THERM02 Run Time: 15:31 Prep Method: 3005A
File ID: T2.050809.153157 Analyst: EDA Method: 6010B
Workgroup (AAB#): WG301762 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD27613 Cal ID: ICP-TH - 08-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits	Q
Sodium, Dissolved	25.0	26.2	105	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 1386879
Report generated: 05/11/2009 09:37



Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: <u>L09050044</u>	Cal ID: <u>ICP-THERMO -</u>	Worknum: <u>WG301762</u>
Instrument ID: <u>ICP-THERMO</u>	Contract #: _____	Method: <u>6010B</u>
Parent ID: <u>WG301530-01</u>	File ID: <u>T2.050709.193914</u> Dil: <u>1</u>	Matrix: <u>WATER</u>
Sample ID: <u>WG301530-04 MS</u>	File ID: <u>T2.050709.194515</u> Dil: <u>1</u>	Units: <u>mg/L</u>
Sample ID: <u>WG301530-05 MSD</u>	File ID: <u>T2.050709.195107</u> Dil: <u>1</u>	

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.422	5.00	5.64	104	5.00	5.80	108	2.75	80 - 120	20	
Barium	0.0455	0.500	0.561	103	0.500	0.569	105	1.43	80 - 120	20	
Beryllium	ND	0.0250	0.0255	102	0.0250	0.0257	103	1.02	80 - 120	20	
Cadmium	0.00116	0.0250	0.0268	103	0.0250	0.0273	104	1.78	80 - 120	20	
Calcium	76.2	5.00	82.7	129	5.00	83.5	145	0.970	80 - 120	20	*
Chromium	ND	0.250	0.253	101	0.250	0.257	103	1.64	80 - 120	20	
Cobalt	ND	0.100	0.102	102	0.100	0.104	104	1.77	80 - 120	20	
Copper	ND	0.250	0.261	104	0.250	0.265	106	1.59	80 - 120	20	
Iron	0.650	2.00	2.73	104	2.00	2.77	106	1.48	80 - 120	20	
Lead	ND	0.250	0.258	103	0.250	0.265	106	2.52	80 - 120	20	
Magnesium	46.5	5.00	52.1	114	5.00	52.7	125	1.10	80 - 120	20	*
Manganese, Total	0.665	0.250	0.936	109	0.250	0.952	115	1.66	80 - 120	20	
Nickel	ND	0.250	0.259	103	0.250	0.263	105	1.64	80 - 120	20	
Potassium	2.05	25.0	28.0	104	25.0	28.3	105	0.964	80 - 120	20	
Silver	ND	0.200	0.205	103	0.200	0.209	104	1.58	80 - 120	20	
Vanadium	ND	0.500	0.518	104	0.500	0.522	104	0.830	80 - 120	20	
Zinc	0.0176	0.500	0.520	100	0.500	0.523	101	0.639	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L09050044 Cal ID: ICP-THERMO - Worknum: WG301762
 Instrument ID: ICP-THERMO Contract #: _____ Method: 6010B
 Parent ID: WG301530-01 File ID: T2.050809.153751 Dil: 1 Matrix: WATER
 Sample ID: WG301530-04 MS File ID: T2.050809.154353 Dil: 1 Units: mg/L
 Sample ID: WG301530-05 MSD File ID: T2.050809.154947 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Sodium	151	25.0	179	109	25.0	181	120	1.58	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

Microbac Laboratories Inc.
Serial Dilution Report

Login: L09050044 **Worknum:** WG301762
Instrument: ICP-THERMO2 **Method:** 6010B
Serial Dil: WG301762-02 **File ID:** T2.050709.200907 **Dil:** 5 **Units:** mg/L
Sample: L09050057-05 **File ID:** T2.050709.195658 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	.0889	F	ND	U		
Barium	.259		.251		3.09	
Beryllium	ND	U	ND	U		
Cadmium	.00144	X	.00285	X	97.90	
Calcium	263		256		2.66	
Chromium	.00267	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	ND	U	ND	U		
Iron	.662	X	.645	X	2.57	
Lead	.00267	F	ND	U		
Magnesium	94.7		93.5		1.27	
Manganese	.496		.5		0.81	
Nickel	ND	U	ND	U		
Potassium	5.22	X	5.1	X	2.30	
Silver	ND	U	ND	U		
Sodium	475		475		0.00	
Vanadium	ND	U	ND	U		
Zinc	.0156	F	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

Microbac Laboratories Inc.
Serial Dilution Report

Login: L09050044 **Worknum:** WG301762
Instrument: ICP-THERM02 **Method:** 6010B
Serial Dil: WG301762-02 **File ID:** T2.050809.160744 **Dil:** 500 **Units:** mg/L
Sample: L09050057-05 **File ID:** T2.050809.155540 **Dil:** 100

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Barium	.309	F	ND	U		
Beryllium	ND	U	ND	U		
Cadmium	.028	F	ND	U		
Calcium	259	X	254	X	1.93	
Chromium	ND	U	ND	U		
Cobalt	ND	U	ND	U		
Copper	ND	U	ND	U		
Iron	ND	U	ND	U		
Lead	ND	U	1.41	F	559.00	
Magnesium	101	X	ND	U		
Manganese	.53	F	ND	U		
Nickel	ND	U	ND	U		
Potassium	ND	U	ND	U		
Silver	ND	U	ND	U		
Sodium	482	X	477.5	X	0.93	
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.

F = Result is greater than or equal to MDL and less than the RL.

X = Result is greater than or equal to RL and less than 50 times the MDL.

E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008

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Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050044
Instrument ID: ICP-THERM02
Post Spike ID: WG301762-01
Sample ID: L09050057-05

Worknum: WG301762
Method: 6010B
Units: mg/L
Matrix: Water
File ID: T2.050709.200308 Dil: 1
File ID: T2.050709.195658 Dil: 1

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5.51		0.0889	F	5	108.6	75 - 125	
BARIUM	0.790		0.259		.5	111.4	75 - 125	
BERYLLIUM	0.0256		0	U	.025	102.5	75 - 125	
CADMIUM	0.0281		0		.025	112.3	75 - 125	
CALCIUM	258		263		5	422.9	75 - 125	N
CHROMIUM	0.256		0.00267	F	.25	101.6	75 - 125	
COBALT	0.102		0	U	.1	102.4	75 - 125	
COPPER	0.264		0	U	.25	105.4	75 - 125	
IRON	2.77		0.662		2	108.6	75 - 125	
LEAD	0.256		0	F	.25	102.6	75 - 125	
MAGNESIUM	95.9		94.7		5	212.9	75 - 125	N
MANGANESE	0.742		0.496		.25	118.2	75 - 125	
NICKEL	0.257		0	U	.25	102.9	75 - 125	
POTASSIUM	32.4		5.22		25	110.7	75 - 125	
SILVER	0.210		0	U	.2	104.8	75 - 125	
SODIUM	485		475		25	227.2	75 - 125	N
VANADIUM	0.522		0	U	.5	104.5	75 - 125	
ZINC	0.518		0.0156	F	.5	100.9	75 - 125	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050044
Instrument ID: ICP-THERM02
Post Spike ID: WG301762-01
Sample ID: L09050057-05

Worknum: WG301762
Method: 6010B
Units: mg/L
Matrix: Water
File ID: T2.050809.160148 Dil: 100
File ID: T2.050809.155540 Dil: 100

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4.87		0	U	5	97.3	75 - 125	
BARIUM	0.497		0.00309	F	.5	98.8	75 - 125	
BERYLLIUM	0.0251		0	U	.025	100.4	75 - 125	
CADMIUM	0.0241		0	F	.025	96.6	75 - 125	
CALCIUM	7.45		2.59		5	97.2	75 - 125	
CHROMIUM	0.251		0	U	.25	100.6	75 - 125	
COBALT	0.0982		0	U	.1	98.2	75 - 125	
COPPER	0.256		0	U	.25	102.3	75 - 125	
IRON	2.03		0	U	2	101.5	75 - 125	
LEAD	0.242		0	U	.25	96.9	75 - 125	
MAGNESIUM	6.05		1.01		5	100.8	75 - 125	
MANGANESE	0.253		0.00530	F	.25	99.2	75 - 125	
NICKEL	0.244		0	U	.25	97.5	75 - 125	
POTASSIUM	24.4		0	U	25	97.5	75 - 125	
SILVER	0.199		0	U	.2	99.7	75 - 125	
SODIUM	29.5		4.82		25	98.8	75 - 125	
VANADIUM	0.506		0	U	.5	101.2	75 - 125	
ZINC	0.503		0	U	.5	100.6	75 - 125	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	<u>L09050044</u>	Workgroup (AAB#):	<u>WG301762</u>
Analytical Method:	<u>6010B</u>	Instrument ID:	<u>ICP-THERM02</u>
ICAL Worknum:	<u>WG301810</u>	Initial Calibration Date:	<u>07-MAY-2009 11:19</u>

	WG301810-01		WG301810-02		WG301810-03		WG301810-04		WG301810-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000730	.1	0.000980	.2	0.00132	5	0.0276	10	0.0551	.999952	
BARIUM	0	0.00584	.01	0.0125	.02	0.0187	.5	0.655	1	1.31	.999993	
BERYLLIUM	0	-0.00158	.0005	0.000610	.001	0.00284	.025	0.205	.05	0.409	.999968	
CADMIUM	0	-0.000180	.0005	0.0000100	.001	0.0000800	.025	0.0102	.05	0.0205	.99874	
CALCIUM	0	-0.00211	.1	-0.00129	.2	-0.000310	5	0.0883	10	0.180	.999977	
CHROMIUM	0	0.000350	.005	0.00127	.01	0.00230	.25	0.100	.5	0.198	.999969	
COBALT	0	-0.0000300	.002	0.000330	.004	0.000700	.1	0.0334	.2	0.0664	.999947	
COPPER	0	0.000260	.1	0.000480	.01	0.000680	.25	0.0233	.5	0.0461	.999963	
IRON	0	-0.0000400	.04	0.000420	.08	0.000650	2	0.0312	4	0.0626	.999633	
LEAD	0	-0.0000700	.005	0.0000100	.01	0.0000900	.25	0.00773	.5	0.0153	.99996	
MAGNESIUM	0	0.0000300	.1	0.000230	.2	0.000410	5	0.0175	10	0.0352	.999958	
MANGANESE	0	-0.0000300	.005	0.000610	.01	0.000980	.25	0.0488	.5	0.0982	.999836	
NICKEL	0	-0.000280	.005	-0.0000600	.01	0.000130	.25	0.0186	.5	0.0368	.999848	
POTASSIUM	0	0.00270	.5	0.00599	1	0.00965	25	0.348	50	0.708	.999938	
SILVER	0	-0.000930	20	0.000550	.008	0.00191	.2	0.118	.4	0.234	.999746	
SODIUM	0	-0.00499	.5	0.0114	1	0.0275	25	1.60	50	3.24	.999988	
VANADIUM	0	-0.000550	.01	0.00378	.02	0.00793	.5	0.414	1	0.827	.999993	
ZINC	0	0.000190	.01	0.00186	.02	0.00362	.5	0.169	1	0.339	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	<u>L09050044</u>	Workgroup (AAB#):	<u>WG301762</u>
Analytical Method:	<u>6010B</u>	Instrument ID:	<u>ICP-THERM02</u>
ICAL Worknum:	<u>WG301912</u>	Initial Calibration Date:	<u>08-MAY-2009 11:53</u>

	WG301912-01		WG301912-02		WG301912-03		WG301912-04		WG301912-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000570	.1	0.000760	.2	0.00102	5	0.0218	10	0.0427	.999943	
BARIUM	0	0.00426	.01	0.00969	.02	0.0148	.5	0.534	1	1.05	.999974	
BERYLLIUM	0	-0.00106	.0005	0.000450	.001	0.00206	.025	0.163	.05	0.321	.999958	
CADMIUM	0	-0.000110	.0005	-0.0000600	.001	0.0000700	.025	0.00832	.05	0.0165	.999709	
CALCIUM	0	-0.00177	.1	0.000410	.2	0.00107	5	0.0715	10	0.141	.990542	Q
CHROMIUM	0	0.000110	.005	0.00101	.01	0.00176	.25	0.0785	.5	0.154	.999892	
COBALT	0	-0.0000500	.002	0.000240	.004	0.000510	.1	0.0272	.2	0.0532	.999926	
COPPER	0	0.000210	-.1	0.000370	.01	0.000600	.25	0.0191	.5	0.0371	.999892	
IRON	0	-0.0000200	.04	0.000280	.08	0.000490	2	0.0252	4	0.0495	.999898	
LEAD	0	-0.0000700	.005	-0.0000300	.01	0.0000700	.25	0.00618	.5	0.0121	.99966	
MAGNESIUM	0	-0.0000100	.1	0.000180	.2	0.000270	5	0.0142	10	0.0280	.999788	
MANGANESE	0	-0.0000400	.005	0.000390	.01	0.000690	.25	0.0388	.5	0.0766	.999953	
NICKEL	0	-0.000180	.005	-0.0000200	.01	0.000130	.25	0.0150	.5	0.0296	.99996	
POTASSIUM	0	-0.000830	.5	0.00243	1	0.00559	25	0.313	50	0.625	.999995	
SILVER	0	-0.000490	20	0.000430	.008	0.00152	.2	0.0940	.4	0.185	.999943	
SODIUM	0	-0.00188	.5	0.0110	1	0.0239	25	1.30	50	2.58	.999989	
VANADIUM	0	-0.000400	.01	0.00299	.02	0.00656	.5	0.332	1	0.654	.999967	
ZINC	0	0.000120	.01	0.00157	.02	0.00296	.5	0.138	1	0.271	.999936	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995



Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: <u>L09050044</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301810-07</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>11:31</u>	Method: <u>6010</u>
File ID: <u>T2.050709.113134</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301762</u>	Cal ID: <u>ICP-THERM - 07-MAY-09</u>	
Matrix: <u>WATER</u>		

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.05	.1	.05	U
BARIUM	.0025	.01	.0025	U
BERYLLIUM	.0005	.002	.0005	U
CADMIUM	.00025	.0005	.00026	F
CALCIUM	.1	.2	.1	U
CHROMIUM	.0025	.005	.0025	U
COBALT	.0025	.02	.0025	U
COPPER	.0025	.005	.0025	U
IRON	.025	.1	.025	U
LEAD	.0025	.005	.0025	U
MAGNESIUM	.25	.5	.25	U
MANGANESE	.005	.01	.005	U
NICKEL	.005	.04	.005	U
POTASSIUM	.25	1	.25	U
SILVER	.005	.01	.005	U
SODIUM	.25	.5	.25	U
VANADIUM	.005	.01	.005	U
ZINC	.005	.02	.005	U

ICB - Modified 03/06/2008
 PDF File ID: 1386885
 Report generated 05/11/2009 09:37



Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: <u>L09050044</u>	Run Date: <u>05/08/2009</u>	Sample ID: <u>WG301912-07</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>12:04</u>	Method: <u>6010</u>
File ID: <u>T2.050809.120453</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301762</u>	Cal ID: <u>ICP-THERM - 08-MAY-09</u>	
Matrix: <u>WATER</u>		

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.05	.1	.05	U
BARIUM	.0025	.01	.0025	U
BERYLLIUM	.0005	.002	.0005	U
CADMIUM	.00025	.0005	.0003	F
CALCIUM	.1	.2	.1	U
CHROMIUM	.0025	.005	.0025	U
COBALT	.0025	.02	.0025	U
COPPER	.0025	.005	.0025	U
IRON	.025	.1	.025	U
LEAD	.0025	.005	.00379	F
MAGNESIUM	.25	.5	.25	U
MANGANESE	.005	.01	.005	U
NICKEL	.005	.04	.005	U
POTASSIUM	.25	1	.25	U
SILVER	.005	.01	.005	U
SODIUM	.25	.5	.25	U
VANADIUM	.005	.01	.005	U
ZINC	.005	.02	.005	U

ICB - Modified 03/06/2008
 PDF File ID: 1386885
 Report generated 05/11/2009 09:37



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/07/2009	Sample ID: WG301810-11
Instrument ID: ICP-THERM02	Run Time: 11:55	Method: 6010B
File ID: T2.050709.115525	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1386888
Report generated 05/11/2009 09:39



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/07/2009	Sample ID: WG301810-23
Instrument ID: ICP-THERM02	Run Time: 18:00	Method: 6010B
File ID: T2.050709.180044	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	-0.0565	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	-0.00251	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/07/2009	Sample ID: WG301810-25
Instrument ID: ICP-THERM02	Run Time: 19:14	Method: 6010B
File ID: T2.050709.191410	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.707	*
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/07/2009	Sample ID: WG301810-27
Instrument ID: ICP-THERM02	Run Time: 20:27	Method: 6010B
File ID: T2.050709.202711	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 07-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000350	F
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.441	F
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
 F = Result is between MDL and RL.
 * = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-11
Instrument ID: ICP-THERM02	Run Time: 12:28	Method: 6010B
File ID: T2.050809.122845	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-17
Instrument ID: ICP-THERM02	Run Time: 15:19	Method: 6010B
File ID: T2.050809.151945	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
 F = Result is between MDL and RL.
 * = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-19
Instrument ID: ICP-THERM02	Run Time: 16:25	Method: 6010B
File ID: T2.050809.162546	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-21
Instrument ID: ICP-THERM02	Run Time: 17:02	Method: 6010B
File ID: T2.050809.170201	Analyst: EDA	Units: mg/L
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0500	0.100	0.0500	U
Barium	0.00250	0.0100	0.00250	U
Beryllium	0.000500	0.00200	0.000500	U
Cadmium	0.000250	0.000500	0.000250	U
Calcium	0.100	0.200	0.100	U
Chromium	0.00250	0.00500	0.00250	U
Cobalt	0.00250	0.0200	0.00250	U
Copper	0.00250	0.00500	0.00250	U
Iron	0.0250	0.100	0.0250	U
Lead	0.00250	0.00500	0.00250	U
Magnesium	0.250	0.500	0.250	U
Manganese	0.00500	0.0100	0.00500	U
Nickel	0.00500	0.0400	0.00500	U
Potassium	0.250	1.00	0.250	U
Silver	0.00500	0.0100	0.00500	U
Sodium	0.250	0.500	0.250	U
Vanadium	0.00500	0.0100	0.00500	U
Zinc	0.00500	0.0200	0.00500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
 (Alternate Source)

Login Number: <u>L09050044</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301810-06</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>11:25</u>	Method: <u>6010B</u>
File ID: <u>T2.050709.112544</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301762</u>	Cal ID: <u>ICP-TH - 07-MAY-09</u>	
QC Key: <u>STD</u>		

Analyte	Expected	Found	%REC	LIMITS	Q
Aluminum	10	10.1	101	90 - 110	
Barium	1	1.01	101	90 - 110	
Beryllium	.05	0.0509	102	90 - 110	
Cadmium	.05	0.0508	102	90 - 110	
Calcium	10	10.1	101	90 - 110	
Chromium	.5	0.516	103	90 - 110	
Cobalt	.2	0.205	103	90 - 110	
Copper	.5	0.513	103	90 - 110	
Iron	4	4.10	103	90 - 110	
Lead	.5	0.507	101	90 - 110	
Magnesium	10	10.3	103	90 - 110	
Manganese	.5	0.515	103	90 - 110	
Nickel	.5	0.515	103	90 - 110	
Potassium	50	50.1	100	90 - 110	
Silver	.4	0.406	102	90 - 110	
Sodium	50	50.9	102	90 - 110	
Vanadium	1	1.02	102	90 - 110	
Zinc	1	1.02	102	90 - 110	

* Exceeds LIMITS Limit



Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
 (Alternate Source)

Login Number: <u>L09050044</u>	Run Date: <u>05/08/2009</u>	Sample ID: <u>WG301912-06</u>
Instrument ID: <u>ICP-THERM02</u>	Run Time: <u>11:59</u>	Method: <u>6010B</u>
File ID: <u>T2.050809.115902</u>	Analyst: <u>EDA</u>	Units: <u>mg/L</u>
Workgroup (AAB#): <u>WG301762</u>	Cal ID: <u>ICP-TH - 08-MAY-09</u>	
QC Key: <u>STD</u>		

Analyte	Expected	Found	%REC	LIMITS	Q
Aluminum	10	10.1	101	90 - 110	
Barium	1	1.00	100	90 - 110	
Beryllium	.05	0.0498	99.5	90 - 110	
Cadmium	.05	0.0505	101	90 - 110	
Calcium	10	9.71	97.1	90 - 110	
Chromium	.5	0.505	101	90 - 110	
Cobalt	.2	0.204	102	90 - 110	
Copper	.5	0.511	102	90 - 110	
Iron	4	4.05	101	90 - 110	
Lead	.5	0.502	100	90 - 110	
Magnesium	10	10.1	101	90 - 110	
Manganese	.5	0.516	103	90 - 110	
Nickel	.5	0.511	102	90 - 110	
Potassium	50	49.8	99.5	90 - 110	
Silver	.4	0.401	100	90 - 110	
Sodium	50	50.1	100	90 - 110	
Vanadium	1	0.994	99.4	90 - 110	
Zinc	1	1.01	101	90 - 110	

* Exceeds LIMITS Limit



CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301810-10
 Instrument ID: ICP-THERM02 Run Time: 11:49 Method: 6010B
 File ID: T2.050709.114935 Analyst: EDA QC Key: STD
 Workgroup (AAB#): WG301762 Cal ID: ICP-TH - 07-MAY-09
 Matrix: WATER

Analyte	Expected	Found	UNITS	%REC	LIMITS	Q
Aluminum	10.0	10.2	mg/L	102	90 - 110	
Barium	1.00	1.01	mg/L	101	90 - 110	
Beryllium	0.0500	0.0505	mg/L	101	90 - 110	
Cadmium	0.0500	0.0511	mg/L	102	90 - 110	
Calcium	10.0	10.1	mg/L	101	90 - 110	
Chromium	0.500	0.513	mg/L	103	90 - 110	
Cobalt	0.200	0.205	mg/L	103	90 - 110	
Copper	0.500	0.513	mg/L	103	90 - 110	
Iron	4.00	4.09	mg/L	102	90 - 110	
Lead	0.500	0.515	mg/L	103	90 - 110	
Magnesium	10.0	10.2	mg/L	102	90 - 110	
Manganese	0.500	0.511	mg/L	102	90 - 110	
Nickel	0.500	0.520	mg/L	104	90 - 110	
Potassium	50.0	50.0	mg/L	100	90 - 110	
Silver	0.400	0.406	mg/L	101	90 - 110	
Sodium	50.0	50.8	mg/L	102	90 - 110	
Vanadium	1.00	1.00	mg/L	100	90 - 110	
Zinc	1.00	1.01	mg/L	101	90 - 110	

* Exceeds LIMITS Criteria



CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301810-22
 Instrument ID: ICP-THERM02 Run Time: 17:54 Method: 6010B
 File ID: T2.050709.175454 Analyst: EDA QC Key: STD
 Workgroup (AAB#): WG301762 Cal ID: ICP-TH - 07-MAY-09
 Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Barium		1.00	0.983	mg/L	98.3	90 - 110		
Beryllium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cadmium		0.0500	0.0499	mg/L	99.8	90 - 110		
Calcium		10.0	9.68	mg/L	96.8	90 - 110		
Chromium		0.500	0.501	mg/L	100	90 - 110		
Cobalt		0.200	0.201	mg/L	101	90 - 110		
Copper		0.500	0.502	mg/L	100	90 - 110		
Iron		4.00	3.95	mg/L	98.7	90 - 110		
Lead		0.500	0.500	mg/L	99.9	90 - 110		
Magnesium		10.0	9.86	mg/L	98.6	90 - 110		
Manganese		0.500	0.502	mg/L	100	90 - 110		
Nickel		0.500	0.508	mg/L	102	90 - 110		
Potassium		50.0	48.5	mg/L	96.9	90 - 110		
Silver		0.400	0.396	mg/L	99.0	90 - 110		
Sodium		50.0	49.4	mg/L	98.9	90 - 110		
Vanadium		1.00	0.987	mg/L	98.7	90 - 110		
Zinc		1.00	0.985	mg/L	98.5	90 - 110		

* Exceeds LIMITS Criteria



CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301810-24
 Instrument ID: ICP-THERM02 Run Time: 19:08 Method: 6010B
 File ID: T2.050709.190821 Analyst: EDA QC Key: STD
 Workgroup (AAB#): WG301762 Cal ID: ICP-TH - 07-MAY-09
 Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Barium		1.00	1.00	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.7	90 - 110		
Cadmium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	9.96	mg/L	99.6	90 - 110		
Chromium		0.500	0.508	mg/L	102	90 - 110		
Cobalt		0.200	0.202	mg/L	101	90 - 110		
Copper		0.500	0.508	mg/L	102	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Lead		0.500	0.503	mg/L	101	90 - 110		
Magnesium		10.0	9.90	mg/L	99.0	90 - 110		
Manganese		0.500	0.509	mg/L	102	90 - 110		
Nickel		0.500	0.510	mg/L	102	90 - 110		
Potassium		50.0	49.9	mg/L	99.8	90 - 110		
Silver		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	51.4	mg/L	103	90 - 110		
Vanadium		1.00	0.996	mg/L	99.6	90 - 110		
Zinc		1.00	0.993	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301810-26
 Instrument ID: ICP-THERM02 Run Time: 20:21 Method: 6010B
 File ID: T2.050709.202121 Analyst: EDA QC Key: STD
 Workgroup (AAB#): WG301762 Cal ID: ICP-TH - 07-MAY-09
 Matrix: WATER

Analyte	Expected	Found	UNITS	%REC	LIMITS	Q
Aluminum	10.0	10.1	mg/L	101	90 - 110	
Barium	1.00	1.01	mg/L	101	90 - 110	
Beryllium	0.0500	0.0499	mg/L	99.7	90 - 110	
Cadmium	0.0500	0.0503	mg/L	101	90 - 110	
Calcium	10.0	9.95	mg/L	99.5	90 - 110	
Chromium	0.500	0.505	mg/L	101	90 - 110	
Cobalt	0.200	0.203	mg/L	102	90 - 110	
Copper	0.500	0.511	mg/L	102	90 - 110	
Iron	4.00	4.03	mg/L	101	90 - 110	
Lead	0.500	0.506	mg/L	101	90 - 110	
Magnesium	10.0	9.99	mg/L	99.9	90 - 110	
Manganese	0.500	0.506	mg/L	101	90 - 110	
Nickel	0.500	0.511	mg/L	102	90 - 110	
Potassium	50.0	50.0	mg/L	100	90 - 110	
Silver	0.400	0.400	mg/L	100	90 - 110	
Sodium	50.0	51.2	mg/L	102	90 - 110	
Vanadium	1.00	0.994	mg/L	99.4	90 - 110	
Zinc	1.00	1.00	mg/L	100	90 - 110	

* Exceeds LIMITS Criteria

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-10
Instrument ID: ICP-THERM02	Run Time: 12:22	Method: 6010B
File ID: T2.050809.122255	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Barium		1.00	0.996	mg/L	99.6	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.3	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Calcium		10.0	9.72	mg/L	97.2	90 - 110		
Chromium		0.500	0.503	mg/L	101	90 - 110		
Cobalt		0.200	0.200	mg/L	100	90 - 110		
Copper		0.500	0.503	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Lead		0.500	0.498	mg/L	99.6	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Manganese		0.500	0.506	mg/L	101	90 - 110		
Nickel		0.500	0.501	mg/L	100	90 - 110		
Potassium		50.0	49.4	mg/L	98.8	90 - 110		
Silver		0.400	0.398	mg/L	99.6	90 - 110		
Sodium		50.0	50.1	mg/L	100	90 - 110		
Vanadium		1.00	0.993	mg/L	99.3	90 - 110		
Zinc		1.00	0.995	mg/L	99.5	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-16
Instrument ID: ICP-THERM02	Run Time: 15:13	Method: 6010B
File ID: T2.050809.151354	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Barium		1.00	1.00	mg/L	100	90 - 110		
Beryllium		0.0500	0.0513	mg/L	103	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	9.92	mg/L	99.2	90 - 110		
Chromium		0.500	0.516	mg/L	103	90 - 110		
Cobalt		0.200	0.203	mg/L	101	90 - 110		
Copper		0.500	0.515	mg/L	103	90 - 110		
Iron		4.00	4.12	mg/L	103	90 - 110		
Lead		0.500	0.494	mg/L	98.8	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Manganese		0.500	0.501	mg/L	100	90 - 110		
Nickel		0.500	0.499	mg/L	99.7	90 - 110		
Potassium		50.0	49.9	mg/L	99.8	90 - 110		
Silver		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	50.9	mg/L	102	90 - 110		
Vanadium		1.00	1.02	mg/L	102	90 - 110		
Zinc		1.00	1.03	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-18
Instrument ID: ICP-THERM02	Run Time: 16:19	Method: 6010B
File ID: T2.050809.161955	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.85	mg/L	98.5	90 - 110		
Barium		1.00	0.989	mg/L	98.9	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Cadmium		0.0500	0.0488	mg/L	97.7	90 - 110		
Calcium		10.0	9.76	mg/L	97.6	90 - 110		
Chromium		0.500	0.505	mg/L	101	90 - 110		
Cobalt		0.200	0.198	mg/L	98.8	90 - 110		
Copper		0.500	0.502	mg/L	100	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Lead		0.500	0.480	mg/L	96.1	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Manganese		0.500	0.498	mg/L	99.5	90 - 110		
Nickel		0.500	0.490	mg/L	98.0	90 - 110		
Potassium		50.0	49.3	mg/L	98.5	90 - 110		
Silver		0.400	0.394	mg/L	98.4	90 - 110		
Sodium		50.0	50.2	mg/L	100	90 - 110		
Vanadium		1.00	0.994	mg/L	99.4	90 - 110		
Zinc		1.00	0.996	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044	Run Date: 05/08/2009	Sample ID: WG301912-20
Instrument ID: ICP-THERM02	Run Time: 16:56	Method: 6010B
File ID: T2.050809.165612	Analyst: EDA	QC Key: STD
Workgroup (AAB#): WG301762	Cal ID: ICP-TH - 08-MAY-09	
Matrix: WATER		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.89	mg/L	98.9	90 - 110		
Barium		1.00	0.992	mg/L	99.2	90 - 110		
Beryllium		0.0500	0.0513	mg/L	103	90 - 110		
Cadmium		0.0500	0.0495	mg/L	99.1	90 - 110		
Calcium		10.0	9.81	mg/L	98.1	90 - 110		
Chromium		0.500	0.516	mg/L	103	90 - 110		
Cobalt		0.200	0.201	mg/L	100	90 - 110		
Copper		0.500	0.511	mg/L	102	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Lead		0.500	0.487	mg/L	97.4	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Manganese		0.500	0.496	mg/L	99.3	90 - 110		
Nickel		0.500	0.497	mg/L	99.4	90 - 110		
Potassium		50.0	49.4	mg/L	98.8	90 - 110		
Silver		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		
Vanadium		1.00	1.02	mg/L	102	90 - 110		
Zinc		1.00	1.01	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L09050044
Instrument ID: ICP-THERMO2
Sol. A : WG301810-08
Sol. AB : WG301810-09

File ID: T2.050709.113740
File ID: T2.050709.114341

Workgroup (AAB#): WG301762
Method: 6010B
Units: mg/L
Matrix: Water

ANALYTE	Sol. A			Sol. AB			Q
	True	Found	%Recovery	True	Found	%Recovery	
Aluminum	250	251	100	250	261	104	
Barium	NS	-0.000350	NS	0.250	0.256	102	
Beryllium	NS	0.0000400	NS	0.250	0.248	99.2	
Cadmium	NS	0.000100	NS	0.500	0.504	101	
Calcium	250	248	99.2	250	259	104	
Chromium	NS	0.00199	NS	0.250	0.243	97.2	
Cobalt	NS	0.00110	NS	0.250	0.242	96.8	
Copper	NS	0.00140	NS	0.250	0.249	99.6	
Iron	100	97.7	97.7	100	102	102	
Lead	NS	-0.000330	NS	0.500	0.493	98.6	
Magnesium	250	246	98.4	250	257	103	
Manganese	NS	-0.00152	NS	0.250	0.253	101	
Nickel	NS	-0.000640	NS	0.500	0.488	97.6	
Potassium	NS	-0.0145	NS	5.00	5.06	101	
Silver	NS	0.000590	NS	0.500	0.494	98.8	
Sodium	NS	0.0192	NS	5.00	5.22	104	
Vanadium	NS	0.000970	NS	0.250	0.247	98.8	
Zinc	NS	-0.00478	NS	0.500	0.474	94.8	

NS = Not spiked

* = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.

= Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L09050044
Instrument ID: ICP-THERMO2
Sol. A : WG301912-08
Sol. AB : WG301912-09

File ID: T2.050809.121059
File ID: T2.050809.121700

Workgroup (AAB#): WG301762
Method: 6010B
Units: mg/L
Matrix: Water

ANALYTE	Sol. A			Sol. AB			Q
	True	Found	%Recovery	True	Found	%Recovery	
Aluminum	250	248	99.2	250	253	101	
Barium	NS	-0.0000100	NS	0.250	0.251	100	
Beryllium	NS	0.0000100	NS	0.250	0.243	97.2	
Cadmium	NS	0.000150	NS	0.500	0.492	98.4	
Calcium	250	243	97.2	250	246	98.4	
Chromium	NS	0.00340	NS	0.250	0.239	95.6	
Cobalt	NS	0.00128	NS	0.250	0.238	95.2	
Copper	NS	0.00150	NS	0.250	0.245	98.0	
Iron	100	97.6	97.6	100	99.2	99.2	
Lead	NS	0.000880	NS	0.500	0.482	96.4	
Magnesium	250	247	98.8	250	249	99.6	
Manganese	NS	-0.000880	NS	0.250	0.248	99.2	
Nickel	NS	0.000220	NS	0.500	0.477	95.4	
Potassium	NS	0.00794	NS	5.00	5.04	101	
Silver	NS	-0.000540	NS	0.500	0.482	96.4	
Sodium	NS	-0.00198	NS	5.00	5.15	103	
Vanadium	NS	0.00126	NS	0.250	0.242	96.8	
Zinc	NS	-0.00374	NS	0.500	0.466	93.2	

NS = Not spiked

*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**

= Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050044
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	AL	AS	B	BA	BE
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0.0000210	0	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0.00250	0	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0.000249	0	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	-0.0000300	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	-0.0000120	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0.0000420	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 05/11/2009 09:37



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050044
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	CA	CO	CR	CU	FE
ALUMINUM	308.20	0	-0.000820	0	0	0
ANTIMONY	206.80	0	0	0.00950	0	0.0000560
ARSENIC	189.00	0	0	0.000490	0	-0.0000120
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0.00343	0	0	-0.000619
CADMIUM	228.80	0	0	0	0	0.0000220
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0.0000220
COBALT	228.60	0	0	0.000108	0	0
COPPER	224.70	0	0.0000770	0	0	0.000480
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	-0.0000930	-0.000172	0.000809	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	-0.0000920	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0.000100	0	0	0.0000320
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0.0000140	0	0	0	0
THALLIUM	190.80	0	0.00397	0.000276	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.0000300
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 1386882
Report generated: 05/11/2009 09:37



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050044
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	LI	MG	MN	MO	NA
ALUMINUM	308.20	0	0	0	0.0153	0
ANTIMONY	206.80	0	0	0	0.000670	0
ARSENIC	189.00	0	0	0	0.00109	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	-0.00169	0
CADMIUM	228.80	0	0	0	0.0000220	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0.000160	0	0
COBALT	228.60	0	0	0	-0.000983	0
COPPER	224.70	0	0	0	0.00274	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	-0.00183	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	-0.00190	-0.0110	0
MANGANESE	257.60	0	0.0000190	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0.000156	0
SILICON	212.40	0	0	0	0.0187	0
SILVER	328.00	0	0	0	-0.0000440	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	-0.000153	0
VANADIUM	292.40	0	0	0	-0.00778	0
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 1386882
Report generated: 05/11/2009 09:37



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050044
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	NI	SB	SN	SR	TI
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	-0.00840	0	-0.000990
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	-0.000128	0	0	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0.0000550
COBALT	228.60	0.000175	0	0	0	0.00188
COPPER	224.70	-0.0120	0	0	0	0.000269
IRON	261.20	0	0	0	0	0
LEAD	220.30	0.000110	0	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	-0.00290
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	-0.00620
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	-0.00170
TIN	189.90	0	0	0	0	-0.00220
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0.000824
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 1386882
Report generated: 05/11/2009 09:37



Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L09050044
Instrument ID: ICP-THERM02

Date: 02/02/2009
Method: 6010B

Analyte	Wave Length	V	ZN
ALUMINUM	308.20	0.00300	0
ANTIMONY	206.80	-0.00438	0
ARSENIC	189.00	0.000107	0
BARIUM	455.40	0	0
BERYLLIUM	313.00	0	0
BORON	249.70	0	0
CADMIUM	228.80	0.000102	0
CALCIUM	422.70	0	0
CHROMIUM	267.70	0	0
COBALT	228.60	0.0000200	0
COPPER	224.70	0	0
IRON	261.20	0	0
LEAD	220.30	-0.000126	0
LITHIUM	670.80	0	0
MAGNESIUM	279.10	0	0
MANGANESE	257.60	0	0
MOLYBDENUM	202.03	-0.000110	0
NICKEL	231.60	0	0
POTASSIUM	766.40	0	0
SELENIUM	196.00	0	0
SILICON	212.40	0	0
SILVER	328.00	-0.00617	0
SODIUM	589.50	0	0
STRONTIUM	407.80	0	0
THALLIUM	190.80	-0.0282	0
TIN	189.90	0	0
TITANIUM	337.30	0	0
VANADIUM	292.40	0	0
ZINC	206.20	0	0

CORR_FACTORS - Modified 03/05/2008
 PDF File ID: 1386882
 Report generated: 05/11/2009 09:37



Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L09050044
Instrument ID: ICP-THERM02

Date: 03/19/2009
Method: 6010B

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	10.00	90.0
Arsenic	10.00	90.0
Barium	10.00	90.0
Beryllium	15.00	9.0
Boron	10.00	90.0
Cadmium	10.00	18.0
Calcium	10.00	900.0
Chromium	10.00	90.0
Cobalt	10.00	90.0
Copper	10.00	180.0
Iron	5.00	900.0
Lead	10.00	180.0
Lithium	10.00	90.0
Magnesium	15.00	900.0
Manganese	15.00	180.0
Molybdenum	10.00	18.0
Nickel	10.00	90.0
Potassium	10.00	315.0
Selenium	10.00	90.0
Silicon	10.00	90.0
Silver	5.00	9.0
Sodium	10.00	315.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	90.0
Titanium	15.00	90.0
Vanadium	10.00	90.0
Zinc	10.00	45.0

Comments:

All analytes passed acceptance criteria at the specified concentration.

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac Laboratories Inc.
METALS

Microbac Login No: L09050044

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6020

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibrations: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Samples: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spike: WG301736(6020) - All acceptance criteria were met.

SAMPLES

All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: JYH

Approved: 13-MAY-09

Shirley L. Plaginsk

LABORATORY REPORT

L09050044

05/20/09 11:23

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta, OH 45750
(740) 373-4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-02	6020	1	02-MAY-09
MW-01-050109	L09050044-04	6020	1	02-MAY-09
MW-03-050109	L09050044-06	6020	1	02-MAY-09
DUP-GW--050109	L09050044-08	6020	1	02-MAY-09

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-02**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301736**
Collect Date: **05/01/2009 09:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **3015**
Analytical Method: **6020**
Analyst: **JYH**
Dilution: **1**
Units: **mg/L**

Instrument: **ELAN-ICP**
Prep Date: **05/06/2009 10:05**
Cal Date: **05/07/2009 10:16**
Run Date: **05/07/2009 12:33**
File ID: **EL.050709.123304**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0	0.00469		0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.195		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00368		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-04**
 Client ID: **MW-01-050109**
 Matrix: **Water**
 Workgroup Number: **WG301736**
 Collect Date: **05/01/2009 10:55**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3015**
 Analytical Method: **6020**
 Analyst: **JYH**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ELAN-ICP**
 Prep Date: **05/06/2009 10:05**
 Cal Date: **05/07/2009 10:16**
 Run Date: **05/07/2009 13:05**
 File ID: **EL.050709.130542**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0	0.000840	J	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.00124		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00150		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-06**
 Client ID: **MW-03-050109**
 Matrix: **Water**
 Workgroup Number: **WG301736**
 Collect Date: **05/01/2009 09:37**
 Sample Tag: **01**

PrePrep Method: **NONE**
 Prep Method: **3015**
 Analytical Method: **6020**
 Analyst: **JYH**
 Dilution: **1**
 Units: **mg/L**

Instrument: **ELAN-ICP**
 Prep Date: **05/06/2009 10:05**
 Cal Date: **05/07/2009 10:16**
 Run Date: **05/07/2009 13:11**
 File ID: **EL.050709.131159**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0	0.000280	J	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.202		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00288		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

J The analyte was positively identified, but the quantitation was below the RL

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-08**
Client ID: **DUP-GW--050109**
Matrix: **Water**
Workgroup Number: **WG301736**
Collect Date: **05/01/2009 00:01**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **3015**
Analytical Method: **6020**
Analyst: **JYH**
Dilution: **1**
Units: **mg/L**

Instrument: **ELAN-ICP**
Prep Date: **05/06/2009 10:05**
Cal Date: **05/07/2009 10:16**
Run Date: **05/07/2009 13:18**
File ID: **EL.050709.131816**

Analyte	CAS. Number	Result	Qual	RL	MDL
Antimony, Dissolved	7440-36-0		U	0.00100	0.000250
Arsenic, Dissolved	7440-38-2	0.237		0.00100	0.000250
Selenium, Dissolved	7782-49-2	0.00285		0.00100	0.000500
Thallium, Dissolved	7440-28-0		U	0.000200	0.0000500

U Not detected at or above the reporting limit (RL).

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer ELAN 6100

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Final volume

Vi = Initial volume

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in (ug/L)

Example:

0.1

100

40

1

0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Final volume

Vi = Initial volume

D = Dilution factor as a multiplier (10X = 10)

Cx = Concentration of element in (ug/kg)

Example:

0.1

200

0.5

1

40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (ug/kg)

Example:

40

80

50

50 ug/kg = 0.050 mg/kg

Perkin Elmer ELAN ICP/MS

STANDARDS KEY

QC Std 1 - ICV

QC Std 2 - ICB

QC Std 3 - CRI - Soil

QC Std 4 - CRI - Water

QC Std 5 - ICSA

QC Std 6 - ICSAB

QC Std 7 - CCV

QC Std 8 - CCB

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.0004	0.05	0.1
Sb	10	0	0.0004	0.05	0.1
As	10	0	0.0004	0.05	0.1
Ba	10	0	0.0004	0.05	0.1
Be	10	0	0.0004	0.05	0.1
Ca	1000	0	0.04	5	10
Cd	10	0	0.0004	0.05	0.1
Cr	10	0	0.0004	0.05	0.1
Co	10	0	0.0004	0.05	0.1
Cu	10	0	0.0004	0.05	0.1
Fe	1000	0	0.04	5	10
Pb	10	0	0.0004	0.05	0.1
Mg	1000	0	0.04	5	10
Mn	10	0	0.0004	0.05	0.1
Ni	10	0	0.0004	0.05	0.1
K	1000	0	0.04	5	10
Se	10	0	0.0004	0.05	0.1
Ag	10	0	0.0004	0.05	0.1
Na	1000	0	0.04	5	10
Tl	10	0	0.0004	0.05	0.1
V	10	0	0.0004	0.05	0.1
Zn	10	0	0.0004	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG301689
Analyst: VC
Spike Analyst: VC
Run Date: 05/06/2009 10:05
Method: 3015

SOP: ME407 Revision 10
Spike Solution: STD30482
Spike Witness: REK
HNO3 Lot #: COA13859
Digest tubes Lot #: COA13830

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG301689-03	BLANK	1	40 mL	100 mL	205.659 g	205.645 g		
2	WG301689-04	LCS	1	40 mL	100 mL	206.528 g	206.517 g	.25 mL	
3	L09050044-02	SAMP	1	40 mL	100 mL	205.717 g	205.685 g		05/18/09
4	L09050044-04	SAMP	1	40 mL	100 mL	206.636 g	206.616 g		05/18/09
5	L09050044-06	SAMP	1	40 mL	100 mL	206.226 g	206.21 g		05/18/09
6	L09050044-08	SAMP	1	40 mL	100 mL	206.217 g	206.19 g		05/18/09
7	L09050075-02	SAMP	1	40 mL	100 mL	205.867 g	205.84 g		05/19/09
8	L09050075-04	SAMP	1	40 mL	100 mL	207.214 g	207.191 g		05/19/09
9	L09050075-06	SAMP	1	40 mL	100 mL	207.734 g	207.679 g		05/19/09
10	L09050075-08	SAMP	1	40 mL	100 mL	206.716 g	206.682 g		05/19/09
11	L09050090-01	SAMP	1	40 mL	100 mL	209.251 g	209.237 g		05/15/09
12	WG301689-01	REF	1	40 mL	100 mL	207.229 g	207.216 g		
13	L09050090-02	SAMP	1	40 mL	100 mL	207.229 g	207.216 g		05/15/09
14	WG301689-02	REF	2	40 mL	100 mL	208.417 g	208.383 g		
15	L09050093-01	SAMP	2	40 mL	100 mL	208.417 g	208.383 g		05/07/09
16	WG301689-05	MS	1	40 mL	100 mL	206.504 g	206.496 g	.25 mL	
17	WG301689-06	MSD	1	40 mL	100 mL	206.343 g	206.332 g	.25 mL	
18	WG301689-07	DUP	1	40 mL	100 mL	205.043 g	205.035 g		

Analyst: Veech Collins

Reviewer: [Signature]

Microbac Laboratories Inc.
Instrument Run Log

Instrument: ELAN-ICP Dataset: 050709A.REP
 Analyst1: JYH Analyst2: N/A
 Method: 6020 SOP: ME700 Rev: 5
 Maintenance Log ID: 28647

Calibration Std: STD32234 ICV/CCV Std: STD32127 Post Spike: STD27580
 ICSA: STD32228 ICSAB: STD32229 Int. Std: STD32010

Workgroups: 301736,301683,301823

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	EL.050709.095351	Blank	Blank		1		05/07/09 09:53
2	EL.050709.095934	WG301812-01	Calibration Point		1		05/07/09 09:59
3	EL.050709.100518	WG301812-02	Calibration Point		1		05/07/09 10:05
4	EL.050709.101102	WG301812-03	Calibration Point		1		05/07/09 10:11
5	EL.050709.101646	WG301812-04	Calibration Point		1		05/07/09 10:16
6	EL.050709.102232	WG301812-05	Initial Calibration Verification		1		05/07/09 10:22
7	EL.050709.102926	WG301812-06	Initial Calib Blank		1		05/07/09 10:29
8	EL.050709.103622	WG301812-07	CRQL Check Solid		1		05/07/09 10:36
9	EL.050709.104320	WG301812-08	CRQL Check Water		1		05/07/09 10:43
10	EL.050709.105018	WG301812-09	Interference Check		1		05/07/09 10:50
11	EL.050709.105715	WG301812-10	Interference Check		1		05/07/09 10:57
12	EL.050709.110411	WG301812-11	CCV		1		05/07/09 11:04
13	EL.050709.111106	WG301812-12	CCB		1		05/07/09 11:11
14	EL.050709.114916	WG301689-03	Method/Prep Blank	40/100	1		05/07/09 11:49
15	EL.050709.115533	WG301689-04	Laboratory Control S	40/100	1		05/07/09 11:55
16	EL.050709.120149	WG301689-01	Reference Sample		1	L09050090-02	05/07/09 12:01
17	EL.050709.120803	WG301689-05	Matrix Spike	40/100	1	L09050090-02	05/07/09 12:08
18	EL.050709.121418	WG301689-06	Matrix Spike Duplica	40/100	1	L09050090-02	05/07/09 12:14
19	EL.050709.122033	L09050093-01	OUTFALL 002/COMP	40/100	2	WG301689-02	05/07/09 12:20
20	EL.050709.122648	WG301689-07	Duplicate	40/100	2	L09050093-01	05/07/09 12:26
21	EL.050709.123304	L09050044-02	BBLD-PIT-SSP-050109	40/100	1		05/07/09 12:33
22	EL.050709.123920	WG301736-01	Post Digestion Spike		1	L09050044-02	05/07/09 12:39
23	EL.050709.124536	WG301736-02	Serial Dilution		5	L09050044-02	05/07/09 12:45
24	EL.050709.125213	WG301812-13	CCV		1		05/07/09 12:52
25	EL.050709.125907	WG301812-14	CCB		1		05/07/09 12:59
26	EL.050709.130542	L09050044-04	MW-01-050109	40/100	1		05/07/09 13:05
27	EL.050709.131159	L09050044-06	MW-03-050109	40/100	1		05/07/09 13:11
28	EL.050709.131816	L09050044-08	DUP-GW--050109	40/100	1		05/07/09 13:18
29	EL.050709.132434	L09050075-02	MW-17-050409	40/100	1		05/07/09 13:24
30	EL.050709.133050	L09050075-04	MW-16S-050409	40/100	1		05/07/09 13:30
31	EL.050709.133705	L09050075-06	MW-16I-050409	40/100	1		05/07/09 13:37
32	EL.050709.134320	L09050075-08	MW-21-050409	40/100	5		05/07/09 13:43
33	EL.050709.134935	L09050090-01	TW 11S	40/100	1		05/07/09 13:49
34	EL.050709.135611	WG301812-15	CCV		1		05/07/09 13:56
35	EL.050709.140305	WG301812-16	CCB		1		05/07/09 14:03
36	EL.050709.140938	IDL1	IDL1		1		05/07/09 14:09
37	EL.050709.141551	IDL2	IDL2		1		05/07/09 14:15

Page: 1 Approved: May 08, 2009

Maren Beery



Microbac Laboratories Inc.
Instrument Run Log

Instrument: ELAN-ICP Dataset: 050709A.REP
 Analyst1: JYH Analyst2: N/A
 Method: 6020 SOP: ME700 Rev: 5
 Maintenance Log ID: 28647

Calibration Std: STD32234 ICV/CCV Std: STD32127 Post Spike: STD27580
 ICSA: STD32228 ICSAB: STD32229 Int. Std: STD32010

Workgroups: 301736,301683,301823

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	EL.050709.142447	IDL3	IDL3		1		05/07/09 14:24
39	EL.050709.143101	IDL4	IDL4		1		05/07/09 14:31
40	EL.050709.143715	IDL5	IDL5		1		05/07/09 14:37
41	EL.050709.144329	IDL6	IDL6		1		05/07/09 14:43
42	EL.050709.144944	IDL7	IDL7		1		05/07/09 14:49
43	EL.050709.145559	L09050075-08	MW-21-050409	40/100	50		05/07/09 14:55
44	EL.050709.150235	WG301812-17	CCV		1		05/07/09 15:02
45	EL.050709.150929	WG301812-18	CCB		1		05/07/09 15:09
46	EL.050709.155359	WG301436-03	Method/Prep Blank	40/100	1		05/07/09 15:53
47	EL.050709.160015	WG301436-04	Laboratory Control S	40/100	1		05/07/09 16:00
48	EL.050709.161010	L09050091-04	0905-230-4	40/100	1	WG301650-01	05/07/09 16:10
49	EL.050709.161626	WG301650-05	Duplicate	40/100	1	L09050091-04	05/07/09 16:16
50	EL.050709.162240	L09050063-01	TW 63D	40/100	1		05/07/09 16:22
51	EL.050709.162914	WG301812-19	CCV		1		05/07/09 16:29
52	EL.050709.163609	WG301812-20	CCB		1		05/07/09 16:36
53	EL.050709.164241	L09050063-01	TW 63D		1		05/07/09 16:42
54	EL.050709.164915	WG301812-21	CCV		1		05/07/09 16:49
55	EL.050709.165610	WG301812-22	CCB		1		05/07/09 16:56
56	EL.050709.170243	L09050063-02	TW 63D	40/100	1		05/07/09 17:02
57	EL.050709.170856	L09050063-03	TW 63S	40/100	1		05/07/09 17:08
58	EL.050709.171510	L09050063-04	TW 63S	40/100	1		05/07/09 17:15
59	EL.050709.172124	L09050063-05	TW 16D	40/100	1		05/07/09 17:21
60	EL.050709.172738	L09050063-06	TW 16D	40/100	1		05/07/09 17:27
61	EL.050709.173353	L09050063-07	TW 16S	40/100	1		05/07/09 17:33
62	EL.050709.174008	L09050063-08	TW 16S	40/100	1		05/07/09 17:40
63	EL.050709.174624	L09050063-09	TW 11D	40/100	1		05/07/09 17:46
64	EL.050709.175240	L09050063-10	TW 11D	40/100	1		05/07/09 17:52
65	EL.050709.175915	WG301812-23	CCV		1		05/07/09 17:59
66	EL.050709.180610	WG301812-24	CCB		1		05/07/09 18:06
67	EL.050709.181244	WG301436-01	Reference Sample		1	L09050041-05	05/07/09 18:12
68	EL.050709.181901	WG301436-05	Matrix Spike	40/100	1	L09050041-05	05/07/09 18:19
69	EL.050709.182516	WG301436-06	Matrix Spike Duplica	40/100	1	L09050041-05	05/07/09 18:25
70	EL.050709.183129	L09050041-01	TW65D	40/100	1		05/07/09 18:31
71	EL.050709.183744	L09050041-02	TW65D	40/100	1		05/07/09 18:37
72	EL.050709.184358	L09050041-03	TW57D	40/100	1		05/07/09 18:43
73	EL.050709.185013	WG301823-01	Post Digestion Spike		1	L09050041-03	05/07/09 18:50
74	EL.050709.185628	WG301823-02	Serial Dilution		5	L09050041-03	05/07/09 18:56

Page: 2 Approved: May 08, 2009

Maren Beery



Microbac Laboratories Inc.

Instrument Run Log

Instrument: ELAN-ICP Dataset: 050709A.REP
 Analyst1: JYH Analyst2: N/A
 Method: 6020 SOP: ME700 Rev: 5
 Maintenance Log ID: 28647

Calibration Std: STD32234 ICV/CCV Std: STD32127 Post Spike: STD27580
 ICSA: STD32228 ICSAB: STD32229 Int. Std: STD32010

Workgroups: 301736,301683,301823

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
75	EL.050709.190303	WG301812-25	CCV		1		05/07/09 19:03
76	EL.050709.190958	WG301812-26	CCB		1		05/07/09 19:09
77	EL.050709.191632	L09050041-04	TW57D	40/100	1		05/07/09 19:16
78	EL.050709.192248	WG301436-02	Reference Sample		1	L09050041-06	05/07/09 19:22
79	EL.050709.192905	WG301436-07	Matrix Spike	40/100	1	L09050041-06	05/07/09 19:29
80	EL.050709.193521	WG301436-08	Matrix Spike Duplica	40/100	1	L09050041-06	05/07/09 19:35
81	EL.050709.194138	L09050041-11	TW65S	40/100	1		05/07/09 19:41
82	EL.050709.194756	L09050041-12	TW65S	40/100	1		05/07/09 19:47
83	EL.050709.195412	L09050041-13	EQUIP RINSE	40/100	1		05/07/09 19:54
84	EL.050709.200026	L09050041-14	EQUIP RINSE	40/100	1		05/07/09 20:00
85	EL.050709.200701	WG301812-27	CCV		1		05/07/09 20:07
86	EL.050709.201356	WG301812-28	CCB		1		05/07/09 20:13

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Maren Beery



Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2009

Analyst: JYH

Analyst: NA

Method: 6020

Instrument: ELAN

Curve Workgroup: 301812

Runlog ID: 27967

Analytical Workgroups: 301736,301683,301823

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	X
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	
Case Narrative	044,075,090,093,041
Client Forms	X
Level X	
Level 3	075,044
Level 4	090,063,041
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	MMB
Comments	

Primary Reviewer:


Secondary Reviewer:
08-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020
Login Number: L09050044

AAB#: WG301736

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-03-050109	05/01/09	05/02/09	05/06/09	180	5.02	05/07/09	180	1.13	
MW-01-050109	05/01/09	05/02/09	05/06/09	180	4.97	05/07/09	180	1.13	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/06/09	180	5.05	05/07/09	180	1.10	
DUP-GW--050109	05/01/09	05/02/09	05/06/09	180	5.42	05/07/09	180	1.13	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1386152
Report generated 05/07/2009 14:23



METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: EL.050709.114916
 Prep Date: 05/06/09 10:05
 Analyzed Date: 05/07/09 11:49
 Analyst: JYH

Work Group: WG301736
 Blank Sample ID: WG301689-03
 Instrument ID: ELAN-ICP
 Method: 6020

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301689-04	EL.050709.115533	05/07/09 11:55	01
DUP	WG301689-07	EL.050709.122648	05/07/09 12:26	DL01
BBLD-PIT-SSP-050109	L09050044-02	EL.050709.123304	05/07/09 12:33	01
MW-01-050109	L09050044-04	EL.050709.130542	05/07/09 13:05	01
MW-03-050109	L09050044-06	EL.050709.131159	05/07/09 13:11	01
DUP-GW--050109	L09050044-08	EL.050709.131816	05/07/09 13:18	01



METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/06/09 10:05 Sample ID: WG301689-03
Instrument ID: ELAN-ICP Run Date: 05/07/09 11:49 Prep Method: 3015
File ID: EL.050709.114916 Analyst: JYH Method: 6020
Workgroup (AAB#): WG301736 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: ELAN-I - 07-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Antimony, Dissolved	0.000250	0.00100	0.000250	1	U
Arsenic, Dissolved	0.000250	0.00100	0.000250	1	U
Selenium, Dissolved	0.000500	0.00100	0.000500	1	U
Thallium, Dissolved	0.0000500	0.000200	0.0000500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386154

07-MAY-2009 14:24



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: <u>L09050044</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301689-04</u>
Instrument ID: <u>ELAN-ICP</u>	Run Time: <u>11:55</u>	Prep Method: <u>3015</u>
File ID: <u>EL.050709.115533</u>	Analyst: <u>JYH</u>	Method: <u>6020</u>
Workgroup (AAB#): <u>WG301736</u>	Matrix: <u>Water</u>	Units: <u>mg/L</u>
QC Key: <u>STD</u>	Lot#: <u>STD30482</u>	Cal ID: <u>ELAN-I - 07-MAY-09</u>

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Dissolved	0.0625	0.0605	96.8	80 - 120	
Arsenic, Dissolved	0.0625	0.0608	97.3	80 - 120	
Selenium, Dissolved	0.0625	0.0630	101	80 - 120	
Thallium, Dissolved	0.0625	0.0583	93.2	80 - 120	

LCS - Modified 03/06/2008
 PDF File ID: 1386155
 Report generated: 05/07/2009 14:24



MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L09050044 Cal ID: ELAN-ICP - Worknum: WG301736
 Instrument ID: ELAN-ICP Contract #: _____ Method: 6020
 Parent ID: WG301689-01 File ID: EL.050709.120149 Dil: 1 Matrix: WATER
 Sample ID: WG301689-05 MS File ID: EL.050709.120803 Dil: 1 Units: mg/L
 Sample ID: WG301689-06 MSD File ID: EL.050709.121418 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Dissolved	ND	0.0625	0.0624	99.9	0.0625	0.0603	96.5	3.38	75 - 125	20	
Arsenic, Dissolved	0.000756	0.0625	0.0585	92.4	0.0625	0.0560	88.3	4.41	75 - 125	20	
Selenium, Dissolved	0.00186	0.0625	0.0538	83.0	0.0625	0.0522	80.6	2.89	75 - 125	20	
Thallium, Dissolved	0.0000530	0.0625	0.0615	98.3	0.0625	0.0596	95.3	3.11	75 - 125	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

Microbac Laboratories Inc.
Serial Dilution Report

Login: L09050044 **Worknum:** WG301736
Instrument: ELAN-ICP **Method:** 6020
Serial Dil: WG301736-02 **File ID:** EL.050709.124536 **Dil:** 5 **Units:** ug/L
Sample: L09050044-02 **File ID:** EL.050709.123304 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.87	X	2.215	X	18.40	
Arsenic	78		79		1.28	
Selenium	1.47	X	1.945	F	32.30	
Thallium	ND	U	ND	U		

U = Result is below MDL.

F = Result is greater than or equal to MDL and less than the RL.

X = Result is greater than or equal to RL and less than 100 times the MDL.

E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008

PDF File ID: 1386150

05/07/2009 14:24



Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050044

Worknum: WG301736

Instrument ID: ELAN-ICP

Method: 6020

Post Spike ID: WG301736-01

File ID: EL.050709.123920

Dil: 1

Units: ug/L

Sample ID: L09050044-02

File ID: EL.050709.123304

Dil: 1

Matrix: Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.3		1.87		50	96.9	75 - 125	
ARSENIC	128		78.0		50	99.7	75 - 125	
SELENIUM	50.6		1.47		50	98.3	75 - 125	
THALLIUM	53.1		0	U	50	106.2	75 - 125	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	<u>L09050044</u>	Workgroup (AAB#):	<u>WG301736</u>
Analytical Method:	<u>6020</u>	Instrument ID:	<u>ELAN-ICP</u>
ICAL Worknum:	<u>WG301812</u>	Initial Calibration Date:	<u>07-MAY-2009 10:16</u>

	WG301812-01		WG301812-02		WG301812-03		WG301812-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	40.2	.4	3290	50	365000	100	715000	.999972	
ARSENIC	0	-646	.4	407	50	135000	100	263000	.999977	
SELENIUM	0	4.52	.4	90.9	50	12200	100	23800	.999985	
THALLIUM	0	112	.4	4160	50	507000	100	974000	.999984	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
***** = Out of Compliance; R < 0.995

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-06
Instrument ID: ELAN-ICP Run Time: 10:29 Method: 6020
File ID: EL.050709.102926 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301736 Cal ID: ELAN-ICP - 07-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ARSENIC	.1	.4	.1	U
ANTIMONY	.1	.4	.129	F
SELENIUM	.2	.4	.2	U
THALLIUM	.02	.08	.02	U

ICB - Modified 03/06/2008
PDF File ID: 1386162
Report generated 05/07/2009 14:24



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-12
Instrument ID: ELAN-ICP Run Time: 11:11 Method: 6020
File ID: EL.050709.111106 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301736 Cal ID: ELAN-I - 07-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.100	0.400	0.116	F
Arsenic	0.100	0.400	0.102	F
Selenium	0.200	0.400	0.200	U
Thallium	0.0200	0.0800	0.0225	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1386165
Report generated 05/07/2009 14:24



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-14
Instrument ID: ELAN-ICP Run Time: 12:59 Method: 6020
File ID: EL.050709.125907 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301736 Cal ID: ELAN-I - 07-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.100	0.400	0.100	U
Arsenic	0.100	0.400	0.120	F
Selenium	0.200	0.400	0.200	U
Thallium	0.0200	0.0800	0.0200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1386165
Report generated 05/07/2009 14:24



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-16
Instrument ID: ELAN-ICP Run Time: 14:03 Method: 6020
File ID: EL.050709.140305 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301736 Cal ID: ELAN-I - 07-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.100	0.400	0.100	U
Arsenic	0.100	0.400	0.100	U
Selenium	0.200	0.400	0.200	U
Thallium	0.0200	0.0800	0.0200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1386165
Report generated 05/07/2009 14:24



Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-05
Instrument ID: ELAN-ICP Run Time: 10:22 Method: 6020
File ID: EL.050709.102232 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG301736 Cal ID: ELAN-I - 07-MAY-09
QC Key: STD

Analyte	Expected	Found	%REC	LIMITS	Q
Antimony	50	49.3	98.7	90 - 110	
Arsenic	50	48.9	97.8	90 - 110	
Selenium	50	50.9	102	90 - 110	
Thallium	50	47.9	95.9	90 - 110	

* Exceeds LIMITS Limit



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: <u>L09050044</u>	Run Date: <u>05/07/2009</u>	Sample ID: <u>WG301812-11</u>
Instrument ID: <u>ELAN-ICP</u>	Run Time: <u>11:04</u>	Method: <u>6020</u>
File ID: <u>EL.050709.110411</u>	Analyst: <u>JYH</u>	QC Key: <u>STD</u>
Workgroup (AAB#): <u>WG301736</u>	Cal ID: <u>ELAN-I - 07-MAY-09</u>	
Matrix: <u>WATER</u>		

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	50.4	ug/L	101	90 - 110		
Arsenic		50.0	51.5	ug/L	103	90 - 110		
Selenium		50.0	54.2	ug/L	108	90 - 110		
Thallium		50.0	49.3	ug/L	98.6	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-13
Instrument ID: ELAN-ICP Run Time: 12:52 Method: 6020
File ID: EL.050709.125213 Analyst: JYH QC Key: STD
Workgroup (AAB#): WG301736 Cal ID: ELAN-I - 07-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	47.7	ug/L	95.3	90 - 110		
Arsenic		50.0	47.1	ug/L	94.1	90 - 110		
Selenium		50.0	49.5	ug/L	99.0	90 - 110		
Thallium		50.0	47.3	ug/L	94.7	90 - 110		

* Exceeds LIMITS Criteria



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-15
Instrument ID: ELAN-ICP Run Time: 13:56 Method: 6020
File ID: EL.050709.135611 Analyst: JYH QC Key: STD
Workgroup (AAB#): WG301736 Cal ID: ELAN-I - 07-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		50.0	48.0	ug/L	95.9	90 - 110		
Arsenic		50.0	48.3	ug/L	96.6	90 - 110		
Selenium		50.0	52.3	ug/L	105	90 - 110		
Thallium		50.0	47.6	ug/L	95.2	90 - 110		

* Exceeds LIMITS Criteria



**Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES**

Login number: L09050044
Instrument ID: ELAN-ICP
Sol. A : WG301812-09
Sol. AB : WG301812-10

File ID: EL.050709.105018
File ID: EL.050709.105715

Workgroup (AAB#): WG301736
Method: 6020
Units: ug/L
Matrix: Water

ANALYTE	Sol. A			Sol. AB			Q
	True	Found	%Recovery	True	Found	%Recovery	
Antimony	NS	-0.00640	NS	100	103	103	
Arsenic	NS	0.0135	NS	100	105	105	
Selenium	NS	-0.00150	NS	100	118	118	
Thallium	NS	0.0117	NS	100	97.1	97.1	

NS = Not spiked

*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**

= Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).

Login Number: L09050044 Run Date: 05/07/2009 Sample ID: WG301812-08
Instrument ID: ELAN-ICP Run Time: 10:43 Prep Method: 3015
File ID: EL.050709.104320 Analyst: JYH Method: 6020
Workgroup (AAB#): WG301812 Matrix: Water Units: ug/L
Contract #: _____ Cal ID: ELAN-ICP - 07-MAY-2009 10:16

Analytes	Expected	Found	% Rec	Limits	Q
Antimony, Dissolved	NS	-----	-----	----- - 150	NO LIM
Arsenic, Dissolved	NS	-----	-----	----- - 150	NO LIM
Selenium, Dissolved	NS	-----	-----	----- - 150	NO LIM
Thallium, Dissolved	NS	-----	-----	----- - 150	NO LIM



INTERNAL STANDARD REPORT

Login: L09050044 Analytical Method: 6020
 Analytical Workgroup: WG301736 Matrix: 1
 Instrument: ELAN-ICP Analyst: JYH
 ICAL Date: 07-MAY-2009 09:59

Sample	Type	Run Date	BISMUTH	GERMANIUM	INDIUM	TERBIUM
			% Rec	% Rec	% Rec	% Rec
L09050044-02	SAMP	07-MAY-2009 12:33	68.78	73.46	73.634	79.545
L09050044-04	SAMP	07-MAY-2009 13:05	101.761	97.585	96.062	98.113
L09050044-06	SAMP	07-MAY-2009 13:11	83.386	87.767	88.503	91.242
L09050044-08	SAMP	07-MAY-2009 13:18	85.233	91.007	92.379	94.98
WG301689-01	REF	07-MAY-2009 12:01	96.235	93.629	91.023	93.882
WG301689-02	REF	07-MAY-2009 12:20	98.749	91.423	85.385	89.389
WG301689-03	BLANK	07-MAY-2009 11:49	100.821	98.23	99.053	98.004
WG301689-04	LCS	07-MAY-2009 11:55	102.637	95.432	98.671	97.961
WG301689-05	MS	07-MAY-2009 12:08	93.14	89.22	85.578	89.048
WG301689-06	MSD	07-MAY-2009 12:14	93.129	88.829	84.148	88.472
WG301689-07	DUP	07-MAY-2009 12:26	98.623	91.281	85.602	89.249
WG301736-01	PSPK	07-MAY-2009 12:39	70.615	77.114	78.214	83.612
WG301736-02	SERIAL	07-MAY-2009 12:45	93.137	90.261	89.22	93.59
WG301812-05	ICV	07-MAY-2009 10:22	98.647	97.795	98.033	98.118
WG301812-06	ICB	07-MAY-2009 10:29	98.12	97.727	98.586	98.859
WG301812-11	CCV	07-MAY-2009 11:04	96.642	93.292	97.057	95.981
WG301812-12	CCB	07-MAY-2009 11:11	100.466	96.522	97.243	97.054
WG301812-13	CCV	07-MAY-2009 12:52	101.931	95.136	95.036	96.404
WG301812-14	CCB	07-MAY-2009 12:59	102.8	96.458	95.865	96.422
WG301812-15	CCV	07-MAY-2009 13:56	103.432	97.258	101.143	99.185
WG301812-16	CCB	07-MAY-2009 14:03	104.756	98.407	103.491	100.318

Acceptance criteria: 30% - 120%
 Underlined recoveries are out of range

INT_STD_ICPMS - Modified 03/05/2008
 PDF File ID: 1386159
 Report generated: 05/07/2009 14:24



Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L09050044

Date: 04/01/2009

Instrument ID: ELAN-ICP

Method: 6020

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:

All analytes passed acceptance criteria at the specified concentration.

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac Laboratories Inc.
METALS

Microbac Login No: L09050044

METHOD

Preparation: SW-846 7470A

Analysis: SW-846 7470A

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibrations: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spike: WG301611(7470A) - All acceptance criteria were met.

SAMPLES

All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: ADC

Approved: 13-MAY-09

Shirley L. Plabon

LABORATORY REPORT

L09050044

05/20/09 11:24

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-02	7470A	1	02-MAY-09
MW-01-050109	L09050044-04	7470A	1	02-MAY-09
MW-03-050109	L09050044-06	7470A	1	02-MAY-09
DUP-GW--050109	L09050044-08	7470A	1	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-02**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **05/01/2009 09:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:41**
File ID: **HY.050809.154110**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-04**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **05/01/2009 10:55**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:42**
File ID: **HY.050809.154253**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: L09050044-06	PrePrep Method: NONE	Instrument: HYDRA
Client ID: MW-03-050109	Prep Method: 7470A	Prep Date: 05/05/2009 07:45
Matrix: Water	Analytical Method: 7470A	Cal Date: 05/08/2009 14:43
Workgroup Number: WG301611	Analyst: ADC	Run Date: 05/08/2009 15:45
Collect Date: 05/01/2009 09:37	Dilution: 1	File ID: HY.050809.154504
Sample Tag: 01	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-08**
Client ID: **DUP-GW--050109**
Matrix: **Water**
Workgroup Number: **WG301611**
Collect Date: **05/01/2009 00:01**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **7470A**
Analytical Method: **7470A**
Analyst: **ADC**
Dilution: **1**
Units: **mg/L**

Instrument: **HYDRA**
Prep Date: **05/05/2009 07:45**
Cal Date: **05/08/2009 14:43**
Run Date: **05/08/2009 15:46**
File ID: **HY.050809.154647**

Analyte	CAS. Number	Result	Qual	RL	MDL
Mercury, Dissolved	7439-97-6		U	0.000200	0.000100

U Not detected at or above the reporting limit (RL).

2.3.3.2 QC Summary Data

Example Cold Vapor Mercury Calculations

Hydra AA Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters

The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Diluted to Volume (mL)

Vi = Aliquot Volume (mL)

D = Manual dilution factor, if required (10X = 10)

Cx = Concentration of element in ppb (ug/L)

Example:

0.1

40

40

1

0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:

Cs = Concentration computed by the data system (ug/L)

Vf = Diluted to volume (mL)

Ws = Aliquot weight (g)

D = Manual dilution factor

Cx = Concentration of element in ug/kg

Example:

0.1

40

0.6

1

6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Cx = Concentration calculated as received (wet basis)

Px = Percent solids of sample (%wt)

$Cdry$ = Concentration calculated as dry weight (ug/kg)

6.67

80

8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG301538

Analyst: REK

Spike Analyst: REK

Method: 7470A

Run Date: 05/05/2009 07:45

Hotblock Start Temp: 94.1 @ 07:40

Hotblock End Temp: 95.6 @ 09:40

SOP: ME404 Revision 11

Spike Solution: STD32634

Spike Witness: VC

H2SO4 Lot #: COA13254

HN03 Lot #: COA13771

Digest tubes Lot #: COA13830

KMn04 1:1 Lot #: RGT13758

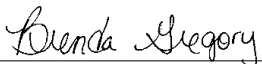
K2S208 1:1 Lot #: RGT13759

Mercury Water ICV Lot #: STD32636

HG H2O STDS 10PPM Lot #: STD32642

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG301538-02	BLANK	1	40 mL	40 mL		
2	WG301460-01	FBLK	17	4 mL	40 mL		
3	WG301538-03	LCS	1	40 mL	40 mL	4 mL	
4	L09040727-02	SAMP	1	40 mL	40 mL		05/14/09
5	L09040727-04	SAMP	1	40 mL	40 mL		05/14/09
6	L09040727-06	SAMP	1	40 mL	40 mL		05/14/09
7	L09040727-08	SAMP	1	40 mL	40 mL		05/14/09
8	L09040727-10	SAMP	1	40 mL	40 mL		05/14/09
9	L09050017-01	SAMP	17	4 mL	40 mL		05/12/09
10	L09050017-02	SAMP	17	4 mL	40 mL		05/12/09
11	L09050017-03	SAMP	17	4 mL	40 mL		05/12/09
12	L09050017-05	SAMP	17	4 mL	40 mL		05/12/09
13	WG301538-01	REF	1	40 mL	40 mL		
14	L09050029-02	RS02	1	40 mL	40 mL		05/12/09
15	WG301538-04	MS	1	36 mL	40 mL	4 mL	
16	L09050029-04	MS02	1	36 mL	40 mL	4 mL	05/12/09
17	WG301538-05	MSD	1	36 mL	40 mL	4 mL	
18	L09050029-06	SD02	1	36 mL	40 mL	4 mL	05/12/09
19	L09050029-08	SAMP	1	40 mL	40 mL		05/12/09
20	L09050029-10	SAMP	1	40 mL	40 mL		05/12/09
21	L09050029-12	SAMP	1	40 mL	40 mL		05/12/09
22	L09050029-14	SAMP	1	40 mL	40 mL		05/12/09
23	L09050044-02	SAMP	1	40 mL	40 mL		05/18/09
24	L09050044-04	SAMP	1	40 mL	40 mL		05/18/09
25	L09050044-06	SAMP	1	40 mL	40 mL		05/18/09
26	L09050044-08	SAMP	1	40 mL	40 mL		05/18/09

Analyst: 

Reviewer: 

Microbac Laboratories Inc.
Instrument Run Log

Instrument: HYDRA Dataset: 050809B.PRN
 Analyst1: ADC Analyst2: N/A
 Method: 7470A SOP: 404 Rev: 11
 Maintenance Log ID: 28662

Calibration Std: STD32642 ICV/CCV Std: STD32636 Post Spike: STD32642
 ICSA: N/A ICSAB: N/A Int. Std: _____

Workgroups: WG301611

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	HY.050809.143412	WG302041-01	Calibration Point		1		05/08/09 14:34
2	HY.050809.143556	WG302041-02	Calibration Point		1		05/08/09 14:35
3	HY.050809.143751	WG302041-03	Calibration Point		1		05/08/09 14:37
4	HY.050809.143935	WG302041-04	Calibration Point		1		05/08/09 14:39
5	HY.050809.144128	WG302041-05	Calibration Point		1		05/08/09 14:41
6	HY.050809.144315	WG302041-06	Calibration Point		1		05/08/09 14:43
7	HY.050809.144532	WG302041-07	Initial Calibration Verification		1		05/08/09 14:45
8	HY.050809.144718	WG302041-08	Initial Calib Blank		1		05/08/09 14:47
9	HY.050809.144900	WG302041-09	CCV		1		05/08/09 14:49
10	HY.050809.145055	WG302041-10	CCB		1		05/08/09 14:50
11	HY.050809.145358	WG301538-02	Method/Prep Blank	40/40	1		05/08/09 14:53
12	HY.050809.145549	WG301538-03	Laboratory Control S	40/40	1		05/08/09 14:55
13	HY.050809.145752	WG301460-01	Fluid Blank		1		05/08/09 14:57
14	HY.050809.145939	L09040727-02	MW-06-042909	40/40	1		05/08/09 14:59
15	HY.050809.150127	L09040727-04	MW-14-042909	40/40	1		05/08/09 15:01
16	HY.050809.150316	L09040727-06	MW-25-042909	40/40	1		05/08/09 15:03
17	HY.050809.150501	L09040727-08	MW-18-042909	40/40	1		05/08/09 15:05
18	HY.050809.150642	L09040727-10	MW-20-042909	40/40	1		05/08/09 15:06
19	HY.050809.150829	L09050017-01	GM090027	4/40	1		05/08/09 15:08
20	HY.050809.151014	WG301611-01	Post Digestion Spike		1	L09050017-01	05/08/09 15:10
21	HY.050809.151201	WG302041-11	CCV		1		05/08/09 15:12
22	HY.050809.151353	WG302041-12	CCB		1		05/08/09 15:13
23	HY.050809.151537	L09050017-02	GM090028	4/40	1		05/08/09 15:15
24	HY.050809.151720	L09050017-03	GM090029	4/40	1		05/08/09 15:17
25	HY.050809.151932	L09050017-05	GM090031	4/40	1		05/08/09 15:19
26	HY.050809.152136	L09050029-02	MW-09R-043009	40/40	1	WG301538-01	05/08/09 15:21
27	HY.050809.152402	L09050029-04	MW-09R-043009-MS	36/40	1	WG301538-04	05/08/09 15:24
28	HY.050809.152546	L09050029-06	MW-09R-043009-MSD	36/40	1	WG301538-05	05/08/09 15:25
29	HY.050809.152740	L09050029-08	MW-13-043009	40/40	1		05/08/09 15:27
30	HY.050809.152922	WG301611-02	Post Digestion Spike		1	L09050029-08	05/08/09 15:29
31	HY.050809.153105	L09050029-10	MW-19-043009	40/40	1		05/08/09 15:31
32	HY.050809.153248	L09050029-12	PZ-01-043009	40/40	1		05/08/09 15:32
33	HY.050809.153430	WG302041-13	CCV		1		05/08/09 15:34
34	HY.050809.153654	WG302041-14	CCB		1		05/08/09 15:36
35	HY.050809.153918	L09050029-14	PZ-03-043009	40/40	1		05/08/09 15:39
36	HY.050809.154110	L09050044-02	BBLD-PIT-SSP-050109	40/40	1		05/08/09 15:41
37	HY.050809.154253	L09050044-04	MW-01-050109	40/40	1		05/08/09 15:42

Page: 1 Approved: May 12, 2009

Maren Beery



Microbac Laboratories Inc.

Instrument Run Log

Instrument: HYDRA Dataset: 050809B.PRN
 Analyst1: ADC Analyst2: N/A
 Method: 7470A SOP: 404 Rev: 11
 Maintenance Log ID: 28662

Calibration Std: STD32642 ICV/CCV Std: STD32636 Post Spike: STD32642
 ICSA: N/A ICSAB: N/A Int. Std: _____

Workgroups: WG301611

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
38	HY.050809.154504	L09050044-06	MW-03-050109	40/40	1		05/08/09 15:45
39	HY.050809.154647	L09050044-08	DUP-GW--050109	40/40	1		05/08/09 15:46
40	HY.050809.154833	WG302041-15	CCV		1		05/08/09 15:48
41	HY.050809.155020	WG302041-16	CCB		1		05/08/09 15:50

Page: 2 Approved: May 12, 2009

Maren Beery



Microbac Laboratories Inc.

Data Checklist

Date: 08-MAY-2009

Analyst: ADC

Analyst: NA

Method: 7470A

Instrument: HYDRA

Curve Workgroup: WG302041

Runlog ID: 28014

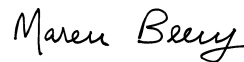
Analytical Workgroups: WG301611

Calibration/Linearity	X
ICV/CCV	X
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0727, 0017, 0029, 0044
Client Forms	X
Level X	
Level 3	0727, 0029, 0044
Level 4	
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	ADC
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
11-MAY-2009



Secondary Reviewer:
12-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method:7470A

AAB#:WG301611

Login Number:L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
DUP-GW--050109	05/01/09	05/02/09	05/05/09	28	4.32	05/08/09	28	3.33	
MW-03-050109	05/01/09	05/02/09	05/05/09	28	3.92	05/08/09	28	3.33	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	28	3.95	05/08/09	28	3.33	
MW-01-050109	05/01/09	05/02/09	05/05/09	28	3.87	05/08/09	28	3.33	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID:1388925
Report generated 05/11/2009 15:52



METHOD BLANK SUMMARY

Login Number: <u>L09050044</u>	Work Group: <u>WG301611</u>
Blank File ID: <u>HY.050809.145358</u>	Blank Sample ID: <u>WG301538-02</u>
Prep Date: <u>05/05/09 07:45</u>	Instrument ID: <u>HYDRA</u>
Analyzed Date: <u>05/08/09 14:53</u>	Method: <u>7470A</u>
Analyst: <u>ADC</u>	

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301538-03	HY.050809.145549	05/08/09 14:55	01
BBLD-PIT-SSP-050109	L09050044-02	HY.050809.154110	05/08/09 15:41	01
MW-01-050109	L09050044-04	HY.050809.154253	05/08/09 15:42	01
MW-03-050109	L09050044-06	HY.050809.154504	05/08/09 15:45	01
DUP-GW--050109	L09050044-08	HY.050809.154647	05/08/09 15:46	01

Report Name: BLANK_SUMMARY
 PDF File ID: 1388926
 Report generated 05/11/2009 15:52



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 07:45 Sample ID: WG301538-02
Instrument ID: HYDRA Run Date: 05/08/09 14:53 Prep Method: 7470A
File ID: HY.050809.145358 Analyst: ADC Method: 7470A
Workgroup (AAB#): WG301611 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: HYDRA - 08-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Mercury, Dissolved	0.000100	0.000200	0.000100	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1388927

11-MAY-2009 15:52



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG301538-03
Instrument ID: HYDRA Run Time: 14:55 Prep Method: 7470A
File ID: HY.050809.145549 Analyst: ADC Method: 7470A
Workgroup (AAB#): WG301611 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD32634 Cal ID: HYDRA - 08-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury, Dissolved	0.00400	0.00420	105	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 1388928
Report generated: 05/11/2009 15:53



MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L09050044 Cal ID: HYDRA - Worknum: WG301611
 Instrument ID: HYDRA Contract #: _____ Method: 7470A
 Parent ID: WG301538-01 File ID: HY.050809.152136 Dil: 1 Matrix: WATER
 Sample ID: WG301538-04 MS File ID: HY.050809.152402 Dil: 1 Units: mg/L
 Sample ID: WG301538-05 MSD File ID: HY.050809.152546 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury, Dissolved	ND	0.00444	0.00483	109	0.00444	0.00503	113	4.05	85 - 115	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050044

Worknum: WG301611

Instrument ID: HYDRA

Method: 7470A

Post Spike ID: WG301611-01

File ID: HY.050809.151014

Dil: 1

Units: ug/L

Sample ID: L09050017-01

File ID: HY.050809.150829

Dil: 1

Matrix: Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.09		0	U	1	109.0	85 - 115	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation



Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L09050044

Worknum: WG301611

Instrument ID: HYDRA

Method: 7470A

Post Spike ID: WG301611-02

File ID: HY.050809.152922

Dil: 1

Units: ug/L

Sample ID: L09050029-08

File ID: HY.050809.152740

Dil: 1

Matrix: Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	0.984		0	U	1	98.4	85 - 115	

N = % Recovery exceeds control limits

F = Result is between MDL and RL

U = Sample result is below MDL. A value of zero is used in the calculation



Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L09050044
Analytical Method: 7470A
ICAL Worknum: WG302041

Workgroup (AAB#): WG301611
Instrument ID: HYDRA
Initial Calibration Date: 05/08/2009 14:43

Analyte	WG302041-01		WG302041-02		WG302041-03		WG302041-04		WG302041-05		WG302041-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-11	0.200	833	1.00	3949	2.00	8001	5.00	20202	10.0	41044

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995



Login Number: L09050044
Analytical Method: 7470A
ICAL Worknum: WG302041

Workgroup (AAB#): WG301611
Instrument ID: HYDRA
Initial Calibration Date: 05/08/2009 14:43

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; $R < 0.995$

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-08
Instrument ID: HYDRA Run Time: 14:47 Method: 7471
File ID: HY.050809.144718 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.2	.1	U

ICB - Modified 03/06/2008
PDF File ID: 1388932
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-10
Instrument ID: HYDRA Run Time: 14:50 Method: 7470A
File ID: HY.050809.145055 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388934
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-12
Instrument ID: HYDRA Run Time: 15:13 Method: 7470A
File ID: HY.050809.151353 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388934
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-14
Instrument ID: HYDRA Run Time: 15:36 Method: 7470A
File ID: HY.050809.153654 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388934
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-16
Instrument ID: HYDRA Run Time: 15:50 Method: 7470A
File ID: HY.050809.155020 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 1388934
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-07
Instrument ID: HYDRA Run Time: 14:45 Method: 7470A
File ID: HY.050809.144532 Analyst: ADC Units: ug/L
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
QC Key: STD

Analyte	Expected	Found	%REC	LIMITS	Q
Mercury	2	1.96	98.0	90 - 110	

* Exceeds LIMITS Limit

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-09
Instrument ID: HYDRA Run Time: 14:49 Method: 7470A
File ID: HY.050809.144900 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00193	mg/L	96.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388933
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-11
Instrument ID: HYDRA Run Time: 15:12 Method: 7470A
File ID: HY.050809.151201 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00195	mg/L	97.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388933
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-13
Instrument ID: HYDRA Run Time: 15:34 Method: 7470A
File ID: HY.050809.153430 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00192	mg/L	96.0	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388933
Report generated 05/11/2009 15:53



Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L09050044 Run Date: 05/08/2009 Sample ID: WG302041-15
Instrument ID: HYDRA Run Time: 15:48 Method: 7470A
File ID: HY.050809.154833 Analyst: ADC QC Key: STD
Workgroup (AAB#): WG301611 Cal ID: HYDRA - 08-MAY-09
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00191	mg/L	95.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 1388933
Report generated 05/11/2009 15:53



2.4 General Chemistry Data

KEMRON ENVIRONMENTAL SERVICES
GENERAL CHEMISTRY**KEMRON Login No.:** L0508590**METHOD****Analysis:** See report for method reference.**HOLDING TIMES****Sample Preparation:** All holding times were met.**Sample Analysis:** Nitrate is analyzed by subtracting the nitrite result from the nitrate-nitrite result. The nitrite was analyzed within the 48 hour hold time. Nitrate-nitrite has a 28 day hold, so the analysis was performed within hold.**PREPARATION**

Sample preparation proceeded normally.

BATCH QA/QC**Method Blank:** All acceptance criteria were met.**Laboratory Control Sample:** All acceptance criteria were met.**Duplicates:** All acceptance criteria were met.**Matrix Spikes:** All acceptance criteria were met.**SAMPLES**

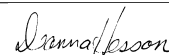
Nitrate

Samples L09050044 (01, 03, 05) had an interference with the cadmium coil used in this method. The samples were diluted to remove the interference. The reporting limits are elevated accordingly.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: DIH

Approved: 07-MAY-09



2.4.1 Alkalinity Data

2.4.1.1 Summary Data

LABORATORY REPORT

L09050044

05/20/09 11:24

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	310.2	20	02-MAY-09
MW-01-050109	L09050044-03	310.2	1	02-MAY-09
MW-03-050109	L09050044-05	310.2	10	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301679**
Collect Date: **05/01/2009 09:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **310.2**
Analytical Method: **310.2**
Analyst: **DIH**
Dilution: **20**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/06/2009 10:29**
Cal Date: **05/06/2009 10:14**
Run Date: **05/06/2009 10:29**
File ID: **SC090506002.035**

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		3630		200	100

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301646**
Collect Date: **05/01/2009 10:55**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **310.2**
Analytical Method: **310.2**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/06/2009 09:19**
Cal Date: **05/06/2009 08:46**
Run Date: **05/06/2009 09:19**
File ID: **SC090506001.062**

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		168		10.0	5.00

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: L09050044-05	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-03-050109	Prep Method: 310.2	Prep Date: 05/06/2009 09:19
Matrix: Water	Analytical Method: 310.2	Cal Date: 05/06/2009 08:46
Workgroup Number: WG301646	Analyst: DIH	Run Date: 05/06/2009 09:19
Collect Date: 05/01/2009 09:37	Dilution: 10	File ID: SC090506001.063
Sample Tag: DL01	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Alkalinity, Total		1160		100	50.0

2.4.1.2 QC Summary Data

Example Alkalinity (Colormetric) Calculations

$$(\text{absorbance} - \text{intercept})/(\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAY-2009

Analyst: DIH

Analyst: NA

Method: ALK

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

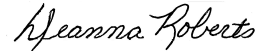
Analytical Workgroups: WG301645 WG301646

Calibration/Linearity	5/6/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.

Data Checklist

Date: 06-MAY-2009

Analyst: DIH

Analyst: NA

Method: ALK

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

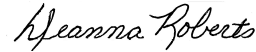
Analytical Workgroups: WG301679

Calibration/Linearity	5/6/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2

AAB#: WG301646

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-03-050109	05/01/09	05/02/09	05/06/09	14	4.99	05/06/09	14	4.99	
MW-01-050109	05/01/09	05/02/09	05/06/09	14	4.93	05/06/09	14	4.93	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2
Login Number: L09050044

AAB#: WG301679

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/06/09	14	5.06	05/06/09	14	5.06	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS



METHOD BLANK SUMMARY

Login Number: <u>L09050044</u>	Work Group: <u>WG301646</u>
Blank File ID: <u>SC090506001.036</u>	Blank Sample ID: <u>WG301646-01</u>
Prep Date: <u>05/06/09 09:03</u>	Instrument ID: <u>SMARTCHEM</u>
Analyzed Date: <u>05/06/09 09:03</u>	Method: <u>310.2</u>
Analyst: <u>DIH</u>	

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301646-02	SC090506001.037	05/06/09 09:04	01
LCS2	WG301646-03	SC090506001.038	05/06/09 09:04	01
DUP	WG301646-05	SC090506001.060	05/06/09 09:18	DL01
MW-01-050109	L09050044-03	SC090506001.062	05/06/09 09:19	01
MW-03-050109	L09050044-05	SC090506001.063	05/06/09 09:19	DL01

Report Name: BLANK_SUMMARY
 PDF File ID: 1386313
 Report generated 05/07/2009 15:18



METHOD BLANK SUMMARY

Login Number: L09050044
Blank File ID: SC090506002.010
Prep Date: 05/06/09 10:15
Analyzed Date: 05/06/09 10:15
Analyst: DIH

Work Group: WG301679
Blank Sample ID: WG301679-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301679-02	SC090506002.011	05/06/09 10:15	01
LCS2	WG301679-03	SC090506002.012	05/06/09 10:16	01
DUP	WG301679-05	SC090506002.030	05/06/09 10:27	DL01
BBLD-PIT-SSP-050109	L09050044-01	SC090506002.035	05/06/09 10:29	DL01



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/06/09 09:03 Sample ID: WG301646-01
Instrument ID: SMARTCHEM Run Date: 05/06/09 09:03 Prep Method: 310.2
File ID: SC090506001.036 Analyst: DIH Method: 310.2
Workgroup (AAB#): WG301646 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 06-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Alkalinity, Total	5.00	10.0	-6.51	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386314

07-MAY-2009 15:18



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/06/09 10:15 Sample ID: WG301679-01
Instrument ID: SMARTCHEM Run Date: 05/06/09 10:15 Prep Method: 310.2
File ID: SC090506002.010 Analyst: DIH Method: 310.2
Workgroup (AAB#): WG301679 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 06-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Alkalinity, Total	5.00	10.0	-16.1	1	*

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386314

07-MAY-2009 15:18



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: DIH Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG301646 Units: mg/L
QC Key: STD Lot #: STD32223
Sample ID: WG301646-02 LCS File ID: SC090506001.037 Run Date: 05/06/2009 09:04
Sample ID: WG301646-03 LCS2 File ID: SC090506001.038 Run Date: 05/06/2009 09:04

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total	200	210	105	200	204	102	2.56	85 - 115	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 1386315
Report generated: 05/07/2009 15:18



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: DIH Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG301679 Units: mg/L
QC Key: STD Lot #: STD32223
Sample ID: WG301679-02 LCS File ID: SC090506002.011 Run Date: 05/06/2009 10:15
Sample ID: WG301679-03 LCS2 File ID: SC090506002.012 Run Date: 05/06/2009 10:16

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total	200	198	99.0	200	197	98.5	0.489	85 - 115	25	



2.4.1.3 Raw Data

SMARTCHEM RUN LOG

301646

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup _____
 Plan # 20090506001
- 2) Workgroup _____
 Plan # _____
- 3) Workgroup _____
 Plan # _____

Analyte	1	2	3
User Prepared Curve	ALK		
SC Prepared Curve			
Position			
1-1	ICV 250		
1-2	BIK		
1-3	LCS 200		
1-4	LCS DUP		
1-5	05-027-01		
1-6	05-035-02	1/4	color
1-7	03	↓	↓
1-8	05	↓	↓
1-9	06	↓	↓
1-10	08	↓	↓
1-11	09	↓	↓
1-12	05-041-01		B,C
1-13	03		↓
1-14	05		↓
1-15	07		↓
1-16	09		↓
1-17	11		↓
1-18	13		↓
1-19	05-085-02	1/4	color
1-20	03	↓	↓
1-21	05	↓	↓
1-22	06	↓	↓
2-1	DUP 06	↓	↓
2-2	BIK		
2-3	LCS		

Analyte	1	2	3
Position			
2-4	LCS		
2-5	05-085-07	1/50	
2-6	05-033-02		T,C
2-7	03	1/2	↓
2-8	04		↓
2-9	05		↓
2-10	06	1/2	↓
2-11	07		↓
2-12	05-047-02	1/10	x T,C
2-13	03		↓
2-14	04		↓
2-15	05	1/2	↓
2-16	07		↓
2-17	05-029-01	1/5	
2-18	07		•
2-19	09	1/2	
2-20	11	1/2	
2-21	13	1/2	
2-22	05-069-02	DUP 029-02 1/2	
2-23	05-044-01	1/10	•
2-24	03		
2-25	05	1/10	
2-26	R 05-047-02		T,C
3-1			
3-2	R 05-047-03	1/2	• T,C

NOTES:

- * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

DCN#79329



Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3			
3-4			
3-5			
3-6			
3-7			
3-8			
3-9			
3-10			
3-11			
3-12			
3-13			
3-14			
3-15			

Analyte	1	2	3
Position			
3-16			
3-17			
3-18			
3-19			
3-20			
3-21			
3-22			
3-23			
3-24			
3-25			
3-26			
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl⁻ E
☐ Sulfate EPA 375.4
☒ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO₃ F

☐ Ammonia EPA 350.1/SM 4500-NH₃ B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte	ALK		
SOP & Revision	K 3102		
Curve Stock (SC made)	std 31639		
Curve ID (user made)			
ICV	std 32222		
CCV	std 32224		
LCS	std 32223		
MS			
	Dilution N/A		

Comments: all 05-041, 05-033, 05-047 pH < 8.3

Analyst: Deanna Roberts Date: 5/6/09

DCN#79329



Deanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.7351	0.00		8:40:54 AM
DIL-1	RBL	0.00	0.7399	0.00		8:41:12 AM
DIL-1	RBL	0.00	0.7286	0.00		8:42:06 AM
DIL-1	Std-1	0.00	0.0025	0.00	INV	8:42:24 AM
SR5-1	Std-2	10.00	-0.0161	0.00		8:43:18 AM
SR5-2	Std-3	20.00	-0.0232	0.00		8:43:36 AM
SR5-3	Std-4	50.00	-0.0720	0.00		8:44:30 AM
SR5-4	Std-5	100.00	-0.1390	0.00		8:44:48 AM
SR5-5	Std-6	200.00	-0.3057	0.00		8:45:42 AM
SR5-6	Std-7	250.00	-0.3924	0.00		8:46:00 AM
SR5-7	Std-8	300.00	-0.4771	0.00		8:46:54 AM
1	ICV 250	260.42	-0.4077	0.00		8:47:12 AM
2	WG301645-01 BLANK	-13.44	0.0210	0.00	INV,><,LL	8:48:06 AM
3	WG301645-02 LCS	202.77	-0.3083	0.00		8:48:24 AM
4	WG301645-03 LCSDUP	200.68	-0.3048	0.00		8:49:18 AM
5	L09050027-01	54.35	-0.0761	0.00		8:49:36 AM
6	L09050035-02 (4)	275.02	-0.4339	0.00		8:50:30 AM
7	L09050035-03 (4)	168.98	-0.2527	0.00		8:50:49 AM
8	L09050035-05 (4)	286.28	-0.4544	0.00		8:51:43 AM
9	L09050035-06 (4)	183.46	-0.2763	0.00		8:52:01 AM
10	L09050035-08 (4)	147.78	-0.2187	0.00		8:52:55 AM
ST-2	CCV (200 mg/L)	210.27	-0.3209	105.14		8:53:13 AM
ST-3	CCB (0 mg/L)	-18.60	0.0282	0.00	INV,><,LL	8:54:07 AM
11	L09050035-09 (4)	241.32	-0.3741	0.00		8:54:25 AM
12	L09050041-01	195.51	-0.2962	0.00		8:55:19 AM
13	L09050041-03	239.31	-0.3706	0.00		8:55:37 AM
14	L09050041-05	195.69	-0.2965	0.00		8:56:31 AM
15	L09050041-07	197.02	-0.2987	0.00		8:56:49 AM
16	L09050041-09	195.75	-0.2966	0.00		8:57:43 AM
17	L09050041-11	175.51	-0.2633	0.00		8:58:01 AM
18	L09050041-13	4.41	-0.0041	0.00		8:58:55 AM
19	L09050085-02 (4)	252.79	-0.3942	0.00		8:59:13 AM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506001
Plan Description : ALK-A-DIH/5/6/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	L09050085-03 (4)	182.24	-0.2743	0.00		9:00:07 AM
ST-2	CCV (200 mg/L)	204.38	-0.3110	102.19		9:00:25 AM
ST-3	CCB (0 mg/L)	-4.09	0.0079	0.00	INV,><,LL	9:01:19 AM
21	L09050085-05 (4)	253.70	-0.3958	0.00		9:01:37 AM
22	L09050085-06 (4)	167.75	-0.2507	0.00		9:02:31 AM
23	WG301646-05 (4) DUP	176.98	-0.2657	0.00		9:02:49 AM
24	WG301646-01 BLK	-6.51	0.0113	0.00	INV,><,LL	9:03:43 AM
25	WG301646-02 LCS	209.56	-0.3197	0.00		9:04:01 AM
26	WG301646-03 LCSDUP	204.26	-0.3108	0.00		9:04:55 AM
27	L09050085-07 (50)	116.82	-0.1702	0.00		9:05:13 AM
28	L09050033-02	72.13	-0.1024	0.00		9:06:07 AM
29	L09050033-03 (2)	195.99	-0.2970	0.00		9:06:25 AM
30	L09050033-04	91.31	-0.1312	0.00		9:07:19 AM
ST-2	CCV (200 mg/L)	211.58	-0.3231	105.79		9:07:37 AM
ST-3	CCB (0 mg/L)	-3.03	0.0064	0.00	INV,><,LL	9:08:31 AM
31	L09050033-05	141.91	-0.2094	0.00		9:08:49 AM
32	L09050033-06 (2)	295.12	-0.4707	0.00		9:09:43 AM
33	L09050033-07	69.03	-0.0978	0.00		9:10:01 AM
34	L09050047-02 ~~2X~~ (10)	11.03 ~~X~~	-0.0135	0.00		9:10:55 AM
35	L09050047-03	387.61 ~~X~~	-0.6531	0.00	><,LH	9:11:13 AM
36	L09050047-04	54.62	-0.0765	0.00		9:12:07 AM
37	L09050047-05 (2)	103.09	-0.1491	0.00		9:12:25 AM
38	L09050047-07	295.82	-0.4720	0.00		9:13:19 AM
39	L09050029-01 (5)	147.34	-0.2180	0.00		9:13:37 AM
40	L09050029-07	321.71 ~~X~~	-0.5208	0.00	><,LH	9:14:31 AM
ST-2	CCV (200 mg/L)	193.64	-0.2931	96.82		9:14:49 AM
ST-3	CCB (0 mg/L)	0.73	0.0011	0.00	INV	9:15:43 AM
41	L09050029-09 (2)	224.76	-0.3455	0.00		9:16:01 AM
42	L09050029-11 (2)	282.18	-0.4469	0.00		9:16:55 AM
43	L09050029-13 (2)	232.03	-0.3580	0.00		9:17:13 AM
44	WG301646-05 (2) DUP	234.99	-0.3631	0.00		9:18:07 AM
45	L09050044-01 (10)	315.27 ~~X~~	-0.5085	0.00	><,LH	9:18:25 AM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506001
Plan Description : ALK-A-DIH/5/6/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
46	L09050044-03	168.00	-0.2511	0.00		9:19:19 AM
47	L09050044-05 (10)	115.65	-0.1684	0.00		9:19:37 AM
48	ID 48 05-047-02	41.28	-0.0570	0.00		9:20:31 AM
49	ID 49	20.00	X -0.0263	0.00		9:20:49 AM
50	ID 50 05-047-03(2)	379.88	X -0.6369	0.00	><,LH	9:21:44 AM
ST-2	CCV (200 mg/L)	215.36	-0.3295	107.68		9:22:01 AM
ST-3	CCB (0 mg/L)	0.31	0.0017	0.00	INV	9:22:55 AM
35-[1/2]	L09050047-03	761.77	X -0.6390	0.00	><,LH	9:30:36 AM
40-[1/2]	L09050029-07	384.39	X -0.2907	0.00	LH	9:31:48 AM
45-[1/2]	L09050044-01 (10)	411.39	X -0.3132	0.00	LH	9:33:00 AM
50-[1/2]	ID 50 047-03(2)	682.76	X -0.5590	0.00	><,LH	9:34:12 AM
ST-2	CCV (200 mg/L)	219.89	X -0.3372	109.95		9:34:12 AM
ST-3	CCB (0 mg/L)	12.23	X -0.0152	0.00		9:35:06 AM
35-[1/4]	L09050047-03	1377.69	X -0.5650	0.00	><,LH	9:42:46 AM
50-[1/4]	ID 50	826.59	-0.3148	0.00	LH	9:43:58 AM
ST-2	CCV (200 mg/L)	213.77	-0.3268	106.88		9:43:58 AM
ST-3	CCB (0 mg/L)	11.67	-0.0144	0.00		9:44:52 AM
35-[1/10]	L09050047-03	186.76	-0.0244	0.00		9:52:32 AM
ST-2	CCV (200 mg/L)	206.59	-0.3147	103.29		9:52:32 AM
ST-3	CCB (0 mg/L)	20.70	X -0.0273	0.00		9:53:26 AM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506001
Plan Description : ALK-A-DIH/5/6/2009

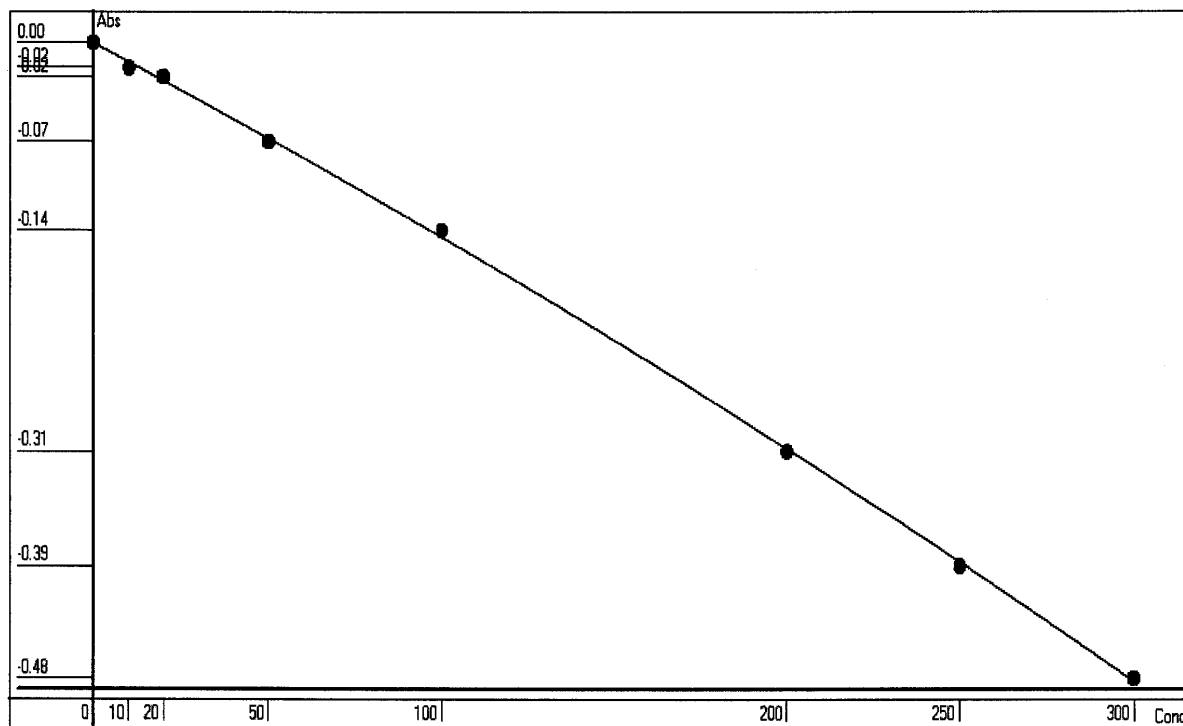
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090506001 Description : [ALK-A-DIH/5/6/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0025	0	-0.2615	-26.15
2	-0.0161	10	12.8604	28.60
3	-0.0232	20	17.8367	-10.82
4	-0.0720	50	51.5522	3.10
5	-0.1390	100	96.4554	-3.54
6	-0.3057	200	201.2144	0.61
7	-0.3924	250	251.7725	0.71
8	-0.4771	300	298.5698	-0.48

Conc= -178.7258*Abso^2 -707.9076*Abso +1.5094 R²=0.9996

RBL
0.7375
0

Report Date 5/6/2009 Run Date 5/6/2009

Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup
Plan # 20090506002
- 2) Workgroup
Plan # _____
- 3) Workgroup
Plan # _____

Analyte	1	2	3
User Prepared Curve	ALK		
SC Prepared Curve			
Position			
1-1	ICV 250		
1-2	BIK		
1-3	LCS 200		
1-4	LCS DUP		
1-5	05-069-02		
1-6	05-090-01		B,C
1-7	05-057-02	1/3	T,C
1-8	05	1/5	↓
1-9	08	1/5	
1-10	09		↓
1-11	05-063-01		B,C
1-12	03		↓
1-13	05		
1-14	07		↓
1-15	09		↓
1-16	05-075-01	1/2	
1-17	03	1/2	
1-18	05	1/2	
1-19	07	1/100	
1-20	DUP 07	↓	
1-21	05-047-03	1/10	BTC
1-22	05-029-07	1/2	
2-1	05-044-01	1/20	
2-2			
2-3			

NOTES:

- * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

Position	1	2	3
2-4			
2-5			
2-6			
2-7			
2-8			
2-9			
2-10			
2-11			
2-12			
2-13			
2-14			
2-15			
2-16			
2-17			
2-18			
2-19			
2-20			
2-21			
2-22			
2-23			
2-24			
2-25			
2-26			
3-1			
3-2			

DCN#79335



Kearna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3			
3-4			
3-5			
3-6			
3-7			
3-8			
3-9			
3-10			
3-11			
3-12			
3-13			
3-14			
3-15			

Analyte	1	2	3
Position			
3-16			
3-17			
3-18			
3-19			
3-20			
3-21			
3-22			
3-23			
3-24			
3-25			
3-26			
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl⁻ E
☐ Sulfate EPA 375.4
☒ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO₃ F

☐ Ammonia EPA 350.1/SM 4500-NH₃ B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte	AIK		
SOP & Revision	K 3102		
Curve Stock (SC made)			
Curve ID (user made)	std 31639		
ICV	std 32222		
CCV	std 32224		
LCS	std 32223		
MS			
	Dilution N/A		

Comments: all 05-090, 05-057, 05-063, 05-047 pH < 8.3

Analyst: Deanne Brown

Date: 5/6/09

DCN#79335



Deanne Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.6557	0.00		10:08:00 AM
DIL-1	RBL	0.00	0.6498	0.00		10:08:18 AM
DIL-1	RBL	0.00	0.6537	0.00		10:09:12 AM
DIL-1	Std-1	0.00	-0.0026	0.00		10:09:30 AM
SR5-1	Std-2	10.00	-0.0153	0.00		10:10:24 AM
SR5-2	Std-3	20.00	-0.0270	0.00		10:10:42 AM
SR5-3	Std-4	50.00	-0.0702	0.00		10:11:36 AM
SR5-4	Std-5	100.00	-0.1400	0.00		10:11:54 AM
SR5-5	Std-6	200.00	-0.3009	0.00		10:12:48 AM
SR5-6	Std-7	250.00	-0.3734	0.00		10:13:06 AM
SR5-7	Std-8	300.00	-0.4541	0.00		10:14:00 AM
1	ICV 250	249.19	-0.3730	0.00		10:14:18 AM
2	WG301679-01 BLANK	-16.08	0.0223	0.00	INV,><,LL	10:15:12 AM
3	WG301679-02 LCS	198.00	-0.2923	0.00		10:15:30 AM
4	WG301679-03 LCSDUP	197.03	-0.2908	0.00		10:16:24 AM
5	L09050069-02	275.05	-0.4147	0.00		10:16:42 AM
6	L09050090-01	187.48	-0.2760	0.00		10:17:36 AM
7	L09050057-02 (3)	132.12	-0.1918	0.00		10:17:54 AM
8	L09050057-05 (5)	174.54	-0.2561	0.00		10:18:48 AM
9	L09050057-08 (5)	95.41	-0.1373	0.00		10:19:06 AM
10	L09050057-09	73.26	-0.1049	0.00		10:20:00 AM
ST-2	CCV (200 mg/L)	204.11	-0.3018	102.05		10:20:18 AM
ST-3	CCB (0 mg/L)	-17.45	0.0242	0.00	INV,><,LL	10:21:13 AM
11	L09050063-01	284.99	-0.4309	0.00		10:21:31 AM
12	L09050063-03	41.18	-0.0586	0.00		10:22:24 AM
13	L09050063-05	279.60	-0.4221	0.00		10:22:43 AM
14	L09050063-07	204.81	-0.3029	0.00		10:23:37 AM
15	L09050063-09	266.66	-0.4011	0.00		10:23:55 AM
16	L09050075-01 (2)	284.50	-0.4301	0.00		10:24:49 AM
17	L09050075-03 (2)	222.17	-0.3301	0.00		10:25:07 AM
18	L09050075-05 (2)	195.87	-0.2890	0.00		10:26:01 AM
19	L09050075-07 (100)	145.42	-0.2118	0.00		10:26:19 AM

Report Date :05/06/2009

Run Date :5/6/2009

Operator : WESTCO

Plan # :20090506002

Plan Description : ALK-B-DIH/5/6/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WALK -Unit [mg/L] - EPA 310.2 Alkalinity

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	WG301679-07 (100)	136.25	-0.1980	0.00		10:27:13 AM
ST-2	CCV (200 mg/L)	211.02	-0.3126	105.51		10:27:31 AM
ST-3	CCB (0 mg/L)	-7.21	0.0099	0.00	INV,><,LL	10:28:25 AM
21	L09050047-03 (5)(10)	146.28	-0.2131	0.00		10:28:43 AM
22	L09050029-07 (2)	170.23	-0.2495	0.00		10:29:37 AM
23	L09050044-01 (20)	181.57	-0.2669	0.00		10:29:55 AM
24	ID 24	9.51	-0.0136	0.00		10:30:49 AM
25	ID 25	12.84	-0.0183	0.00		10:31:07 AM
ST-2	CCV (200 mg/L)	205.64	-0.3042	102.82		10:32:01 AM
ST-3	CCB (0 mg/L)	-4.85	0.0066	0.00	INV,><,LL	10:32:19 AM

Report Date :05/06/2009

Run Date :5/6/2009

Operator : WESTCO

Plan # :20090506002

Plan Description : ALK-B-DIH/5/6/2009

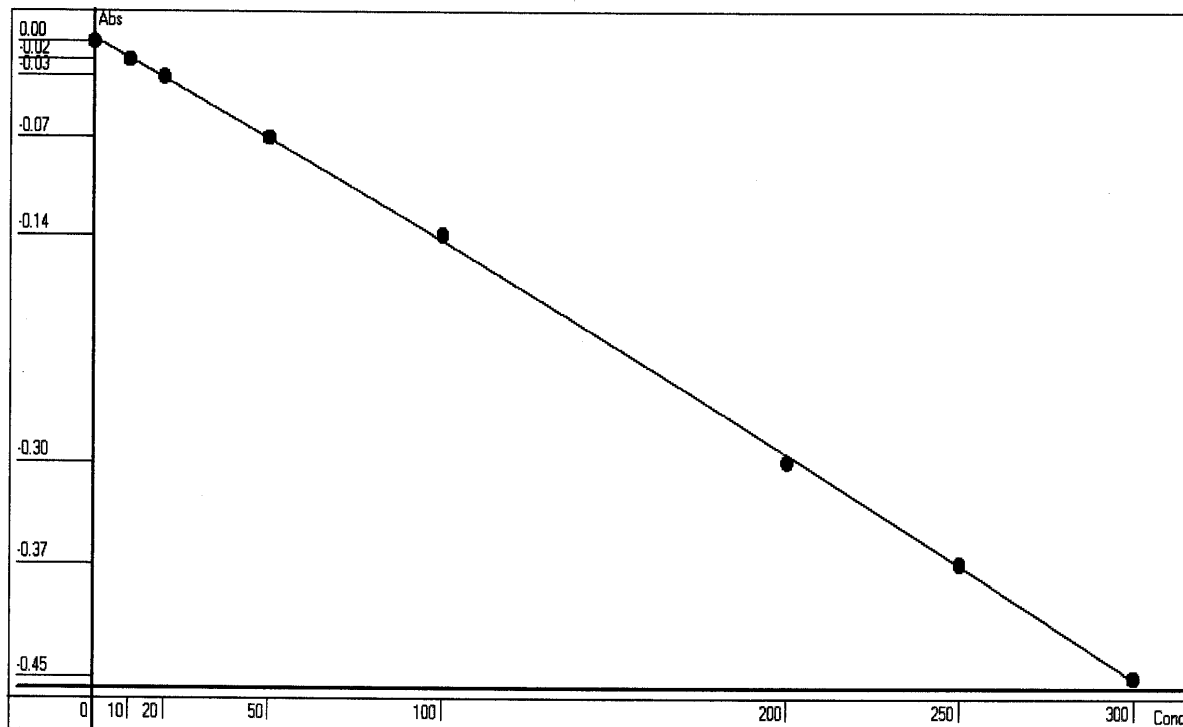
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090506002 Description : [ALK-B-DIH/5/6/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0026	0	1.7030	170.30
2	-0.0153	10	10.7189	7.19
3	-0.0270	20	18.9915	-5.04
4	-0.0702	50	49.2600	-1.48
5	-0.1400	100	97.2455	-2.75
6	-0.3009	200	203.5281	1.76
7	-0.3734	250	249.4435	-0.22
8	-0.4541	300	299.1093	-0.30

Conc= -116.6921*Abso^2 -712.0004*Abso -0.1474 R²=0.9997

RBL
0.6547
0

Report Date 5/6/2009 Run Date 5/6/2009

Heanna Roberts

Approved: May 10, 2009

2.4.2 Ferrous Iron Data

2.4.2.1 Summary Data

LABORATORY REPORT

L09050044

05/20/09 11:24

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	SM3500	5	02-MAY-09
MW-01-050109	L09050044-03	SM3500	1	02-MAY-09
MW-03-050109	L09050044-05	SM3500	1	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301750**
Collect Date: **05/01/2009 09:00**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **DIH**
Dilution: **5**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/07/2009 08:40**
Cal Date:
Run Date: **05/07/2009 08:40**
File ID: **1V.0905070840-05**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6	0.106	J	0.200	0.100

J The analyte was positively identified, but the quantitation was below the RL

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301750**
Collect Date: **05/01/2009 10:55**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/07/2009 08:40**
Cal Date:
Run Date: **05/07/2009 08:40**
File ID: **1V.0905070840-06**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6		U	0.0400	0.0200

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
Client ID: **MW-03-050109**
Matrix: **Water**
Workgroup Number: **WG301750**
Collect Date: **05/01/2009 09:37**

PrePrep Method: **NONE**
Prep Method: **SM3500**
Analytical Method: **SM3500**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **UV-120-1V**
Prep Date: **05/07/2009 08:40**
Cal Date:
Run Date: **05/07/2009 08:40**
File ID: **1V.0905070840-07**

Analyte	CAS. Number	Result	Qual	RL	MDL
Iron, Ferrous	7439-89-6	0.509		0.0400	0.0200

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation

b = intercept from the linear equation

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

$$y = mx + b$$

Step 3: Solve for analyte concentration in sample, Cy

$$C_y = (y) (D)$$

Example Calculation (LCS):

Value of m from plot:	2.7599
Value of b from plot:	0.0153
Absorbance of unknown from quantitation report (x):	0.3765
Calculated concentration (y):	1.05440235
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	1.05 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

$$y = Ax^2 + Bx + C$$

Step 3: Solve for analyte concentration in sample, Cy

$$C_y = (y) (D)$$

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2009

Analyst: DIH

Analyst: NA

Method: FERROUS

Instrument: UV-120-1V

Curve Workgroup: NA

Runlog ID: _____

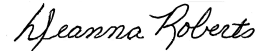
Analytical Workgroups: WG301750

Calibration/Linearity	2/12/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM3500

AAB#: WG301750

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/07/09	7	5.99	05/07/09	7	5.99	
MW-03-050109	05/01/09	05/02/09	05/07/09	7	5.96	05/07/09	7	5.96	
MW-01-050109	05/01/09	05/02/09	05/07/09	7	5.91	05/07/09	7	5.91	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1386369
Report generated 05/07/2009 15:25



METHOD BLANK SUMMARY

Login Number: L09050044
Blank File ID: 1V.0905070840-02
Prep Date: 05/07/09 08:40
Analyzed Date: 05/07/09 08:40
Analyst: DIH

Work Group: WG301750
Blank Sample ID: WG301750-01
Instrument ID: UV-120-1V
Method: SM3500

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301750-02	1V.0905070840-03	05/07/09 08:40	
LCS2	WG301750-03	1V.0905070840-04	05/07/09 08:40	
BBLD-PIT-SSP-050109	L09050044-01	1V.0905070840-05	05/07/09 08:40	
MW-01-050109	L09050044-03	1V.0905070840-06	05/07/09 08:40	
MW-03-050109	L09050044-05	1V.0905070840-07	05/07/09 08:40	
DUP	WG301750-05	1V.0905070840-17	05/07/09 08:40	



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/07/09 08:40 Sample ID: WG301750-01
Instrument ID: UV-120-1V Run Date: 05/07/09 08:40 Prep Method: SM3500
File ID: 1V.0905070840-02 Analyst: DIH Method: SM3500
Workgroup (AAB#): WG301750 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: UV-120 -

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Iron, Ferrous	0.0200	0.0400	0.0200	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386371

07-MAY-2009 15:25



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: DIH Prep Method: SM3500
 Instrument ID: UV-120-1V Matrix: Water Method: SM3500
 Workgroup (AAB#): WG301750 Units: mg/L
 QC Key: STD Lot #: STD29965
 Sample ID: WG301750-02 LCS File ID: 1V.0905070840-03 Run Date: 05/07/2009 08:40
 Sample ID: WG301750-03 LCS2 File ID: 1V.0905070840-04 Run Date: 05/07/2009 08:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Iron, Ferrous	0.200	0.198	98.9	0.200	0.196	97.8	1.08	75 - 125	25	

LCS_LCS2 - Modified 03/06/2008
 PDF File ID: 1386372
 Report generated: 05/07/2009 15:25



2.4.2.3 Raw Data

Curves

Wg 294799

Parameter: Iron(II) solutionSpectrophotometer: UV-120-1VCalibration (Curve) standard stock: 100 mg/L Std 29968Concentration: 100 mg/L

Recipe for preparation of curve standards found in:

SOP: 3500 Revision: 1 Page: 7Second Source Stock: Std 29965 (concentration: 100 mg/L)Daily Preparation: 2(100)/1000 =concentration = = 0.2

Calibration Standards (mg/L)	Volume	Cell Size	Wavelength	Absorbance
0.6	50	10cm	510	0.572
0.4				0.362
0.2				~~0.177~~ 0.177
0.08				0.071
0.04				0.034
0				0.002
2nd Source				
0.2				0.182

Analyst: Jimmy MorrisDate/Time: 2/12/09 @ 1125

DCN#78377



Approved: February 13, 2009

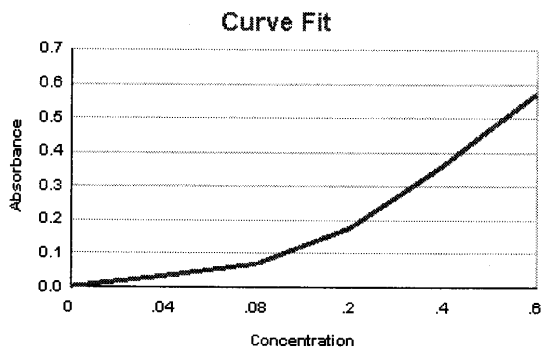
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG294799
Analytical Method: FERROUS
Instrument ID: UV-120-1V

Analyst: TMM
Initial Calibration Date: 02/12/2009

Analyte: IRON
Number of Points: 6
Slope: 0.945533
Y-Intercept: -0.00501729
Coef. Of Correlation (R^2): 0.998710
Coef. Of Correlation (R): 0.999355

Concentration X	Absorbance Y	X ²	X * Y	Y-Fitted (mX^2+B)
0.00	0.00200	0.00	0.00	-0.00501729
0.0400	0.0340	0.00160	0.00136	0.0328040
0.0800	0.0710	0.00640	0.00568	0.0706254
0.200	0.177	0.0400	0.0354	0.184089
0.400	0.362	0.160	0.145	0.373196
0.600	0.572	0.360	0.343	0.562303



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 02/12/2009 11:44



Anna Hesson

Approved: February 13, 2009

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG294799
File ID: 1V.0902121125-07
CCV ID: WG294799-07
Units: mg/L
Analyte: IRON

Instrument ID: UV-120-1V
Run Date: 02/12/2009
Run Time: 11:25
Analyst: TMM
Cal ID: UV-120 -

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.2	0.198	0.910	1.0	

* Exceeds %D Limit

CCC Calibration Check Compounds

SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 02/12/2009 11:44



Danna Hesson

Approved: February 13, 2009

Ferrous Iron

☒ SM 3500Fe-B☐ SM 3500Fe-B (HACH mod.)☐ OtherSOP K3500 Revision # 1CCV: STD 29968Daily Dilution: 3/1000(100)Daily Dilution: = 0.3LCS: STD 29965Daily Dilution: 2/1000(100)Daily Dilution: = 0.2Instrument: ☒ UV-120-IV☐ IV-120-02Curve Reference: 2/12/09Spike: STD 29965Daily Dilution: 0.1/50(100)Daily Dilution: = 0.2

Sample	Blank	Volume	Dilution	Cell Size	Absorbance
CCV: <u>0.3</u> mg/L	☒	<u>50</u>		<u>10cm</u>	<u>0.264</u>
BLANK	☒				<u>0.002</u>
LCS: <u>0.2</u> mg/L	☒				<u>0.182</u>
LCS DUP: (<u>0.2</u> mg/L)	☒				<u>0.180</u>
<u>05-044-01</u>			<u>1/5 *</u>		<u>0.015</u>
<u>03</u>					<u>0.007</u>
<u>05</u>					<u>0.476</u>
<u>05-075-01</u>			<u>1/4</u>		<u>0.199</u>
<u>03</u>			<u>1/10</u>		<u>0.284</u>
<u>05</u>			<u>1/50</u>		<u>0.303</u>
<u>07</u>			<u>1/500 **</u>		<u>0.016</u>
<u>05-125-04</u>					<u>0.056</u>
<u>06</u>					<u>0.022</u>
<u>08</u>					<u>0.006</u>
<u>10</u>			<u>1/25</u>		<u>0.291</u>
<u>12</u>			<u>1/5 ***</u>		<u>0.071</u>
DUP: <u>125-04</u>					<u>0.081</u>
MS: (<u>0.2</u>) <u>↓</u>					<u>0.254</u>
MSD: ()					
CCV: (<u>0.3</u>)					<u>0.265</u>

Analyst: Deanna RobertsDate/Time: 5/17/09/0840

* matrix int

** black sample - diluted for color

*** dil for color

DCN#79348



Deanna Roberts

Approved: May 10, 2009

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG301750

Analyst: DIH

Analyte: IRON

Date: 05/07/2009

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG301750-01	50	50	0.00200	0.9455	-0.005017	0.0074215	0.0074215	1	mg/L
WG301750-02	50	50	0.182	0.9455	-0.005017	0.19779	0.19779	1	mg/L
WG301750-03	50	50	0.180	0.9455	-0.005017	0.19568	0.19568	1	mg/L
L09050044-01	50	50	0.0150	0.9455	-0.005017	0.021170	0.10585 F	5	mg/L
L09050044-03	50	50	0.00700	0.9455	-0.005017	0.012710	ND	1	mg/L
L09050044-05	50	50	0.476	0.9455	-0.005017	0.50873	0.50873	1	mg/L
L09050075-01	50	50	0.199	0.9455	-0.005017	0.21577	0.86308	4	mg/L
L09050075-03	50	50	0.284	0.9455	-0.005017	0.30567	3.0567	10	mg/L
L09050075-05	50	50	0.303	0.9455	-0.005017	0.32576	16.288	50	mg/L
L09050075-07	50	50	0.0160	0.9455	-0.005017	0.022228	11.114 F	500	mg/L
L09050125-04	50	50	0.0560	0.9455	-0.005017	0.064532	0.064532	1	mg/L
WG301750-04	50	50	0.0560	0.9455	-0.005017	0.064532	0.064532	1	mg/L
L09050125-06	50	50	0.0220	0.9455	-0.005017	0.028574	0.028574 F	1	mg/L
L09050125-08	50	50	0.00600	0.9455	-0.005017	0.011652	ND	1	mg/L
L09050125-10	50	50	0.291	0.9455	-0.005017	0.31307	7.8267	25	mg/L
L09050125-12	50	50	0.0710	0.9455	-0.005017	0.080396	0.40198	5	mg/L
WG301750-05	50	50	0.0810	0.9455	-0.005017	0.090972	0.090972	1	mg/L
WG301750-06	50	50	0.254	0.9455	-0.005017	0.27394	0.27394	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 05/07/2009 15:24



Kleanna Roberts

Approved: May 10, 2009

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG301827
File ID: 1V.0905070840-01
CCV ID: WG301827-01
Units: mg/L
Analyte: IRON

Instrument ID: UV-120-1V
Run Date: 05/07/2009
Run Time: 08:40
Analyst: DIH
Cal ID: UV-120 -

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.285	0.880	5.0	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/07/2009 15:22



Heanna Roberts

Approved: May 10, 2009

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG301827

Instrument ID: UV-120-1V

File ID: 1V.0905070840-19

Run Date: 05/07/2009

CCV ID: WG301827-02

Run Time: 08:40

Units: mg/L

Analyst: DIH

Analyte: IRON

Cal ID: UV-120 -

Analyte	Expected	Found	RF	%D	Q
Iron, Ferrous	.3	0.286	0.883	4.7	

* Exceeds %D Limit

CCC Calibration Check Compounds

SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 05/07/2009 15:22

Microbac

Heanna Roberts

Approved: May 10, 2009

2.4.3 Nitrate Data

2.4.3.1 Summary Data

LABORATORY REPORT

L09050044

05/20/09 11:24

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	353.2	50	02-MAY-09
MW-01-050109	L09050044-03	353.2	10	02-MAY-09
MW-03-050109	L09050044-05	353.2	25	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: L09050044-01	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: BBLD-PIT-SSP-050109	Prep Method: 353.2	Prep Date: 05/06/2009 15:41
Matrix: Water	Analytical Method: 353.2	Cal Date: 05/05/2009 14:08
Workgroup Number: WG301673	Analyst: DIH	Run Date: 05/06/2009 15:41
Collect Date: 05/01/2009 09:00	Dilution: 50	File ID: SC09050714161701
	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8		U	2.50	1.25

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: L09050044-03	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-01-050109	Prep Method: 353.2	Prep Date: 05/06/2009 15:41
Matrix: Water	Analytical Method: 353.2	Cal Date: 05/05/2009 14:08
Workgroup Number: WG301673	Analyst: DIH	Run Date: 05/06/2009 15:41
Collect Date: 05/01/2009 10:55	Dilution: 10	File ID: SC09050714162701
	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8	0.310	J	0.500	0.250

J The analyte was positively identified, but the quantitation was below the RL

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: L09050044-05	PrePrep Method: NONE	Instrument: SMARTCHEM
Client ID: MW-03-050109	Prep Method: 353.2	Prep Date: 05/06/2009 15:41
Matrix: Water	Analytical Method: 353.2	Cal Date: 05/05/2009 14:08
Workgroup Number: WG301673	Analyst: DIH	Run Date: 05/06/2009 15:41
Collect Date: 05/01/2009 09:37	Dilution: 25	File ID: SC09050714163401
	Units: mg/L	

Analyte	CAS. Number	Result	Qual	RL	MDL
Nitrate	14797-55-8		U	1.25	0.625

U Not detected at or above the reporting limit (RL).

2.4.3.2 QC Summary Data

Example Nitrate Calculations

$$(\text{absorbance} - \text{intercept}) / (\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAY-2009

Analyst: DIH

Analyst: NA

Method: NO3

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

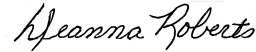
Analytical Workgroups: WG301675 WG301678 WG301673

Calibration/Linearity	5/6/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
09-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method:353.2

AAB#:WG301673

Login Number:L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-03-050109	05/01/09	05/02/09	05/06/09	2	5.25	05/06/09	2	5.25	*ANAL
MW-01-050109	05/01/09	05/02/09	05/06/09	2	5.20	05/06/09	2	5.20	*ANAL
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/06/09	2	5.28	05/06/09	2	5.28	*ANAL

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID:1386498
Report generated 05/07/2009 16:36



METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: SC09050714141701
 Prep Date: 05/06/09 15:41
 Analyzed Date: 05/06/09 15:41
 Analyst: DIH

Work Group: WG301673
 Blank Sample ID: WG301673-01
 Instrument ID: SMARTCHEM
 Method: 353.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301673-02	SC09050714142401	05/06/09 15:41	
BBLD-PIT-SSP-050109	L09050044-01	SC09050714161701	05/06/09 15:41	
MW-01-050109	L09050044-03	SC09050714162701	05/06/09 15:41	
MW-03-050109	L09050044-05	SC09050714163401	05/06/09 15:41	
DUP	WG301673-05	SC09050714143701	05/06/09 15:41	
LCS2	WG301673-03	SC09050714143001	05/06/09 15:41	



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/06/09 15:41 Sample ID: WG301673-01
Instrument ID: SMARTCHEM Run Date: 05/06/09 15:41 Prep Method: 353.2
File ID: SC09050714141701 Analyst: DIH Method: 353.2
Workgroup (AAB#): WG301673 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 05-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Nitrate	0.0250	0.0500	0.0250	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1386500

07-MAY-2009 16:36



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: DIH Prep Method: 353.2
Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
Workgroup (AAB#): WG301673 Units: mg/L
QC Key: STD Lot #: STD32552
Sample ID: WG301673-02 LCS File ID: SC09050714142401 Run Date: 05/06/2009 15:41
Sample ID: WG301673-03 LCS2 File ID: SC09050714143001 Run Date: 05/06/2009 15:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate	1.00	0.993	99.3	1.00	1.01	101	1.40	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 1386501
Report generated: 05/07/2009 16:36



2.4.3.3 Raw Data

SMARTCHEM RUN LOG

301675
301678

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☒ NO3 Reagent bottle connected / purged
☒ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

cd coil cleaned 5/10

- 1) Workgroup
Plan # 20090506003
- 2) Workgroup
Plan #
- 3) Workgroup
Plan #

Analyte	1	2	3
User Prepared Curve	NO3		
SC Prepared Curve			
Position			
1-1	ICV 1.5		
1-2	BLK		
1-3	LCS 1		
1-4	LCS DUP		
1-5	NO2 1		
1-6	04-727-01		
1-7	03		
1-8	05		
1-9	07		
1-10	09		
1-11	05-023-02	1/20	
1-12	04-732-01		
1-13	05-029-01		
1-14	07		
1-15	09		
1-16	11		
1-17	13		
1-18	05-044-01	1/10	blank
1-19	05-044-03		blank
1-20	05-1/10	gas/air	blank
1-21	05-079-01	DUP 727-01	
1-22	MS 727-01		
2-1	MSD	↓	
2-2	BLK		
2-3	LCS		

NOTES:

- * Run NO2 std on NO3 runs
- * LCS/LCS Dup all parameters
- * MS/MSD (NO3, TKN, NH3)

Position	Analyte	1	2	3
2-4	LCS DUP			
2-5	05-059-01			
2-6	02			
2-7	05-075-01			
2-8	03			
2-9	05			
2-10	07	1/50		color
2-11	05-085-08	1/5		
2-12	09	1/50		↓
2-13	05-079-01			
2-14	04-76730-02			• auto dil 1/2
2-15	03			
2-16	05			
2-17	05-033-02			
2-18	03			
2-19	04			
2-20	05			
2-21	06			
2-22	07			
2-23	DUP			
2-24	MS			
2-25	MSD			↓
2-26	05-092-01	1/75		
3-1	05-097-01			
3-2	BLK			

DCN#79333



Dannad Hesson
Approved: May 08, 2009

Heanna Roberts
Approved: May 09, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3	LCS		
3-4	LCS DVP		
3-5	05-047-02		
3-6	03		
3-7	04		
3-8	05		
3-9	07		
3-10	05-057-02		
3-11	05		
3-12	08		
3-13	09		
3-14	DVP		
3-15	MS		

Analyte	1	2	3
Position			
3-16	MSD		
3-17	05-023-02	1/20	CCV
3-18	05-044-01	05-044-01	1/25 *
3-19	05-727-01		
3-20	MSD		
3-21	05-736-02	1/10	
3-22	CCV		
3-23	05-044-01	1/50	*
3-24	03	1/10	*
3-25	CCV		
3-26	05-044-05	1/25	*
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl E
☐ Sulfate EPA 375.4
☒ Alkalinity EPA 310.2
☒ Nitrate-Nitrite EPA 353.2/SM 4500-NO3 F

☐ Ammonia EPA 350.1/SM 4500-NH3 B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte		
SOP & Revision	NO3	
Curve Stock (SC made)	1K 3532	
Curve ID (user made)	std 32554	
ICV	std 32551	NO2
CCV	std 32553	std 32555
LCS	std 32552	
MS	std 30016	
	Dilution 0.1/5(25) = 0.5	

Comments:

Analyst:

Date:

044(1,3,5)
 * diluted due to matrix interference
 any lower dilution 'kills' the
 Cd coil. Ran several times and
 this is the best I could do

DCN#79333



Danna Hesson
 Approved: May 08, 2009

Kleana Roberts
 Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-NitrItc

Smp#[[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0130	0.00		3:29:30 PM
DIL-1	RBL	0.000	0.0151	0.00		3:30:42 PM
DIL-1	RBL	0.000	0.0156	0.00		3:31:54 PM
DIL-1	Std-1	0.000	-0.0028	0.00	INV	3:33:06 PM
SR5-1	Std-2	0.040	0.0140	0.00		3:34:18 PM
SR5-2	Std-3	0.100	0.0332	0.00		3:35:30 PM
SR5-3	Std-4	0.500	0.1798	0.00		3:36:42 PM
SR5-4	Std-5	1.000	0.3606	0.00		3:37:54 PM
ST-1	Std-6	2.000	0.7293	0.00		3:39:06 PM
1	ICV 1.5	1.489	0.5415	0.00		3:40:18 PM
2	WG301673-01 BLK	0.010	0.0009	0.00		3:41:30 PM
3	WG301673-02 LCS	0.993	0.3601	0.00		3:42:42 PM
4	WG301673-03 LCSDUP	1.007	0.3653	0.00		3:43:54 PM
5	NO2 1	0.966	0.3505	0.00		3:45:06 PM
6	L09040727-01	0.019	0.0042	0.00	NO2	3:46:18 PM
7	L09040727-03	0.027	0.0072	0.00	0	3:47:30 PM
8	L09040727-05	0.360	0.1289	0.00	0	3:48:42 PM
9	L09040727-07	0.014	0.0025	0.00	0	3:49:54 PM
10	L09040727-09	0.886	0.3210	0.00	0	3:51:06 PM
ST-2	CCV (1 mg/L)	1.015	0.3682	101.49		3:52:18 PM
ST-3	CCB (0 mg/L)	0.003	-0.0017	0.00	INV	3:53:31 PM
11	L09050023-02 (20)	0.941	0.3413	0.00	0.761	3:54:43 PM
12	L09040732-01	0.772	0.2793	0.00	0.0098	3:55:54 PM
13	L09050029-01	0.014	0.0023	0.00	0	3:57:07 PM
14	L09050029-07	0.025	0.0065	0.00	0	3:58:19 PM
15	L09050029-09	0.012	0.0015	0.00	0	3:59:31 PM
16	L09050029-11	0.000	-0.0026	0.00	INV	4:00:43 PM
17	L09050029-13	0.015	0.0028	0.00	0	4:01:55 PM
18	~~L09050044-01 (10)~~ BLK	-0.001	-0.0032	0.00	INV,><,LL	4:03:07 PM
19	~~L09050044-03~~	0.005	-0.0007	0.00	INV	4:04:19 PM
20	~~L09050044-05~~	-0.003	-0.0038	0.00	INV,><,LL	4:05:31 PM
ST-2	CCV (1 mg/L)	0.986	0.3578	98.64		4:06:43 PM

Report Date :05/06/2009 Run Date :5/6/2009 Operator : WESTCO Plan # :20090506003
Plan Description : NO3-A-DIH/5/6/2009

Dannad Hesson
Approved: May 08, 2009

Heanna Roberts
Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	CCB (0 mg/L)	0.008	0.0000	0.00		4:07:55 PM
21	DUP 727-01	0.008	0.0003	0.00		4:09:07 PM
22	MS 727-01	0.446	0.1603	0.00		4:10:19 PM
23	MSD 727-01	0.437	0.1570	0.00		4:11:31 PM
24	WG301675-01 BLANK	0.008	0.0003	0.00		4:12:43 PM
25	WG301675-02 LCS	0.965	0.3499	0.00		4:13:55 PM
26	WG301675-03 LCSDUP	0.971	0.3521	0.00		4:15:07 PM
27	L09050059-01	0.139	0.0480	0.00	0.004	4:16:19 PM
28	L09050059-02	0.233	0.0825	0.00	0.007	4:17:31 PM
29	L09050075-01	0.016	0.0031	0.00		4:18:43 PM
30	L09050075-03	0.016	0.0032	0.00		4:19:55 PM
ST-2	CCV (1 mg/L)	0.987	0.3579	98.67		4:21:07 PM
ST-3	CCB (0 mg/L)	0.010	0.0011	0.00		4:22:19 PM
31	L09050075-05	0.022	0.0054	0.00		4:23:31 PM
32	L09050075-07 (50)	0.020	0.0045	0.00	0	4:24:43 PM
33	L09050085-08 (5)	0.017	0.0036	0.00	0	4:25:55 PM
34	L09050085-09 (50)	1.174	0.4264	0.00	0	4:27:07 PM
35	L09050079-01	0.134	0.0462	0.00	0	4:28:19 PM
36	L09040736-02	7.944X	2.9000	0.00	EPL,><,LH	4:29:31 PM
37	L09040736-03	0.019	0.0041	0.00		4:30:43 PM
38	L09040736-05	0.029	0.0080	0.00		4:31:55 PM
39	L09050033-02	1.682	0.6121	0.00		4:33:07 PM
40	L09050033-03	0.114	0.0389	0.00		4:34:19 PM
ST-2	CCV (1 mg/L)	0.991	0.3595	99.11		4:35:31 PM
ST-3	CCB (0 mg/L)	0.004	-0.0013	0.00	INV	4:36:43 PM
41	L09050033-04	1.557	0.5662	0.00		4:37:55 PM
42	L09050033-05	1.945	0.7082	0.00		4:39:07 PM
43	L09050033-06	0.380	0.1362	0.00		4:40:19 PM
44	L09050033-07	0.934	0.3388	0.00		4:41:31 PM
45	DUP 033-07	0.948	0.3438	0.00		4:42:43 PM
46	MS 033-07	1.335	0.4851	0.00		4:43:55 PM
47	MSD 033-07	1.350	0.4907	0.00		4:45:07 PM

Report Date : 05/06/2009 Run Date : 5/6/2009 Operator : WESTCO Plan # : 20090506003
Plan Description : NO3-A-DIH/5/6/2009

Danna Hesson
Approved: May 08, 2009

Heanna Roberts
Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
 UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
48	L09050092-01 (75)	1.031	0.3739	0.00	1.12	4:46:19 PM
49	L09050097-01	0.746	0.2698	0.00	0.63	4:47:31 PM
50	WG301678-01 BLK	0.008	0.0002	0.00		4:48:43 PM
ST-2	CCV (1 mg/L)	0.971	0.3521	97.08		4:49:55 PM
ST-3	CCB (0 mg/L)	0.010	0.0011	0.00		4:51:07 PM
51	WG301678-02 LCS	0.956	0.3466	0.00		4:52:19 PM
52	WG301678-03 LCSDUP	0.956	0.3466	0.00		4:53:31 PM
53	L09050047-02	0.036	0.0105	0.00		4:54:43 PM
54	L09050047-03	0.114	0.0389	0.00		4:55:55 PM
55	L09050047-04	2.100X	0.7646	0.00	><,LH	4:57:07 PM
56	L09050047-05	0.101	0.0344	0.00		4:58:19 PM
57	L09050047-07	2.538X	0.9246	0.00	><,LH	4:59:32 PM
58	L09050057-02	0.045	0.0137	0.00		5:00:43 PM
59	L09050057-05	0.014	0.0024	0.00		5:01:56 PM
60	L09050057-08	0.013	0.0022	0.00		5:03:07 PM
ST-2	CCV (1 mg/L)	0.960	0.3483	96.04		5:04:20 PM
ST-3	CCB (0 mg/L)	0.004	-0.0013	0.00	INV	5:05:32 PM
61	L09050057-09	0.250	0.0887	0.00		5:06:44 PM
62	DUP 0057-09	0.257	0.0911	0.00		5:07:56 PM
63	MS 0057-09	0.683	0.2470	0.00		5:09:08 PM
64	MSD 0057-09	0.680	0.2458	0.00		5:10:20 PM
65	ID 65 05-0736-02 (10)	0.743	0.2690	0.00		5:11:32 PM
66	ID 66	0.889X	0.3222	0.00		5:12:44 PM
67	ID 67 05-044-01 (50)	-0.004	-0.0043	0.00	INV,><,LL	5:13:56 PM
68	ID 68 05-044-03 (10)	0.031	0.0085	0.00		5:15:08 PM
69	ID 69	0.891X	0.3228	0.00		5:16:20 PM
70	ID 70 05-044-05 (25)	-0.004	-0.0043	0.00	INV,><,LL	5:17:32 PM
ST-2	CCV (1 mg/L)	0.955	0.3464	95.52		5:18:44 PM
ST-3	CCB (0 mg/L)	0.008	0.0002	0.00		5:19:56 PM
36-[1/4]	L09040736-02 (2)	3.822X	0.3465	0.00	LH	5:29:06 PM
55-[1/4]	L09050047-04	2.041	0.1838	0.00	LH	5:31:12 PM
57-[1/4]	L09050047-07	2.551	0.2304	0.00	LH	5:33:18 PM

Report Date :05/06/2009 Run Date :5/6/2009 Operator : WESTCO Plan # :20090506003
 Plan Description : NO3-A-DIH/5/6/2009

Dannad Hesson
 Approved: May 08, 2009

Heanna Roberts
 Approved: May 09, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-2	CCV (1 mg/L)	0.936	0.3393	93.58		5:34:12 PM
ST-3	CCB (0 mg/L)	-0.002	-0.0034	0.00	INV,><,LL	5:35:24 PM

Report Date :05/06/2009 Run Date :5/6/2009 Operator : WESTCO Plan # :20090506003
Plan Description : NO3-A-DIH/5/6/2009

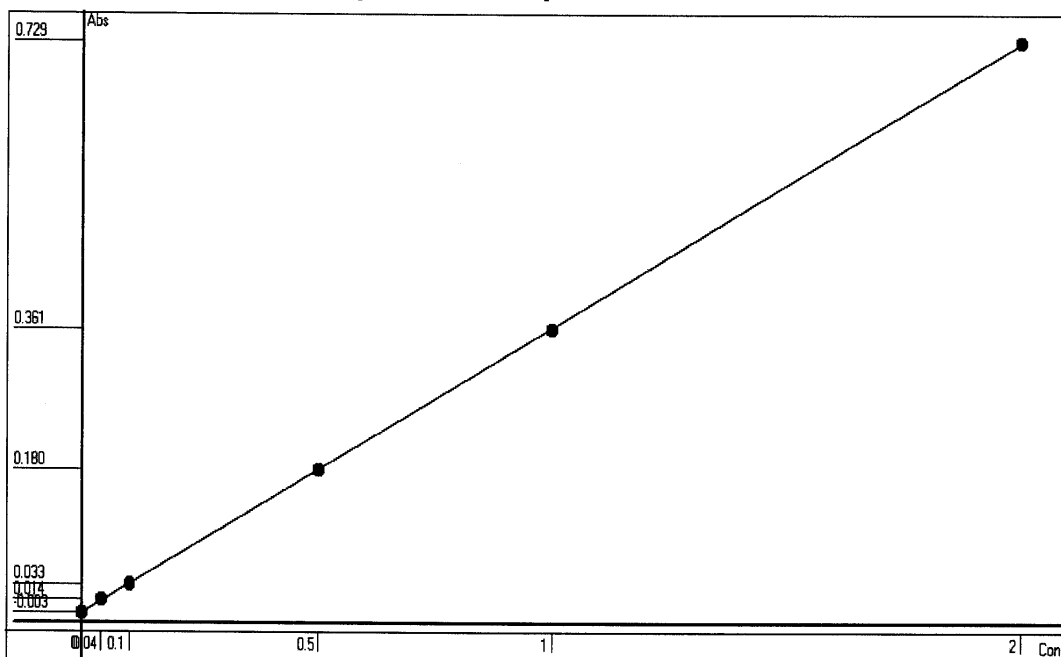

Approved: May 08, 2009


Approved: May 09, 2009

Calibrant Report - WNO3 -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090506003 Description : [NO3-A-DIH/5/6/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0028	0	-0.0003	-0.03
2	0.0140	0.04	0.0457	14.25
3	0.0332	0.1	0.0983	-1.70
4	0.1798	0.5	0.4994	-0.12
5	0.3606	1	0.9942	-0.58
6	0.7293	2	2.0032	0.16

Conc= +2.7366*Abso +0.0074 R²=1.0000

RBL
0.0154
0

Report Date 5/6/2009 Run Date 5/6/2009

Danna Hesson
Approved: May 08, 2009

Heanna Roberts
Approved: May 09, 2009

2.4.4 Phosphorus Data

2.4.4.1 Summary Data

LABORATORY REPORT

L09050044

05/20/09 11:24

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	365.4	1	02-MAY-09
MW-01-050109	L09050044-03	365.4	1	02-MAY-09
MW-03-050109	L09050044-05	365.4	1	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301549**
Collect Date: **05/01/2009 09:00**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 12:12**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 12:12**
File ID: **SC090505004.052**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0	0.772		0.200	0.100

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301549**
Collect Date: **05/01/2009 10:55**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 12:13**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 12:13**
File ID: **SC090505004.055**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0		U	0.200	0.100

U Not detected at or above the reporting limit (RL).

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
Client ID: **MW-03-050109**
Matrix: **Water**
Workgroup Number: **WG301549**
Collect Date: **05/01/2009 09:37**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **365.4**
Analytical Method: **365.4**
Analyst: **JBK**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/05/2009 12:14**
Cal Date: **05/05/2009 11:44**
Run Date: **05/05/2009 12:14**
File ID: **SC090505004.056**

Analyte	CAS. Number	Result	Qual	RL	MDL
Phosphorus, Total	7723-14-0	0.347		0.200	0.100

2.4.4.2 QC Summary Data

Example Phosphorus Calculations

$$(\text{absorbance} - \text{intercept}) / (\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: JBK

Analyst: NA

Method: PHOS

Instrument: SMARTCHEM

Curve Workgroup: NA

Runlog ID: _____

Analytical Workgroups: WG301470 WG301549

Calibration/Linearity	05/05/09
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JBK
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
06-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4

AAB#: WG301549

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-03-050109	05/01/09	05/02/09	05/05/09	28	4.11	05/05/09	28	4.11	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	28	4.13	05/05/09	28	4.13	
MW-01-050109	05/01/09	05/02/09	05/05/09	28	4.05	05/05/09	28	4.05	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1384940
Report generated 05/06/2009 14:01



METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: SC090505004.037
 Prep Date: 05/05/09 12:02
 Analyzed Date: 05/05/09 12:02
 Analyst: JBK

Work Group: WG301549
 Blank Sample ID: WG301549-01
 Instrument ID: SMARTCHEM
 Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301549-02	SC090505004.038	05/05/09 12:03	01
BBLD-PIT-SSP-050109	L09050044-01	SC090505004.052	05/05/09 12:12	01
MW-01-050109	L09050044-03	SC090505004.055	05/05/09 12:13	01
MW-03-050109	L09050044-05	SC090505004.056	05/05/09 12:14	01
DUP	WG301549-04	SC090505004.057	05/05/09 12:14	01

Report Name: BLANK_SUMMARY
 PDF File ID: 1384941
 Report generated 05/06/2009 14:01



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 12:02 Sample ID: WG301549-01
Instrument ID: SMARTCHEM Run Date: 05/05/09 12:02 Prep Method: 365.4
File ID: SC090505004.037 Analyst: JBK Method: 365.4
Workgroup (AAB#): WG301549 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 05-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.200	0.100	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384942

06-MAY-2009 14:01



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Run Date: 05/05/2009 Sample ID: WG301549-02
Instrument ID: SMARTCHEM Run Time: 12:03 Prep Method: 365.4
File ID: SC090505004.038 Analyst: JBK Method: 365.4
Workgroup (AAB#): WG301549 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD32370 Cal ID: SMARTC - 05-MAY-09

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.924	92.4	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 1384943
Report generated: 05/06/2009 14:01



2.4.4.3 Raw Data

SMARTCHEM RUN LOG

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup _____
 Plan # 20050505004
 2) Workgroup _____
 Plan # _____
 3) Workgroup _____
 Plan # _____

Analyte	1	2	3
User Prepared Curve	Phos		
SC Prepared Curve			
Position			
1-1	ICV 1.5		
1-2	Blank		
1-3	LCS 1		
1-4	04-685-01		
1-5	-02		
1-6	-03		
1-7	04-718-01		
1-8	-02		
1-9	-03		
1-10	04-687-03	1/250	
1-11	04-713-01		
1-12	-02		
1-13	05-029-01		
1-14	-07		
1-15	-09		
1-16	-11		
1-17	-13		
1-18	0504-690-01		
1-19	-07		
1-20	-09		
1-21	-11		
1-22	-13		
2-1	Dup 685-01		
2-2	ms		
2-3	msd ↓		

Position	Analyte	1	2	3
2-4	IL 121.5			
2-5	Blank			
2-6	LCS 1			
2-7	04-693-01			
2-8	-02			
2-9	-03			
2-10	-04			
2-11	-05			
2-12	-06			
2-13	04-727-01			
2-14	-03			
2-15	-05			
2-16	-07			
2-17	-09			
2-18	05-044-01			
2-19	-03			
2-20	-05			
2-21	Dup ↓			
2-22	ms			
2-23	msd ↓			
2-24	22 455-01			
2-25				
2-26				
3-1				
3-2				

NOTES:
 * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

* W6301549 digested diff. day (see clyat loss)

DCN#79317



Dannat/Johnson

Approved: May 06, 2009

SMARTCHEM RUN LOG

Analyte		1	2	3
Position				
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Analyte		1	2	3
Position				
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

☐ Chloride EPA 325.2/SM 4500-Cl E
☐ Sulfate EPA 375.4
☐ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO3 F

☐ Ammonia EPA 350.1/SM 4500-NH3 B
☐ TKN EPA 351.2
☒ Phos EPA 365.4

Analyte			
SOP & Revision	Phos		
Curve Stock (SC made)	K3654		
Curve ID (user made)	SEE		
ICV			
CCV	DILUT		
LCS			
MS	LOG		
	Dilution		

Comments: _____

Analyst: _____

Date: _____

05/05/09

DCN#79317



Danna K. Johnson

Approved: May 06, 2009

TKN/Phosphorus Digestion Log

TKN WG: 301469
 TKN Std: Std 32416
 TKN CCV: $\downarrow 1/25 = 2.5$
 TKN ICV: Std 32418
 TKN LCS: Std 32417

Phos WG: 301470
 Phos Std: Std 32416
 Phos CCV: $\downarrow 1/2(2) = 1$
 Phos ICV: Std 32371
 Phos LCS: Std 32370

MS/MSD: Std 30130
 Daily Dilution: $1(25)/25 = 1$

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	05-029-11			✓
2	CCV		2.5	1	27	-13			✓
3	ICV T		2		28	04-690-01			✓
4	ICV P			1.5	29	-07			✓
5	Blank		✓	✓	30	-09			✓
6	LCS T		1		31	-11			✓
7	LCS P			1	32	-13			✓
8	04-676-02		1/50		33				
9	-05		↓		34				
10	04-685-01*		✓	✓	35				
11	-02		✓	✓	36				
12	-03		✓	✓	37				
13	05-035-02		1/50		38	DUP* 04-685-01	✓	✓	
14	-05		↓		39	MS	✓	✓	
15	-08		↓		40	MSD ↓	✓	✓	
16	04-714-01		✓		41				
17	04-718-01		✓	✓	42				
18	-02		✓	✓	43				
19	-03		✓	✓	44				
20	04-687-03			1/250	45				
21	04-713-01			✓	46				
22	-02			✓	47				
23	05-029-01			✓	48				
24	-07			✓	49				
25	-09			✓	50				

Analyst: 

Date: 05/04/09

* Large amt of organic matter (grass). Larger pieces removed prior to digestion



Approved: May 06, 2009

TKN/Phosphorus Digestion Log

TKN WG: _____
 TKN Std: _____
 TKN CCV: _____
 TKN ICV: _____
 TKN LCS: _____

Phos WG: 301549
 Phos Std: Std 32416
 Phos CCV: 1/2(2) = 1
 Phos ICV: Std 32371
 Phos LCS: Std 32370

MS/MSD: Std 30130
 Daily Dilution: 1(25)/25 = 1

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std				26				
2	CCV				27				
3	ICV				28				
4	Blank				29				
5	LCS				30				
6	04-693-01				31				
7	-02				32				
8	-03				33				
9	-04				34				
10	-05				35				
11	-06				36				
12	04-727-01				37				
13	-03				38				
14	-05				39				
15	-07				40				
16	-09				41				
17	05-044-01*				42				
18	-03				43				
19	-05				44				
20	Dup				45				
21	MS				46				
22	MSD				47				
23					48				
24					49				
25					50				

* Addition of digest vgt. made orange precip. to come out of sol'n

Analyst: [Signature] Date: 05/05/09

[Signature]

Approved: May 06, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WTPH -Unit [mg/L] - EPA 365.4 PHOSPHORUS

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0406	0.00		11:39:44 AM
DIL-1	RBL	0.000	0.0323	0.00		11:40:02 AM
DIL-1	RBL	0.000	0.0379	0.00		11:40:56 AM
SR5-1	Std-1	0.010	-0.0018	0.00		11:41:14 AM
SR5-2	Std-2	0.200	0.0322	0.00		11:42:09 AM
SR5-3	Std-3	0.500	0.0606	0.00		11:42:26 AM
SR5-4	Std-4	1.000	0.1342	0.00		11:43:21 AM
SR5-5	Std-5	1.500	0.1919	0.00		11:43:38 AM
ST-1	Std-6	2.000	0.2668	0.00		11:44:33 AM
1	ICV 1.5	1.411	0.1858	0.00	EPL	11:44:50 AM
2	WG301470-01 BLANK	0.058	0.0067	0.00		11:45:45 AM
3	WG301470-02 LCS1	1.180	0.1552	0.00		11:46:02 AM
4	L09040685-01	0.351	0.0454	0.00		11:46:57 AM
5	L09040685-02	0.064	0.0075	0.00		11:47:14 AM
6	L09040685-03	0.196	0.0249	0.00		11:48:09 AM
7	L09040718-01	0.045	0.0049	0.00		11:48:26 AM
8	L09040718-02	0.164	0.0207	0.00		11:49:21 AM
9	L09040718-03	0.065	0.0075	0.00		11:49:38 AM
10	L09040687-03 (250)	1.399	0.1842	0.00		11:50:33 AM
ST-2	CCV (1 mg/L)	1.018	0.1338	101.80		11:50:50 AM
ST-3	CCB (0 mg/L)	0.034	0.0035	0.00		11:51:45 AM
11	L09040713-01	0.672	0.0880	0.00		11:52:02 AM
12	L09040713-02	0.791	0.1037	0.00	EPL	11:52:57 AM
13	L09050029-01	0.170	0.0215	0.00		11:53:15 AM
14	L09050029-07	0.122	0.0152	0.00		11:54:09 AM
15	L09050029-09	-0.046	-0.0071	0.00	><,LL	11:54:27 AM
16	L09050029-11	-0.017	-0.0032	0.00	><,LL	11:55:21 AM
17	L09050029-13	-0.084	-0.0121	0.00	><,LL	11:55:39 AM
18	L09040690-01	0.082	0.0099	0.00		11:56:33 AM
19	L09040690-07	-0.076	-0.0111	0.00	><,LL	11:56:51 AM
20	L09040690-09	0.007	-0.0001	0.00		11:57:45 AM
ST-2	CCV (1 mg/L)	0.970	0.1275	97.04		11:58:03 AM

Report Date :05/05/2009

Run Date :5/5/2009

Operator : WESTCO

Plan # :20090505004

Plan Description : PHOS-B-JBK/05/05/2009



Approved: May 06, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WTPH -Unit [mg/L] - EPA 365.4 PHOSPHORUS

Smp#[[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	CCB (0 mg/L)	-0.011	-0.0024	0.00	><,LL	11:58:57 AM
21	L09040690-11	-0.106	-0.0150	0.00	><,LL	11:59:15 AM
22	L09040690-13	-0.072	-0.0106	0.00	><,LL	12:00:09 PM
23	WG301470-04 DUP	0.492	0.0641	0.00		12:00:27 PM
24	WG301470-05 MS	1.630	0.2148	0.00		12:01:21 PM
25	WG301470-06 SD	1.540	0.2029	0.00		12:01:39 PM
26	ICV	1.536	0.2024	0.00		12:02:33 PM
27	WG301549-01 BLANK	-0.011	-0.0024	0.00	><,LL	12:02:51 PM
28	WG301549-02 LCS1	0.924	0.1214	0.00		12:03:45 PM
29	L09040693-01	0.264	0.0339	0.00		12:04:03 PM
30	L09040693-02	1.306	0.1719	0.00		12:04:57 PM
ST-2	CCV (1 mg/L)	0.936	0.1229	93.57		12:05:15 PM
ST-3	CCB (0 mg/L)	-0.008	-0.0020	0.00	><,LL	12:06:09 PM
31	L09040693-03	0.616	0.0806	0.00		12:06:27 PM
32	L09040693-04	0.140	0.0175	0.00		12:07:21 PM
33	L09040693-05	0.008	0.0001	0.00		12:07:39 PM
34	L09040693-06	-0.001	-0.0011	0.00	LL	12:08:33 PM
35	L09040727-01	0.153	0.0192	0.00		12:08:51 PM
36	L09040727-03	0.349	0.0452	0.00		12:09:45 PM
37	L09040727-05	-0.094	-0.0134	0.00	><,LL	12:10:03 PM
38	L09040727-07	-0.001	-0.0012	0.00	LL	12:10:57 PM
39	L09040727-09	-0.076	-0.0111	0.00	><,LL	12:11:15 PM
40	L09050044-01	0.772	0.1012	0.00		12:12:09 PM
ST-2	CCV (1 mg/L)	1.036	0.1362	103.61		12:12:27 PM
ST-3	CCB (0 mg/L)	-0.002	-0.0013	0.00	LL	12:13:21 PM
41	L09050044-03	0.073	0.0087	0.00	EPL	12:13:39 PM
42	L09050044-05	0.347	0.0450	0.00		12:14:33 PM
43	WG301549-04 DUP	0.224	0.0287	0.00	EPL	12:14:51 PM
44	WG301549-05 MS	1.136	0.1494	0.00		12:15:45 PM
45	WG301549-06 SD	1.038	0.1365	0.00		12:16:03 PM
46	ID 46	0.385	0.0500	0.00		12:16:57 PM
47	ID 47	-0.180	-0.0248	0.00	><,LL	12:17:15 PM

Report Date :05/05/2009 Run Date :5/5/2009 Operator : WESTCO Plan # :20090505004
Plan Description : PHOS-B-JBK/05/05/2009

Annika Jansson

Approved: May 06, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WTPH -Unit [mg/L] - EPA 365.4 PHOSPHORUS

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
48	ID 48	-0.087	-0.0125	0.00	><,LL	12:18:09 PM
ST-2	CCV (1 mg/L)	0.858	0.1126	85.79		12:18:27 PM
ST-3	CCB (0 mg/L)	-0.033	-0.0054	0.00	><,LL	12:19:21 PM

Report Date :05/05/2009 Run Date :5/5/2009 Operator : WESTCO Plan # :20090505004
Plan Description : PHOS-B-JBK/05/05/2009

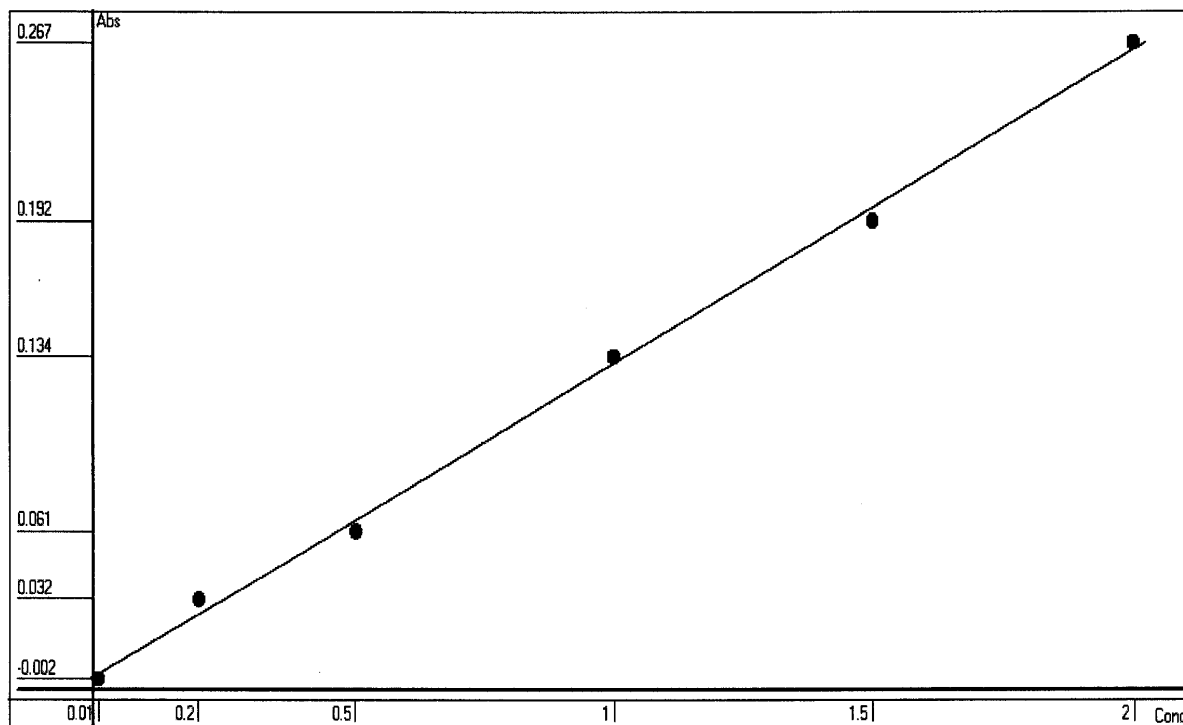


Approved: May 06, 2009

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090505004 Description: [PHOS-B-JBK/05/05/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0018	0.01	-0.0058	-158.00
2	0.0322	0.2	0.2509	25.45
3	0.0606	0.5	0.4654	-6.92
4	0.1342	1	1.0211	2.11
5	0.1919	1.5	1.4568	-2.88
6	0.2668	2	2.0224	1.12

Conc= +7.551*Abso +0.0078 R²=0.9977

RBL
0.0393
0

Report Date 5/5/2009 Run Date 5/5/2009

Annika Persson

Approved: May 06, 2009

2.4.5 Sulfate Data

2.4.5.1 Summary Data

LABORATORY REPORT

L09050044

05/20/09 11:24

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	375.4	3	02-MAY-09
MW-01-050109	L09050044-03	375.4	3	02-MAY-09
MW-03-050109	L09050044-05	375.4	1	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301484**
Collect Date: **05/01/2009 09:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **375.4**
Analytical Method: **375.4**
Analyst: **DIH**
Dilution: **3**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/04/2009 15:09**
Cal Date: **05/04/2009 15:01**
Run Date: **05/04/2009 15:09**
File ID: **SC090504005.015**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	24.2		15.0	7.50

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301457**
Collect Date: **05/01/2009 10:55**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **375.4**
Analytical Method: **375.4**
Analyst: **DIH**
Dilution: **3**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/04/2009 11:58**
Cal Date: **05/04/2009 11:41**
Run Date: **05/04/2009 11:58**
File ID: **SC090504002.036**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	58.3		15.0	7.50

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
Client ID: **MW-03-050109**
Matrix: **Water**
Workgroup Number: **WG301457**
Collect Date: **05/01/2009 09:37**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **375.4**
Analytical Method: **375.4**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **SMARTCHEM**
Prep Date: **05/04/2009 11:58**
Cal Date: **05/04/2009 11:41**
Run Date: **05/04/2009 11:58**
File ID: **SC090504002.037**

Analyte	CAS. Number	Result	Qual	RL	MDL
Sulfate	14808-79-8	12.6		5.00	2.50

2.4.5.2 QC Summary Data

Example Sulfate Calculations

$$(\text{absorbance} - \text{intercept})/(\text{slope} * \text{dilution}) = \text{mg/L}$$

where:

absorbance = reading from the spectrophotometer

intercept = calculated from calibration standard absorbencies

slope = calculated from calibration standard absorbencies

dilution = dilution of the distillate in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2009

Analyst: DIH

Analyst: NA

Method: SO4

Instrument: SC

Curve Workgroup: NA

Runlog ID: _____

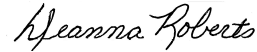
Analytical Workgroups: WG301482 WG301484 WG301457

Calibration/Linearity	5/4/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
05-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 375.4

AAB#: WG301457

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-01-050109	05/01/09	05/02/09	05/04/09	28	3.04	05/04/09	28	3.04	
MW-03-050109	05/01/09	05/02/09	05/04/09	28	3.10	05/04/09	28	3.10	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 375.4

AAB#: WG301484

Login Number: L09050044

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/04/09	28	3.26	05/04/09	28	3.26	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS



METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: SC090504002.010
 Prep Date: 05/04/09 11:42
 Analyzed Date: 05/04/09 11:42
 Analyst: DIH

Work Group: WG301457
 Blank Sample ID: WG301457-01
 Instrument ID: SMARTCHEM
 Method: 375.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301457-02	SC090504002.011	05/04/09 11:43	01
LCS2	WG301457-03	SC090504002.012	05/04/09 11:44	01
DUP	WG301457-05	SC090504002.034	05/04/09 11:57	01
MW-01-050109	L09050044-03	SC090504002.036	05/04/09 11:58	DL01
MW-03-050109	L09050044-05	SC090504002.037	05/04/09 11:58	01

METHOD BLANK SUMMARY

Login Number: L09050044
Blank File ID: SC090504005.010
Prep Date: 05/04/09 15:06
Analyzed Date: 05/04/09 15:06
Analyst: DIH

Work Group: WG301484
Blank Sample ID: WG301484-01
Instrument ID: SMARTCHEM
Method: 375.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301484-02	SC090504005.011	05/04/09 15:07	01
LCS2	WG301484-03	SC090504005.012	05/04/09 15:07	01
BBLD-PIT-SSP-050109	L09050044-01	SC090504005.015	05/04/09 15:09	DL01
DUP	WG301484-05	SC090504005.016	05/04/09 15:10	DL01



METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/04/09 11:42 Sample ID: WG301457-01
Instrument ID: SMARTCHEM Run Date: 05/04/09 11:42 Prep Method: 375.4
File ID: SC090504002.010 Analyst: DIH Method: 375.4
Workgroup (AAB#): WG301457 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 04-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Sulfate	2.50	5.00	2.50	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384150

05-MAY-2009 15:10



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/04/09 15:06 Sample ID: WG301484-01
Instrument ID: SMARTCHEM Run Date: 05/04/09 15:06 Prep Method: 375.4
File ID: SC090504005.010 Analyst: DIH Method: 375.4
Workgroup (AAB#): WG301484 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: SMARTC - 04-MAY-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Sulfate	2.50	5.00	2.50	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1384150

05-MAY-2009 15:10



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: DIH Prep Method: 375.4
Instrument ID: SMARTCHEM Matrix: Water Method: 375.4
Workgroup (AAB#): WG301457 Units: mg/L
QC Key: STD Lot #: STD32347
Sample ID: WG301457-02 LCS File ID: SC090504002.011 Run Date: 05/04/2009 11:43
Sample ID: WG301457-03 LCS2 File ID: SC090504002.012 Run Date: 05/04/2009 11:44

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfate	20.0	19.9	99.4	20.0	20.2	101	1.76	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 1384151
Report generated: 05/05/2009 15:10



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: DIH Prep Method: 375.4
 Instrument ID: SMARTCHEM Matrix: Water Method: 375.4
 Workgroup (AAB#): WG301484 Units: mg/L
 QC Key: STD Lot #: STD32347
 Sample ID: WG301484-02 LCS File ID: SC090504005.011 Run Date: 05/04/2009 15:07
 Sample ID: WG301484-03 LCS2 File ID: SC090504005.012 Run Date: 05/04/2009 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfate	20.0	20.7	104	20.0	20.0	100	3.56	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
 PDF File ID: 1384151
 Report generated: 05/05/2009 15:10



2.4.5.3 Raw Data

SMARTCHEM RUN LOG

301482
301484

Daily Check

- ☒ Lamp On
☒ Probe Rinse Full
☒ DI Water > 1/2 Full
☒ Wash Solution > 1/2 Full
☐ NO3 Reagent bottle connected / purged
☐ NO3 pH adj to pH 5-9
- ☒ WBL Run
☒ Reagents Full
☒ Dilution H₂O Full
☒ Waste Container Check

- 1) Workgroup 301457
 Plan # 20090504002
 2) Workgroup _____
 Plan # _____
 3) Workgroup 301482, 301484
 Plan # 20090504005

Analyte	1	2	3
User Prepared Curve	504		
SC Prepared Curve			
Position			
1-1	ICV 30		✓
1-2	BIK		✓
1-3	LCS 20		✓
1-4	LCS DUP		✓
1-5	04-734-01 1/4		✓
1-6	04 1/10		✓
1-7	05-029-01 1/25		✓
1-8	09 1/3		✓
1-9	04-690-01 1/5		✓
1-10	07 1/15		✓
1-11	09 1/15		✓
1-12	11 1/15		✓
1-13	13 1/12		✓
1-14	04-693-05		✓
1-15	06		✓
1-16	04-727-01		✓
1-17	03 1/12		✓
1-18	05		✓
1-19	07 1/12		✓
1-20	09 1/12		✓
1-21	DUP 693-05		✓
1-22	MS ↓		✓
2-1	044-03 1/3		✓
2-2	05-044-05		✓
2-3	PIT 044-01 1/10		

NOTES:

- * Run NO2 std on NO3 runs
 * LCS/LCS Dup all parameters
 * MS/MSD (NO3, TKN, NH3)

Position	Analyte	1	2	3
2-4	BIK			✓
2-5	LCS			✓
2-6	LCS			✓
2-7	05-046-03 1/2			✓
2-8	02 1/10			✓
2-9	DUP ↓ ↓			✓
2-10	MS ↓ ↓			✓
2-11				
2-12				
2-13				
2-14	Run 2			
2-15	1 BIK ICV			
2-16	2 LCS BIK			
2-17	3 LCS DUP			
2-18	4 LCS DUP			
2-19	5 04-690-11 1/15			
2-20	6 05-044-01 1/3 color			
2-21	7 DUP ↓			
2-22	8 MS ↓ ↓			
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

DCN#79306



Heanna Roberts

Approved: May 10, 2009

SMARTCHEM RUN LOG

Analyte	1	2	3
Position			
3-3			
3-4			
3-5			
3-6			
3-7			
3-8			
3-9			
3-10			
3-11			
3-12			
3-13			
3-14			
3-15			

Analyte	1	2	3
Position			
3-16			
3-17			
3-18			
3-19			
3-20			
3-21			
3-22			
3-23			
3-24			
3-25			
3-26			
3-27			
3-28			

☐ Chloride EPA 325.2/SM 4500-Cl⁻ E
☒ Sulfate EPA 375.4
☐ Alkalinity EPA 310.2
☐ Nitrate-Nitrite EPA 353.2/SM 4500-NO₃ F

☐ Ammonia EPA 350.1/SM 4500-NH₃ B
☐ TKN EPA 351.2
☐ Phos EPA 365.4

Analyte			
SOP & Revision	504		
Curve Stock (SC made)	13754		
Curve ID (user made)	std 31984		
ICV	std 32346		
CCV	std 32499		
LCS	std 32347		
MS	std 30480		
	Dilution 0.1/10(1000)=10		

Comments: _____

Analyst: Joanna LessmanDate: 5/4/09

DCN#79306



Joanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.0047	0.00		11:35:40 AM
DIL-1	RBL	0.00	0.0065	0.00		11:35:58 AM
DIL-1	RBL	0.00	0.0042	0.00		11:36:52 AM
DIL-1	Std-1	0.00	0.0002	0.00		11:37:10 AM
SR5-1	Std-2	5.00	0.0244	0.00		11:38:05 AM
SR5-2	Std-3	10.00	0.0578	0.00		11:38:22 AM
SR5-3	Std-4	15.00	0.0819	0.00		11:39:16 AM
SR5-4	Std-5	20.00	0.1040	0.00		11:39:34 AM
SR5-5	Std-6	25.00	0.1231	0.00		11:40:28 AM
SR5-6	Std-7	30.00	0.1392	0.00		11:40:46 AM
SR5-7	Std-8	35.00	0.1543	0.00		11:41:41 AM
1	ICV 30	29.06	0.1360	0.00		11:41:58 AM
2	WG301457-01 BLANK	0.58	-0.0003	0.00	><,LL	11:42:52 AM
3	WG301457-02 LCS	19.87	0.1022	0.00		11:43:11 AM
4	WG301457-03 LCSDUP	20.22	0.1036	0.00		11:44:04 AM
R-3	CCV (30 mg/L)	29.21	0.1365	97.37		11:44:22 AM
5	L09040734-01 (4)	24.76	0.1208	0.00		11:45:17 AM
6	L09040734-04 (10)	16.97	0.0903	0.00		11:45:35 AM
7	L09050029-01 (25)	25.42	0.1232	0.00		11:46:29 AM
8	L09050029-09 (3)	24.22	0.1188	0.00		11:46:47 AM
R-3	CCV (30 mg/L)	29.21	0.1365	97.37		11:47:41 AM
9	L09040690-01 (5)	31.11	0.1429	0.00		11:47:59 AM
10	L09040690-07 (5)	27.27	0.1298	0.00		11:48:53 AM
11	L09040690-09 (5)	27.41	0.1303	0.00		11:49:11 AM
12	L09040690-11 (5)	67.92X	0.2442	0.00	><,LH	11:50:05 AM
R-3	CCV (30 mg/L)	29.21	0.1365	97.37		11:50:23 AM
13	L09040690-13 (2)	22.97	0.1142	0.00		11:51:17 AM
14	L09040693-05	6.96	0.0419	0.00	LL	11:51:35 AM
15	L09040693-06	6.21	0.0376	0.00	LL	11:52:29 AM
16	L09040727-01	16.52	0.0884	0.00		11:52:47 AM
R-3	CCV (30 mg/L)	28.19	0.1330	93.97		11:53:41 AM
17	L09040727-03 (2)	24.16	0.1186	0.00		11:53:59 AM

Report Date :05/04/2009

Run Date :5/4/2009

Operator : WESTCO

Plan # :20090504002

Plan Description : SO4-B-DIH/5/4/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)
SMARTCHEM REPORT
UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L09040727-05	33.10	0.1494	0.00		11:54:53 AM
19	L09040727-07 (2)	28.16	0.1329	0.00		11:55:11 AM
20	L09040727-09 (2)	26.06	0.1255	0.00		11:56:05 AM
R-3	CCV (30 mg/L)	28.25	0.1332	94.16		11:56:23 AM
21	WG301457-05 DUP	6.37	0.0385	0.00	LL	11:57:17 AM
22	WG301457-06 MS	16.50	0.0883	0.00		11:57:35 AM
23	(3) 05-044-03 (3)	19.42	0.1004	0.00		11:58:29 AM
24	ID 24 05-044-05	12.56	0.0707	0.00		11:58:47 AM
R-3	CCV (30 mg/L)	27.67	0.1312	92.24		11:59:41 AM
25	(10) 05-044-01 (10)	0.91X	0.0023	0.00	LL	11:59:59 AM
26	ID 26 wg 301482-01 BIK	0.62	0.0000	0.00	><,LL	12:00:53 PM
27	ID 27 02 L5	18.31	0.0959	0.00		12:01:11 PM
28	ID 28 03 L5D	18.63	0.0972	0.00		12:02:05 PM
R-3	CCV (30 mg/L)	27.76	0.1315	92.53		12:02:23 PM
29	Add-L09050046-03 (2)	27.64	0.1311	0.00		12:03:17 PM
30	Add-L09050046-02 (10)	20.05	0.1029	0.00		12:03:35 PM
31	Add-(10) DUP wg 301482-05	19.62	0.1012	0.00		12:04:29 PM
32	Add-(10) MS -06	19.62	0.1012	0.00		12:04:47 PM
R-3	Add-CCV (30 mg/L)	27.90	0.1320	93.01		12:05:41 PM
12-[1/2]	L09040690-11 (5)	67.25X	0.1511	0.00	LH	12:13:39 PM
R-3	CCV (30 mg/L)	26.25X	0.1262	87.51		12:13:39 PM

Report Date : 05/04/2009

Run Date : 5/4/2009

Operator : WESTCO

Plan # : 20090504002

Plan Description : SO4-B-DIH/5/4/2009

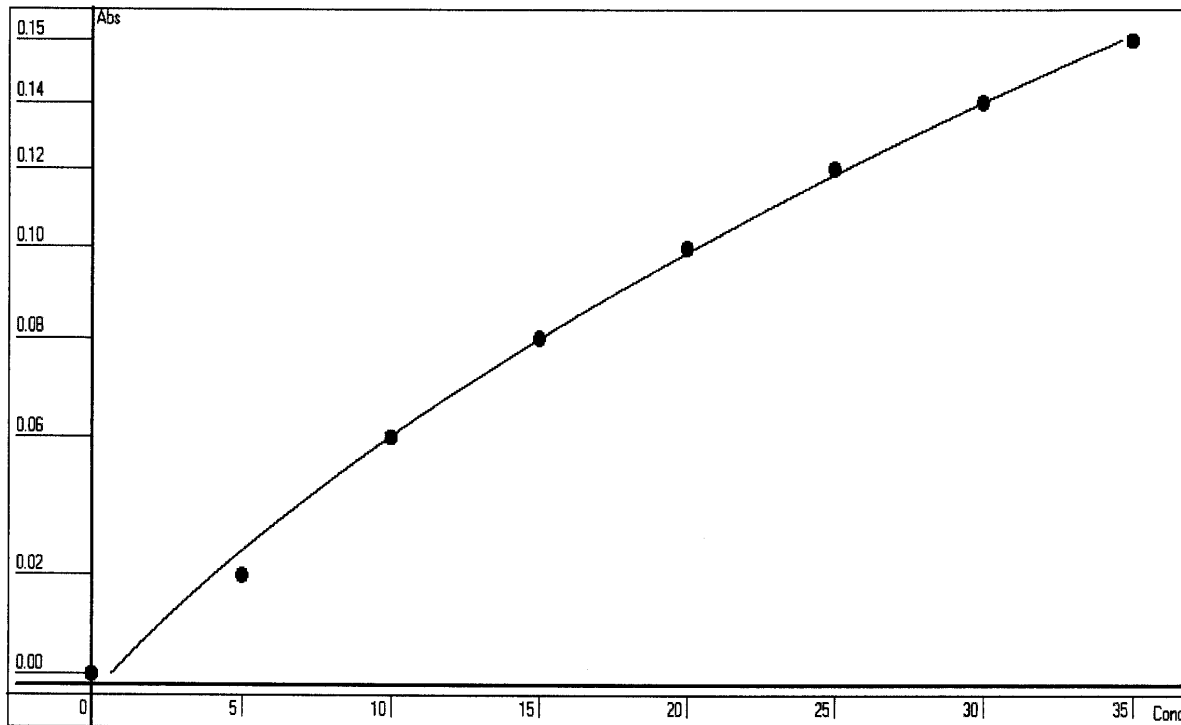
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WSO4 -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090504002 Description: [SO4-B-DIH/5/4/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0002	0	0.6443	64.43
2	0.0244	5	4.0492	-19.02
3	0.0578	10	9.9303	-0.70
4	0.0819	15	15.0252	0.17
5	0.1040	20	20.3245	1.62
6	0.1231	25	25.3878	1.55
7	0.1392	30	30.0040	0.01
8	0.1543	35	34.6229	-1.08

Conc= +614.3216*Abso^2 +125.5844*Abso +0.6192 R²=0.9984

RBL
0.0045
0

Report Date 5/4/2009 Run Date 5/4/2009

Heanna Roberts

Approved: May 10, 2009

MICROBAC (OVD)

SMARTCHEM REPORT

UNITS: MG/L

Method : WSO4 -Unit [mg/L] - Sulfate EPA 375.4

Smp#[/Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.00	0.0042	0.00		2:59:33 PM
DIL-1	RBL	0.00	0.0039	0.00		2:59:51 PM
DIL-1	RBL	0.00	0.0042	0.00		3:00:45 PM
DIL-1	Std-1	0.00	0.0017	0.00		3:01:03 PM
SR5-1	Std-2	5.00	0.0290	0.00		3:01:57 PM
SR5-2	Std-3	10.00	0.0601	0.00		3:02:15 PM
SR5-3	Std-4	15.00	0.0861	0.00		3:03:09 PM
SR5-4	Std-5	20.00	0.1100	0.00		3:03:27 PM
SR5-5	Std-6	25.00	0.1292	0.00		3:04:21 PM
SR5-6	Std-7	30.00	0.1450	0.00		3:04:39 PM
SR5-7	Std-8	35.00	0.1629	0.00		3:05:33 PM
1	ICV 30	29.52	0.1445	0.00		3:05:51 PM
2	WG301484-01 BLANK	0.44	0.0014	0.00	><,LL	3:06:45 PM
3	WG301484-02 LCS	20.72	0.1108	0.00		3:07:03 PM
4	WG301484-03 LCSDUP	19.99	0.1078	0.00		3:07:57 PM
R-3	CCV (30 mg/L)	29.05	0.1428	96.83		3:08:15 PM
5	L09040690-11 (15)	23.77	0.1230	0.00		3:09:09 PM
6	L050044-01 (3)	8.07	0.0511	0.00		3:09:27 PM
7	WG301484-05 (3)	7.51	0.0479	0.00	LL	3:10:21 PM
8	WG301484-06 (3)	11.98	0.0716	0.00		3:10:39 PM
R-3	CCV (30 mg/L)	28.64	0.1413	95.45		3:11:34 PM

Report Date :05/04/2009

Run Date :5/4/2009

Operator : WESTCO

Plan # :20090504005

Plan Description : SO4-E-DIH/5/4/2009

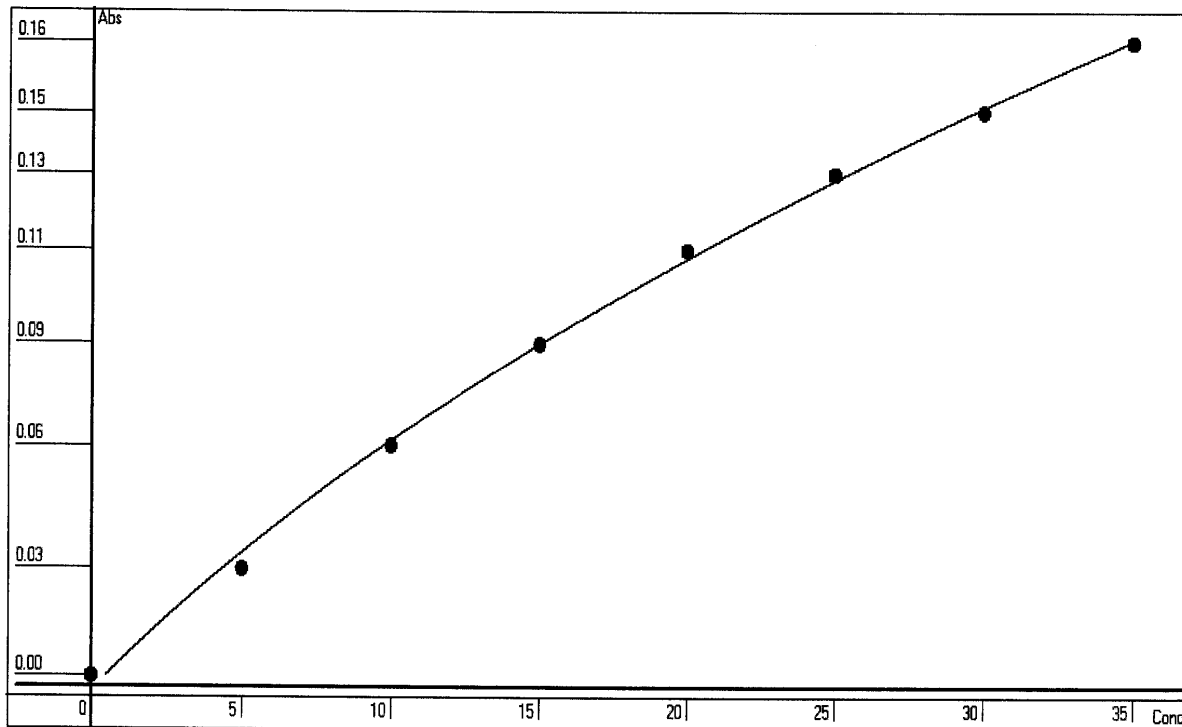
Heanna Roberts

Approved: May 10, 2009

Calibrant Report - WSO4 -

Calib Lot #:010104 Exp Date:1/1/2010 User:Westco Scientific

Plan #: 20090504005 Description : [SO4-E-DIH/5/4/2009] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0017	0	0.4710	47.10
2	0.0290	5	4.3494	-13.01
3	0.0601	10	9.7316	-2.68
4	0.0861	15	15.0193	0.13
5	0.1100	20	20.5129	2.56
6	0.1292	25	25.3654	1.46
7	0.1450	30	29.6522	-1.16
8	0.1629	35	34.8289	-0.49

Conc= +530.7995*Abso^2 +125.7685*Abso +0.2557 R²=0.9988

RBL
0.0042
0

Report Date 5/4/2009 Run Date 5/4/2009

Heanna Roberts

Approved: May 10, 2009

2.4.6 Total Organic Carbon Data

2.4.6.1 Summary Data

LABORATORY REPORT

L09050044

05/20/09 11:24

Submitted By

Microbac Laboratories Inc.
158 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: CH2MHILL, Inc
CH2MHILL
119 Cherry Hill Road Suite 300
Parsippany, NJ 07054-1102
Attention: Rachel Kopec

Project Number: 2736.061
Project: DOW WATERLOO GW
Site: WATERLOO

P.O. Number: 933914

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
BBLD-PIT-SSP-050109	L09050044-01	415.1	100	02-MAY-09
MW-01-050109	L09050044-03	415.1	1	02-MAY-09
MW-03-050109	L09050044-05	415.1	10	02-MAY-09



Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-01**
Client ID: **BBLD-PIT-SSP-050109**
Matrix: **Water**
Workgroup Number: **WG301536**
Collect Date: **05/01/2009 09:00**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **100**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/05/2009 19:18**
Cal Date: **01/13/2009 15:07**
Run Date: **05/05/2009 19:18**
File ID: **TC05052009.044**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		1530		100	50.0

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-03**
Client ID: **MW-01-050109**
Matrix: **Water**
Workgroup Number: **WG301536**
Collect Date: **05/01/2009 10:55**
Sample Tag: **01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **1**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/05/2009 14:40**
Cal Date: **01/13/2009 15:07**
Run Date: **05/05/2009 14:40**
File ID: **TC05052009.022**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		3.85		1.00	0.500

Report Number: **L09050044**Report Date : **May 20, 2009**

Sample Number: **L09050044-05**
Client ID: **MW-03-050109**
Matrix: **Water**
Workgroup Number: **WG301536**
Collect Date: **05/01/2009 09:37**
Sample Tag: **DL01**

PrePrep Method: **NONE**
Prep Method: **415.1**
Analytical Method: **415.1**
Analyst: **DIH**
Dilution: **10**
Units: **mg/L**

Instrument: **TOC-VWP**
Prep Date: **05/05/2009 14:53**
Cal Date: **01/13/2009 15:07**
Run Date: **05/05/2009 14:53**
File ID: **TC05052009.023**

Analyte	CAS. Number	Result	Qual	RL	MDL
Total Organic Carbon		127		10.0	5.00

3 of 3



2.4.6.2 QC Summary Data

**Total Organic Carbon Example Calculations
(Direct Readout Parameter)**

$$(\text{Readout})/(\text{dilution}) = \text{mg/L}$$

where:

Readout = direct readout from the instrument

dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2009

Analyst: DIH

Analyst: NA

Method: TOC

Instrument: TOC

Curve Workgroup: NA

Runlog ID: _____

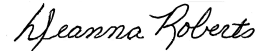
Analytical Workgroups: WG301536 WG301537

Calibration/Linearity	1/13/2009
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DR
Comments	

Primary Reviewer:
08-MAY-2009



Secondary Reviewer:
10-MAY-2009



Microbac Laboratories Inc.
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1
Login Number: L09050044

AAB#: WG301536

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal	Time Held Anal.	Q
MW-01-050109	05/01/09	05/02/09	05/05/09	28	4.16	05/05/09	28	4.16	
MW-03-050109	05/01/09	05/02/09	05/05/09	28	4.22	05/05/09	28	4.22	
BBLD-PIT-SSP-050109	05/01/09	05/02/09	05/05/09	28	4.43	05/05/09	28	4.43	

* EXT = SEE PROJECT QAPP REQUIREMENTS

* ANAL = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 1385360
Report generated 05/06/2009 17:37



METHOD BLANK SUMMARY

Login Number: L09050044
 Blank File ID: TC05052009.004
 Prep Date: 05/05/09 10:38
 Analyzed Date: 05/05/09 10:38
 Analyst: DIH

Work Group: WG301536
 Blank Sample ID: WG301536-01
 Instrument ID: TOC-VWP
 Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG301536-02	TC05052009.005	05/05/09 10:49	01
LCS2	WG301536-03	TC05052009.006	05/05/09 11:02	01
MW-01-050109	L09050044-03	TC05052009.022	05/05/09 14:40	01
MW-03-050109	L09050044-05	TC05052009.023	05/05/09 14:53	DL01
DUP	WG301536-05	TC05052009.031	05/05/09 16:32	01
BBLD-PIT-SSP-050109	L09050044-01	TC05052009.044	05/05/09 19:18	DL01



Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L09050044 Prep Date: 05/05/09 10:38 Sample ID: WG301536-01
Instrument ID: TOC-VWP Run Date: 05/05/09 10:38 Prep Method: 415.1
File ID: TC05052009.004 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG301536 Matrix: Water Units: mg/L
Contract #: _____ Cal ID: TOC-VW - 13-JAN-09

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	1.00	0.500	1	U

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* |Analyte concentration| > RL

Report Name: BLANK

PDF ID: 1385362

06-MAY-2009 17:37



Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L09050044 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG301536 Units: mg/L
QC Key: STD Lot #: STD31844
Sample ID: WG301536-02 LCS File ID: TC05052009.005 Run Date: 05/05/2009 10:49
Sample ID: WG301536-03 LCS2 File ID: TC05052009.006 Run Date: 05/05/2009 11:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	24.1	96.3	25.0	25.0	100	3.75	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 1385363
Report generated: 05/06/2009 17:37



2.4.6.3 Raw Data

TC/TIC curves

wg 292773

Total Organic Carbon

MAKE DAILY

CCV (TOC): see below

LCS (TOC): _____

$$\left(\frac{10}{200}\right)(1000) = 50 \text{ mg/L} \quad \left(\frac{2}{200}\right)(1000) = 10 \text{ mg/L}$$

$$\left(\frac{5}{200}\right)(1000) = 25 \text{ mg/L}$$

CCV (TIC): _____

MS (TOC): _____

$$\left(\frac{5}{200}\right)(1000) = 25 \text{ mg/L}$$

Calibration Curve Date: _____



SM5310-C : Matrix 2 WG _____



EPA 415.1/9060A(mod): Matrix 1 WG _____

SOP: K 4151 Rev. 11

WG _____

Instrument: Shimadza TOC-VWP/ASI



drain reservoir filled



ASI water bottle full



dilution water bottle full



DAILY CHECK

3rd bottle full

sufficient gas



sufficient persulfate



sufficient acid

waste container

Position	Sample ID	Dilution
1	TC CURVE	
2	TIC curve	
3	TC ICV(25)	
4	TIC ICV(25)	
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16	all curve points and ICV's were injected and analyzed in duplicate	
17		
18		
19		
20		
21		
22		
23		
24		
25		

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31	curve std	
32	std 30838	
33	TIC 28734	
34		
35		
36	ICV	
37	TC std 30420	
38	TIC std 28733	
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57	see SOP for	
58	curve pts	
59		
60		
61		
62	$\frac{5 \text{ ml}}{200}(1000) = 25 \text{ mg/L}$	
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Deanna RobertsDate/Time: 1/13/09

WG: _____

WG: _____

WG: _____

DCN#78103



Deanna Roberts

Approved: January 19, 2009

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TC	TC CURVE		Comple	01/13/2009 03:12:54 PM	0, 1,
2	IC	TIC CURVE		Comple	01/13/2009 04:22:39 PM	0, 6,
3	TC	TC ICV	TC:24.92mg/L	Comple	01/13/2009 04:38:03 PM	11
4	IC	TIC ICV	IC:24.60mg/L	Comple	01/13/2009 04:50:47 PM	12

Heanna Roberts

Approved: January 19, 2009

Instr. Information

System
DetectorTOCVW ASI
Wet Chemical

Cal. Curve

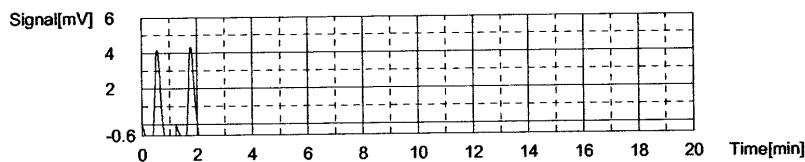
Sample Name: TC CURVE
 Sample ID: TCCURVE
 Cal. Curve: TCCURVE-01-13-2009.2009_01_13_14_10_52.cal
 Status: Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	8.437	500uL	1	*****		01/13/2009 02:14:13 PM
2	8.432	500uL	1	*****		01/13/2009 02:18:55 PM

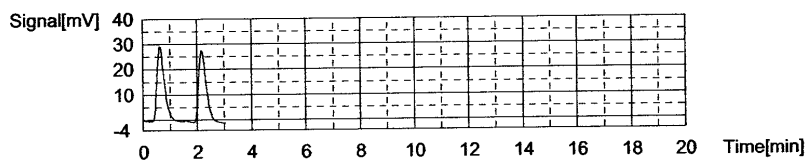
Acid Add. 0.000%
 Mean Area 8.434



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	56.85	500uL	1	*****		01/13/2009 02:24:22 PM
2	54.36	500uL	1	*****		01/13/2009 02:29:25 PM

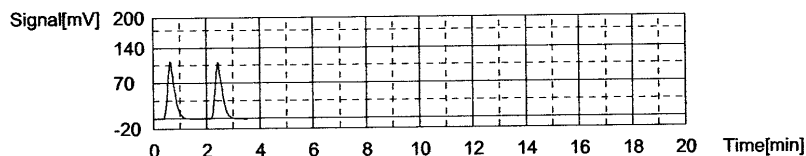
Acid Add. 0.000%
 Mean Area 55.61



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	206.9	500uL	1	*****		01/13/2009 02:35:09 PM
2	202.6	500uL	1	*****		01/13/2009 02:39:10 PM

Acid Add. 0.000%
 Mean Area 204.8

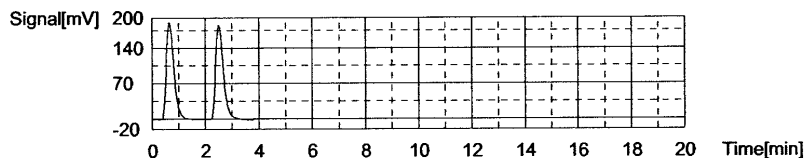


Conc: 10.00mg/L

Approved: January 19, 2009

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	380.7	500uL	1	*****		01/13/2009 02:44:58 PM
2	379.4	500uL	1	*****		01/13/2009 02:49:11 PM

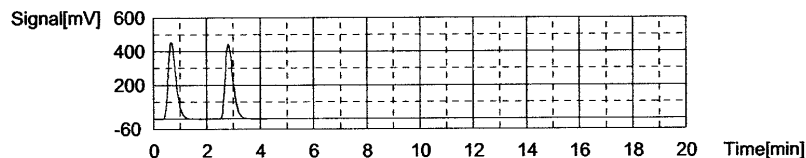
Acid Add. 0.000%
Mean Area 380.1



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	934.8	500uL	1	*****		01/13/2009 02:55:16 PM
2	914.5	500uL	1	*****		01/13/2009 03:00:30 PM

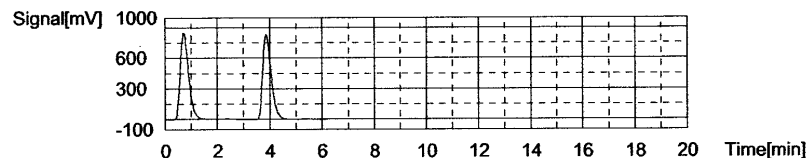
Acid Add. 0.000%
Mean Area 924.7



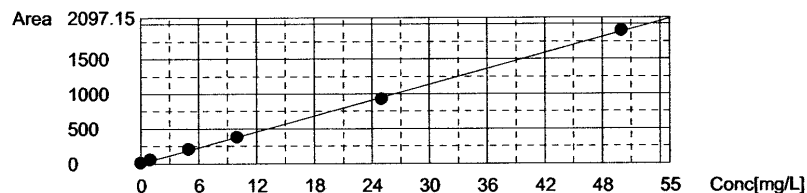
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1922	500uL	1	*****		01/13/2009 03:07:36 PM
2	1891	500uL	1	*****		01/13/2009 03:12:54 PM

Acid Add. 0.000%
Mean Area 1907



Slope: 37.71
Intercept 8.127
 r^2 0.999609
Zero Shift No



Cal. Curve

Sample Name: TIC CURVE
Sample ID: TICCURVE
Cal. Curve: TICCURVE-01-13-2009.2009_01_13_15_12_54.cal
Status: Completed

Type	Anal.
Standard	IC

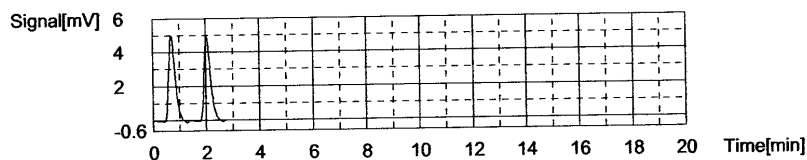
Conc: 0.000mg/L

Heanna Roberts

Approved: January 19, 2009

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	8.658	500uL	1	*****		01/13/2009 03:16:31 PM
2	8.479	500uL	1	*****		01/13/2009 03:20:08 PM

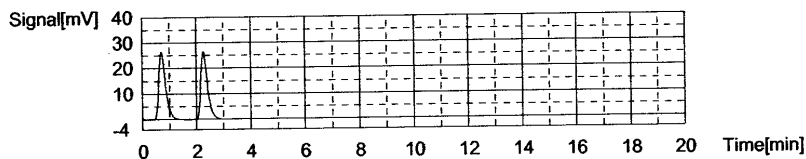
Acid Add. 3.000%
Mean Area 8.569



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.56	500uL	1	*****		01/13/2009 03:27:22 PM
2	46.10	500uL	1	*****		01/13/2009 03:31:26 PM

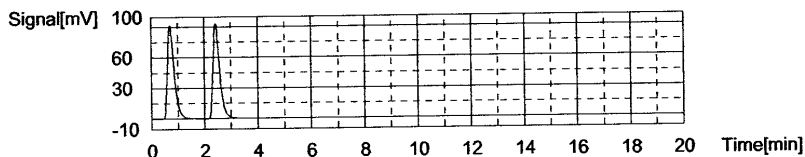
Acid Add. 3.000%
Mean Area 46.33



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	160.8	500uL	1	*****		01/13/2009 03:38:53 PM
2	161.9	500uL	1	*****		01/13/2009 03:43:10 PM

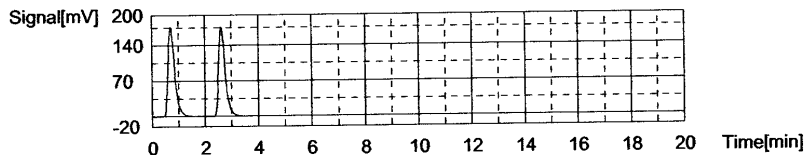
Acid Add. 3.000%
Mean Area 161.4



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	310.0	500uL	1	*****		01/13/2009 03:50:52 PM
2	308.4	500uL	1	*****		01/13/2009 03:55:18 PM

Acid Add. 3.000%
Mean Area 309.2



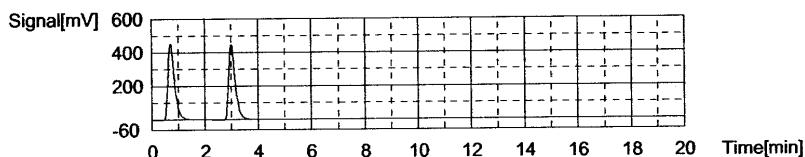
Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	793.7	500uL	1	*****		01/13/2009 04:03:34 PM
2	782.1	500uL	1	*****		01/13/2009 04:08:41 PM

Heanna Roberts

Approved: January 19, 2009

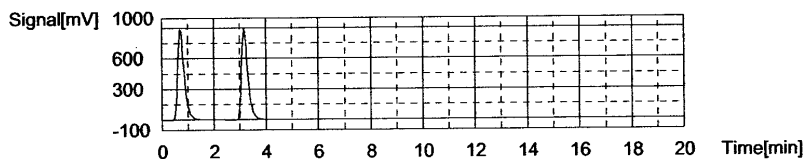
Acid Add. 3.000%
Mean Area 787.9



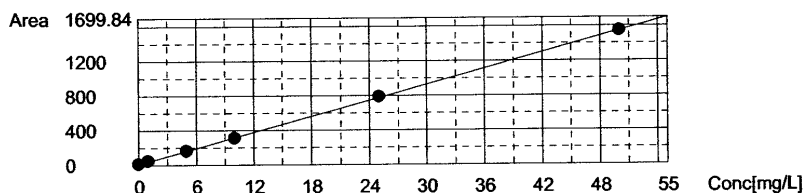
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1547	500uL	1	*****		01/13/2009 04:17:18 PM
2	1537	500uL	1	*****		01/13/2009 04:22:39 PM

Acid Add. 3.000%
Mean Area 1542



Slope: 30.70
Intercept 10.26
 r^2 0.999878
Zero Shift No



Sample

Sample Name: TC ICV
Sample ID: TCCURVE
Origin: TCCURVE-01-13-2009.cal
Status: Completed
Chk. Result:

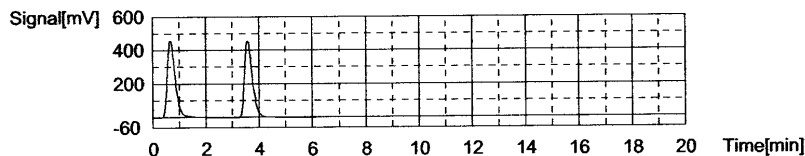
Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	951.9	25.03mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	01/13/2009 04:31:14 PM
2	943.7	24.81mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	01/13/2009 04:38:03 PM

Mean Area 947.8
Mean Conc. 24.92mg/L



Heanna Roberts

Approved: January 19, 2009

Sample

Sample Name: TIC ICV
Sample ID: TICCURVE
Origin: TICCURVE-01-13-2009.cal
Status: Completed
Chk. Result

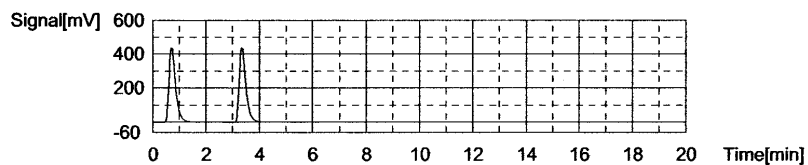
Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.60mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	765.5	24.60mg/L	500ul	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	01/13/2009 04:45:09 PM
2	765.4	24.60mg/L	500ul	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	01/13/2009 04:50:47 PM

Mean Area 765.5
Mean Conc. 24.60mg/L

*Heanna Roberts*

Approved: January 19, 2009

3015317

Total Organic Carbon

MAKE DAILY

CCV (TOC): 51d32652

LCS (TOC): 51d31844

 $(\frac{10}{200} (1000) = 50 \text{ mg/L})$ $(\frac{2}{200} (1000) = 10 \text{ mg/L})$

CCV (TIC): 51d31777

MS (TOC): 0.4/40(1000)=10

 $(\frac{5}{200} (1000) = 25 \text{ mg/L})$

Calibration Curve Date: 11/3/09



SM5310-C : Matrix 2 WG



EPA 415.1/9060A(mod): Matrix 1 WG

SOP: K 4151

Rev. 11

WG

Instrument: Shimadza TOC-VWP/ASI



drain reservoir filled



ASI water bottle full



dilution water bottle full



DAILY CHECK

3rd bottle full

sufficient gas



sufficient persulfate



sufficient acid



waste container

Position	Sample ID	Dilution
1	CCV 50	
2	CCV 10	
3	TIC 25	
4	BLK	
5	LCS 25	
6	LCS DUP	
7	05-029-01	1/5
8	07	1/3
9	04-690-09	1/4
10	04-698-02	1/5
11	04-727-01	
12	05	
13	07	
14	09	
15	CCV	
16	CCB	
17	04-736-02	1/3
18	05	1/5
19	05-033-05	
20	06	
21	05-044-01	1/10
22	03	
23	05	1/10
24	05-047-02	1/2 Fe
25	03	1/50

Position	Sample ID	Dilution
26	05-047-04	1/2
27	CCV	
28	CCB	
29	05-047-05	1/2
30	07	
31	DUP	
32	MS	✓
33	BLK	
34	LCS	
35	LCS DUP	
36	05-057-02	
37	05	1/10
38	08	1/4
39	CCV	
40	CCB	
41	05-057-09	
42	DUP	✓
43	MS	✓
44	04-044-01	1/100
45	04-698-02	1/5
46	05-075-01	1/4
47	03	
48	05	1/2
49	07	1/100
50	05-069-02	1/2

Position	Sample ID	Dilution
51	CCV	
52	CCB	
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63	CCV	
64	CCB	
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: Deanna

Date/Time: 5/5/09

0

069-02 was re-analyzed straight on 5/7.
Result over cal range. This diluted
result is being reported.
Suspect CL interference

DCN#79315



Deanna Roberts

Approved: May 10, 2009

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	CCV 50	!!Error!! TOC:53.88mg/L TC:53.68mg/L IC:-0.2040mg	Comple	05/05/2009 10:06:59 AM	1
2	TOC	CCV 10	!!Error!! TOC:9.623mg/L TC:9.435mg/L IC:-0.1878mg	Comple	05/05/2009 10:19:10 AM	2
3	TOC	TIC 25	TOC:1.659mg/L TC:26.41mg/L IC:24.75mg/L	Comple	05/05/2009 10:32:47 AM	3
4	TOC	WG301536-01 BLANK	!!Error!! TOC:0.1003mg/L TC:-0.05248mg/L IC:-0.152	Comple	05/05/2009 10:42:04 AM	0
5	TOC	WG301536-02 LCS	!!Error!! TOC:24.08mg/L TC:23.87mg/L IC:-0.2093mg	Comple	05/05/2009 10:54:16 AM	5
6	TOC	WG301536-03 LCSDUP	!!Error!! TOC:25.00mg/L TC:24.79mg/L IC:-0.2098mg	Comple	05/05/2009 11:06:40 AM	6
7	TOC	L09050029-01 (5)	TOC:4.241mg/L TC:23.95mg/L IC:19.70mg/L	Comple	05/05/2009 11:20:51 AM	7
8	TOC	L09050029-07 (3)	TOC:3.924mg/L TC:21.11mg/L IC:17.19mg/L	Comple	05/05/2009 11:34:16 AM	8
9	TOC	L09040690-09 (4)	TOC:3.397mg/L TC:15.67mg/L IC:12.27mg/L	Comple	05/05/2009 11:47:04 AM	9
10	TOC	L09040698-02 (15) X	TOC:1.825mg/L TC:6.497mg/L IC:4.672mg/L	Comple	05/05/2009 11:59:33 AM	10
11	TOC	L09040727-01	TOC:6.531mg/L TC:42.06mg/L IC:35.53mg/L	Comple	05/05/2009 12:13:51 PM	11
12	TOC	L09040727-05	TOC:3.914mg/L TC:19.70mg/L IC:15.78mg/L	Comple	05/05/2009 12:27:05 PM	12
13	TOC	L09040727-07 X	TOC:4.949mg/L TC:67.84mg/L IC:62.89mg/L	Comple	05/05/2009 12:42:06 PM	13
14	TOC	L09040727-09 X	TOC:2.536mg/L TC:67.28mg/L IC:64.75mg/L	Comple	05/05/2009 12:57:03 PM	14
15	TOC	CCV	TOC:49.89mg/L TC:49.96mg/L IC:0.06972mg/L	Comple	05/05/2009 01:09:50 PM	15
16	TOC	CCB	!!Error!! TOC:0.05517mg/L TC:-0.06315mg/L IC:-0.11	Comple	05/05/2009 01:18:54 PM	0
17	TOC	L0904736-02 (3)	TOC:11.80mg/L TC:33.70mg/L IC:21.91mg/L	Comple	05/05/2009 01:33:04 PM	17
18	TOC	L09040736-05 (5)	TOC:3.594mg/L TC:27.39mg/L IC:23.80mg/L	Comple	05/05/2009 01:46:45 PM	18
19	TOC	L09050033-05	TOC:2.420mg/L TC:14.07mg/L IC:11.65mg/L	Comple	05/05/2009 02:00:28 PM	19
20	TOC	L09050033-06 X	!!Error!! TOC:-2.620mg/L TC:92.87mg/L IC:95.49mg	Comple	05/05/2009 02:17:21 PM	20
21	TOC	L09050044-01 (10) X	TOC:135.0mg/L TC:156.2mg/L IC:21.10mg/L	Comple	05/05/2009 02:32:31 PM	21
22	TOC	L09050044-03	TOC:3.854mg/L TC:20.06mg/L IC:16.20mg/L	Comple	05/05/2009 02:45:29 PM	22
23	TOC	L09050044-05 (10)	TOC:12.70mg/L TC:33.47mg/L IC:20.77mg/L	Comple	05/05/2009 02:59:02 PM	23
24	TOC	L09050047-02 (2) X	TOC:0.3964mg/L TC:2.250mg/L IC:1.854mg/L	Comple	05/05/2009 03:10:56 PM	24
25	TOC	L09050047-03 (50) X	TOC:3.068mg/L TC:5.380mg/L IC:2.313mg/L	Comple	05/05/2009 03:23:16 PM	25
26	TOC	L09050047-04 (2) X	TOC:1.042mg/L TC:3.049mg/L IC:2.007mg/L	Comple	05/05/2009 03:36:27 PM	26
27	TOC	CCV	!!Error!! TOC:49.50mg/L TC:49.35mg/L IC:-0.1461mg	Comple	05/05/2009 03:49:08 PM	27
28	TOC	CCB	!!Error!! TOC:0.05881mg/L TC:-0.09123mg/L IC:-0.15	Comple	05/05/2009 03:58:15 PM	0
29	TOC	L09050047-05 (2) X	TOC:1.333mg/L TC:9.022mg/L IC:7.688mg/L	Comple	05/05/2009 04:11:01 PM	29
30	TOC	L09050047-07	TOC:4.956mg/L TC:34.69mg/L IC:29.73mg/L	Comple	05/05/2009 04:25:21 PM	30
31	TOC	WG301536-05 DUP	TOC:3.676mg/L TC:35.80mg/L IC:32.12mg/L	Comple	05/05/2009 04:38:49 PM	31
32	TOC	WG301536-06 MS	TOC:14.23mg/L TC:48.13mg/L IC:33.90mg/L	Comple	05/05/2009 04:52:32 PM	32
33	TOC	WG301537-01 BLANK	!!Error!! TOC:0.02792mg/L TC:-0.00867mg/L IC:-0.03	Comple	05/05/2009 05:01:44 PM	0
34	TOC	WG301537-02 LCS	!!Error!! TOC:25.30mg/L TC:25.20mg/L IC:-0.09910m	Comple	05/05/2009 05:14:08 PM	34
35	TOC	WG301537-03 LCSDUP	!!Error!! TOC:24.85mg/L TC:24.71mg/L IC:-0.1410mg	Comple	05/05/2009 05:26:01 PM	35
36	TOC	L09050057-02	TOC:6.300mg/L TC:50.07mg/L IC:43.77mg/L	Comple	05/05/2009 05:41:05 PM	36
37	TOC	L09050057-05 (10)	TOC:2.483mg/L TC:11.44mg/L IC:8.952mg/L	Comple	05/05/2009 05:53:36 PM	37
38	TOC	L09050057-08 (4)	TOC:4.211mg/L TC:19.45mg/L IC:15.24mg/L	Comple	05/05/2009 06:07:03 PM	38
39	TOC	CCV	!!Error!! TOC:49.91mg/L TC:49.83mg/L IC:-0.08308m	Comple	05/05/2009 06:19:51 PM	39
40	TOC	CCB	!!Error!! TOC:0.04742mg/L TC:-0.09314mg/L IC:-0.14	Comple	05/05/2009 06:28:57 PM	0
41	TOC	L09050057-09	TOC:1.351mg/L TC:4.518mg/L IC:3.167mg/L	Comple	05/05/2009 06:42:19 PM	41
42	TOC	WG301537-05 DUP	TOC:1.164mg/L TC:4.126mg/L IC:2.962mg/L	Comple	05/05/2009 06:55:40 PM	42
43	TOC	WG301537-06 MS	TOC:10.18mg/L TC:14.60mg/L IC:4.425mg/L	Comple	05/05/2009 07:10:48 PM	43
44	TOC	L09050044-01 (100)	TOC:15.30mg/L TC:16.73mg/L IC:1.424mg/L	Comple	05/05/2009 07:23:19 PM	44
45	TOC	L09040698-02 (5)	TOC:3.693mg/L TC:10.76mg/L IC:7.063mg/L	Comple	05/05/2009 07:36:02 PM	45
46	TOC	L09050075-01 (4)	TOC:3.946mg/L TC:22.18mg/L IC:18.24mg/L	Comple	05/05/2009 07:48:58 PM	46
47	TOC	L09050075-03 X	!!Error!! TOC:-1.553mg/L TC:81.20mg/L IC:82.76mg	Comple	05/05/2009 08:05:15 PM	47
48	TOC	L09050075-05 (2)	TOC:3.465mg/L TC:34.34mg/L IC:30.88mg/L	Comple	05/05/2009 08:18:58 PM	48
49	TOC	L09050075-07 (100)	TOC:2.653mg/L TC:21.51mg/L IC:18.86mg/L	Comple	05/05/2009 08:32:23 PM	49
50	TOC	L09050069-02 (2) X	!!Error!! TOC:0.2746mg/L TC:0.2565mg/L IC:-0.0180	Comple	05/05/2009 08:43:55 PM	50
51	TOC	CCV	!!Error!! TOC:50.05mg/L TC:49.94mg/L IC:-0.1112mg	Comple	05/05/2009 08:56:42 PM	51
52	TOC	CCB	!!Error!! TOC:0.04502mg/L TC:-0.08460mg/L IC:-0.12	Comple	05/05/2009 09:05:51 PM	0

Heanna Roberts

Approved: May 10, 2009

Instr. Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: CCV 50
Sample ID:
Origin: TOC-01-13-2009.met
Status Completed
Chk. Result

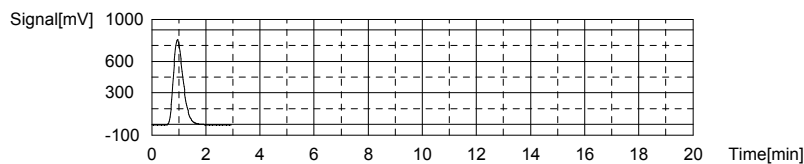
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:53.88mg/L TC:53.68mg/L IC:-0.2040mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2032	53.68mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 10:02:41 AM

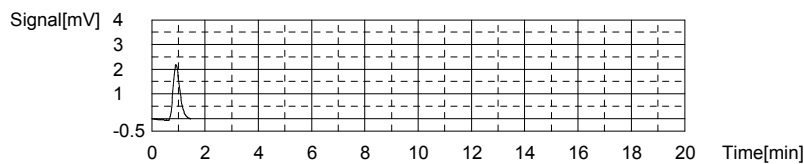
Mean Area 2032
Mean Conc. 53.68mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.995	-0.2040mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 10:06:59 AM

Mean Area 3.995
Mean Conc. -0.2040mg/L



Sample

Sample Name: CCV 10
Sample ID:
Origin: TOC-01-13-2009.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:9.623mg/L TC:9.435mg/L IC:-0.1878mg/L

1. Det

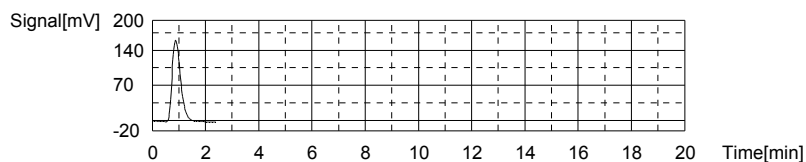
Anal.: TC

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No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	363.9	9.435mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 10:14:49 AM

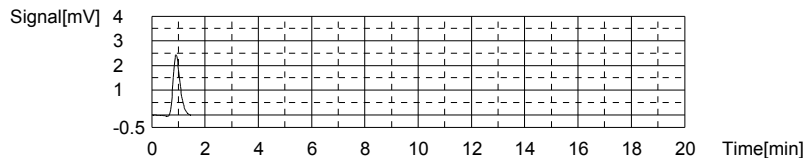
Mean Area 363.9
Mean Conc. 9.435mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.495	-0.1878mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 10:19:10 AM

Mean Area 4.495
Mean Conc. -0.1878mg/L



Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

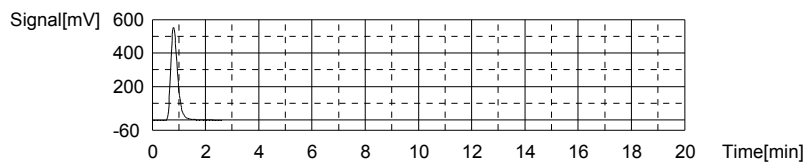
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.659mg/L TC:26.41mg/L IC:24.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1004	26.41mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 10:27:12 AM

Mean Area 1004
Mean Conc. 26.41mg/L



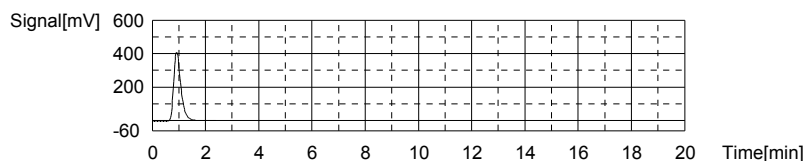
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	770.2	24.75mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 10:32:47 AM

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Approved: May 10, 2009

Mean Area 770.2
Mean Conc. 24.75mg/L



Sample

Sample Name: WG301536-01 BLANK
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

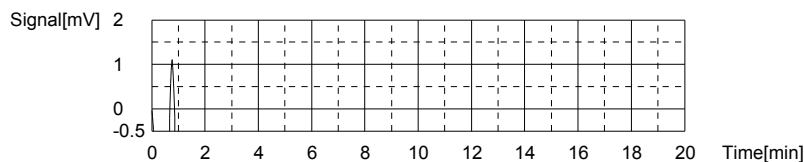
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1003mg/L TC:-0.05248mg/L IC:-0.1528mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.148	-0.05248mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 10:38:06 AM

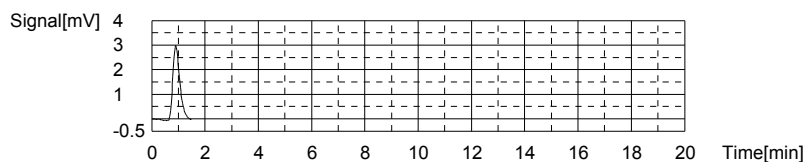
Mean Area 6.148
Mean Conc. -0.05248mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.569	-0.1528mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 10:42:04 AM

Mean Area 5.569
Mean Conc. -0.1528mg/L



Sample

Sample Name: WG301536-02 LCS
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.08mg/L TC:23.87mg/L IC:-0.2093mg/L

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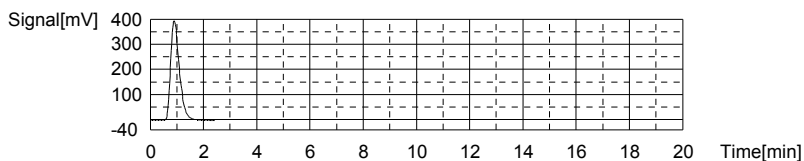
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	908.2	23.87mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 10:49:55 AM

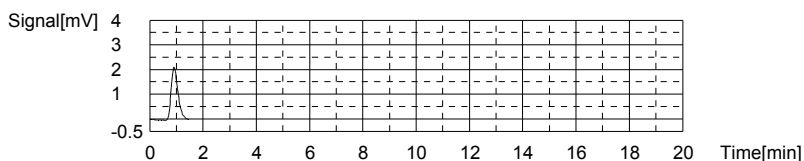
Mean Area 908.2
Mean Conc. 23.87mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.835	-0.2093mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 10:54:16 AM

Mean Area 3.835
Mean Conc. -0.2093mg/L



Sample

Sample Name: WG301536-03 LCSDUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

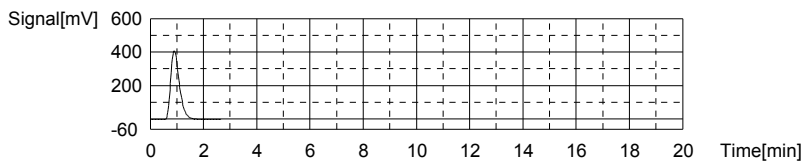
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.00mg/L TC:24.79mg/L IC:-0.2098mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	942.9	24.79mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:02:22 AM

Mean Area 942.9
Mean Conc. 24.79mg/L

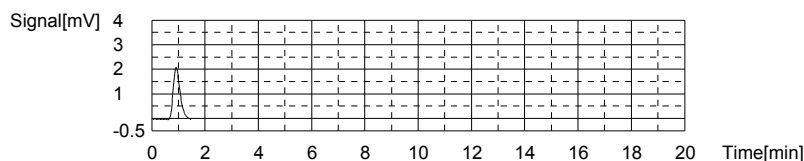


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.817	-0.2098mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:06:40 AM

Approved: May 10, 2009

Mean Area 3.817
Mean Conc. -0.2098mg/L



Sample

Sample Name: L09050029-01 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

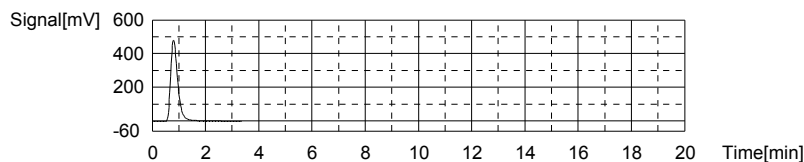
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.241mg/L TC:23.95mg/L IC:19.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	911.0	23.95mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:15:28 AM

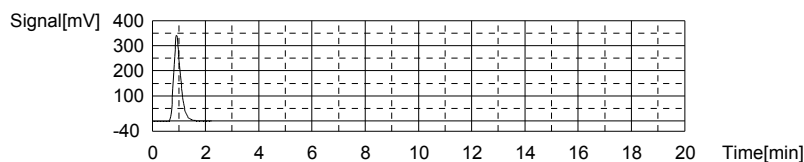
Mean Area 911.0
Mean Conc. 23.95mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	615.2	19.70mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:20:51 AM

Mean Area 615.2
Mean Conc. 19.70mg/L



Sample

Sample Name: L09050029-07 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.924mg/L TC:21.11mg/L IC:17.19mg/L

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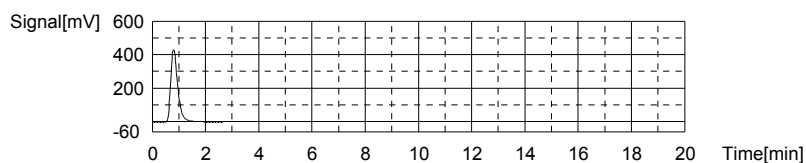
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	804.1	21.11mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:28:56 AM

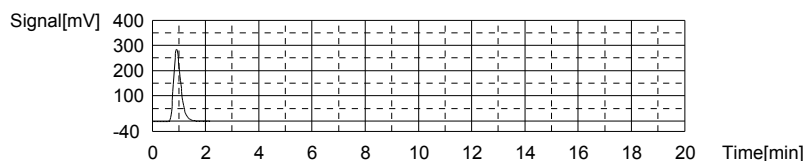
Mean Area 804.1
Mean Conc. 21.11mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	537.9	17.19mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:34:16 AM

Mean Area 537.9
Mean Conc. 17.19mg/L



Sample

Sample Name: L09040690-09 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

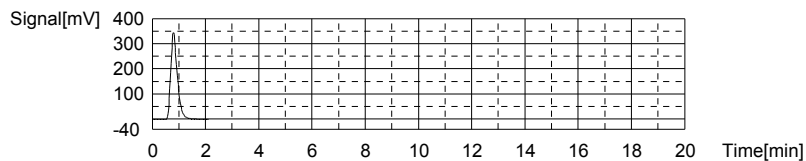
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.397mg/L TC:15.67mg/L IC:12.27mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	598.9	15.67mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:41:48 AM

Mean Area 598.9
Mean Conc. 15.67mg/L

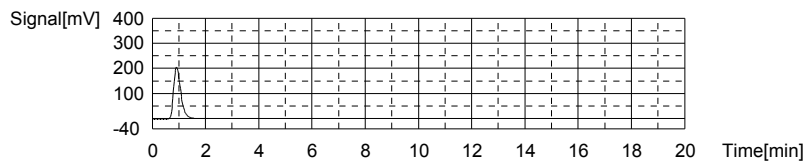


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.0	12.27mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:47:04 AM

Approved: May 10, 2009

Mean Area 387.0
Mean Conc. 12.27mg/L



Sample

Sample Name: L09040698-02 (15)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

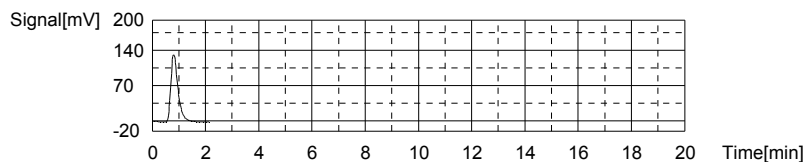
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.825mg/L TC:6.497mg/L IC:4.672mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	253.1	6.497mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 11:54:38 AM

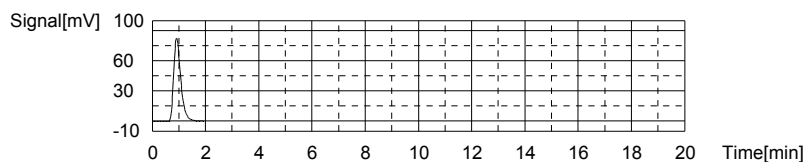
Mean Area 253.1
Mean Conc. 6.497mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	153.7	4.672mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 11:59:33 AM

Mean Area 153.7
Mean Conc. 4.672mg/L



Sample

Sample Name: L09040727-01
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.531mg/L TC:42.06mg/L IC:35.53mg/L

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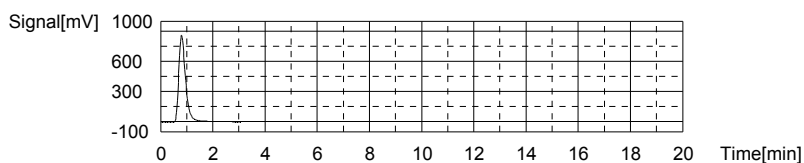
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1594	42.06mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 12:08:04 PM

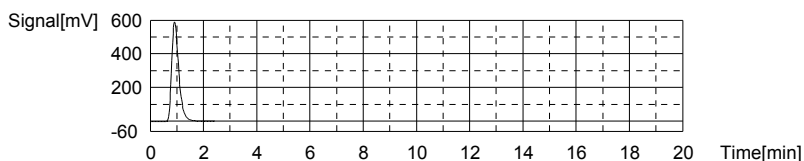
Mean Area 1594
Mean Conc. 42.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1101	35.53mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 12:13:51 PM

Mean Area 1101
Mean Conc. 35.53mg/L



Sample

Sample Name: L09040727-05
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

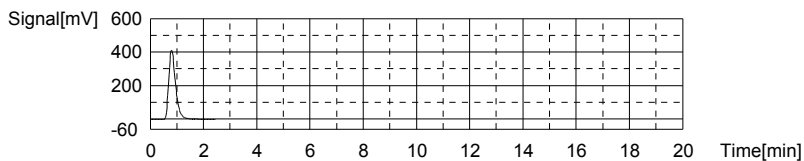
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.914mg/L TC:19.70mg/L IC:15.78mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	750.8	19.70mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 12:21:43 PM

Mean Area 750.8
Mean Conc. 19.70mg/L

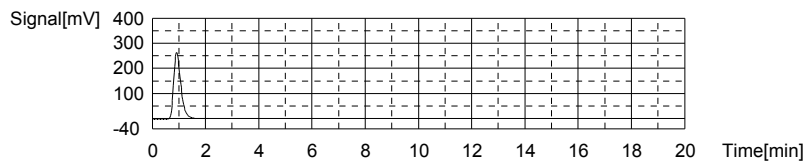


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	494.8	15.78mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 12:27:05 PM

Approved: May 10, 2009

Mean Area 494.8
Mean Conc. 15.78mg/L



Sample

Sample Name: L09040727-07
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

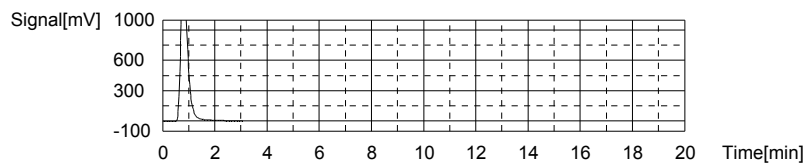
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.949mg/L TC:67.84mg/L IC:62.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2566	67.84mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 12:35:35 PM

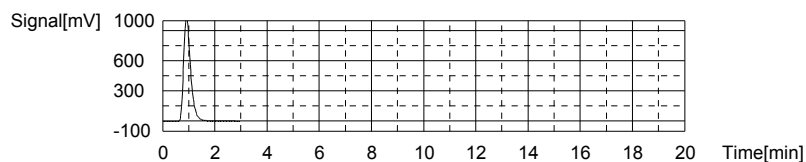
Mean Area 2566
Mean Conc. 67.84mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1941	62.89mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 12:42:06 PM

Mean Area 1941
Mean Conc. 62.89mg/L



Sample

Sample Name: L09040727-09
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.536mg/L TC:67.28mg/L IC:64.75mg/L

Kearna Roberts

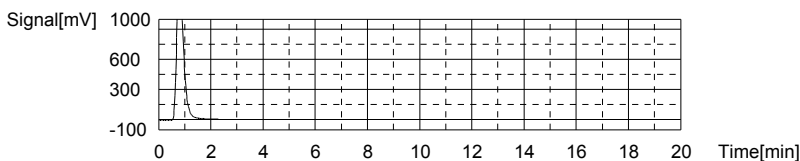
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2545	67.28mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 12:50:46 PM

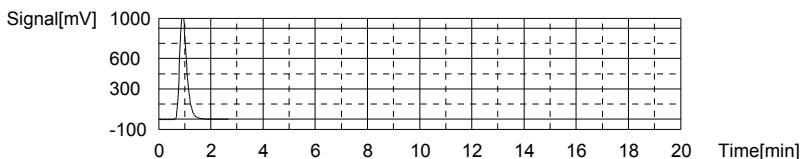
Mean Area 2545
Mean Conc. 67.28mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1998	64.75mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 12:57:03 PM

Mean Area 1998
Mean Conc. 64.75mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

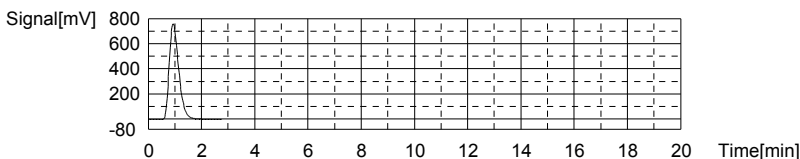
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:49.89mg/L TC:49.96mg/L IC:0.06972mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1892	49.96mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:05:15 PM

Mean Area 1892
Mean Conc. 49.96mg/L

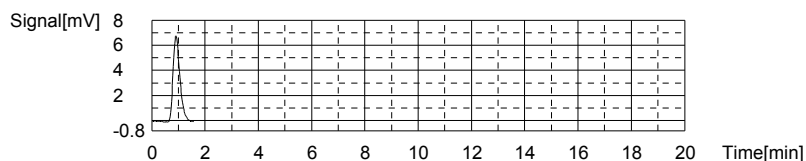


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.40	0.06972mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 01:09:50 PM

Approved: May 10, 2009

Mean Area 12.40
Mean Conc. 0.06972mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

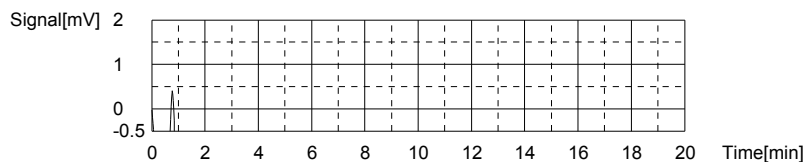
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.05517mg/L TC:-0.06315mg/L IC:-0.1183mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.746	-0.06315mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:14:59 PM

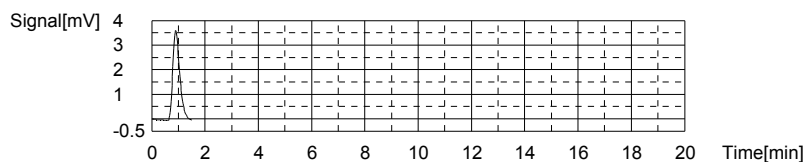
Mean Area 5.746
Mean Conc. -0.06315mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.627	-0.1183mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 01:18:54 PM

Mean Area 6.627
Mean Conc. -0.1183mg/L



Sample

Sample Name: L0904736-02 (3)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.80mg/L TC:33.70mg/L IC:21.91mg/L

Kearna Roberts

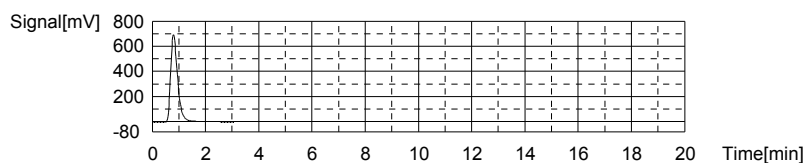
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1279	33.70mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:27:24 PM

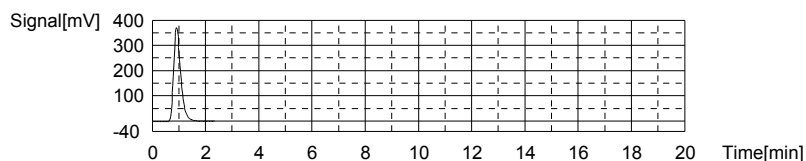
Mean Area 1279
Mean Conc. 33.70mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	682.9	21.91mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 01:33:04 PM

Mean Area 682.9
Mean Conc. 21.91mg/L



Sample

Sample Name: L09040736-05 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

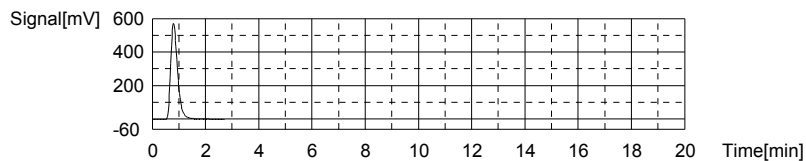
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.594mg/L TC:27.39mg/L IC:23.80mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1041	27.39mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 01:41:13 PM

Mean Area 1041
Mean Conc. 27.39mg/L

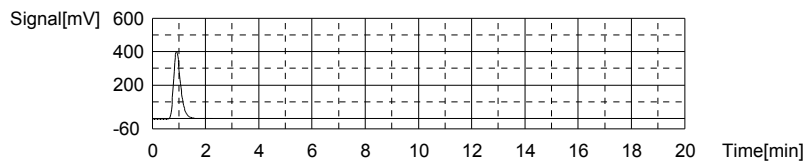


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	740.9	23.80mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 01:46:45 PM

Approved: May 10, 2009

Mean Area 740.9
Mean Conc. 23.80mg/L



Sample

Sample Name: L09050033-05
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

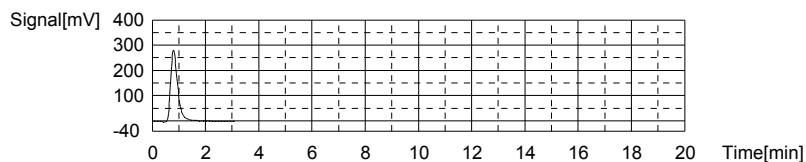
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.420mg/L TC:14.07mg/L IC:11.65mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	538.5	14.07mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 01:55:18 PM

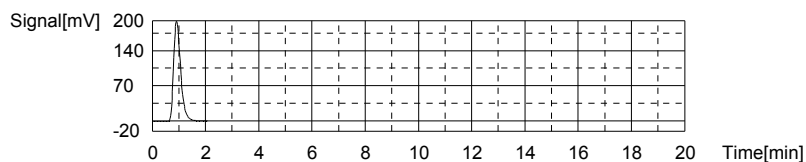
Mean Area 538.5
Mean Conc. 14.07mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	367.8	11.65mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 02:00:28 PM

Mean Area 367.8
Mean Conc. 11.65mg/L



Sample

Sample Name: L09050033-06
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-2.620mg/L TC:92.87mg/L IC:95.49mg/L

Heanna Roberts

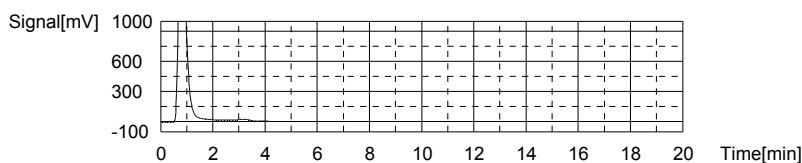
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3510	92.87mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:10:28 PM

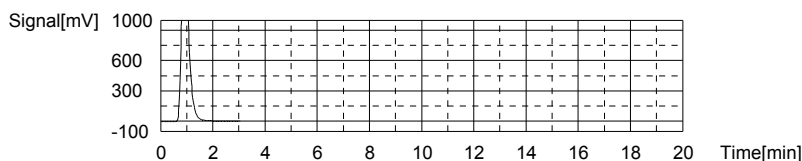
Mean Area 3510
Mean Conc. 92.87mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2942	95.49mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:17:21 PM

Mean Area 2942
Mean Conc. 95.49mg/L



Sample

Sample Name: L09050044-01 (10)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

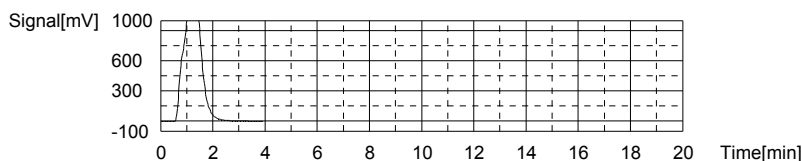
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:135.0mg/L TC:156.2mg/L IC:21.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5896	156.2mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:26:43 PM

Mean Area 5896
Mean Conc. 156.2mg/L

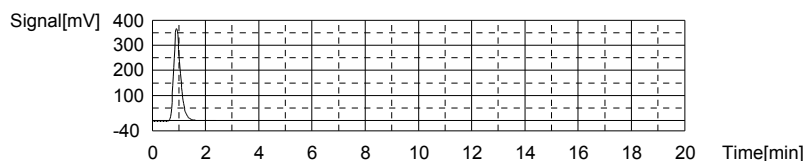


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	658.2	21.10mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:32:31 PM

Approved: May 10, 2009

Mean Area 658.2
Mean Conc. 21.10mg/L



Sample

Sample Name: L09050044-03
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

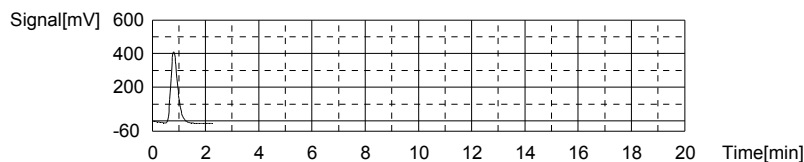
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.854mg/L TC:20.06mg/L IC:16.20mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	764.4	20.06mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:40:12 PM

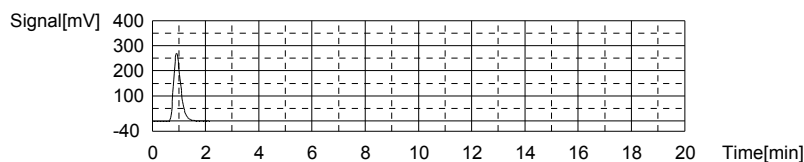
Mean Area 764.4
Mean Conc. 20.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	507.7	16.20mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:45:29 PM

Mean Area 507.7
Mean Conc. 16.20mg/L



Sample

Sample Name: L09050044-05 (10)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.70mg/L TC:33.47mg/L IC:20.77mg/L

Heanna Roberts

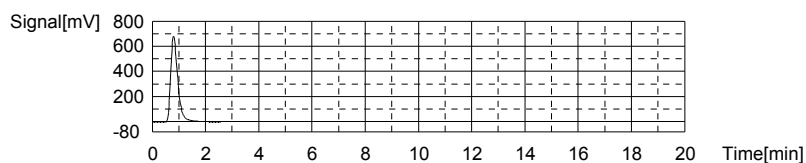
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1270	33.47mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 02:53:30 PM

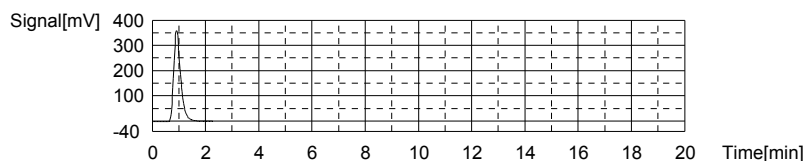
Mean Area 1270
Mean Conc. 33.47mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	647.8	20.77mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 02:59:02 PM

Mean Area 647.8
Mean Conc. 20.77mg/L



Sample

Sample Name: L09050047-02 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

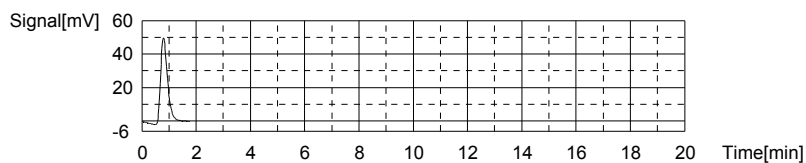
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3964mg/L TC:2.250mg/L IC:1.854mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	92.97	2.250mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:06:14 PM

Mean Area 92.97
Mean Conc. 2.250mg/L



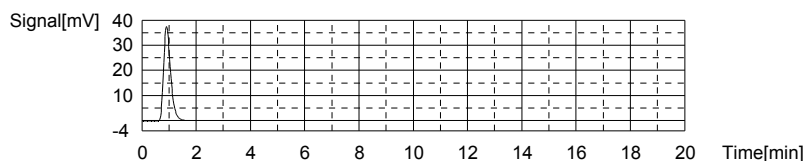
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	67.17	1.854mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:10:56 PM

Kearna Roberts

Approved: May 10, 2009

Mean Area 67.17
Mean Conc. 1.854mg/L



Sample

Sample Name: L09050047-03 (50)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

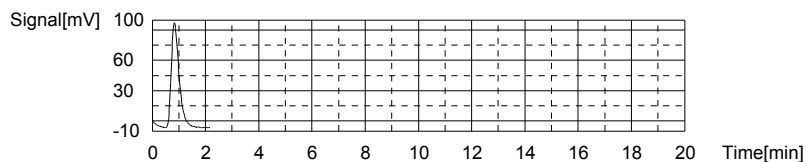
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.068mg/L TC:5.380mg/L IC:2.313mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	211.0	5.380mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10	05/05/2009 03:18:31 PM

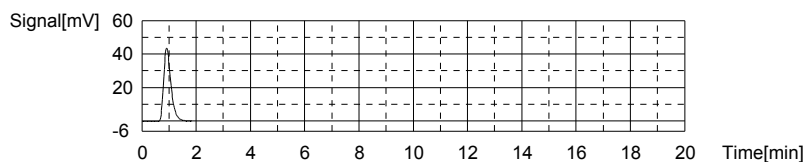
Mean Area 211.0
Mean Conc. 5.380mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.26	2.313mg/L	500uL	1		TICURVE-01-13-2009.2009_01_13_15_12	05/05/2009 03:23:16 PM

Mean Area 81.26
Mean Conc. 2.313mg/L



Sample

Sample Name: L09050047-04 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.042mg/L TC:3.049mg/L IC:2.007mg/L

Heanna Roberts

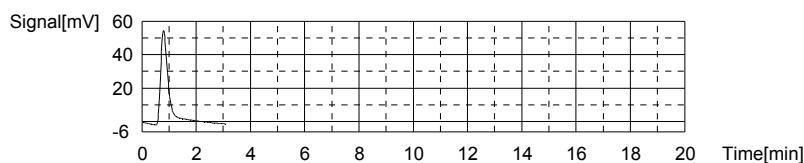
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	123.1	3.049mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:31:48 PM

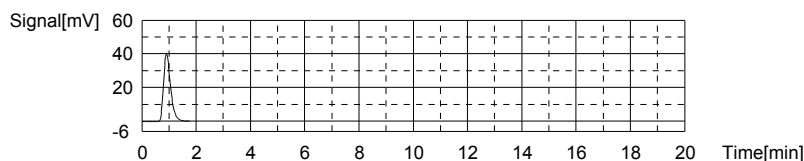
Mean Area 123.1
Mean Conc. 3.049mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.88	2.007mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:36:27 PM

Mean Area 71.88
Mean Conc. 2.007mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

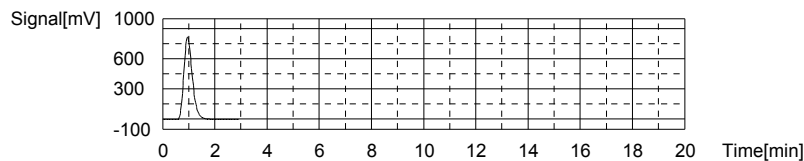
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:49.50mg/L TC:49.35mg/L IC:-0.1461mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1869	49.35mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:44:47 PM

Mean Area 1869
Mean Conc. 49.35mg/L

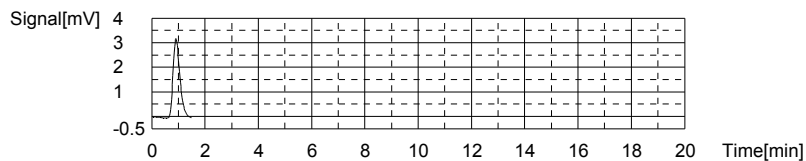


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.775	-0.1461mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:49:08 PM

Approved: May 10, 2009

Mean Area 5.775
Mean Conc. -0.1461mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

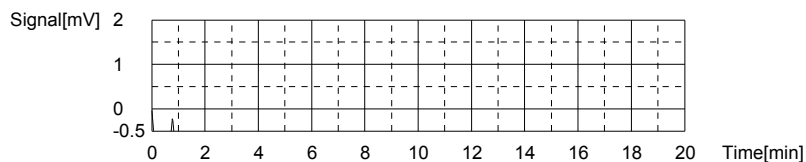
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.05881mg/L TC:-0.09123mg/L IC:-0.1500mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.687	-0.09123mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 03:54:17 PM

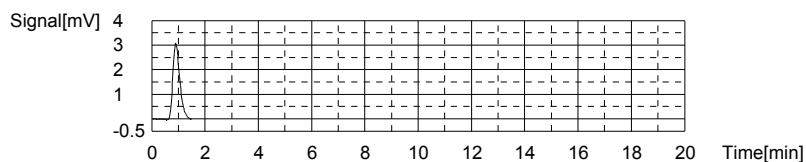
Mean Area 4.687
Mean Conc. -0.09123mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.653	-0.1500mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 03:58:15 PM

Mean Area 5.653
Mean Conc. -0.1500mg/L



Sample

Sample Name: L09050047-05 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.333mg/L TC:9.022mg/L IC:7.688mg/L

Heanna Roberts

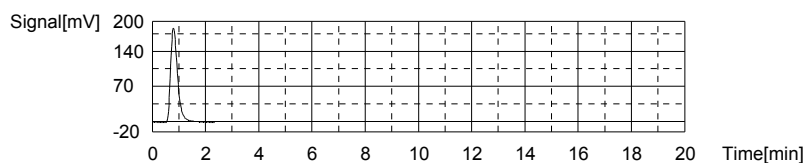
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	348.3	9.022mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:06:03 PM

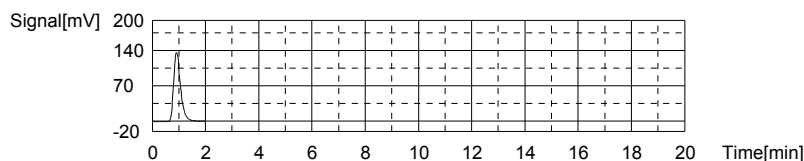
Mean Area 348.3
Mean Conc. 9.022mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	246.3	7.688mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:11:01 PM

Mean Area 246.3
Mean Conc. 7.688mg/L



Sample

Sample Name: L09050047-07
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

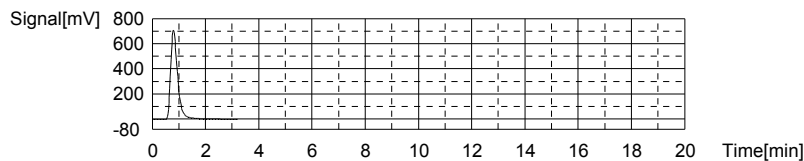
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.956mg/L TC:34.69mg/L IC:29.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1316	34.69mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:19:41 PM

Mean Area 1316
Mean Conc. 34.69mg/L



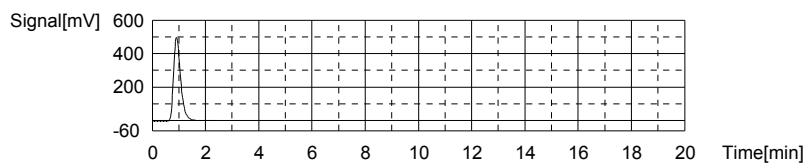
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	923.0	29.73mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:25:21 PM

Heanna Roberts

Approved: May 10, 2009

Mean Area 923.0
Mean Conc. 29.73mg/L



Sample

Sample Name: WG301536-05 DUP
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

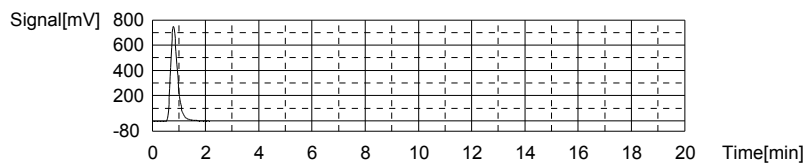
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.676mg/L TC:35.80mg/L IC:32.12mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1358	35.80mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:32:57 PM

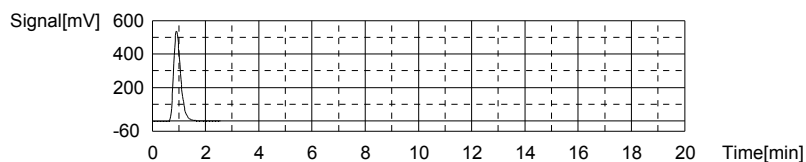
Mean Area 1358
Mean Conc. 35.80mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	996.5	32.12mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:38:49 PM

Mean Area 996.5
Mean Conc. 32.12mg/L



Sample

Sample Name: WG301536-06 MS
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.23mg/L TC:48.13mg/L IC:33.90mg/L

Heanna Roberts

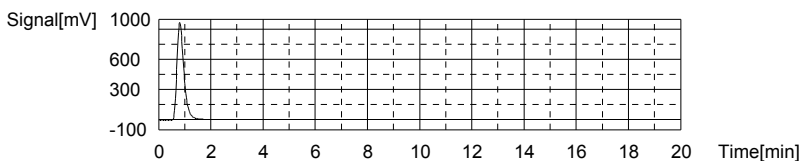
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1823	48.13mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:46:46 PM

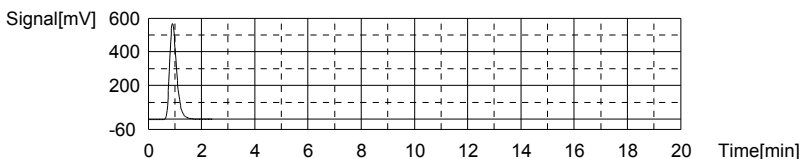
Mean Area 1823
Mean Conc. 48.13mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1051	33.90mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 04:52:32 PM

Mean Area 1051
Mean Conc. 33.90mg/L



Sample

Sample Name: WG301537-01 BLANK
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

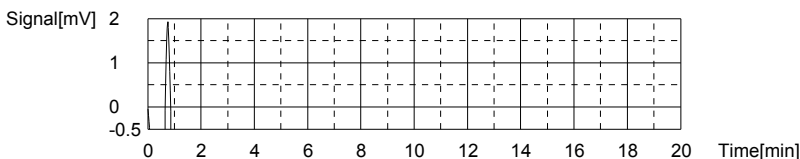
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.02792mg/L TC:-0.00867mg/L IC:-0.03660mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.800	-0.00867mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 04:57:42 PM

Mean Area 7.800
Mean Conc. -0.00867mg/L



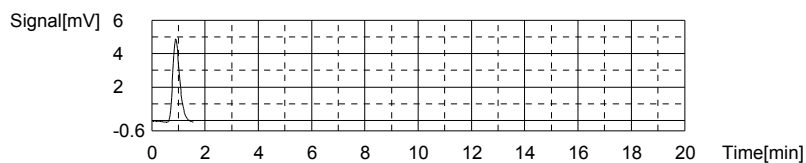
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.136	-0.03660mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:01:44 PM

Heanna Roberts

Approved: May 10, 2009

Mean Area 9.136
Mean Conc. -0.03660mg/L



Sample

Sample Name: WG301537-02 LCS
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

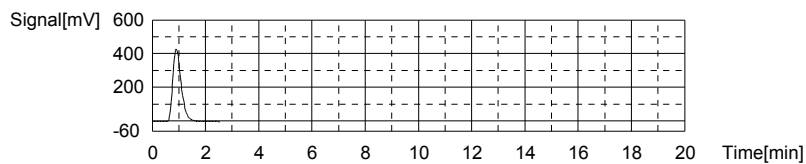
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.30mg/L TC:25.20mg/L IC:-0.09910mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	958.5	25.20mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 05:09:44 PM

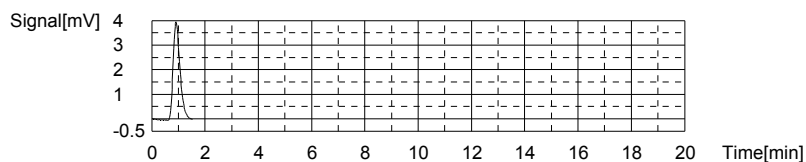
Mean Area 958.5
Mean Conc. 25.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.217	-0.09910mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:14:08 PM

Mean Area 7.217
Mean Conc. -0.09910mg/L



Sample

Sample Name: WG301537-03 LCSDUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.85mg/L TC:24.71mg/L IC:-0.1410mg/L

Heanna Roberts

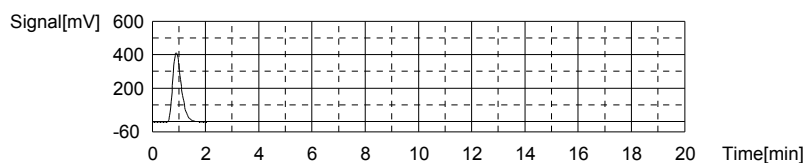
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	939.8	24.71mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 05:21:38 PM

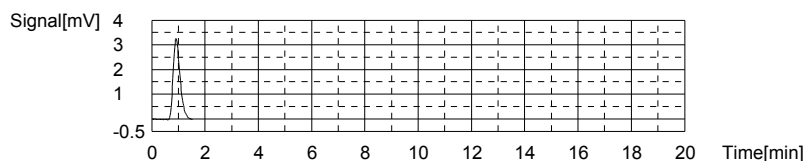
Mean Area 939.8
Mean Conc. 24.71mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.930	-0.1410mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 05:26:01 PM

Mean Area 5.930
Mean Conc. -0.1410mg/L



Sample

Sample Name: L09050057-02
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

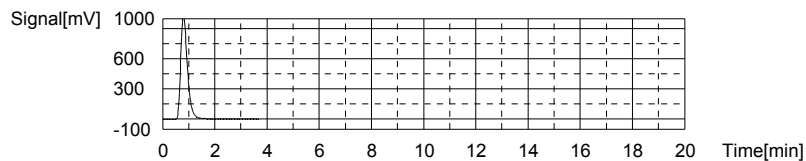
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.300mg/L TC:50.07mg/L IC:43.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1896	50.07mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 05:35:09 PM

Mean Area 1896
Mean Conc. 50.07mg/L

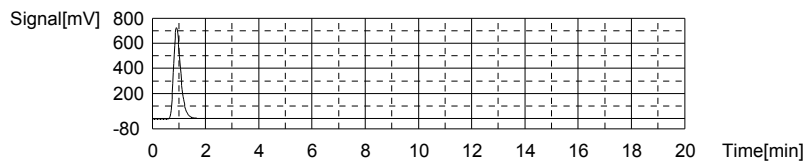


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1354	43.77mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 05:41:05 PM

Approved: May 10, 2009

Mean Area 1354
Mean Conc. 43.77mg/L



Sample

Sample Name: L09050057-05 (10)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

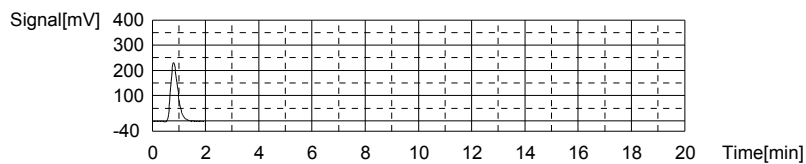
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.483mg/L TC:11.44mg/L IC:8.952mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	439.3	11.44mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 05:48:27 PM

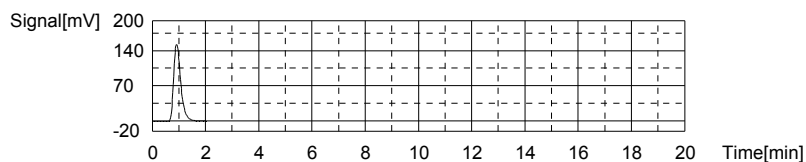
Mean Area 439.3
Mean Conc. 11.44mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	285.1	8.952mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 05:53:36 PM

Mean Area 285.1
Mean Conc. 8.952mg/L



Sample

Sample Name: L09050057-08 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.211mg/L TC:19.45mg/L IC:15.24mg/L

Kearna Roberts

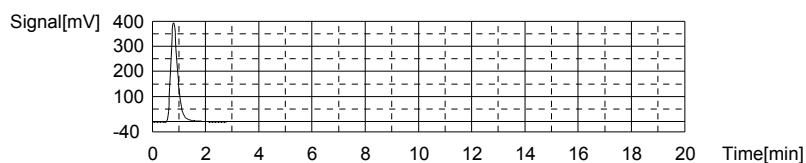
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	741.5	19.45mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 06:01:51 PM

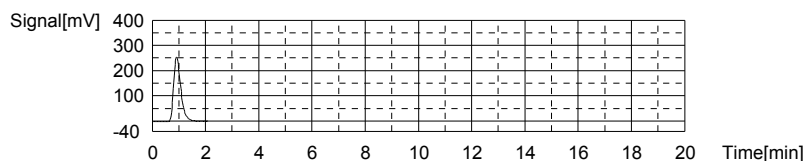
Mean Area 741.5
Mean Conc. 19.45mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	478.1	15.24mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 06:07:03 PM

Mean Area 478.1
Mean Conc. 15.24mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

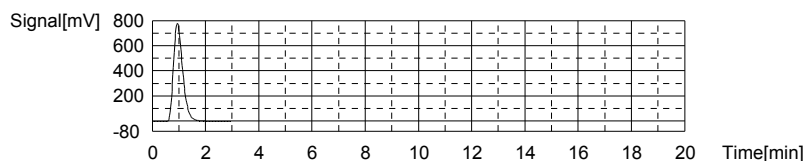
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:49.91mg/L TC:49.83mg/L IC:-0.08308mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1887	49.83mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 06:15:26 PM

Mean Area 1887
Mean Conc. 49.83mg/L

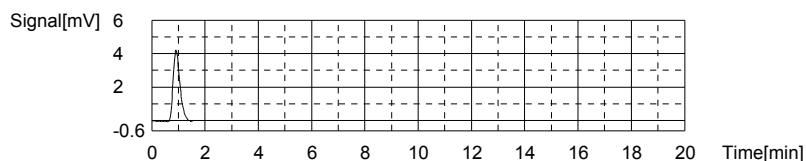


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.709	-0.08308mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 06:19:51 PM

Approved: May 10, 2009

Mean Area 7.709
Mean Conc. -0.08308mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

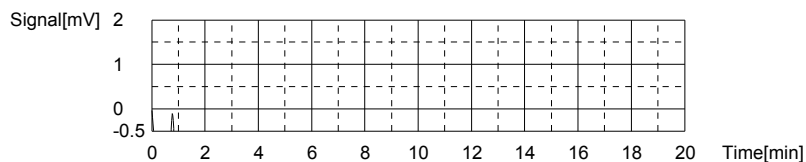
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04742mg/L TC:-0.09314mg/L IC:-0.1406mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.615	-0.09314mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 06:25:02 PM

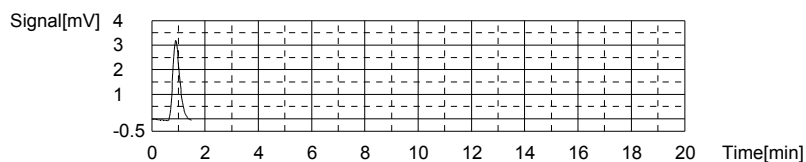
Mean Area 4.615
Mean Conc. -0.09314mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.944	-0.1406mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 06:28:57 PM

Mean Area 5.944
Mean Conc. -0.1406mg/L



Sample

Sample Name: L09050057-09
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.351mg/L TC:4.518mg/L IC:3.167mg/L

Heanna Roberts

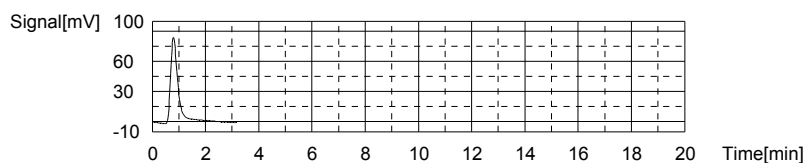
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	178.5	4.518mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 06:37:36 PM

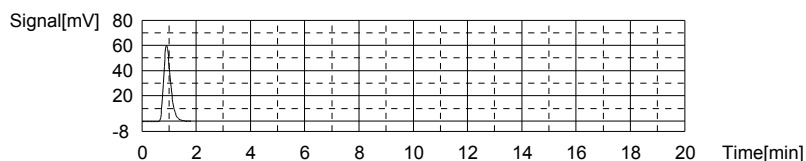
Mean Area 178.5
Mean Conc. 4.518mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.5	3.167mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 06:42:19 PM

Mean Area 107.5
Mean Conc. 3.167mg/L



Sample

Sample Name: WG301537-05 DUP
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

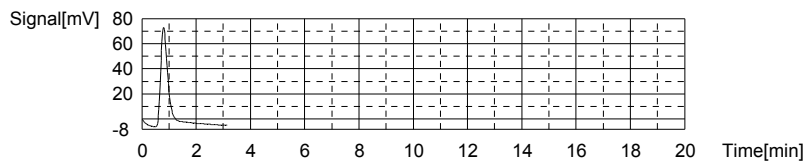
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.164mg/L TC:4.126mg/L IC:2.962mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	163.7	4.126mg/L	500uL	1		TCCURVE-01-13-2009.2009_01_13_14_10_50	05/05/2009 06:50:54 PM

Mean Area 163.7
Mean Conc. 4.126mg/L



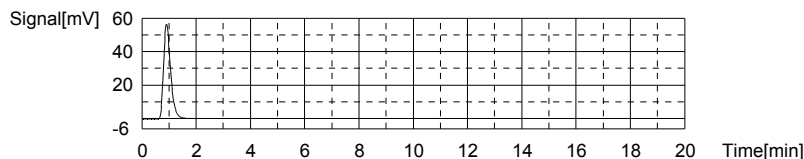
Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.2	2.962mg/L	500uL	1		TICCURVE-01-13-2009.2009_01_13_15_12_50	05/05/2009 06:55:40 PM

Heanna Roberts

Approved: May 10, 2009

Mean Area 101.2
Mean Conc. 2.962mg/L



Sample

Sample Name: WG301537-06 MS
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

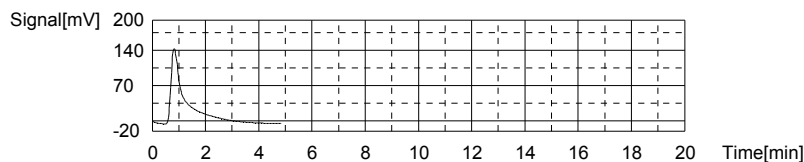
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.18mg/L TC:14.60mg/L IC:4.425mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	558.7	14.60mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 07:05:58 PM

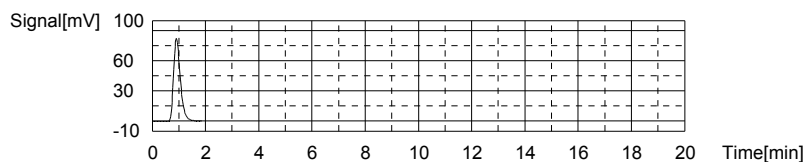
Mean Area 558.7
Mean Conc. 14.60mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	146.1	4.425mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 07:10:48 PM

Mean Area 146.1
Mean Conc. 4.425mg/L



Sample

Sample Name: L09050044-01 (100)
Sample ID: TOC-01-13-2009.met
Origin: Completed
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.30mg/L TC:16.73mg/L IC:1.424mg/L

Kearna Roberts

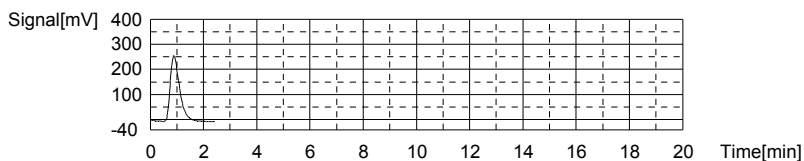
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	638.8	16.73mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:18:40 PM

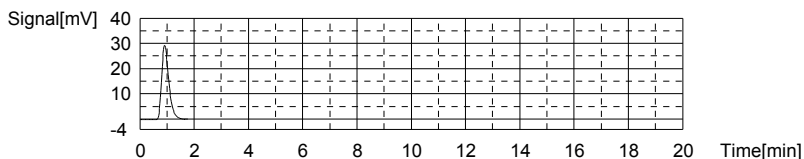
Mean Area 638.8
Mean Conc. 16.73mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.98	1.424mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 07:23:19 PM

Mean Area 53.98
Mean Conc. 1.424mg/L



Sample

Sample Name: L09040698-02 (5)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

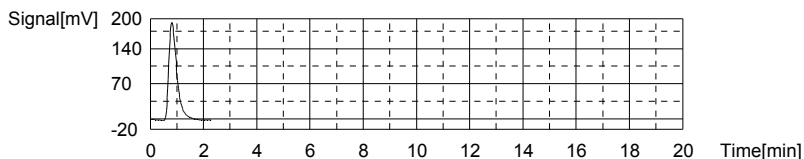
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.693mg/L TC:10.76mg/L IC:7.063mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	413.7	10.76mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:31:04 PM

Mean Area 413.7
Mean Conc. 10.76mg/L

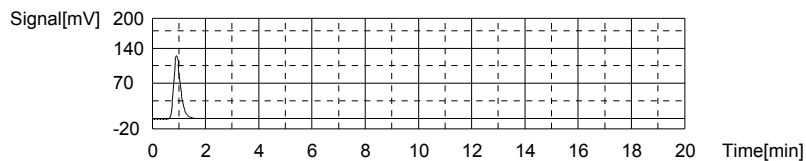


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	227.1	7.063mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 07:36:02 PM

Approved: May 10, 2009

Mean Area 227.1
Mean Conc. 7.063mg/L



Sample

Sample Name: L09050075-01 (4)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

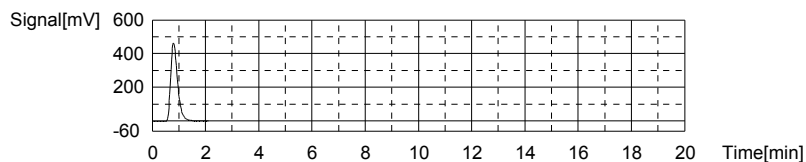
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.946mg/L TC:22.18mg/L IC:18.24mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	844.6	22.18mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:43:36 PM

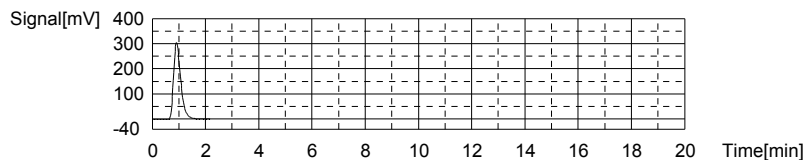
Mean Area 844.6
Mean Conc. 22.18mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	570.2	18.24mg/L	500uL	1		TICURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 07:48:58 PM

Mean Area 570.2
Mean Conc. 18.24mg/L



Sample

Sample Name: L09050075-03
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.553mg/L TC:81.20mg/L IC:82.76mg/L

Heanna Roberts

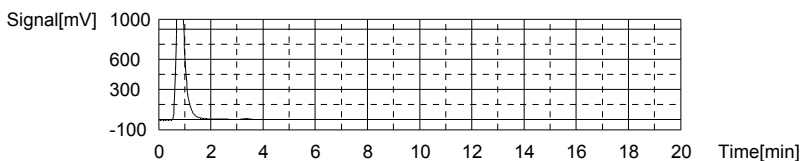
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3070	81.20mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 07:58:37 PM

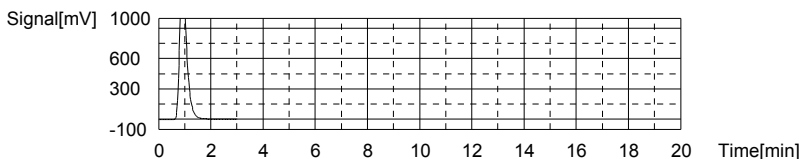
Mean Area 3070
Mean Conc. 81.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2551	82.76mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:05:15 PM

Mean Area 2551
Mean Conc. 82.76mg/L



Sample

Sample Name: L09050075-05 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

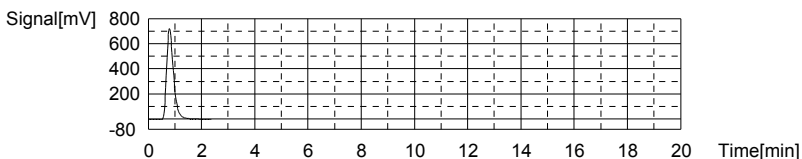
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.465mg/L TC:34.34mg/L IC:30.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1303	34.34mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:13:05 PM

Mean Area 1303
Mean Conc. 34.34mg/L

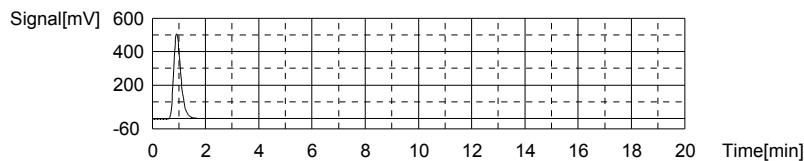


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	958.2	30.88mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:18:58 PM

Approved: May 10, 2009

Mean Area 958.2
Mean Conc. 30.88mg/L



Sample

Sample Name: L09050075-07 (100)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

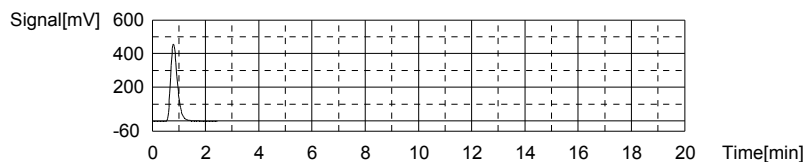
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.653mg/L TC:21.51mg/L IC:18.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	819.2	21.51mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:26:53 PM

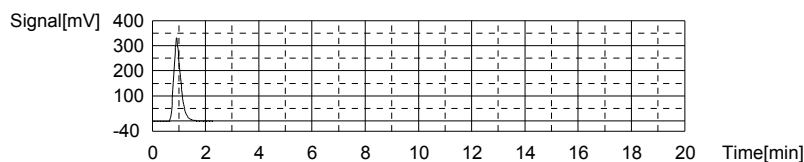
Mean Area 819.2
Mean Conc. 21.51mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	589.2	18.86mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:32:23 PM

Mean Area 589.2
Mean Conc. 18.86mg/L



Sample

Sample Name: L09050069-02 (2)
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.2746mg/L TC:0.2565mg/L IC:-0.01806mg/L

Heanna Roberts

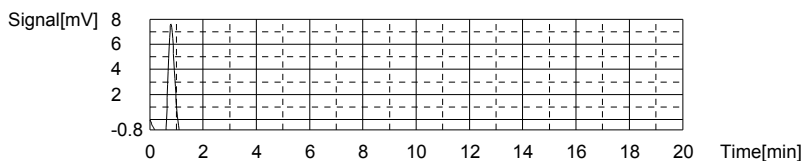
Approved: May 10, 2009

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.80	0.2565mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:39:27 PM

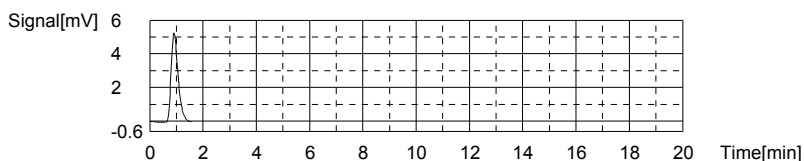
Mean Area 17.80
Mean Conc. 0.2565mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.705	-0.01806mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:43:55 PM

Mean Area 9.705
Mean Conc. -0.01806mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

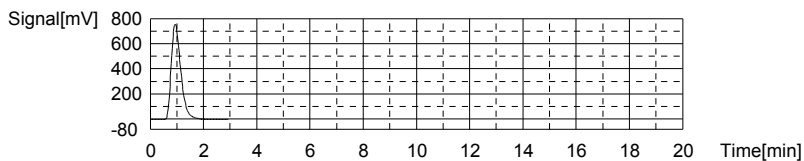
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:50.05mg/L TC:49.94mg/L IC:-0.1112mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1891	49.94mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10 50	05/05/2009 08:52:19 PM

Mean Area 1891
Mean Conc. 49.94mg/L

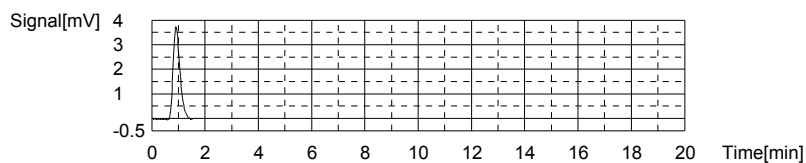


Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.846	-0.1112mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12 50	05/05/2009 08:56:42 PM

Approved: May 10, 2009

Mean Area 6.846
Mean Conc. -0.1112mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-01-13-2009.met
Status: Completed
Chk. Result

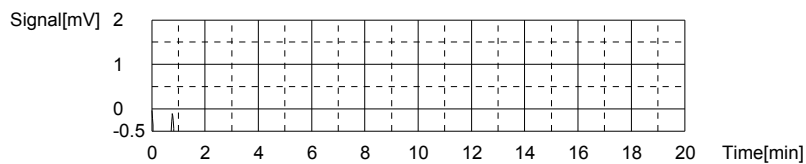
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04502mg/L TC:-0.08460mg/L IC:-0.1296mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.937	-0.08460mg/L	500uL	1		TCCURVE-01-13-2009.2009 01 13 14 10	05/05/2009 09:01:55 PM

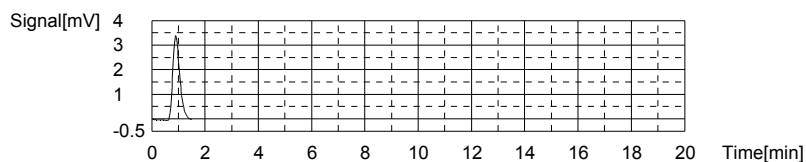
Mean Area 4.937
Mean Conc. -0.08460mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.280	-0.1296mg/L	500uL	1		TICCURVE-01-13-2009.2009 01 13 15 12	05/05/2009 09:05:51 PM

Mean Area 6.280
Mean Conc. -0.1296mg/L

*Heanna Roberts*

Approved: May 10, 2009

3.0 Attachments

Microbac Laboratories Inc.
Analyst Listing
May 20, 2009

ADC - ANTHONY D. CANTER	AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BROWN
AM - ALISON J. MILLER	AML - ANTHONY M. LONG	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS	CAH - CHARLES A. HALL
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL	CTB - CHRIS T. BUCINA
DDE - DEBRA D. ELLIOTT	DEL - DON E. LIGHTFRITZ	DEV - DAVID E. VANDENBERG
DGB - DOUGLAS G. BUTCHER	DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH	DR - DEANNA ROBERTS
ECL - ERIC C. LAWSON	EDA - ERIN D. AGEE	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	HAV - HEMA VILASAGAR	HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON	JKT - JANE K. THOMPSON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES	JYH - JI Y. HU
KEB - KATHRYN E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MICHAEL D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	NPM - NATHANIEL P. MILLER
PDM - PIERCE D. MORRIS	RAH - ROY A. HALSTEAD	RB - ROBERT BUCHANAN
REK - ROBERT E. KYER	RLK - ROBIN L. KLINGER	RWC - RODNEY W. CAMPBELL
SDH - SHANA D. HINYARD	SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TIP - TAE I. PARRISH	TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WTD - WADE T. DELONG	

May 20, 2009

Qualkey: CLP

<u>Qualifier</u>	<u>Description</u>
E	Estimated concentration due to interference
E	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration.
J	The analyte was positively identified, but the quantitation was below the RL
J,B	Analyte detected in both the method blank and sample above the MDL.
U	Not detected at or above the reporting limit (RL).

*****Special Notes for Organic Analytes**

1. Acrolein and acrylonitrile by method 624 are semi-quantitative screens only.
2. 1,2-Diphenylhydrazine is unstable and is reported as azobenzene.
3. N-nitrosodiphenylamine cannot be separated from diphenylamine.
4. 3-Methylphenol and 4-Methylphenol are unresolvable compounds.
5. m-Xylene and p-Xylene are unresolvable compounds.
6. The reporting limits for Appendix II/IX compounds by method 8270 are based on EPA estimated PQLs referenced in 40 CFR Part 264, Appendix IX. They are not always achievable for every compound and are matrix dependent.



158 Starlite Drive

Phone: 740-373-4071

Marietta, OH 45750

Fax: 740-373-4835

Microbac

CHAIN-OF-CUSTODY RECORD

[illegible]

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Client:	CH2MHILL		
Workorder Number:	B 20416		
Date Received:	5-2-09		
Delivered by:	☒ Fedx	☐ UPS	☐ Client ☐ Courier Time: 0959
Opened by:	JWS		
IR Temp Gun:	☒ G	☐ H	
Logged by:	RLK L 09050044		

Cooler information

Cooler ID	Temp C	Airbill#	COC#	Other
2943	2	8689 1013 4998		SH/ NO3
2084	1	7955 0154 5362		

Inspection Checklist

	Y	N	NA	Discrepancy ID
Were shipping coolers sealed?	☒			
Were custody seals intact?	☒			
Were cooler temperatures in range of 0 - 6?	☒			
Was ice present?	☒			
Were COC's received/ information complete/signed and dated?	☒			
Were sample containers and labels intact and match COC?	☒			
Were the correct containers and volumes received?	☒			
Were correct preservatives used? (water only)	☒			
Were pH ranges acceptable? (voa's excluded)		☒		①
Were VOA samples free of headspace (< 6mm)?	☒			
Were samples received within EPA hold times?	☒			

Discrepancy/Comments/Other Problems

① Sample BALD - PIT - SSP 050109 (metals and A/K.) Could not pH due to matrix. pH was out. Added SKT 3mL of 11N03 to metals Lot# 13794 on 5/4/09 @ 0940; Added 3mL of H2SO4, Lot# 1364, to Phos + Toc Stored IN COLD WALKIN Both pH's were OKay.	Phos+Toc RK

Distribution

Name of Microbac representative:
Client/Company:
Person Contacted:
Date contacted:

Resolution/other comments:

Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

Samplenum **Container ID** **Products**
L09050044-03 577306 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	04-MAY-2009 16:10	JBK	JKT
3	STORE	WET	A2	06-MAY-2009 07:31	JKT	DIH

Samplenum **Container ID** **Products**
L09050044-04 577307 AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	DIG	04-MAY-2009 14:45	VC	JKT
3	STORE	DIG	A2	06-MAY-2009 13:10	JKT	VC

Samplenum **Container ID** **Products**
L09050044-01 577293 RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-05	577308	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-02	577299	AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	DIG	04-MAY-2009 14:45	VC	JKT
3	STORE	DIG	A2	06-MAY-2009 13:11	JKT	VC

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-03	577304	S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	04-MAY-2009 11:24	JDH	RLK
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

A1 - Sample Archive (COLD)
 A2 - Sample Archive (AMBIENT)
 F1 - Volatiles Freezer in Login
 V1 - Volatiles Refrigerator in Login
 W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-06	577315	AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	DIG	04-MAY-2009 14:45	VC	JKT
3	STORE	DIG	A2	06-MAY-2009 13:10	JKT	VC

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-05	577309	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-05	577310	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	EXT	05-MAY-2009 10:00	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

A1 - Sample Archive (COLD)
 A2 - Sample Archive (AMBIENT)
 F1 - Volatiles Freezer in Login
 V1 - Volatiles Refrigerator in Login
 W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-03	577302	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	EXT	05-MAY-2009 10:00	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-01	577296	S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	04-MAY-2009 11:24	JDH	RLK
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-05	577311	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

A1 - Sample Archive (COLD)
 A2 - Sample Archive (AMBIENT)
 F1 - Volatiles Freezer in Login
 V1 - Volatiles Refrigerator in Login
 W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-01	577292	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:27	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:27	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:27	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-03	577300	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:27	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:27	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:27	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

A1 - Sample Archive (COLD)
 A2 - Sample Archive (AMBIENT)
 F1 - Volatiles Freezer in Login
 V1 - Volatiles Refrigerator in Login
 W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-07	577316	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-01	577295	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-08	577318	AG-D AL-D AS-MSD BA-D BE-AXD CA-D CD-AXD CO-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	DIG	04-MAY-2009 14:45	VC	JKT
3	STORE	DIG	A2	06-MAY-2009 13:10	JKT	VC

A1 - Sample Archive (COLD)
 A2 - Sample Archive (AMBIENT)
 F1 - Volatiles Freezer in Login
 V1 - Volatiles Refrigerator in Login
 W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

Samplenum **Container ID** **Products**
L09050044-01 577298 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	04-MAY-2009 16:10	JBK	JKT
3	STORE	WET	A2	06-MAY-2009 07:31	JKT	DIH

Samplenum **Container ID** **Products**
L09050044-03 577303 ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	06-MAY-2009 07:35	DIH	JKT
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050044-05 577312 S04

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	04-MAY-2009 11:23	JDH	RLK
3	STORE	WET	A2	07-MAY-2009 07:17	JKT	DIH

Samplenum **Container ID** **Products**
L09050044-05 577314 TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	04-MAY-2009 16:10	JBK	JKT
3	STORE	WET	A2	06-MAY-2009 07:31	JKT	DIH

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-03	577301	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG3	05-MAY-2009 10:09	MRT	JKT
3	STORE	ORG4	A2	20-MAY-2009 08:32	RLK	MRT

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-01	577294	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	EXT	05-MAY-2009 10:00	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

A1 - Sample Archive (COLD)
 A2 - Sample Archive (AMBIENT)
 F1 - Volatiles Freezer in Login
 V1 - Volatiles Refrigerator in Login
 W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L09050044

Account: 2736

Project: 2736.061

Samples: 9

Due Date: 18-MAY-2009

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-07	577317	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	PREP	W1	EXT	05-MAY-2009 10:00	CEB	JKT
3	DISP	EXT	DISP	06-MAY-2009 07:49	JKT	DEL

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	STORE	W1	A1	11-MAY-2009 13:44	ERE	ERE

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-03	577305	FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	07-MAY-2009 07:24	DIH	JKT
3	STORE	WET	A2	08-MAY-2009 17:00	JKT	DIH

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L09050044-09	577319	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	V1	04-MAY-2009 11:11	RLK	
2	ANALYZ	V1	ORG4	04-MAY-2009 11:28	MES	JKT
3	STORE	ORG4	A2	18-MAY-2009 09:35	JKT	MRT

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER		04-MAY-2009 11:11	RLK	

A1 - Sample Archive (COLD)
 A2 - Sample Archive (AMBIENT)
 F1 - Volatiles Freezer in Login
 V1 - Volatiles Refrigerator in Login
 W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L09050044**Account:** 2736**Project:** 2736.061**Samples:** 9**Due Date:** 18-MAY-2009

Samplenum **Container ID** **Products**
L09050044-01 577297 FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	07-MAY-2009 07:24	DIH	JKT
3	STORE	WET	A2	08-MAY-2009 17:00	JKT	DIH

Samplenum **Container ID** **Products**
L09050044-05 577313 FERROUS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	04-MAY-2009 11:11	RLK	
2	ANALYZ	W1	WET	07-MAY-2009 07:24	DIH	JKT
3	STORE	WET	A2	08-MAY-2009 17:00	JKT	DIH

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

