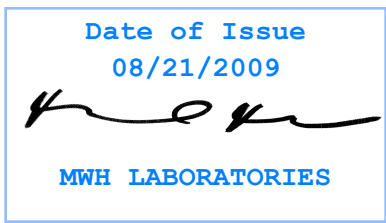


750 Royal Oak Dr., Suite 100
Monrovia, California, 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

CDM
50 Hampshire Street
Cambridge, MA 02139-1548
Attention: Jamie Lefkowitz
Fax: 617-452-8566



Report#: 310978
Project: MERRIMACK-RIVER
Group: DW Study

TDF: Thomas.D.French
Project Manager

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

Acknowledgement of Samples Received
CDM

 50 Hampshire Street
 Cambridge, MA 02139-1548
 Attn: Jamie Lefkowitz
 Phone: 617-452-6591

 Customer Code: CDM-MA
 Group #: 310978
 Project #: MERRIMACK-RIVER
 Sample Group: DW Study
 Project Manager: Thomas.D.French
 Phone: 480-778-1558

The following samples were received from you on **July 30, 2009**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample #	Sample Id	Sample Date
200907300216	AMOSKFAG ST ROUND 1	29-Jul-2009 1050
	@MTBE9	@SPMELOW
	Algae Identification	CLO41PPB
	Iron Total ICAP	Manganese Total ICAP/MS
	Total Organic Carbon	UV absorbance at 254 nm
		Algae Enumeration
		Dissolved Organic Carbon
		PH (H3=past HT not compliant)
200907300217	TRAVEL BLANK - HOLD	29-Jul-2009 0000
	@MTBE9 TB	

Test Description

- @MTBE9 -- Volatile Organics by GCMS
- @MTBE9 TB -- Volatile Organics by GCMS
- @SPMELOW -- Taste and Odor Cmpds Low Level

CHAIN OF CUSTODY RECORD

310978

750 Royal Oaks, Suite 100
Monrovia, California 91016
Phone: (626) 386-1100
(800) 566-5227
Fax: (626) 386-1101

MWH LABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: SM

Rec over Temp.

SAMPLES LOGGED IN BY: SM

SAMPLE TEMP WHEN REC'D AT LAB: 14 (Compliance: 6°C or Below)

SAMPLES REC'D DAY OF COLLECTION? (check for yes)

CONDITION OF BLUE ICE: FROZEN PARTIALLY FROZEN _____ THAWED _____

(check for yes) (check for yes)

TO BE COMPLETED BY SAMPLER:

COMPANY, UTILITY or PROJECT: <u>CDM MERRIMACK</u>	SYSTEM #:	COMPLIANCE SAMPLES - Requires state forms <input type="checkbox"/>	NON-COMPLIANCE SAMPLES <input checked="" type="checkbox"/>
MWH LABS CLIENT CODE:	P.O.# / JOB # / PROJECT :	REGULATION INVOLVED: (eg. SDWA, Phase V, NPDES, FDA,...)	

SAMPLER PRINTED NAME AND SIGNATURE: <u>J LEFKOWITZ</u>	TAT requested: rush by adv notice only STD ___ 1 week ___ 3 day ___ 2 day ___ 1 day	SEE ATTACHED BOTTLE ORDER FOR ANALYSES <input checked="" type="checkbox"/> (check for yes), <u>OR</u>
		LIST ANALYSES REQUIRED BELOW (enter number of bottles sent for each test for each sample):

SAMPLE DATE	SAMPLE TIME	STATION # or LOCATION	SITE NAME OR SAMPLE I.D.	MATRIX *	GRAB	COMP	SAMPLER COMMENTS
<u>7/29</u>	<u>10:50A</u>	<u>AMOSKEAG ST</u>	<u>ROUND 1</u>	<u>RSW</u>	<input checked="" type="checkbox"/>		<u>Rec'd 6PM</u> <u>07/30/09 15:53</u>
	<u>3:24</u>			<u>RSW</u>	<input checked="" type="checkbox"/>		
				<u>RSW</u>	<input checked="" type="checkbox"/>		
				<u>RSW</u>	<input checked="" type="checkbox"/>		
				<u>RSW</u>	<input checked="" type="checkbox"/>		
				<u>RSW</u>	<input checked="" type="checkbox"/>		
				<u>RSW</u>	<input checked="" type="checkbox"/>		
				<u>RSW</u>	<input checked="" type="checkbox"/>		

7/29/09 FedEx Tracking Number 869081321200

Order's name: JAMIE LEFKOWITZ Phone: 617 452-6000

Company: CDM

Address: 50 HAMPSHIRE ST

City: CAMBRIDGE State: MA ZIP: 02139-1548

Our Internal Billing Reference: 50919-66485-6162.004.102.75K03

* MATRIX TYPES: RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water CWW = Chlorinated Waste Water BW = Bottled Water SO = Soil
 RGW = Raw Ground Water FW = Other Finished Water WW = Other Waste Water SW = Storm Water SL = Sludge

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<u>Jamie Lefkowitz</u>	<u>JAMIE LEFKOWITZ</u>	<u>CDM</u>	<u>7/29/09</u>	<u>1:15 PM</u>
<u>[Signature]</u>	<u>Julian Mat</u>	<u>MWH</u>	<u>7-30-09</u>	<u>11:20</u>

Thomas.D.French Your MWHL Project Manager

BO #: 6722

Created By: TDF

Order Date: 06/18/2009

Bottle Orders

**Sampler: please return
 this paper with your samples**

Client Code CDM-MA

Project Code MERRIMACK-RIVER Bottle Orders

Group Name DW Study

PO# / Job#

Group#
Date Sampled
Date Received

Ship By:
06/18/2009

Ship Sample Kits to
 CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

Send Report to
 CDM, Inc.
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

Billing Address
 CDM, Inc.
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

# of Samples	Tests	Qteline#	Bottles - Qty for each sample, type & preservative if any	UN DOT #
1	@MTBE9 ✓		3 40ml amber glass vial 4drops 6N HCL (36%)	
1	@MTBE9 TB ✓		2 40ml amber glass vial 4drops of 1:1 HCL + H2O	
1	@SPMELOW ✓		4 40ml amber glass vial no preservative	
1	Algae Enumeration, Algae Identification ✓		1 500ml poly sterilized no preservative	
1	CLO41PPB ✓		1 125ml poly CLO4 - no preservative	
1	Dissolved Organic Carbon, UV absorbance at 254 nm ✓		1 125ml amber glass no preservative	
1	Iron Total ICAP, Manganese Total ICAP/MS ✓		1 250ml acid rinsed 1ml HNO3 (18%)	
1	PH (H3=past HT not compliant) ✓		1 125ml poly no preservative	
1	Total Organic Carbon ✓		1 125ml amber glass 0.5ml H2SO4 (50%)	

Comments

Include COC, sampling/packing, blue ice. Client is responsible for return shipment to MWH Laboratories, 750 Royal Oaks Drive, Monrovia, CA 91016. (626) 386 1100.



A Division of MWH Americas, Inc.

750 Royal Oak Dr., Suite 100
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Fax: 626 386 1101
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Laboratory Comments
Report: #310978

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

750 Royal Oak Dr., Suite 100
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Laboratory
Hits Report: 310978

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Samples Received on:
07/30/2009

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	200907300216	<u>AMOSKFAG ST ROUND 1</u>				
08/11/2009	14:27	Algae Enumeration	62		#/ml	1
08/11/2009	14:27	Algae Identification	See Com		Not Appl.	
07/31/2009	22:30	Dissolved Organic Carbon	1.1		mg/L	0.3
07/30/2009	15:22	Dissolved UV Abs. at 254 nm	0.23		cm -1	0.009
07/31/2009	19:53	Geosmin	3.2		ng/L	1
08/18/2009	22:37	Iron Total ICAP	0.45	0.3	mg/L	0.02
08/10/2009	20:02	Manganese Total ICAP/MS	24	50	ug/L	2
07/30/2009	16:15	PH (H3=past HT not compliant)	6.9		Units	0.1
07/31/2009	22:55	Total Organic Carbon	5.8		mg/L	1.5

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**Laboratory Data
 Report: 310978**
CDM
 Jamie Lefkowitz
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Samples Received on:
 07/30/2009

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
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AMOSKFAG ST ROUND 1 (200907300216)
Sampled on 07/29/2009 1050

EPA 200.8 - ICPMS Metals									
08/10/2009	20:02	519556	(EPA 200.8)	Manganese Total ICAP/MS	24	ug/L	2	1	
EPA 200.7 - ICP Metals									
08/18/2009	22:37	520965	(EPA 200.7)	Iron Total ICAP	0.45	mg/L	0.02	1	
SM 10900 - Algae Identification									
08/11/2009	14:27	519805	(SM 10900)	Algae Identification	See Comments	Not Appl.		1	
SM 10200F - Algae Enumeration									
08/11/2009	14:27	519746	(SM 10200F)	Algae Enumeration	62	#/ml	1	1	
SM5310C/E415.3 - Total Organic Carbon									
07/31/2009	22:55	518286	(SM5310C/E415.3)	Total Organic Carbon	5.8	mg/L	1.5	5	
SM 5310C - Dissolved Organic Carbon									
07/31/2009	22:30	518455	(SM 5310C)	Dissolved Organic Carbon	1.1	mg/L	0.3	1	
SM 5910 - Dissolved UV Abs. at 254 nm									
07/30/2009	15:22	518443	(SM 5910)	Dissolved UV Abs. at 254 nm	0.23	cm -1	0.009	1	
SM 6040D - Taste and Odor Cmpds Low Level									
07/31/2009	19:53	518402	(SM 6040D)	Geosmin	3.2	ng/L	1	1	
07/31/2009	19:53	518402	(SM 6040D)	Methylisoborneol	ND	ng/L	1	1	
07/31/2009	19:53	518402	(SM 6040D)	Isobutyl methoxypyrazine	115	%		1	
07/31/2009	19:53	518402	(SM 6040D)	Isopropyl methoxypyrazine	105	%		1	
EPA 314.0 - Perchlorate with 0.5 ppb DL									
08/03/2009	23:33	518771	(EPA 314.0)	Perchlorate	ND	ug/L	0.5	1	
EPA 524.2 - Volatile Organics by GCMS									
7/31/2009	07/31/2009	19:29	518740	(EPA 524.2)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5	1
7/31/2009	07/31/2009	19:29	518740	(EPA 524.2)	1,2-Dichloroethane-d4	97	%		1
SM4500-HB - PH (H3=past HT not compliant)									
07/30/2009	16:15	518587	(SM4500-HB)	PH (H3=past HT not compliant)	6.9	Units	0.1	1	

TRAVEL BLANK - HOLD (200907300217)
Sampled on 07/29/2009 0000

EPA 524.2 - Volatile Organics by GCMS									
7/31/2009	05/19/2009	11:55	518740	(EPA 524.2)	Methyl Tert-butyl ether (MTBE)	NA	ug/L	0.5	1
7/31/2009	05/19/2009	11:55	518740	(EPA 524.2)	1,2-Dichloroethane-d4	NA	%		1

CDM

QC Ref # 518286 - Total Organic Carbon

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 07/31/2009

Analyzed by: KXS

QC Ref # 518402 - Taste and Odor Cmpds Low Level

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 07/31/2009

Analyzed by: DLO

QC Ref # 518443 - Dissolved UV Abs. at 254 nm

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 07/30/2009

Analyzed by: KXS

QC Ref # 518455 - Dissolved Organic Carbon

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 07/31/2009

Analyzed by: KXS

QC Ref # 518587 - PH (H3=past HT not compliant)

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 07/30/2009

Analyzed by: SAR

QC Ref # 518740 - Volatile Organics by GCMS

200907300216 AMOSKFAG ST ROUND 1
200907300217 TRAVEL BLANK - HOLD

Analysis Date: 07/31/2009

Analyzed by: MAD
Analyzed by: MAD

QC Ref # 518771 - Perchlorate with 0.5 ppb DL

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 08/03/2009

Analyzed by: VXT

QC Ref # 519556 - ICPMS Metals

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 08/10/2009

Analyzed by: LUPE

QC Ref # 519746 - Algae Enumeration

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 08/11/2009

Analyzed by: NWM

QC Ref # 519805 - Algae Identification

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 08/11/2009

Analyzed by: NWM

QC Ref # 520965 - ICP Metals

200907300216 AMOSKFAG ST ROUND 1

Analysis Date: 08/18/2009

Analyzed by: CSK

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Laboratory
QC Report: 310978

CDM, Inc.

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 518286 - Total Organic Carbon by SM5310C/E415.3					Analysis Date: 07/31/2009				
LCS3	Total Organic Carbon		5.0	4.84	mg/L	97	(90-110)		
LCS4	Total Organic Carbon		5.0	4.91	mg/L	98	(90-110)	20	1.8
MBLK	Total Organic Carbon			<0.3	mg/L				
MRL_CHK	Total Organic Carbon		0.2	0.198	mg/L	99	(50-150)		
MS_200907300095	Total Organic Carbon	3.7	4.0	7.51	mg/L	96	(80-120)		
MS_2ND_200907290483	Total Organic Carbon	1.4	2.0	3.33	mg/L	99	(80-120)		
MSD_200907300095	Total Organic Carbon	3.7	4.0	7.62	mg/L	99	(80-120)	20	2.8
QC Ref# 518402 - Taste and Odor Cmpds Low Level by SM 6040D					Analysis Date: 07/31/2009				
LCS1	Geosmin		10	9.99	ng/L	100	(75-125)		
MBLK	Geosmin			<1	ng/L				
MRLLW	Geosmin		1.0	0.758	ng/L	76	(50-150)		
MS_200907310063	Geosmin	1.8	10	13.3	ng/L	115	(70-130)		
MSD_200907310063	Geosmin	1.8	10	10.8	ng/L	90	(70-130)	20	<u>25</u>
LCS1	Isobutyl methoxypyrazine (I)			94.0	%	94	(50-150)		
MBLK	Isobutyl methoxypyrazine (I)			98.0	%	98	(50-150)		
MRLLW	Isobutyl methoxypyrazine (I)			84.0	%	84	(50-150)		
MS_200907310063	Isobutyl methoxypyrazine (I)			91.0	%	91	(50-150)		
MSD_200907310063	Isobutyl methoxypyrazine (I)			105	%	105	(50-150)		
LCS1	Isopropyl methoxy pyrazine (S)			101	%	101	(70-130)		
MBLK	Isopropyl methoxy pyrazine (S)			107	%	107	(70-130)		
MRLLW	Isopropyl methoxy pyrazine (S)			115	%	115	(70-130)		
MS_200907310063	Isopropyl methoxy pyrazine (S)			118	%	118	(70-130)		
MSD_200907310063	Isopropyl methoxy pyrazine (S)			102	%	102	(70-130)		
LCS1	Methylisoborneol		10	11.0	ng/L	110	(75-125)		
MBLK	Methylisoborneol			<1	ng/L				
MRLLW	Methylisoborneol		1.0	1.29	ng/L	129	(50-150)		
MS_200907310063	Methylisoborneol	ND	10	9.37	ng/L	94	(70-130)		
MSD_200907310063	Methylisoborneol	ND	10	8.98	ng/L	90	(70-130)	20	4.1
QC Ref# 518443 - Dissolved UV Abs. at 254 nm by SM 5910					Analysis Date: 07/30/2009				
DUP1_200907300216	UV absorbance at 254 nm	0.23		0.230	cm -1		(0-15)	15	0.0
LCS1	UV absorbance at 254 nm		0.37	0.410	cm -1	111	(83-121)		
MBLK	UV absorbance at 254 nm			<0.004	cm -1				
MRL_CHK	UV absorbance at 254 nm		0.009	0.00800	cm -1	89	(85-115)		
QC Ref# 518455 - Dissolved Organic Carbon by SM 5310C					Analysis Date: 07/31/2009				
LCS3	Dissolved Organic Carbon		5.0	4.84	mg/L	97	(90-110)		
LCS4	Dissolved Organic Carbon		5.0	4.91	mg/L	98	(90-110)	20	1.8
MBLK	Dissolved Organic Carbon			<0.3	mg/L				

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

9/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

750 Royal Oak Dr., Suite 100
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 Fax: 626 386 1101
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Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Dissolved Organic Carbon		0.2	0.198	mg/L	99	(50-150)		
MS_200908050865	Dissolved Organic Carbon	3.7	4.0	7.51	mg/L	96	(80-120)		
MS_2ND_200908050866	Dissolved Organic Carbon	1.4	2.0	3.33	mg/L	99	(70-130)		
MSD_200908050865	Dissolved Organic Carbon	3.7	4.0	7.62	mg/L	99	(80-120)	20	2.8
QC Ref# 518587 - PH (H3=past HT not compliant) by SM4500-HB					Analysis Date: 07/30/2009				
DUP1_200907310119	PH (H3=past HT not compliant)	8.0		7.99	Units		(0-20)	20	0.13
LCS1	PH (H3=past HT not compliant)		6.0	6.00	Units	100	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	6.01	Units	100	(98-102)	20	0.17
QC Ref# 518740 - Volatile Organics by GCMS by EPA 524.2					Analysis Date: 05/19/2009				
LCS1	1,1,1,2-Tetrachloroethane		5.0	5.47	ug/L	109	(70-130)		
LCS2	1,1,1,2-Tetrachloroethane		5.0	5.5	ug/L	110	(70-130)	20	0.55
MBLK	1,1,1,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,1,2-Tetrachloroethane		0.5	0.490	ug/L	98	(50-150)		
LCS1	1,1,1-Trichloroethane		5.0	4.97	ug/L	99	(70-130)		
LCS2	1,1,1-Trichloroethane		5.0	5.08	ug/L	102	(70-130)	20	2.2
MBLK	1,1,1-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,1-Trichloroethane		0.5	0.510	ug/L	102	(50-150)		
LCS1	1,1,2,2-Tetrachloroethane		5.0	4.8	ug/L	96	(70-130)		
LCS2	1,1,2,2-Tetrachloroethane		5.0	4.99	ug/L	100	(70-130)	20	3.9
MBLK	1,1,2,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,2,2-Tetrachloroethane		0.5	0.540	ug/L	108	(50-150)		
LCS1	1,1,2-Trichloroethane		5.0	4.43	ug/L	89	(70-130)		
LCS2	1,1,2-Trichloroethane		5.0	4.82	ug/L	96	(70-130)	20	8.4
MBLK	1,1,2-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,2-Trichloroethane		0.5	0.470	ug/L	94	(50-150)		
LCS1	1,1-Dichloroethane		5.0	4.76	ug/L	95	(70-130)		
LCS2	1,1-Dichloroethane		5.0	4.78	ug/L	96	(70-130)	20	0.42
MBLK	1,1-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethane		0.5	0.490	ug/L	98	(50-150)		
LCS1	1,1-Dichloroethylene		5.0	5.53	ug/L	111	(70-130)		
LCS2	1,1-Dichloroethylene		5.0	5.54	ug/L	111	(70-130)	20	0.18
MBLK	1,1-Dichloroethylene			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethylene		0.5	0.570	ug/L	114	(50-150)		
LCS1	1,1-Dichloropropene		5.0	4.81	ug/L	96	(70-130)		
LCS2	1,1-Dichloropropene		5.0	4.96	ug/L	99	(70-130)	20	3.1
MBLK	1,1-Dichloropropene			<0.25	ug/L				
MRL_CHK	1,1-Dichloropropene		0.5	0.470	ug/L	94	(50-150)		
LCS1	1,2,3-Trichlorobenzene		5.0	5.16	ug/L	103	(70-130)		

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

10/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	1,2,3-Trichlorobenzene		5.0	5.13	ug/L	103	(70-130)	20	0.58
MBLK	1,2,3-Trichlorobenzene			<0.25	ug/L				
MRL_CHK	1,2,3-Trichlorobenzene		0.5	0.420	ug/L	84	(50-150)		
LCS1	1,2,3-Trichloropropane		5.0	4.29	ug/L	86	(70-130)		
LCS2	1,2,3-Trichloropropane		5.0	4.66	ug/L	93	(70-130)	20	8.3
MBLK	1,2,3-Trichloropropane			<0.25	ug/L				
MRL_CHK	1,2,3-Trichloropropane		0.5	0.480	ug/L	96	(50-150)		
LCS1	1,2,4-Trichlorobenzene		5.0	5.05	ug/L	101	(70-130)		
LCS2	1,2,4-Trichlorobenzene		5.0	5.06	ug/L	101	(70-130)	20	0.20
MBLK	1,2,4-Trichlorobenzene			<0.25	ug/L				
MRL_CHK	1,2,4-Trichlorobenzene		0.5	0.450	ug/L	90	(50-150)		
LCS1	1,2,4-Trimethylbenzene		5.0	5.44	ug/L	109	(70-130)		
LCS2	1,2,4-Trimethylbenzene		5.0	5.55	ug/L	111	(70-130)	20	2.0
MBLK	1,2,4-Trimethylbenzene			<0.25	ug/L				
MRL_CHK	1,2,4-Trimethylbenzene		0.5	0.540	ug/L	108	(50-150)		
LCS1	1,2-Dichloroethane		5.0	4.46	ug/L	89	(70-130)		
LCS2	1,2-Dichloroethane		5.0	4.38	ug/L	88	(70-130)	20	1.8
MBLK	1,2-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,2-Dichloroethane		0.5	0.440	ug/L	88	(50-150)		
LCS1	1,2-Dichloroethane-d4 (S)			91.4	%	91	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			89.4	%	89	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			96.4	%	96	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			87.6	%	88	(70-130)		
LCS1	1,2-Dichloropropane		5.0	4.4	ug/L	88	(70-130)		
LCS2	1,2-Dichloropropane		5.0	4.67	ug/L	93	(70-130)	20	6.0
MBLK	1,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,2-Dichloropropane		0.5	0.440	ug/L	88	(50-150)		
LCS1	1,3,5-Trimethylbenzene		5.0	5.43	ug/L	109	(70-130)		
LCS2	1,3,5-Trimethylbenzene		5.0	5.69	ug/L	114	(70-130)	20	4.7
MBLK	1,3,5-Trimethylbenzene			<0.25	ug/L				
MRL_CHK	1,3,5-Trimethylbenzene		0.5	0.510	ug/L	102	(50-150)		
LCS1	1,3-Dichloropropane		5.0	4.6	ug/L	92	(70-130)		
LCS2	1,3-Dichloropropane		5.0	4.78	ug/L	96	(70-130)	20	3.8
MBLK	1,3-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,3-Dichloropropane		0.5	0.500	ug/L	100	(50-150)		
LCS1	2,2-Dichloropropane		5.0	4.77	ug/L	95	(70-130)		
LCS2	2,2-Dichloropropane		5.0	4.92	ug/L	98	(70-130)	20	3.1
MBLK	2,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	2,2-Dichloropropane		0.5	0.470	ug/L	94	(50-150)		

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

11/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

750 Royal Oak Dr., Suite 100
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 1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	2-Butanone (MEK)		50	43.5	ug/L	87	(70-130)		
LCS2	2-Butanone (MEK)		50	48.0	ug/L	96	(70-130)	20	8.7
MBLK	2-Butanone (MEK)			<2.5	ug/L				
MRL_CHK	2-Butanone (MEK)		5.0	3.97	ug/L	79	(50-150)		
LCS1	4-Bromofluorobenzene (S)			111	%	111	(70-130)		
LCS2	4-Bromofluorobenzene (S)			112	%	112	(70-130)		
MBLK	4-Bromofluorobenzene (S)			114	%	114	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			110	%	110	(70-130)		
LCS1	4-Methyl-2-Pentanone (MIBK)		50	43.1	ug/L	86	(70-130)		
LCS2	4-Methyl-2-Pentanone (MIBK)		50	45.5	ug/L	91	(70-130)	20	5.4
MBLK	4-Methyl-2-Pentanone (MIBK)			<2.5	ug/L				
MRL_CHK	4-Methyl-2-Pentanone (MIBK)		5.0	4.03	ug/L	81	(50-150)		
LCS1	Benzene		5.0	4.81	ug/L	96	(70-130)		
LCS2	Benzene		5.0	4.77	ug/L	95	(70-130)	20	0.84
MBLK	Benzene			<0.25	ug/L				
MRL_CHK	Benzene		0.5	0.480	ug/L	96	(50-150)		
LCS1	Bromobenzene		5.0	5.41	ug/L	108	(70-130)		
LCS2	Bromobenzene		5.0	5.54	ug/L	111	(70-130)	20	2.4
MBLK	Bromobenzene			<0.25	ug/L				
MRL_CHK	Bromobenzene		0.5	0.560	ug/L	112	(50-150)		
LCS1	Bromochloromethane		5.0	5.08	ug/L	102	(70-130)		
LCS2	Bromochloromethane		5.0	4.78	ug/L	96	(70-130)	20	6.1
MBLK	Bromochloromethane			<0.25	ug/L				
MRL_CHK	Bromochloromethane		0.5	0.420	ug/L	84	(50-150)		
LCS1	Bromodichloromethane		5.0	4.17	ug/L	83	(70-130)		
LCS2	Bromodichloromethane		5.0	4.45	ug/L	89	(70-130)	20	6.5
MBLK	Bromodichloromethane			<0.25	ug/L				
MRL_CHK	Bromodichloromethane		0.5	0.460	ug/L	92	(50-150)		
LCS1	Bromoethane		5.0	5.38	ug/L	108	(70-130)		
LCS2	Bromoethane		5.0	5.99	ug/L	120	(70-130)	20	11
MBLK	Bromoethane			<0.25	ug/L				
MRL_CHK	Bromoethane		0.5	0.540	ug/L	108	(50-150)		
LCS1	Bromoform		5.0	5.13	ug/L	103	(70-130)		
LCS2	Bromoform		5.0	4.98	ug/L	100	(70-130)	20	3.0
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.540	ug/L	108	(50-150)		
LCS1	Bromomethane (Methyl Bromide)		5.0	4.87	ug/L	97	(70-130)		
LCS2	Bromomethane (Methyl Bromide)		5.0	4.34	ug/L	87	(70-130)	20	12
MBLK	Bromomethane (Methyl Bromide)			<0.25	ug/L				

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

12/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Bromomethane (Methyl Bromide)		0.5	0.450	ug/L	90	(50-150)		
LCS1	Carbon Tetrachloride		5.0	5.02	ug/L	100	(70-130)		
LCS2	Carbon Tetrachloride		5.0	5.13	ug/L	103	(70-130)	20	2.2
MBLK	Carbon Tetrachloride			<0.25	ug/L				
MRL_CHK	Carbon Tetrachloride		0.5	0.550	ug/L	110	(50-150)		
LCS1	Chlorobenzene		5.0	5.31	ug/L	106	(70-130)		
LCS2	Chlorobenzene		5.0	5.32	ug/L	106	(70-130)	20	0.19
MBLK	Chlorobenzene			<0.25	ug/L				
MRL_CHK	Chlorobenzene		0.5	0.560	ug/L	112	(50-150)		
LCS1	Chlorodibromomethane		5.0	5.19	ug/L	104	(70-130)		
LCS2	Chlorodibromomethane		5.0	4.89	ug/L	98	(70-130)	20	6.0
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.510	ug/L	102	(50-150)		
LCS1	Chloroethane		5.0	5.14	ug/L	103	(70-130)		
LCS2	Chloroethane		5.0	4.69	ug/L	94	(70-130)	20	9.2
MBLK	Chloroethane			<0.25	ug/L				
MRL_CHK	Chloroethane		0.5	0.550	ug/L	110	(50-150)		
LCS1	Chloroform (Trichloromethane)		5.0	4.69	ug/L	94	(70-130)		
LCS2	Chloroform (Trichloromethane)		5.0	4.84	ug/L	97	(70-130)	20	3.1
MBLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.520	ug/L	104	(50-150)		
LCS1	Chloromethane(Methyl Chloride)		5.0	3.89	ug/L	78	(70-130)		
LCS2	Chloromethane(Methyl Chloride)		5.0	4.1	ug/L	82	(70-130)	20	5.3
MBLK	Chloromethane(Methyl Chloride)			<0.25	ug/L				
MRL_CHK	Chloromethane(Methyl Chloride)		0.5	0.450	ug/L	90	(50-150)		
LCS1	cis-1,2-Dichloroethylene		5.0	5.14	ug/L	103	(70-130)		
LCS2	cis-1,2-Dichloroethylene		5.0	5.27	ug/L	105	(70-130)	20	2.5
MBLK	cis-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	cis-1,2-Dichloroethylene		0.5	0.520	ug/L	104	(50-150)		
LCS1	cis-1,3-Dichloropropene		5.0	4.44	ug/L	89	(70-130)		
LCS2	cis-1,3-Dichloropropene		5.0	4.37	ug/L	87	(70-130)	20	1.6
MBLK	cis-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	cis-1,3-Dichloropropene		0.5	0.490	ug/L	98	(50-150)		
LCS1	Di-isopropyl ether		5.0	4.44	ug/L	89	(70-130)		
LCS2	Di-isopropyl ether		5.0	4.38	ug/L	88	(70-130)	20	1.4
MBLK	Di-isopropyl ether			<1.5	ug/L				
MRL_CHK	Di-isopropyl ether		0.5	0.450	ug/L	90	(50-150)		
LCS1	Dibromomethane		5.0	5.02	ug/L	100	(70-130)		
LCS2	Dibromomethane		5.0	4.86	ug/L	97	(70-130)	20	3.2

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

13/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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 1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Dibromomethane			<0.25	ug/L				
MRL_CHK	Dibromomethane		0.5	0.500	ug/L	100	(50-150)		
LCS1	Dichlorodifluoromethane		5.0	5.72	ug/L	114	(70-130)		
LCS2	Dichlorodifluoromethane		5.0	5.68	ug/L	114	(70-130)	20	0.70
MBLK	Dichlorodifluoromethane			<0.25	ug/L				
MRL_CHK	Dichlorodifluoromethane		0.5	0.530	ug/L	106	(50-150)		
LCS1	Dichloromethane		5.0	4.91	ug/L	98	(70-130)		
LCS2	Dichloromethane		5.0	5.03	ug/L	101	(70-130)	20	2.4
MBLK	Dichloromethane			<0.25	ug/L				
MRL_CHK	Dichloromethane		0.5	0.550	ug/L	110	(50-150)		
LCS1	Ethyl benzene		5.0	5.19	ug/L	104	(70-130)		
LCS2	Ethyl benzene		5.0	5.5	ug/L	110	(70-130)	20	5.8
MBLK	Ethyl benzene			<0.25	ug/L				
MRL_CHK	Ethyl benzene		0.5	0.510	ug/L	102	(50-150)		
LCS1	Hexachlorobutadiene		5.0	4.83	ug/L	97	(70-130)		
LCS2	Hexachlorobutadiene		5.0	4.92	ug/L	98	(70-130)	20	1.9
MBLK	Hexachlorobutadiene			<0.25	ug/L				
MRL_CHK	Hexachlorobutadiene		0.5	0.480	ug/L	96	(50-150)		
LCS1	Isopropylbenzene		5.0	6.6	ug/L	<u>132</u>	(70-130)		
LCS2	Isopropylbenzene		5.0	6.9	ug/L	<u>138</u>	(70-130)	20	4.4
MBLK	Isopropylbenzene			<0.25	ug/L				
MRL_CHK	Isopropylbenzene		0.5	0.540	ug/L	108	(50-150)		
LCS1	m,p-Xylenes		10	10.4	ug/L	104	(70-130)		
LCS2	m,p-Xylenes		10	10.8	ug/L	108	(70-130)	20	3.8
MBLK	m,p-Xylenes			<0.25	ug/L				
MRL_CHK	m,p-Xylenes		1.0	0.880	ug/L	88	(50-150)		
LCS1	m-Dichlorobenzene (1,3-DCB)		5.0	5.27	ug/L	105	(70-130)		
LCS2	m-Dichlorobenzene (1,3-DCB)		5.0	5.67	ug/L	113	(70-130)	20	7.3
MBLK	m-Dichlorobenzene (1,3-DCB)			<0.25	ug/L				
MRL_CHK	m-Dichlorobenzene (1,3-DCB)		0.5	0.520	ug/L	104	(50-150)		
LCS1	Methyl Tert-butyl ether (MTBE)		5.0	4.56	ug/L	91	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		5.0	4.72	ug/L	94	(70-130)	20	3.5
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.430	ug/L	86	(50-150)		
LCS1	n-Butylbenzene		5.0	4.59	ug/L	92	(70-130)		
LCS2	n-Butylbenzene		5.0	4.63	ug/L	93	(70-130)	20	0.87
MBLK	n-Butylbenzene			<0.25	ug/L				
MRL_CHK	n-Butylbenzene		0.5	0.420	ug/L	84	(50-150)		
LCS1	n-Propylbenzene		5.0	5.68	ug/L	114	(70-130)		

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

14/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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 1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	n-Propylbenzene		5.0	5.82	ug/L	116	(70-130)	20	2.4
MBLK	n-Propylbenzene			<0.25	ug/L				
MRL_CHK	n-Propylbenzene		0.5	0.550	ug/L	110	(50-150)		
LCS1	Naphthalene		5.0	4.65	ug/L	93	(70-130)		
LCS2	Naphthalene		5.0	4.78	ug/L	96	(70-130)	20	2.8
MBLK	Naphthalene			<0.25	ug/L				
MRL_CHK	Naphthalene		0.5	0.600	ug/L	120	(50-150)		
LCS1	o-Chlorotoluene		5.0	5.53	ug/L	111	(70-130)		
LCS2	o-Chlorotoluene		5.0	5.76	ug/L	115	(70-130)	20	4.1
MBLK	o-Chlorotoluene			<0.25	ug/L				
MRL_CHK	o-Chlorotoluene		0.5	0.590	ug/L	118	(50-150)		
LCS1	o-Dichlorobenzene (1,2-DCB)		5.0	4.88	ug/L	98	(70-130)		
LCS2	o-Dichlorobenzene (1,2-DCB)		5.0	4.93	ug/L	99	(70-130)	20	1.0
MBLK	o-Dichlorobenzene (1,2-DCB)			<0.25	ug/L				
MRL_CHK	o-Dichlorobenzene (1,2-DCB)		0.5	0.520	ug/L	104	(50-150)		
LCS1	o-Xylene		5.0	4.99	ug/L	100	(70-130)		
LCS2	o-Xylene		5.0	5.24	ug/L	105	(70-130)	20	4.9
MBLK	o-Xylene			<0.25	ug/L				
MRL_CHK	o-Xylene		0.5	0.500	ug/L	100	(50-150)		
LCS1	p-Chlorotoluene		5.0	5.49	ug/L	110	(70-130)		
LCS2	p-Chlorotoluene		5.0	5.62	ug/L	112	(70-130)	20	2.3
MBLK	p-Chlorotoluene			<0.25	ug/L				
MRL_CHK	p-Chlorotoluene		0.5	0.530	ug/L	106	(50-150)		
LCS1	p-Dichlorobenzene (1,4-DCB)		5.0	5.38	ug/L	108	(70-130)		
LCS2	p-Dichlorobenzene (1,4-DCB)		5.0	5.65	ug/L	113	(70-130)	20	4.9
MBLK	p-Dichlorobenzene (1,4-DCB)			<0.25	ug/L				
MRL_CHK	p-Dichlorobenzene (1,4-DCB)		0.5	0.520	ug/L	104	(50-150)		
LCS1	p-Isopropyltoluene		5.0	5.33	ug/L	107	(70-130)		
LCS2	p-Isopropyltoluene		5.0	5.33	ug/L	107	(70-130)	20	0.0
MBLK	p-Isopropyltoluene			<0.25	ug/L				
MRL_CHK	p-Isopropyltoluene		0.5	0.500	ug/L	100	(50-150)		
LCS1	sec-Butylbenzene		5.0	5.44	ug/L	109	(70-130)		
LCS2	sec-Butylbenzene		5.0	5.51	ug/L	110	(70-130)	20	1.3
MBLK	sec-Butylbenzene			<0.25	ug/L				
MRL_CHK	sec-Butylbenzene		0.5	0.540	ug/L	108	(50-150)		
LCS1	Styrene		5.0	4.13	ug/L	83	(70-130)		
LCS2	Styrene		5.0	4.39	ug/L	88	(70-130)	20	6.1
MBLK	Styrene			<0.25	ug/L				
MRL_CHK	Styrene		0.5	0.430	ug/L	86	(50-150)		

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

15/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	tert-amyl Methyl Ether		5.0	4.3	ug/L	86	(70-130)		
LCS2	tert-amyl Methyl Ether		5.0	4.45	ug/L	89	(70-130)	20	3.4
MBLK	tert-amyl Methyl Ether			<1.5	ug/L				
MRL_CHK	tert-amyl Methyl Ether		0.5	0.400	ug/L	80	(50-150)		
LCS1	tert-Butyl Ethyl Ether		5.0	4.37	ug/L	87	(70-130)		
LCS2	tert-Butyl Ethyl Ether		5.0	4.58	ug/L	92	(70-130)	20	4.7
MBLK	tert-Butyl Ethyl Ether			<1.5	ug/L				
MRL_CHK	tert-Butyl Ethyl Ether		0.5	0.400	ug/L	80	(50-150)		
LCS1	tert-Butylbenzene		5.0	5.26	ug/L	105	(70-130)		
LCS2	tert-Butylbenzene		5.0	5.37	ug/L	107	(70-130)	20	2.1
MBLK	tert-Butylbenzene			<0.25	ug/L				
MRL_CHK	tert-Butylbenzene		0.5	0.540	ug/L	108	(50-150)		
LCS1	Tetrachloroethylene (PCE)		5.0	5.37	ug/L	107	(70-130)		
LCS2	Tetrachloroethylene (PCE)		5.0	5.35	ug/L	107	(70-130)	20	0.37
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.580	ug/L	116	(50-150)		
LCS1	Toluene		5.0	5.06	ug/L	101	(70-130)		
LCS2	Toluene		5.0	5.13	ug/L	103	(70-130)	20	1.4
MBLK	Toluene			<0.25	ug/L				
MRL_CHK	Toluene		0.5	0.530	ug/L	106	(50-150)		
LCS1	Toluene-d8 (S)			102	%	102	(70-130)		
LCS2	Toluene-d8 (S)			103	%	103	(70-130)		
MBLK	Toluene-d8 (S)			104	%	104	(70-130)		
MRL_CHK	Toluene-d8 (S)			109	%	109	(70-130)		
LCS1	trans-1,2-Dichloroethylene		5.0	5.63	ug/L	113	(70-130)		
LCS2	trans-1,2-Dichloroethylene		5.0	5.47	ug/L	109	(70-130)	20	2.9
MBLK	trans-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	trans-1,2-Dichloroethylene		0.5	0.500	ug/L	100	(50-150)		
LCS1	trans-1,3-Dichloropropene		5.0	4.52	ug/L	90	(70-130)		
LCS2	trans-1,3-Dichloropropene		5.0	4.28	ug/L	86	(70-130)	20	5.5
MBLK	trans-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	trans-1,3-Dichloropropene		0.5	0.440	ug/L	88	(50-150)		
LCS1	Trichloroethylene (TCE)		5.0	5.28	ug/L	106	(70-130)		
LCS2	Trichloroethylene (TCE)		5.0	5.47	ug/L	109	(70-130)	20	3.5
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.540	ug/L	108	(50-150)		
LCS1	Trichlorofluoromethane		5.0	5.32	ug/L	106	(70-130)		
LCS2	Trichlorofluoromethane		5.0	5.33	ug/L	107	(70-130)	20	0.19
MBLK	Trichlorofluoromethane			<0.25	ug/L				

Spike recovery is already corrected for native results.

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Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

16/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Trichlorofluoromethane		0.5	0.440	ug/L	88	(50-150)		
LCS1	Trichlorotrifluoroethane(Freon)		5.0	4.83	ug/L	97	(70-130)		
LCS2	Trichlorotrifluoroethane(Freon)		5.0	4.91	ug/L	98	(70-130)	20	1.6
MBLK	Trichlorotrifluoroethane(Freon)			<0.25	ug/L				
MRL_CHK	Trichlorotrifluoroethane(Freon)		0.5	0.540	ug/L	108	(50-150)		
LCS1	Vinyl chloride (VC)		5.0	4.51	ug/L	90	(70-130)		
LCS2	Vinyl chloride (VC)		5.0	4.58	ug/L	92	(70-130)	20	1.5
MBLK	Vinyl chloride (VC)			<0.15	ug/L				
MRL_CHK	Vinyl chloride (VC)		0.5	0.450	ug/L	90	(50-150)		
QC Ref# 518771 - Perchlorate with 0.5 ppb DL by EPA 314.0						Analysis Date: 08/03/2009			
LCS1	Perchlorate- 0.5 ppb		25	24.0	ug/L	96	(85-115)		
LCS2	Perchlorate- 0.5 ppb		25	24.3	ug/L	97	(85-115)	15	1.2
MBLK	Perchlorate- 0.5 ppb			<0.25	ug/L				
MRL_CHK	Perchlorate- 0.5 ppb		0.5	0.457	ug/L	92	(70-130)		
MS1_200908041097	Perchlorate- 0.5 ppb	ND	1.0	0.834	ug/L	83	(70-130)		
MSD1_200908041097	Perchlorate- 0.5 ppb	ND	1.0	0.905	ug/L	91	(70-130)	15	8.2
QC Ref# 519556 - ICPMS Metals by EPA 200.8						Analysis Date: 08/10/2009			
LCS1	Antimony Total ICAP/MS		50	48.3	ug/L	97	(85-115)		
LCS2	Antimony Total ICAP/MS		50	47.9	ug/L	96	(85-115)	20	0.83
MBLK	Antimony Total ICAP/MS			<1	ug/L				
MRL_CHK	Antimony Total ICAP/MS		1.0	0.890	ug/L	89	(50-150)		
MS_200907290242	Antimony Total ICAP/MS		50	50.9	ug/L	102	(70-130)		
MS_200907290246	Antimony Total ICAP/MS		50	49.4	ug/L	99	(70-130)		
MSD_200907290242	Antimony Total ICAP/MS		50	51.6	ug/L	103	(70-130)	20	0.98
MSD_200907290246	Antimony Total ICAP/MS		50	48.8	ug/L	98	(70-130)	20	1.2
LCS1	Arsenic Total ICAP/MS		20	19.2	ug/L	96	(85-115)		
LCS2	Arsenic Total ICAP/MS		20	18.9	ug/L	95	(85-115)	20	1.6
MBLK	Arsenic Total ICAP/MS			<1	ug/L				
MRL_CHK	Arsenic Total ICAP/MS		1.0	1.25	ug/L	125	(50-150)		
MS_200907290242	Arsenic Total ICAP/MS	ND	20	20.4	ug/L	99	(70-130)		
MS_200907290246	Arsenic Total ICAP/MS	2.7	20	23.0	ug/L	101	(70-130)		
MSD_200907290242	Arsenic Total ICAP/MS	ND	20	21.1	ug/L	102	(70-130)	20	3.0
MSD_200907290246	Arsenic Total ICAP/MS	2.7	20	22.5	ug/L	99	(70-130)	20	2.3
LCS1	Barium Total ICAP/MS		100	102	ug/L	102	(85-115)		
LCS2	Barium Total ICAP/MS		100	99.4	ug/L	99	(85-115)	20	2.6
MBLK	Barium Total ICAP/MS			<2	ug/L				
MRL_CHK	Barium Total ICAP/MS		2.0	2.24	ug/L	112	(50-150)		
MS_200907290242	Barium Total ICAP/MS		100	123	ug/L	123	(70-130)		

Spike recovery is already corrected for native results.

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are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

17/24

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_200907290246	Barium Total ICAP/MS		100	99.4	ug/L	99	(70-130)		
MSD_200907290242	Barium Total ICAP/MS		100	125	ug/L	125	(70-130)	20	1.6
MSD_200907290246	Barium Total ICAP/MS		100	98.5	ug/L	99	(70-130)	20	0.91
LCS1	Cadmium Total ICAP/MS		20	19.9	ug/L	100	(85-115)		
LCS2	Cadmium Total ICAP/MS		20	19.5	ug/L	98	(85-115)	20	2.0
MBLK	Cadmium Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Cadmium Total ICAP/MS		0.5	0.478	ug/L	96	(50-150)		
MS_200907290242	Cadmium Total ICAP/MS	ND	20	19.5	ug/L	98	(70-130)		
MS_200907290246	Cadmium Total ICAP/MS	ND	20	19.0	ug/L	95	(70-130)		
MSD_200907290242	Cadmium Total ICAP/MS	ND	20	19.7	ug/L	99	(70-130)	20	1.0
MSD_200907290246	Cadmium Total ICAP/MS	ND	20	18.9	ug/L	94	(70-130)	20	1.1
LCS1	Chromium Total ICAP/MS		100	95.1	ug/L	95	(85-115)		
LCS2	Chromium Total ICAP/MS		100	94.1	ug/L	94	(85-115)	20	1.1
MBLK	Chromium Total ICAP/MS			<1	ug/L				
MRL_CHK	Chromium Total ICAP/MS		1.0	1.29	ug/L	129	(50-150)		
MS_200907290242	Chromium Total ICAP/MS	1.0	100	92.4	ug/L	91	(70-130)		
MS_200907290246	Chromium Total ICAP/MS	ND	100	93.2	ug/L	93	(70-130)		
MSD_200907290242	Chromium Total ICAP/MS	1.0	100	93.3	ug/L	92	(70-130)	20	0.98
MSD_200907290246	Chromium Total ICAP/MS	ND	100	91.9	ug/L	91	(70-130)	20	1.4
LCS1	Copper Total ICAP/MS		100	93.3	ug/L	93	(85-115)		
LCS2	Copper Total ICAP/MS		100	92.2	ug/L	92	(85-115)	20	1.2
MBLK	Copper Total ICAP/MS			<2	ug/L				
MRL_CHK	Copper Total ICAP/MS		2.0	2.1	ug/L	105	(50-150)		
MS_200907290242	Copper Total ICAP/MS	4.4	100	90.3	ug/L	86	(70-130)		
MS_200907290246	Copper Total ICAP/MS	ND	100	87.0	ug/L	85	(70-130)		
MSD_200907290242	Copper Total ICAP/MS	4.4	100	90.7	ug/L	86	(70-130)	20	0.47
MSD_200907290246	Copper Total ICAP/MS	ND	100	86.2	ug/L	85	(70-130)	20	0.94
LCS1	Lead Total ICAP/MS		20	18.1	ug/L	91	(85-115)		
LCS2	Lead Total ICAP/MS		20	19.8	ug/L	99	(85-115)	20	9.0
MBLK	Lead Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.519	ug/L	104	(50-150)		
MS_200907290242	Lead Total ICAP/MS	0.51	20	20.9	ug/L	102	(70-130)		
MS_200907290246	Lead Total ICAP/MS	ND	20	20.5	ug/L	102	(70-130)		
MSD_200907290242	Lead Total ICAP/MS	0.51	20	21.1	ug/L	103	(70-130)	20	0.98
MSD_200907290246	Lead Total ICAP/MS	ND	20	20.3	ug/L	101	(70-130)	20	0.99
LCS1	Manganese Total ICAP/MS		50	46.5	ug/L	93	(85-115)		
LCS2	Manganese Total ICAP/MS		50	46.0	ug/L	92	(85-115)	20	1.1
MBLK	Manganese Total ICAP/MS			<2	ug/L				
MRL_CHK	Manganese Total ICAP/MS		2.0	2.08	ug/L	104	(50-150)		

Spike recovery is already corrected for native results.

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(S) Indicates surrogate compound.

18/24

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_200907290242	Manganese Total ICAP/MS	41	50	85.0	ug/L	87	(70-130)		
MS_200907290246	Manganese Total ICAP/MS	39	50	84.2	ug/L	90	(70-130)		
MSD_200907290242	Manganese Total ICAP/MS	41	50	86.2	ug/L	90	(70-130)	20	2.6
MSD_200907290246	Manganese Total ICAP/MS	39	50	82.6	ug/L	87	(70-130)	20	3.5
LCS1	Molybdenum Total ICAP/MS		100	91.0	ug/L	91	(85-115)		
LCS2	Molybdenum Total ICAP/MS		100	91.1	ug/L	91	(85-115)	20	0.11
MBLK	Molybdenum Total ICAP/MS			<2	ug/L				
MRL_CHK	Molybdenum Total ICAP/MS		2.0	1.34	ug/L	67	(50-150)		
MS_200907290242	Molybdenum Total ICAP/MS		100	100	ug/L	100	(70-130)		
MS_200907290246	Molybdenum Total ICAP/MS		100	98.8	ug/L	99	(70-130)		
MSD_200907290242	Molybdenum Total ICAP/MS		100	102	ug/L	102	(70-130)	20	2.0
MSD_200907290246	Molybdenum Total ICAP/MS		100	98.1	ug/L	98	(70-130)	20	0.71
LCS1	Nickel Total ICAP/MS		50	46.4	ug/L	93	(85-115)		
LCS2	Nickel Total ICAP/MS		50	45.7	ug/L	91	(85-115)	20	1.5
MBLK	Nickel Total ICAP/MS			<5	ug/L				
MRL_CHK	Nickel Total ICAP/MS		5.0	5.24	ug/L	105	(50-150)		
MS_200907290242	Nickel Total ICAP/MS		50	45.9	ug/L	92	(70-130)		
MS_200907290246	Nickel Total ICAP/MS		50	46.3	ug/L	93	(70-130)		
MSD_200907290242	Nickel Total ICAP/MS		50	46.1	ug/L	92	(70-130)	20	0.54
MSD_200907290246	Nickel Total ICAP/MS		50	45.3	ug/L	91	(70-130)	20	2.1
LCS1	Selenium Total ICAP/MS		20	20.4	ug/L	102	(85-115)		
LCS2	Selenium Total ICAP/MS		20	19.9	ug/L	100	(85-115)	20	2.5
MBLK	Selenium Total ICAP/MS			<5	ug/L				
MRL_CHK	Selenium Total ICAP/MS		5.0	5.87	ug/L	117	(50-150)		
MS_200907290242	Selenium Total ICAP/MS	ND	20	21.5	ug/L	98	(70-130)		
MS_200907290246	Selenium Total ICAP/MS	ND	20	21.7	ug/L	101	(70-130)		
MSD_200907290242	Selenium Total ICAP/MS	ND	20	22.1	ug/L	101	(70-130)	20	3.5
MSD_200907290246	Selenium Total ICAP/MS	ND	20	21.0	ug/L	98	(70-130)	20	3.1
LCS1	Thallium Total ICAP/MS		20	18.3	ug/L	92	(85-115)		
LCS2	Thallium Total ICAP/MS		20	20.0	ug/L	100	(85-115)	20	8.9
MBLK	Thallium Total ICAP/MS			<1	ug/L				
MRL_CHK	Thallium Total ICAP/MS		1.0	1.26	ug/L	126	(50-150)		
MS_200907290242	Thallium Total ICAP/MS		20	20.7	ug/L	103	(70-130)		
MS_200907290246	Thallium Total ICAP/MS		20	20.7	ug/L	103	(70-130)		
MSD_200907290242	Thallium Total ICAP/MS		20	20.9	ug/L	105	(70-130)	20	1.9
MSD_200907290246	Thallium Total ICAP/MS		20	20.5	ug/L	103	(70-130)	20	0.0

QC Ref# 520965 - ICP Metals by EPA 200.7
Analysis Date: 08/18/2009

LCS1	Boron Total ICAP		0.5	0.475	mg/L	95	(85-115)		
LCS2	Boron Total ICAP		0.5	0.492	mg/L	98	(85-115)	20	3.5

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are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

19/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Boron Total ICAP			<0.05	mg/L				
MRL_CHK	Boron Total ICAP		0.05	0.0566	mg/L	113	(50-150)		
MS_200908190216	Boron Total ICAP	0.23	0.5	0.694	mg/L	93	(70-130)		
MS2_200907290244	Boron Total ICAP		0.5	0.563	mg/L	113	(70-130)		
MSD_200908190216	Boron Total ICAP	0.23	0.5	0.706	mg/L	95	(70-130)	20	2.5
MSD2_200907290244	Boron Total ICAP		0.5	0.551	mg/L	110	(70-130)	20	2.7
LCS1	Calcium Total ICAP		50	48.1	mg/L	96	(85-115)		
LCS2	Calcium Total ICAP		50	49.0	mg/L	98	(85-115)	20	1.9
MBLK	Calcium Total ICAP			<1	mg/L				
MRL_CHK	Calcium Total ICAP		1.0	1.08	mg/L	108	(50-150)		
MS_200908190216	Calcium Total ICAP	56	50	100	mg/L	89	(70-130)		
MS2_200907290244	Calcium Total ICAP		50	46.4	mg/L	93	(70-130)		
MSD_200908190216	Calcium Total ICAP	56	50	102	mg/L	92	(70-130)	20	4.0
MSD2_200907290244	Calcium Total ICAP		50	44.5	mg/L	89	(70-130)	20	4.3
LCS1	Iron Total ICAP		5.0	4.6	mg/L	92	(85-115)		
LCS2	Iron Total ICAP		5.0	4.96	mg/L	99	(85-115)	20	7.5
MBLK	Iron Total ICAP			<0.02	mg/L				
MRL_CHK	Iron Total ICAP		0.02	0.0206	mg/L	103	(50-150)		
MS_200908190216	Iron Total ICAP	0.20	5.0	4.95	mg/L	95	(70-130)		
MS2_200907290244	Iron Total ICAP	0.62	5.0	5.47	mg/L	97	(70-130)		
MSD_200908190216	Iron Total ICAP	0.20	5.0	5.05	mg/L	97	(70-130)	20	2.1
MSD2_200907290244	Iron Total ICAP	0.62	5.0	5.21	mg/L	92	(70-130)	20	5.6
LCS1	Iron Total ICAP 10 ppb		5.0	4.6	mg/L	92	(85-115)		
LCS2	Iron Total ICAP 10 ppb		5.0	4.96	mg/L	99	(85-115)	20	7.5
MBLK	Iron Total ICAP 10 ppb			<0.01	mg/L				
MRL_CHK	Iron Total ICAP 10 ppb		0.01	0.0101	mg/L	101	(50-150)		
MS_200908190216	Iron Total ICAP 10 ppb		5.0	4.75	mg/L	95	(70-130)		
MS2_200907290244	Iron Total ICAP 10 ppb		5.0	4.85	mg/L	97	(70-130)		
MSD_200908190216	Iron Total ICAP 10 ppb		5.0	4.85	mg/L	97	(70-130)	20	2.1
MSD2_200907290244	Iron Total ICAP 10 ppb		5.0	4.59	mg/L	92	(70-130)	20	5.6
LCS1	Magnesium Total ICAP		20	19.0	mg/L	95	(85-115)		
LCS2	Magnesium Total ICAP		20	19.5	mg/L	98	(85-115)	20	2.6
MBLK	Magnesium Total ICAP			<0.1	mg/L				
MRL_CHK	Magnesium Total ICAP		0.1	0.105	mg/L	105	(50-150)		
MS_200908190216	Magnesium Total ICAP	13	20	31.5	mg/L	91	(70-130)		
MS2_200907290244	Magnesium Total ICAP	11	20	30.2	mg/L	95	(70-130)		
MSD_200908190216	Magnesium Total ICAP	13	20	32.0	mg/L	93	(70-130)	20	2.7
MSD2_200907290244	Magnesium Total ICAP	11	20	29.3	mg/L	91	(70-130)	20	4.5
LCS1	Potassium Total ICAP		20	18.7	mg/L	94	(85-115)		

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20/24

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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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QC Report: 310978

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Potassium Total ICAP		20	19.1	mg/L	96	(85-115)	20	2.1
MBLK	Potassium Total ICAP			<1	mg/L				
MRL_CHK	Potassium Total ICAP		1.0	1.03	mg/L	103	(50-150)		
MS_200908190216	Potassium Total ICAP	12	20	29.5	mg/L	90	(70-130)		
MS2_200907290244	Potassium Total ICAP		20	23.2	mg/L	116	(70-130)		
MSD_200908190216	Potassium Total ICAP	12	20	30.2	mg/L	93	(70-130)	20	3.6
MSD2_200907290244	Potassium Total ICAP		20	22.4	mg/L	112	(70-130)	20	3.5
LCS1	Sodium Total ICAP		50	47.3	mg/L	95	(85-115)		
LCS2	Sodium Total ICAP		50	48.3	mg/L	97	(85-115)	20	2.1
MBLK	Sodium Total ICAP			<1	mg/L				
MRL_CHK	Sodium Total ICAP		1.0	0.970	mg/L	97	(50-150)		
MS_200908190216	Sodium Total ICAP	91	50	134	mg/L	86	(70-130)		
MS2_200907290244	Sodium Total ICAP	44	50	90.2	mg/L	92	(70-130)		
MSD_200908190216	Sodium Total ICAP	91	50	136	mg/L	90	(70-130)	20	4.6
MSD2_200907290244	Sodium Total ICAP	44	50	88.4	mg/L	89	(70-130)	20	4.0

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

21/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

LONGVIEW
GROUP#310888
LAB# 200907290333

PREDOMINANT ALGAE:

Stephanodiscus 31%
Melosira 30%
Synedra 12%
Scenedesmus 8%

OTHER ALGAE:

Agmenellum
Ankistrodesmus
Closteriopsis
Coelastrum
Crucigenia
Cyclotella
Dictyosphaeria
Glenodinium
Gloeocystis
Gyrosigma
Kirchneriella
Navicula
Nitzschia
Oscillatoria
Pinnularia
Staurastrum
Treuberia
Unidentified flagellates

LONGVIEW

GROUP: 310889

LAB# 200907290334

PREDOMINANT ALGAE:

Synedra 33%

Mougeotia 21%

Unidentified flagellates 10%

Phormidium 7%

OTHER ALGAE:

Achnanthes

Anabaena

Ankistrodesmus

Aphanizomenon

Chroococcus

Closteriopsis

Closterium

Crucigenia

Cryptomonas

Glenodinium

Gloeocystis

Navicula

Nitzschia

Oscillatoria

Phacus

Scenedesmus

Staurastrum

Stephanodiscus

Trachelomonas

CDM-MA

GROUP# 310978

LAB# 200907300216

PREDOMINANT ALGAE:

Unidentified flagellates 21%

Navicula 15%

Synedra 10%

Gloeocystis 6%

OTHER ALGAE:

Achnanthes

Asterionella

Closteriopsis

Cocconeis

Cosmarium

Crucigenia

Cryptomonas

Cylindrospermopsis

Diatoma

Gloeocystis

Gomphonema

Melosira

Nitzschia

Pediastrum

Pinnularia

Scenedesmus

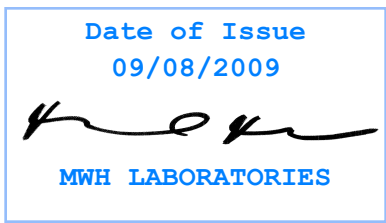
Stephanodiscus

750 Royal Oak Dr., Suite 100
Monrovia, California, 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

CDM
50 Hampshire Street
Cambridge, MA 02139-1548
Attention: Jamie Lefkowitz
Fax: 617-452-8566



TDF: Thomas.D.French
Project Manager



Report#: 312922
Project: MERRIMACK-RIVER
Group: DW Study

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

Acknowledgement of Samples Received

CDM

50 Hampshire Street
 Cambridge, MA 02139-1548
 Attn: Jamie Lefkowitz
 Phone: 617-452-6591

Customer Code: CDM-MA
 Group #: 312922
 Project #: MERRIMACK-RIVER
 Sample Group: DW Study
 Project Manager: Thomas.D.French
 Phone: 480-778-1558

The following samples were received from you on **August 25, 2009**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample #	Sample Id	Sample Date
200908250149	DW2	24-Aug-2009 1200
	@MTBE9	@SPMELOW
	Algae Enumeration	Algae Identification
	Dissolved Organic Carbon	Iron Total ICAP
	PH (H3=past HT not compliant)	Total Organic Carbon
		Actinomycetes
		CLO41PPB
		Manganese Total ICAP/MS
		UV absorbance at 254 nm
200908250150	MTBE - TRAVEL BLANK - HOLD	24-Aug-2009 0000
	@MTBE9 TB	

Test Description

- @MTBE9 -- Volatile Organics by GCMS
- @MTBE9 TB -- Volatile Organics by GCMS
- @SPMELOW -- Taste and Odor Cmpds Low Level



MWH Laboratories

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Monrovia, California 91016-3629
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CHAIN OF CUSTODY RECORD

312922

MWH LABS USE ONLY:

LOGIN COMMENTS: _____	SAMPLES CHECKED AGAINST COC BY: <u>JS</u>
_____	SAMPLES LOGGED IN BY: <u>MD</u>
SAMPLE TEMP WHEN REC'D AT LAB: <u>6</u> (Compliance: 4 +/- 2°C)	SAMPLES REC'D DAY OF COLLECTION? <input type="checkbox"/> (check for yes)
CONDITION OF BLUE ICE: FROZEN <input checked="" type="checkbox"/> PARTIALLY FROZEN <input type="checkbox"/> THAWED <input type="checkbox"/>	

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: <u>CDM</u>		PROJECT CODE:		COMPLIANCE SAMPLES - Requires state forms <input type="checkbox"/>		NON-COMPLIANCE SAMPLES <input checked="" type="checkbox"/> REGULATION INVOLVED:	
MWH LABS CLIENT CODE:	COC ID:	SAMPLE GROUP:		Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION		(eg. SDWA, Phase V, NPDES, FDA,...)	
SAMPLER PRINTED NAME AND SIGNATURE: <u>JAMIE LEFKOWITZ</u>		TAT requested: rush by adv notice only STD ___ 1 wk ___ 3 day ___ 2 day ___ 1 day ___		SEE ATTACHED BOTTLE ORDER FOR ANALYSES <input checked="" type="checkbox"/> (check for yes), <u>OR</u> list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)			
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	Field Data	Field Data	SAMPLER COMMENTS
<u>8/24/09</u>	<u>12:00PM</u>	<u>DWZ</u>					<u>PCWP 8/25/09 HUEK</u>
	<u>3/16</u>						
				<p><small>This portion can be removed for recipient's records.</small></p> <p>Date: <u>8/24/2009</u> FedEx Tracking Number: <u>869859229850</u></p> <p>Sender's Name: <u>JAMIE LEFKOWITZ</u> Phone: <u>617 452-6000</u></p> <p>Company: <u>CDM</u></p> <p>Address: <u>50 HAMPSHIRE ST</u></p> <p>City: <u>CAMBRIDGE</u> State: <u>MA</u> ZIP: <u>02139-1548</u></p> <p>Your Internal Billing Reference: <u>50919-66485-6162.004.102.TSKC</u></p>			

* MATRIX TYPES: RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil O = Other - Please Identify
 RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<u>J Lefkowitz</u>	<u>Jamie Lefkowitz</u>	<u>CDM</u>	<u>8/24/09</u>	<u>2:30 PM</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>MWH</u>	<u>8/25/09</u>	<u>10:00</u>

Thomas.D.French Your MWHL Project Manager

BO #: 7912

Created By: TDF

Order Date: 08/07/2009

Bottle Orders

**Sampler: please return
 this paper with your samples**

Client Code CDM-MA
 Project Code MERRIMACK-RIVER Bottle Orders
 Group Name DW Study
 PO# / Job# _____

Group#
Date Sampled
Date Received

Ship Sample Kits to

Send Report to

Billing Address

Ship By:
 08/11/2009

CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

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 50 Hampshire Street
 Cambridge, MA 02139-1548

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 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

# of Samples	Tests	Qteline#	Bottles - Qty for each sample, type & preservative if any	UN DOT #
1	@MPBE9		3 40ml amber glass vial 4drops 6N HCL (36%)	
1	@MPBE9 TB		2 40ml amber glass vial 4drops of 1:1 HCL + H2O	
1	@SPMELOW		4 40ml amber glass vial no preservative	
1	Actinomycetes		1 100ml poly sterilized 0.25ml thio (8%)	
1	Algae Enumeration, Algae Identification		1 500ml poly sterilized no preservative	
1	CLO41PPB		1 125ml poly CLO4 - no preservative	
1	Dissolved Organic Carbon, UV absorbance at 254 nm		1 125ml amber glass no preservative	
1	Iron Total ICAP, Manganese Total ICAP/MS		1 250ml acid rinsed 1ml HNO3 (18%)	
1	PH (H3=past HT not compliant)		1 125ml poly no preservative	
1	Total Organic Carbon		1 125ml amber glass 0.5ml H2SO4 (50%)	

Comments

Include COC, sampling/packing, blue ice. Client is responsible for return shipment to MWH Laboratories, 750 Royal Oaks Drive, Monrovia, CA 91016. (626) 386 1100.



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Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory Comments
Report: #312922

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

750 Royal Oak Dr., Suite 100
Monrovia, California, 91016-3629
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Laboratory
Hits Report: 312922

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Samples Received on:
08/25/2009

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	200908250149	<u>DW2</u>				
08/25/2009	15:10 Actinomycetes		1.0		CFU/ml	
09/03/2009	16:58 Algae Enumeration		110		#/ml	1
09/03/2009	16:58 Algae Identification		See Com		Not Appl.	
08/28/2009	13:36 Dissolved Organic Carbon		3.2		mg/L	0.3
08/25/2009	16:13 Dissolved UV Abs. at 254 nm		0.11		cm -1	0.009
08/26/2009	22:24 Geosmin		7.7		ng/L	1
08/27/2009	0::05 Iron Total ICAP		0.31	0.3	mg/L	0.02
08/28/2009	23:19 Manganese Total ICAP/MS		23	50	ug/L	2
08/26/2009	22:24 Methylisoborneol		1.1		ng/L	1
08/25/2009	16:22 PH (H3=past HT not compliant)		7.1		Units	0.1
08/28/2009	14:04 Total Organic Carbon		3.2		mg/L	0.3

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**Laboratory Data
 Report: 312922**
CDM
 Jamie Lefkowitz
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Samples Received on:
 08/25/2009

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
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DW2 (200908250149)
Sampled on 08/24/2009 1200

EPA 200.8 - ICPMS Metals								
08/28/2009	23:19	522212	(EPA 200.8)	Manganese Total ICAP/MS	23	ug/L	2	1
EPA 200.7 - ICP Metals								
08/27/2009	0::05	522000	(EPA 200.7)	Iron Total ICAP	0.31	mg/L	0.02	1
SM 10900 - Algae Identification								
09/03/2009	16:58	522841	(SM 10900)	Algae Identification	See Comments	Not Appl.		1
SM 10200F - Algae Enumeration								
09/03/2009	16:58	522840	(SM 10200F)	Algae Enumeration	110	#/ml	1	1
SM 9250B - Actinomycetes								
08/25/2009	15:10	522450	(SM 9250B)	Actinomycetes	1.0	CFU/ml		1
SM5310C/E415.3 - Total Organic Carbon								
08/28/2009	14:04	522009	(SM5310C/E415.3)	Total Organic Carbon	3.2	mg/L	0.3	1
SM 5310C - Dissolved Organic Carbon								
08/28/2009	13:36	522006	(SM 5310C)	Dissolved Organic Carbon	3.2	mg/L	0.3	1
SM 5910 - Dissolved UV Abs. at 254 nm								
08/25/2009	16:13	521605	(SM 5910)	Dissolved UV Abs. at 254 nm	0.11	cm -1	0.009	1
SM 6040D - Taste and Odor Cmpds Low Level								
08/26/2009	22:24	521621	(SM 6040D)	Geosmin	7.7	ng/L	1	1
08/26/2009	22:24	521621	(SM 6040D)	Methylisborneol	1.1	ng/L	1	1
08/26/2009	22:24	521621	(SM 6040D)	Isobutyl methoxypyrazine	97	%		1
08/26/2009	22:24	521621	(SM 6040D)	Isopropyl methoxypyrazine	97	%		1
EPA 314.0 - Perchlorate with 0.5 ppb DL								
09/01/2009	12:13	522403	(EPA 314.0)	Perchlorate	ND	ug/L	0.5	1
EPA 524.2 - Volatile Organics by GCMS								
8/25/2009	08/25/2009	17:53	521691	(EPA 524.2)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5 1
8/25/2009	08/25/2009	17:53	521691	(EPA 524.2)	1,2-Dichloroethane-d4	109	%	1
SM4500-HB - PH (H3=past HT not compliant)								
08/25/2009	16:22	521631	(SM4500-HB)	PH (H3=past HT not compliant)	7.1	Units	0.1	1

MTBE - TRAVEL BLANK - HOLD (200908250150)
Sampled on 08/24/2009 0000

EPA 524.2 - Volatile Organics by GCMS								
8/25/2009	08/25/2009	12:11	521691	(EPA 524.2)	Methyl Tert-butyl ether (MTBE)	NA	ug/L	0.5 1
8/25/2009	08/25/2009	12:11	521691	(EPA 524.2)	1,2-Dichloroethane-d4	NA	%	1

CDM

QC Ref # 521605 - Dissolved UV Abs. at 254 nm		Analysis Date: 08/25/2009
200908250149	DW2	Analyzed by: KXS
QC Ref # 521621 - Taste and Odor Cmpds Low Level		Analysis Date: 08/26/2009
200908250149	DW2	Analyzed by: DLO
QC Ref # 521631 - PH (H3=past HT not compliant)		Analysis Date: 08/25/2009
200908250149	DW2	Analyzed by: SAR
QC Ref # 521691 - Volatile Organics by GCMS		Analysis Date: 08/25/2009
200908250149	DW2	Analyzed by: MCB
200908250150	MTBE - TRAVEL BLANK - HOLD	Analyzed by: MCB
QC Ref # 522000 - ICP Metals		Analysis Date: 08/27/2009
200908250149	DW2	Analyzed by: CSK
QC Ref # 522006 - Dissolved Organic Carbon		Analysis Date: 08/28/2009
200908250149	DW2	Analyzed by: KXS
QC Ref # 522009 - Total Organic Carbon		Analysis Date: 08/28/2009
200908250149	DW2	Analyzed by: KXS
QC Ref # 522212 - ICPMS Metals		Analysis Date: 08/28/2009
200908250149	DW2	Analyzed by: DYH
QC Ref # 522403 - Perchlorate with 0.5 ppb DL		Analysis Date: 09/01/2009
200908250149	DW2	Analyzed by: MCE
QC Ref # 522450 - Actinomycetes		Analysis Date: 08/25/2009
200908250149	DW2	Analyzed by: PAB
QC Ref # 522840 - Algae Enumeration		Analysis Date: 09/03/2009
200908250149	DW2	Analyzed by: NWM
QC Ref # 522841 - Algae Identification		Analysis Date: 09/03/2009
200908250149	DW2	Analyzed by: NWM

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Laboratory
QC Report: 312922

CDM, Inc.

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 521605 - Dissolved UV Abs. at 254 nm by SM 5910					Analysis Date: 08/25/2009				
DUP1_200908250149	UV absorbance at 254 nm	0.11		0.105	cm -1		(0-15)	15	0.0
LCS1	UV absorbance at 254 nm		0.37	0.400	cm -1	109	(83-121)		
MBLK	UV absorbance at 254 nm			<0.004	cm -1				
MRL_CHK	UV absorbance at 254 nm		0.009	0.00800	cm -1	89	(85-115)		
QC Ref# 521621 - Taste and Odor Cmpds Low Level by SM 6040D					Analysis Date: 08/26/2009				
LCS1	Geosmin		10	10.3	ng/L	103	(75-125)		
MBLK	Geosmin			<1	ng/L				
MRLLW	Geosmin		1.0	1.19	ng/L	119	(50-150)		
MS_200908260140	Geosmin	2.8	10	14.7	ng/L	119	(70-130)		
MSD_200908260140	Geosmin	2.8	10	14.3	ng/L	115	(70-130)	20	3.4
LCS1	Isobutyl methoxypyrazine (I)			99.0	%	99	(50-150)		
MBLK	Isobutyl methoxypyrazine (I)			101	%	101	(50-150)		
MRLLW	Isobutyl methoxypyrazine (I)			102	%	102	(50-150)		
MS_200908260140	Isobutyl methoxypyrazine (I)			106	%	106	(50-150)		
MSD_200908260140	Isobutyl methoxypyrazine (I)			98.0	%	98	(50-150)		
LCS1	Isopropyl methoxy pyrazine (S)			121	%	121	(70-130)		
MBLK	Isopropyl methoxy pyrazine (S)			120	%	120	(70-130)		
MRLLW	Isopropyl methoxy pyrazine (S)			108	%	108	(70-130)		
MS_200908260140	Isopropyl methoxy pyrazine (S)			111	%	111	(70-130)		
MSD_200908260140	Isopropyl methoxy pyrazine (S)			111	%	111	(70-130)		
LCS1	Methylisoborneol		10	8.51	ng/L	85	(75-125)		
MBLK	Methylisoborneol			<1	ng/L				
MRLLW	Methylisoborneol		1.0	1.31	ng/L	131	(50-150)		
MS_200908260140	Methylisoborneol	ND	10	10.6	ng/L	106	(70-130)		
MSD_200908260140	Methylisoborneol	ND	10	10.5	ng/L	105	(70-130)	20	0.95
QC Ref# 521631 - PH (H3=past HT not compliant) by SM4500-HB					Analysis Date: 08/25/2009				
DUP1_200908250158	PH (H3=past HT not compliant)	7.2		7.12	Units		(0-20)	20	0.42
LCS1	PH (H3=past HT not compliant)		6.0	6.03	Units	101	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	6.06	Units	101	(98-102)	20	0.50
QC Ref# 521691 - Volatile Organics by GCMS by EPA 524.2					Analysis Date: 08/25/2009				
LCS1	1,2-Dichloroethane-d4 (S)			110	%	110	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			112	%	112	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			116	%	116	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			111	%	111	(70-130)		
LCS1	4-Bromofluorobenzene (S)			98.4	%	98	(70-130)		
LCS2	4-Bromofluorobenzene (S)			99.2	%	99	(70-130)		
MBLK	4-Bromofluorobenzene (S)			100	%	100	(70-130)		

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

9/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

750 Royal Oak Dr., Suite 100
 Monrovia, California, 91016-3629
 Tel: 626 386 1100
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Laboratory
QC Report: 312922

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	4-Bromofluorobenzene (S)			100	%	100	(70-130)		
LCS1	Bromodichloromethane		5.0	4.64	ug/L	93	(70-130)		
LCS2	Bromodichloromethane		5.0	4.77	ug/L	95	(70-130)	20	2.8
MBLK	Bromodichloromethane			<0.25	ug/L				
MRL_CHK	Bromodichloromethane		0.5	0.500	ug/L	100	(50-150)		
LCS1	Bromoform		5.0	5.04	ug/L	101	(70-130)		
LCS2	Bromoform		5.0	5.03	ug/L	101	(70-130)	20	0.20
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.750	ug/L	150	(50-150)		
LCS1	Chlorodibromomethane		5.0	5.05	ug/L	101	(70-130)		
LCS2	Chlorodibromomethane		5.0	5.25	ug/L	105	(70-130)	20	3.9
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.570	ug/L	114	(50-150)		
LCS1	Chloroform (Trichloromethane)		5.0	5.2	ug/L	104	(70-130)		
LCS2	Chloroform (Trichloromethane)		5.0	5.14	ug/L	103	(70-130)	20	1.2
MBLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.630	ug/L	126	(50-150)		
LCS1	Methyl Tert-butyl ether (MTBE)		5.0	5.04	ug/L	101	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		5.0	5.2	ug/L	104	(70-130)	20	3.1
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.530	ug/L	106	(50-150)		
LCS1	Tetrachloroethylene (PCE)		5.0	4.61	ug/L	92	(70-130)		
LCS2	Tetrachloroethylene (PCE)		5.0	4.55	ug/L	91	(70-130)	20	1.3
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.610	ug/L	122	(50-150)		
LCS1	Toluene-d8 (S)			104	%	104	(70-130)		
LCS2	Toluene-d8 (S)			104	%	104	(70-130)		
MBLK	Toluene-d8 (S)			100	%	100	(70-130)		
MRL_CHK	Toluene-d8 (S)			101	%	101	(70-130)		
LCS1	Trichloroethylene (TCE)		5.0	4.97	ug/L	99	(70-130)		
LCS2	Trichloroethylene (TCE)		5.0	4.9	ug/L	98	(70-130)	20	1.4
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.520	ug/L	104	(50-150)		

QC Ref# 522000 - ICP Metals by EPA 200.7
Analysis Date: 08/26/2009

LCS1	Boron Total ICAP		0.5	0.456	mg/L	91	(85-115)		
LCS2	Boron Total ICAP		0.5	0.465	mg/L	93	(85-115)	20	2.0
MBLK	Boron Total ICAP			<0.05	mg/L				
MRL_CHK	Boron Total ICAP		0.05	0.0429	mg/L	86	(50-150)		
MS_200908250366	Boron Total ICAP		0.5	0.508	mg/L	102	(70-130)		

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

10/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 312922

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS2_200908240032	Boron Total ICAP	0.61	0.5	1.1	mg/L	99	(70-130)		
MSD_200908250366	Boron Total ICAP		0.5	0.503	mg/L	101	(70-130)	20	0.99
MSD2_200908240032	Boron Total ICAP	0.61	0.5	1.11	mg/L	100	(70-130)	20	1.0
LCS1	Calcium Total ICAP		50	49.1	mg/L	98	(85-115)		
LCS2	Calcium Total ICAP		50	51.3	mg/L	103	(85-115)	20	4.4
MBLK	Calcium Total ICAP			<1	mg/L				
MRL_CHK	Calcium Total ICAP		1.0	0.960	mg/L	96	(50-150)		
MS_200908250366	Calcium Total ICAP		50	54.2	mg/L	108	(70-130)		
MS2_200908240032	Calcium Total ICAP		50	50.5	mg/L	101	(70-130)		
MSD_200908250366	Calcium Total ICAP		50	54.5	mg/L	109	(70-130)	20	0.92
MSD2_200908240032	Calcium Total ICAP		50	49.6	mg/L	99	(70-130)	20	1.8
LCS1	Iron Total ICAP		5.0	4.87	mg/L	98	(85-115)		
LCS2	Iron Total ICAP		5.0	5.04	mg/L	101	(85-115)	20	3.4
MBLK	Iron Total ICAP			<0.02	mg/L				
MRL_CHK	Iron Total ICAP		0.02	0.0205	mg/L	103	(50-150)		
MS_200908250366	Iron Total ICAP	0.055	5.0	5.29	mg/L	105	(70-130)		
MS2_200908240032	Iron Total ICAP		5.0	5.16	mg/L	103	(70-130)		
MSD_200908250366	Iron Total ICAP	0.055	5.0	5.26	mg/L	104	(70-130)	20	0.96
MSD2_200908240032	Iron Total ICAP		5.0	5.18	mg/L	104	(70-130)	20	0.97
LCS1	Magnesium Total ICAP		20	20.1	mg/L	100	(85-115)		
LCS2	Magnesium Total ICAP		20	20.7	mg/L	103	(85-115)	20	2.9
MBLK	Magnesium Total ICAP			<0.1	mg/L				
MRL_CHK	Magnesium Total ICAP		0.1	0.0961	mg/L	96	(50-150)		
MS_200908250366	Magnesium Total ICAP		20	20.4	mg/L	102	(70-130)		
MS2_200908240032	Magnesium Total ICAP		20	20.5	mg/L	102	(70-130)		
MSD_200908250366	Magnesium Total ICAP		20	20.2	mg/L	101	(70-130)	20	0.99
MSD2_200908240032	Magnesium Total ICAP		20	20.7	mg/L	103	(70-130)	20	0.98
LCS1	Potassium Total ICAP		20	19.6	mg/L	98	(85-115)		
LCS2	Potassium Total ICAP		20	20.1	mg/L	100	(85-115)	20	2.5
MBLK	Potassium Total ICAP			<1	mg/L				
MRL_CHK	Potassium Total ICAP		1.0	1.00	mg/L	100	(50-150)		
MS_200908250366	Potassium Total ICAP		20	24.6	mg/L	123	(70-130)		
MS2_200908240032	Potassium Total ICAP		20	21.5	mg/L	108	(70-130)		
MSD_200908250366	Potassium Total ICAP		20	24.3	mg/L	122	(70-130)	20	0.82
MSD2_200908240032	Potassium Total ICAP		20	21.8	mg/L	109	(70-130)	20	0.92
LCS1	Sodium Total ICAP		50	49.7	mg/L	100	(85-115)		
LCS2	Sodium Total ICAP		50	50.6	mg/L	101	(85-115)	20	1.8
MBLK	Sodium Total ICAP			<1	mg/L				
MRL_CHK	Sodium Total ICAP		1.0	0.922	mg/L	92	(50-150)		

Spike recovery is already corrected for native results.
 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
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 (S) Indicates surrogate compound.
 (I) Indicates internal standard compound.
 RPD not calculated for LCS2 when different a concentration than LCS1 is used
 RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 312922

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_200908250366	Sodium Total ICAP		50	52.3	mg/L	105	(70-130)		
MS2_200908240032	Sodium Total ICAP		50	45.8	mg/L	92	(70-130)		
MSD_200908250366	Sodium Total ICAP		50	51.0	mg/L	102	(70-130)	20	2.9
MSD2_200908240032	Sodium Total ICAP		50	46.1	mg/L	92	(70-130)	20	0.65
QC Ref# 522006 - Dissolved Organic Carbon by SM 5310C					Analysis Date: 08/28/2009				
LCS3	Dissolved Organic Carbon		5.0	5.03	mg/L	101	(90-110)		
LCS4	Dissolved Organic Carbon		5.0	5.07	mg/L	101	(90-110)	20	1.4
MBLK	Dissolved Organic Carbon			<0.3	mg/L				
MRL_CHK	Dissolved Organic Carbon		0.2	0.216	mg/L	108	(50-150)		
MS_200908310022	Dissolved Organic Carbon	0.92	4.0	4.94	mg/L	100	(80-120)		
MSD_200908310022	Dissolved Organic Carbon	0.92	4.0	4.78	mg/L	96	(80-120)	20	3.7
QC Ref# 522009 - Total Organic Carbon by SM5310C/E415.3					Analysis Date: 08/28/2009				
LCS3	Total Organic Carbon		5.0	5.03	mg/L	101	(90-110)		
LCS4	Total Organic Carbon		5.0	5.07	mg/L	101	(90-110)	20	1.4
MBLK	Total Organic Carbon			<0.3	mg/L				
MRL_CHK	Total Organic Carbon		0.2	0.216	mg/L	108	(50-150)		
MS_200908250095	Total Organic Carbon	0.92	4.0	4.94	mg/L	100	(80-120)		
MSD_200908250095	Total Organic Carbon	0.92	4.0	4.78	mg/L	96	(80-120)	20	3.7
QC Ref# 522212 - ICPMS Metals by EPA 200.8					Analysis Date: 08/28/2009				
LCS1	Aluminum Total ICAP/MS		200	206	ug/L	103	(85-115)		
LCS2	Aluminum Total ICAP/MS		200	202	ug/L	101	(85-115)	20	2.0
MBLK	Aluminum Total ICAP/MS			<20	ug/L				
MRL_CHK	Aluminum Total ICAP/MS		20	19.1	ug/L	95	(50-150)		
MS2_200908250434	Aluminum Total ICAP/MS		200	178	ug/L	89	(70-130)		
MSD2_200908250434	Aluminum Total ICAP/MS		200	184	ug/L	92	(70-130)	20	3.1
LCS1	Antimony Total ICAP/MS		50	48.7	ug/L	97	(85-115)		
LCS2	Antimony Total ICAP/MS		50	48.4	ug/L	97	(85-115)	20	0.62
MBLK	Antimony Total ICAP/MS			<1	ug/L				
MRL_CHK	Antimony Total ICAP/MS		1.0	0.953	ug/L	95	(50-150)		
MS_200908250130	Antimony Total ICAP/MS		100	96.0	ug/L	96	(70-130)		
MS2_200908250434	Antimony Total ICAP/MS		50	44.2	ug/L	89	(70-130)		
MSD_200908250130	Antimony Total ICAP/MS		100	96.1	ug/L	96	(70-130)	20	0.10
MSD2_200908250434	Antimony Total ICAP/MS		50	45.7	ug/L	91	(70-130)	20	3.1
LCS1	Arsenic Total ICAP/MS		20	20.8	ug/L	104	(85-115)		
LCS2	Arsenic Total ICAP/MS		20	20.6	ug/L	103	(85-115)	20	0.97
MBLK	Arsenic Total ICAP/MS			<1	ug/L				
MRL_CHK	Arsenic Total ICAP/MS		1.0	0.999	ug/L	100	(50-150)		

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 Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
 (S) Indicates surrogate compound.
 (I) Indicates internal standard compound.
 RPD not calculated for LCS2 when different a concentration than LCS1 is used
 RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 312922

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_200908250130	Arsenic Total ICAP/MS	ND	40	42.2	ug/L	104	(70-130)		
MS2_200908250434	Arsenic Total ICAP/MS		20	21.8	ug/L	109	(70-130)		
MSD_200908250130	Arsenic Total ICAP/MS	ND	40	42.2	ug/L	104	(70-130)	20	0.0
MSD2_200908250434	Arsenic Total ICAP/MS		20	22.5	ug/L	112	(70-130)	20	2.7
LCS1	Barium Total ICAP/MS		100	96.2	ug/L	96	(85-115)		
LCS2	Barium Total ICAP/MS		100	96.1	ug/L	96	(85-115)	20	0.10
MBLK	Barium Total ICAP/MS			<2	ug/L				
MRL_CHK	Barium Total ICAP/MS		2.0	1.87	ug/L	94	(50-150)		
MS_200908250130	Barium Total ICAP/MS		200	186	ug/L	93	(70-130)		
MS2_200908250434	Barium Total ICAP/MS		100	86.4	ug/L	86	(70-130)		
MSD_200908250130	Barium Total ICAP/MS		200	184	ug/L	92	(70-130)	20	1.1
MSD2_200908250434	Barium Total ICAP/MS		100	88.7	ug/L	89	(70-130)	20	2.6
LCS1	Beryllium Total ICAP/MS		5.0	4.77	ug/L	95	(85-115)		
LCS2	Beryllium Total ICAP/MS		5.0	4.75	ug/L	95	(85-115)	20	0.42
MBLK	Beryllium Total ICAP/MS			<1	ug/L				
MRL_CHK	Beryllium Total ICAP/MS		1.0	0.947	ug/L	95	(50-150)		
MS_200908250130	Beryllium Total ICAP/MS		10	10.9	ug/L	109	(70-130)		
MS2_200908250434	Beryllium Total ICAP/MS		5.0	4.69	ug/L	94	(70-130)		
MSD_200908250130	Beryllium Total ICAP/MS		10	10.8	ug/L	108	(70-130)	20	0.92
MSD2_200908250434	Beryllium Total ICAP/MS		5.0	4.85	ug/L	97	(70-130)	20	3.4
LCS1	Cadmium Total ICAP/MS		20	19.7	ug/L	98	(85-115)		
LCS2	Cadmium Total ICAP/MS		20	19.6	ug/L	98	(85-115)	20	0.0
MBLK	Cadmium Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Cadmium Total ICAP/MS		0.5	0.500	ug/L	100	(50-150)		
MS_200908250130	Cadmium Total ICAP/MS		40	37.2	ug/L	93	(70-130)		
MS2_200908250434	Cadmium Total ICAP/MS		20	18.2	ug/L	91	(70-130)		
MSD_200908250130	Cadmium Total ICAP/MS		40	37.2	ug/L	93	(70-130)	20	0.11
MSD2_200908250434	Cadmium Total ICAP/MS		20	18.5	ug/L	93	(70-130)	20	1.9
LCS1	Chromium Total ICAP/MS		100	94.9	ug/L	95	(85-115)		
LCS2	Chromium Total ICAP/MS		100	94.0	ug/L	94	(85-115)	20	0.95
MBLK	Chromium Total ICAP/MS			<1	ug/L				
MRL_CHK	Chromium Total ICAP/MS		1.0	0.929	ug/L	93	(50-150)		
MS_200908250130	Chromium Total ICAP/MS		200	166	ug/L	83	(70-130)		
MS2_200908250434	Chromium Total ICAP/MS		100	83.5	ug/L	84	(70-130)		
MSD_200908250130	Chromium Total ICAP/MS		200	166	ug/L	83	(70-130)	20	0.0
MSD2_200908250434	Chromium Total ICAP/MS		100	86.5	ug/L	87	(70-130)	20	3.5
LCS1	Copper Total ICAP/MS		100	94.4	ug/L	94	(85-115)		
LCS2	Copper Total ICAP/MS		100	93.2	ug/L	93	(85-115)	20	1.3
MBLK	Copper Total ICAP/MS			<2	ug/L				

Spike recovery is already corrected for native results.

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(S) Indicates surrogate compound.

13/16

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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**Laboratory
 QC Report: 312922**

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Copper Total ICAP/MS		2.0	1.97	ug/L	99	(50-150)		
MS_200908250130	Copper Total ICAP/MS		200	176	ug/L	88	(70-130)		
MS2_200908250434	Copper Total ICAP/MS		100	78.7	ug/L	79	(70-130)		
MSD_200908250130	Copper Total ICAP/MS		200	176	ug/L	88	(70-130)	20	0.0
MSD2_200908250434	Copper Total ICAP/MS		100	80.8	ug/L	81	(70-130)	20	2.6
LCS1	Lead Total ICAP/MS		20	19.7	ug/L	99	(85-115)		
LCS2	Lead Total ICAP/MS		20	19.6	ug/L	98	(85-115)	20	0.51
MBLK	Lead Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.493	ug/L	99	(50-150)		
MS_200908250130	Lead Total ICAP/MS		40	36.3	ug/L	91	(70-130)		
MS2_200908250434	Lead Total ICAP/MS		20	16.9	ug/L	85	(70-130)		
MSD_200908250130	Lead Total ICAP/MS		40	36.1	ug/L	90	(70-130)	20	0.55
MSD2_200908250434	Lead Total ICAP/MS		20	17.5	ug/L	87	(70-130)	20	3.3
LCS1	Manganese Total ICAP/MS		50	52.9	ug/L	106	(85-115)		
LCS2	Manganese Total ICAP/MS		50	52.3	ug/L	105	(85-115)	20	1.1
MBLK	Manganese Total ICAP/MS			<2	ug/L				
MRL_CHK	Manganese Total ICAP/MS		2.0	1.86	ug/L	93	(50-150)		
MS_200908250130	Manganese Total ICAP/MS		100	92.2	ug/L	92	(70-130)		
MS2_200908250434	Manganese Total ICAP/MS	ND	50	46.5	ug/L	93	(70-130)		
MSD_200908250130	Manganese Total ICAP/MS		100	91.5	ug/L	92	(70-130)	20	0.76
MSD2_200908250434	Manganese Total ICAP/MS	ND	50	48.4	ug/L	96	(70-130)	20	3.9
LCS1	Nickel Total ICAP/MS		50	47.9	ug/L	96	(85-115)		
LCS2	Nickel Total ICAP/MS		50	47.7	ug/L	95	(85-115)	20	0.42
MBLK	Nickel Total ICAP/MS			<5	ug/L				
MRL_CHK	Nickel Total ICAP/MS		5.0	4.61	ug/L	92	(50-150)		
MS_200908250130	Nickel Total ICAP/MS		100	82.4	ug/L	82	(70-130)		
MS2_200908250434	Nickel Total ICAP/MS		50	40.2	ug/L	80	(70-130)		
MSD_200908250130	Nickel Total ICAP/MS		100	82.4	ug/L	82	(70-130)	20	0.0
MSD2_200908250434	Nickel Total ICAP/MS		50	41.7	ug/L	83	(70-130)	20	3.7
LCS1	Selenium Total ICAP/MS		20	21.6	ug/L	108	(85-115)		
LCS2	Selenium Total ICAP/MS		20	21.9	ug/L	110	(85-115)	20	1.4
MBLK	Selenium Total ICAP/MS			<5	ug/L				
MRL_CHK	Selenium Total ICAP/MS		5.0	5.19	ug/L	104	(50-150)		
MS_200908250130	Selenium Total ICAP/MS		40	49.1	ug/L	123	(70-130)		
MSD_200908250130	Selenium Total ICAP/MS		40	48.2	ug/L	121	(70-130)	20	1.6
LCS1	Silver Total ICAP/MS		50	53.6	ug/L	107	(85-115)		
LCS2	Silver Total ICAP/MS		50	53.9	ug/L	108	(85-115)	20	0.37
MBLK	Silver Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Silver Total ICAP/MS		0.5	0.432	ug/L	86	(50-150)		

Spike recovery is already corrected for native results.
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 Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
 (S) Indicates surrogate compound.
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 RPD not calculated for LCS2 when different a concentration than LCS1 is used
 RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 312922

 CDM, Inc.
 (continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_200908250130	Silver Total ICAP/MS		100	90.9	ug/L	91	(70-130)		
MS2_200908250434	Silver Total ICAP/MS		50	42.0	ug/L	84	(70-130)		
MSD_200908250130	Silver Total ICAP/MS		100	90.9	ug/L	91	(70-130)	20	0.0
MSD2_200908250434	Silver Total ICAP/MS		50	44.8	ug/L	90	(70-130)	20	6.3
LCS1	Thallium Total ICAP/MS		20	19.9	ug/L	100	(85-115)		
LCS2	Thallium Total ICAP/MS		20	19.8	ug/L	99	(85-115)	20	0.50
MBLK	Thallium Total ICAP/MS			<1	ug/L				
MRL_CHK	Thallium Total ICAP/MS		1.0	0.956	ug/L	96	(50-150)		
MS_200908250130	Thallium Total ICAP/MS		40	37.9	ug/L	95	(70-130)		
MS2_200908250434	Thallium Total ICAP/MS		20	17.4	ug/L	87	(70-130)		
MSD_200908250130	Thallium Total ICAP/MS		40	38.2	ug/L	95	(70-130)	20	0.53
MSD2_200908250434	Thallium Total ICAP/MS		20	18.0	ug/L	90	(70-130)	20	2.9
LCS1	Vanadium Total ICAP/MS		100	103	ug/L	103	(85-115)		
LCS2	Vanadium Total ICAP/MS		100	102	ug/L	102	(85-115)	20	0.98
MBLK	Vanadium Total ICAP/MS			<3	ug/L				
MRL_CHK	Vanadium Total ICAP/MS		3.0	2.75	ug/L	92	(50-150)		
MS_200908250130	Vanadium Total ICAP/MS		200	184	ug/L	92	(70-130)		
MS2_200908250434	Vanadium Total ICAP/MS		100	95.0	ug/L	95	(70-130)		
MSD_200908250130	Vanadium Total ICAP/MS		200	184	ug/L	92	(70-130)	20	0.0
MSD2_200908250434	Vanadium Total ICAP/MS		100	97.5	ug/L	98	(70-130)	20	2.6
LCS1	Zinc Total ICAP/MS		100	101	ug/L	101	(85-115)		
LCS2	Zinc Total ICAP/MS		100	97.9	ug/L	98	(85-115)	20	3.1
MBLK	Zinc Total ICAP/MS			<20	ug/L				
MRL_CHK	Zinc Total ICAP/MS		20	19.8	ug/L	99	(50-150)		
MS_200908250130	Zinc Total ICAP/MS		200	209	ug/L	105	(70-130)		
MS2_200908250434	Zinc Total ICAP/MS		100	94.0	ug/L	94	(70-130)		
MSD_200908250130	Zinc Total ICAP/MS		200	202	ug/L	101	(70-130)	20	3.9
MSD2_200908250434	Zinc Total ICAP/MS		100	98.0	ug/L	98	(70-130)	20	4.2

QC Ref# 522403 - Perchlorate with 0.5 ppb DL by EPA 314.0
Analysis Date: 09/01/2009

DUP_200908260332	Perchlorate- 0.5 ppb	ND		ND	ug/L		(0-15)		
ICCS	Perchlorate- 0.5 ppb		1.0	0.990	ug/L	99	(85-115)		
LCS1	Perchlorate- 0.5 ppb		25	24.7	ug/L	99	(85-115)		
LCS2	Perchlorate- 0.5 ppb		25	25.1	ug/L	100	(85-115)	15	1.6
MBLK	Perchlorate- 0.5 ppb			<0.25	ug/L				
MRL_CHK	Perchlorate- 0.5 ppb		0.5	0.417	ug/L	83	(70-130)		
MRLHI	Perchlorate- 0.5 ppb		1.0	1.19	ug/L	119	(75-125)		
MS1_200908260332	Perchlorate- 0.5 ppb	ND	1.0	0.726	ug/L	73	(70-130)		
MSD1_200908260332	Perchlorate- 0.5 ppb	ND	1.0	0.732	ug/L	73	(70-130)	15	0.82

Spike recovery is already corrected for native results.

 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

15/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

CLIENT: CDM
GROUP: 312922

Lab# 200908250149

PREDOMINANT ALGAE:
Unidentified Flagellates 24%
Synedra 14%
Navicula 10%
Nitzschia 8%

OTHER ALGAE:
Achnanthes
Anabaena
Ankistrodesmus
Closteriopsis
Closterium
Cocconeis
Cryptomonas
Cymbella
Diatoma
Dinobryon
Elakatothrix
Glenodinium
Gloeocapsa
Gloeocystis
Mallomonas
Scenedesmus
Stephanodiscus



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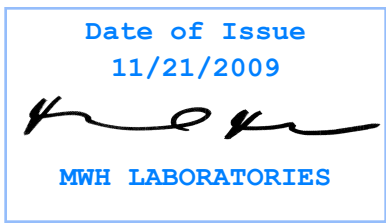
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Monrovia, California, 91016-3629
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Laboratory Report

for

CDM
50 Hampshire Street
Cambridge, MA 02139-1548
Attention: Jamie Lefkowitz
Fax: 617-452-8566



Report#: 318113
Project: MERRIMACK-RIVER
Group: DW Study

TDF: Thomas.D.French
Project Manager

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

Acknowledgement of Samples Received
CDM

 50 Hampshire Street
 Cambridge, MA 02139-1548
 Attn: Jamie Lefkowitz
 Phone: 617-452-6591

 Customer Code: CDM-MA
 Group #: 318113
 Project #: MERRIMACK-RIVER
 Sample Group: DW Study
 Project Manager: Thomas.D.French
 Phone: (480) 778-1558

The following samples were received from you on **October 29, 2009**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample #	Sample Id	Sample Date
200910290258	AMOSK-DW4	28-Oct-2009 1100
	@MTBE9 @SPMELOW Actinomycetes Algae Enumeration Algae Identification CLO41PPB Dissolved Organic Carbon Iron Total ICAP Manganese Total ICAP/MS PH (H3=past HT not compliant) Total Organic Carbon UV absorbance at 254 nm	
200910290259	MTBE - TRAVEL BLANK - HOLD	28-Oct-2009 0000
	@MTBE9 TB	

Test Description

- @MTBE9 -- Volatile Organics by GCMS
- @MTBE9 TB -- Volatile Organics by GCMS
- @SPMELOW -- Taste and Odor Cmpds Low Level



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CHAIN OF CUSTODY RECORD

318113

MWH LABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: JS

SAMPLES LOGGED IN BY: _____

SAMPLE TEMP WHEN REC'D AT LAB: 6°C (Compliance: 4 +/- 2°C)

SAMPLES REC'D DAY OF COLLECTION? (check for yes)

CONDITION OF BLUE ICE: FROZEN PARTIALLY FROZEN THAWED

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME:		PROJECT CODE:		COMPLIANCE SAMPLES <input type="checkbox"/> - Requires state forms <input type="checkbox"/>		NON-COMPLIANCE SAMPLES <input type="checkbox"/> REGULATION INVOLVED: _____	
MWH LABS CLIENT CODE:		COC ID:		SAMPLE GROUP:		Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, Phase V, NPDES, FDA,...)	
SAMPLER PRINTED NAME AND SIGNATURE:		TAT requested: rush by adv notice only STD ___ 1 wk ___ 3 day ___ 2 day ___ 1 day ___		SEE ATTACHED BOTTLE ORDER FOR ANALYSES <input type="checkbox"/> (check for yes), OR list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)			
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	Field Data	Field Data	SAMPLER COMMENTS
10/28	11:00	AMOSK	DWH				AM 10/28/09 12:03
	3/15						

Use this portion only for relinquish records.

Date: 10/28/09 FedEx Tracking Number: 869859228327

Sender's Name: JAMIE LEFKOWITZ Phone: 617 452-6000

Company: CDM

Address: 50 HAMPSHIRE ST Dept./Floor/Suite/Room

City: CAMBRIDGE State: MA ZIP: 02139-1548

Your Internal Billing Reference: 40919-60485-6062-664.102.TSKC

* MATRIX TYPES: RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil O = Other - Please Identify
 RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY: _____	_____	_____	_____	_____
RECEIVED BY: <u>Joe Sanchez</u>	<u>Joe Sanchez</u>	<u>MWH</u>	<u>102809</u>	<u>11:02</u>
RELINQUISHED BY: _____	_____	_____	_____	_____
RECEIVED BY: _____	_____	_____	_____	_____

Thomas.D.French Your MWHL Project Manager

BO #: 9515
 Created By: TDF
 Order Date: 09/24/2009

**Sampler: please return
 this paper with your samples**

Client Code CDM-MA
 Project Code MERRIMACK-RIVER Bottle Orders
 Group Name DW Study
 PO# / Job#

Group#
 Date Sampled
 Date Received

Bottle Orders

Ship Sample Kits to

Send Report to

Billing Address

Ship By:
 10/09/2009

CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548
 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

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 Fax: 617-452-8566

# of Samples	Tests	Qteline#	Bottles - Qty for each sample, type & preservative if any	UN DOT #
1	@MTBE9		3 40ml amber glass vial 4drops 6N HCL (36%)	
1	@MTBE9 TB		2 40ml amber glass vial 4drops of 1:1 HCL + H2O	
1	@SPMELOW		4 40ml amber glass vial no preservative	
1	Actinomycetes		1 100ml poly sterilized 0.25ml thio (8%)	
1	Algae Enumeration, Algae Identification		1 500ml poly sterilized no preservative	
1	CLO41PPB		1 125ml poly CLO4 - no preservative	
1	Dissolved Organic Carbon, UV absorbance at 254 nm		1 125ml amber glass no preservative	
1	Iron Total ICAP, Manganese Total ICAP/MS		1 250ml acid rinsed 1ml HNO3 (18%)	
1	PH (H3=past HT not compliant)		1 125ml poly no preservative	
1	Total Organic Carbon		1 125ml amber glass 0.5ml H2SO4 (50%)	

Comments

Include COC, sampling/packing, blue ice. Client is responsible for return shipment to MWH Laboratories, 750 Royal Oaks Drive, Monrovia, CA 91016. (626) 386 1100.



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**Laboratory Comments
Report: #318113**

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Flags Legend:

R7 - LFB/LFBD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.



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Laboratory
Hits Report: 318113

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Samples Received on:
10/29/2009

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	200910290258	<u>AMOSK-DW4</u>				
11/05/2009	13:00 Actinomycetes		5.0		CFU/ml	
11/02/2009	16:28 Algae Enumeration		130		#/ml	1
11/02/2009	16:28 Algae Identification		See Comments		Not Appl.	
11/03/2009	22:36 Dissolved Organic Carbon		7.3		mg/L	1.5
10/29/2009	13:27 Dissolved UV Abs. at 254 nm		0.29		cm -1	0.009
11/03/2009	14:19 Geosmin		5.1		ng/L	1
11/13/2009	02:01 Iron Total ICAP		0.40	0.3	mg/L	0.02
11/10/2009	15:28 Manganese Total ICAP/MS		42	50	ug/L	2
10/30/2009	16:28 PH (H3=past HT not compliant)		6.6		Units	0.1
11/03/2009	23:00 Total Organic Carbon		7.6		mg/L	1.5



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Laboratory Data
Report: 318113

CDM

Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Samples Received on:
10/29/2009

Table with columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MRL, Dilution. Includes sections for AMOSK-DW4 (200910290258) and MTBE - TRAVEL BLANK - HOLD (200910290259) with various test results.



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Laboratory
QC Summary: 318113

CDM

QC Ref # 529442 - Taste and Odor Cmpds Low Level

200910290258 AMOSK-DW4

Analysis Date: 11/03/2009

Analyzed by: KAM

QC Ref # 529546 - Dissolved UV Abs. at 254 nm

200910290258 AMOSK-DW4

Analysis Date: 10/29/2009

Analyzed by: KXS

QC Ref # 529763 - PH (H3=past HT not compliant)

200910290258 AMOSK-DW4

Analysis Date: 10/30/2009

Analyzed by: NEM

QC Ref # 529771 - Volatile Organics by GCMS

200910290258 AMOSK-DW4
200910290259 MTBE - TRAVEL BLANK - HOLD

Analysis Date: 10/30/2009

Analyzed by: MAD

Analyzed by: MAD

QC Ref # 529871 - Total Organic Carbon

200910290258 AMOSK-DW4

Analysis Date: 11/03/2009

Analyzed by: KXS

QC Ref # 529873 - Dissolved Organic Carbon

200910290258 AMOSK-DW4

Analysis Date: 11/03/2009

Analyzed by: KXS

QC Ref # 529972 - Algae Enumeration

200910290258 AMOSK-DW4

Analysis Date: 11/02/2009

Analyzed by: NWM

QC Ref # 529973 - Algae Identification

200910290258 AMOSK-DW4

Analysis Date: 11/02/2009

Analyzed by: NWM

QC Ref # 530120 - Perchlorate with 0.5 ppb DL

200910290258 AMOSK-DW4

Analysis Date: 11/04/2009

Analyzed by: MCE

QC Ref # 530306 - Actinomycetes

200910290258 AMOSK-DW4

Analysis Date: 11/05/2009

Analyzed by: NWM

QC Ref # 530782 - ICPMS Metals

200910290258 AMOSK-DW4

Analysis Date: 11/10/2009

Analyzed by: LUPE

QC Ref # 530948 - ICP Metals

200910290258 AMOSK-DW4

Analysis Date: 11/10/2009

Analyzed by: VXT

QC Ref # 531219 - ICP Metals

200910290258 AMOSK-DW4

Analysis Date: 11/13/2009

Analyzed by: VXT



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Laboratory
QC Report: 318113

CDM, Inc.

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 529442 - Taste and Odor Cmpds Low Level by SM 6040D					Analysis Date: 11/03/2009				
LCS1	Geosmin		10	10.3	ng/L	103	(75-125)		
LCS2	Geosmin		10	11.8	ng/L	118	(75-125)	20	14
MBLK	Geosmin			<1	ng/L				
MRLLW	Geosmin		1.0	1.04	ng/L	104	(50-150)		
MS_200910290258	Geosmin	5.1	10	16.9	ng/L	117	(70-130)		
MSD_200910290258	Geosmin	5.1	10	17.7	ng/L	125	(70-130)	20	6.6
LCS1	Isobutyl methoxypyrazine (I)			125	%	125	(50-150)		
LCS2	Isobutyl methoxypyrazine (I)			85.0	%	85	(50-150)		
MBLK	Isobutyl methoxypyrazine (I)			78.0	%	78	(50-150)		
MRLLW	Isobutyl methoxypyrazine (I)			81.0	%	81	(50-150)		
MS_200910290258	Isobutyl methoxypyrazine (I)			95.0	%	95	(50-150)		
MSD_200910290258	Isobutyl methoxypyrazine (I)			91.0	%	91	(50-150)		
LCS1	Isopropyl methoxy pyrazine (S)			92.6	%	93	(70-130)		
LCS2	Isopropyl methoxy pyrazine (S)			102	%	102	(70-130)		
MBLK	Isopropyl methoxy pyrazine (S)			91.9	%	92	(70-130)		
MRLLW	Isopropyl methoxy pyrazine (S)			97.4	%	97	(70-130)		
MS_200910290258	Isopropyl methoxy pyrazine (S)			99.2	%	99	(70-130)		
MSD_200910290258	Isopropyl methoxy pyrazine (S)			98.0	%	98	(70-130)		
LCS1	Methylisoborneol		10	7.56	ng/L	76	(75-125)		
LCS2	Methylisoborneol		10	9.76	ng/L	98	(75-125)	20	<u>25</u>
MBLK	Methylisoborneol			<1	ng/L				
MRLLW	Methylisoborneol		1.0	1.06	ng/L	106	(50-150)		
MS_200910290258	Methylisoborneol	ND	10	8.1	ng/L	78	(70-130)		
MSD_200910290258	Methylisoborneol	ND	10	9.75	ng/L	95	(70-130)	20	19
QC Ref# 529546 - Dissolved UV Abs. at 254 nm by SM 5910					Analysis Date: 10/29/2009				
DUP1_200910290044	UV absorbance at 254 nm	0.11		0.108	cm -1		(0-15)	15	0.0
LCS1	UV absorbance at 254 nm		0.37	0.334	cm -1	91	(83-121)		
MBLK	UV absorbance at 254 nm			<0.004	cm -1				
MRL_CHK	UV absorbance at 254 nm		0.009	0.0100	cm -1	111	(85-115)		
QC Ref# 529763 - PH (H3=past HT not compliant) by SM4500-HB					Analysis Date: 10/30/2009				
DUP_200910290153	PH (H3=past HT not compliant)	7.7		7.63	Units		(0-20)	20	0.78
DUP2_200910290336	PH (H3=past HT not compliant)	8.0		8.06	Units		(0-20)	20	0.25
LCS1	PH (H3=past HT not compliant)		6.0	5.99	Units	100	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	6.02	Units	100	(98-102)	20	0.50
QC Ref# 529771 - Volatile Organics by GCMS by EPA 524.2					Analysis Date: 10/30/2009				

Spike recovery is already corrected for native results.
 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
 Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
 (S) Indicates surrogate compound.
 (I) Indicates internal standard compound.
 RPD not calculated for LCS2 when different a concentration than LCS1 is used
 RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 318113

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	1,2-Dichloroethane		5.0	4.87	ug/L	97	(70-130)		
LCS2	1,2-Dichloroethane		5.0	4.62	ug/L	92	(70-130)	20	5.3
MBLK	1,2-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,2-Dichloroethane		0.5	0.570	ug/L	114	(50-150)		
LCS1	1,2-Dichloroethane-d4 (S)			111	%	111	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			109	%	109	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			111	%	111	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			112	%	112	(70-130)		
LCS1	4-Bromofluorobenzene (S)			105	%	105	(70-130)		
LCS2	4-Bromofluorobenzene (S)			103	%	103	(70-130)		
MBLK	4-Bromofluorobenzene (S)			104	%	104	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			104	%	104	(70-130)		
LCS1	Bromodichloromethane		5.0	4.39	ug/L	88	(70-130)		
LCS2	Bromodichloromethane		5.0	4.4	ug/L	88	(70-130)	20	0.23
MBLK	Bromodichloromethane			<0.25	ug/L				
MRL_CHK	Bromodichloromethane		0.5	0.530	ug/L	106	(50-150)		
LCS1	Bromoform		5.0	5.04	ug/L	101	(70-130)		
LCS2	Bromoform		5.0	4.74	ug/L	95	(70-130)	20	6.1
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.570	ug/L	114	(50-150)		
LCS1	Carbon Tetrachloride		5.0	4.47	ug/L	89	(70-130)		
LCS2	Carbon Tetrachloride		5.0	4.25	ug/L	85	(70-130)	20	5.0
MBLK	Carbon Tetrachloride			<0.25	ug/L				
MRL_CHK	Carbon Tetrachloride		0.5	0.500	ug/L	100	(50-150)		
LCS1	Chlorodibromomethane		5.0	4.65	ug/L	93	(70-130)		
LCS2	Chlorodibromomethane		5.0	4.39	ug/L	88	(70-130)	20	5.8
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.550	ug/L	110	(50-150)		
LCS1	Chloroform (Trichloromethane)		5.0	4.54	ug/L	91	(70-130)		
LCS2	Chloroform (Trichloromethane)		5.0	4.37	ug/L	87	(70-130)	20	3.8
MBLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.560	ug/L	112	(50-150)		
LCS1	Methyl Tert-butyl ether (MTBE)		5.0	3.7	ug/L	74	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		5.0	3.66	ug/L	73	(70-130)	20	1.1
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.460	ug/L	92	(50-150)		
LCS1	Tetrachloroethylene (PCE)		5.0	4.2	ug/L	84	(70-130)		
LCS2	Tetrachloroethylene (PCE)		5.0	3.97	ug/L	79	(70-130)	20	5.6

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

10/15

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 318113

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.470	ug/L	94	(50-150)		
LCS1	Toluene-d8 (S)			98.8	%	99	(70-130)		
LCS2	Toluene-d8 (S)			98.0	%	98	(70-130)		
MBLK	Toluene-d8 (S)			97.6	%	98	(70-130)		
MRL_CHK	Toluene-d8 (S)			100	%	100	(70-130)		
LCS1	Trichloroethylene (TCE)		5.0	4.31	ug/L	86	(70-130)		
LCS2	Trichloroethylene (TCE)		5.0	4.04	ug/L	81	(70-130)	20	6.5
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.550	ug/L	110	(50-150)		

QC Ref# 529871 - Total Organic Carbon by SM5310C/E415.3

Analysis Date: 11/03/2009

LCS3	Total Organic Carbon		5.0	4.94	mg/L	99	(90-110)		
LCS4	Total Organic Carbon		5.0	5.01	mg/L	100	(90-110)	20	0.20
MBLK	Total Organic Carbon			<0.3	mg/L				
MRL_CHK	Total Organic Carbon		0.2	0.186	mg/L	93	(50-150)		
MS_200910290335	Total Organic Carbon	ND	4.0	3.76	mg/L	93	(80-120)		
MS2_200911030001	Total Organic Carbon	ND	2.0	1.98	mg/L	90	(80-120)		
MSD_200910290335	Total Organic Carbon	ND	4.0	3.88	mg/L	96	(80-120)	20	3.0

QC Ref# 529873 - Dissolved Organic Carbon by SM 5310C

Analysis Date: 11/03/2009

LCS3	Dissolved Organic Carbon		5.0	4.94	mg/L	99	(90-110)		
LCS4	Dissolved Organic Carbon		5.0	5.01	mg/L	100	(90-110)	20	0.20
MBLK	Dissolved Organic Carbon			<0.3	mg/L				
MRL_CHK	Dissolved Organic Carbon		0.2	0.186	mg/L	93	(50-150)		
MS_200911030090	Dissolved Organic Carbon	ND	4.0	3.76	mg/L	93	(80-120)		
MSD_200911030090	Dissolved Organic Carbon	ND	4.0	3.88	mg/L	96	(80-120)	20	3.0

QC Ref# 530120 - Perchlorate with 0.5 ppb DL by EPA 314.0

Analysis Date: 11/03/2009

DUP_200910290258	Perchlorate- 0.5 ppb	ND		ND	ug/L		(0-15)		
ICCS	Perchlorate- 0.5 ppb		1.0	0.979	ug/L	98	(85-115)		
LCS1	Perchlorate- 0.5 ppb		25	24.8	ug/L	99	(85-115)		
LCS2	Perchlorate- 0.5 ppb		25	24.7	ug/L	99	(85-115)	15	0.40
MBLK	Perchlorate- 0.5 ppb			<0.25	ug/L				
MRL_CHK	Perchlorate- 0.5 ppb		0.5	0.451	ug/L	90	(70-130)		
MRLHI	Perchlorate- 0.5 ppb		1.0	0.962	ug/L	96	(75-125)		
MS1_200910290258	Perchlorate- 0.5 ppb	ND	1.0	0.916	ug/L	92	(70-130)		
MS1_200911030331	Perchlorate- 0.5 ppb	4.9	1.0	5.75	ug/L	90	(70-130)		
MSD1_200910290258	Perchlorate- 0.5 ppb	ND	1.0	0.926	ug/L	93	(70-130)	15	1.1

Spike recovery is already corrected for native results.

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are advisory only, unless otherwise specified in the method.

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11/15

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 318113

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MSD1_200911030331	Perchlorate- 0.5 ppb	4.9	1.0	5.65	ug/L	80	(70-130)	15	12
QC Ref# 530782 - ICPMS Metals by EPA 200.8					Analysis Date: 11/07/2009				
LCS1	Manganese Total ICAP/MS		50	50.5	ug/L	101	(85-115)		
LCS2	Manganese Total ICAP/MS		50	51.4	ug/L	103	(85-115)	20	1.8
MBLK	Manganese Total ICAP/MS			<2	ug/L				
MRL_CHK	Manganese Total ICAP/MS		2.0	2.77	ug/L	139	(50-150)		
MS_200911100478	Manganese Total ICAP/MS	170	50	171	ug/L	<u>1.1</u>	(70-130)		
MSD_200911100478	Manganese Total ICAP/MS	170	50	166	ug/L	<u>0</u>	(70-130)	20	<u>110</u>
QC Ref# 530948 - ICP Metals by EPA 200.7					Analysis Date: 11/10/2009				
LCS1	Calcium Dissolved ICAP		50	54.1	mg/L	108	(85-115)		
LCS2	Calcium Dissolved ICAP		50	51.5	mg/L	103	(85-115)	20	4.9
MBLK	Calcium Dissolved ICAP			<1	mg/L				
MRL_CHK	Calcium Dissolved ICAP		1.0	1.05	mg/L	105	(50-150)		
MS_200910290042	Calcium Dissolved ICAP	75	50	123	mg/L	97	(70-130)		
MS2_200910290258	Calcium Dissolved ICAP	2.5	50	55.3	mg/L	106	(70-130)		
MSD_200910290042	Calcium Dissolved ICAP	75	50	123	mg/L	97	(70-130)	20	0.21
MSD2_200910290258	Calcium Dissolved ICAP	2.5	50	54.1	mg/L	103	(70-130)	20	2.9
LCS1	Calcium Total ICAP		50	54.1	mg/L	108	(85-115)		
LCS2	Calcium Total ICAP		50	51.5	mg/L	103	(85-115)	20	4.9
MBLK	Calcium Total ICAP			<1	mg/L				
MRL_CHK	Calcium Total ICAP		1.0	1.05	mg/L	105	(50-150)		
MS_200910290042	Calcium Total ICAP	75	50	123	mg/L	97	(70-130)		
MS2_200910290258	Calcium Total ICAP	2.5	50	55.3	mg/L	106	(70-130)		
MSD_200910290042	Calcium Total ICAP	75	50	123	mg/L	97	(70-130)	20	0.21
MSD2_200910290258	Calcium Total ICAP	2.5	50	54.1	mg/L	103	(70-130)	20	2.9
LCS1	Chromium Total ICAP		1.0	1.07	mg/L	107	(85-115)		
LCS2	Chromium Total ICAP		1.0	1.02	mg/L	102	(85-115)	20	4.8
MBLK	Chromium Total ICAP			<0.01	mg/L				
MRL_CHK	Chromium Total ICAP		0.01	0.0106	mg/L	106	(50-150)		
MS_200910290042	Chromium Total ICAP	0.012	1.0	0.991	mg/L	98	(70-130)		
MS2_200910290258	Chromium Total ICAP	ND	1.0	1.03	mg/L	103	(70-130)		
MSD_200910290042	Chromium Total ICAP	0.012	1.0	0.960	mg/L	95	(70-130)	20	3.2
MSD2_200910290258	Chromium Total ICAP	ND	1.0	0.994	mg/L	99	(70-130)	20	3.7
LCS1	Magnesium Dissolved ICAP		20	21.2	mg/L	106	(85-115)		
LCS2	Magnesium Dissolved ICAP		20	20.4	mg/L	102	(85-115)	20	3.9
MBLK	Magnesium Dissolved ICAP			<0.1	mg/L				

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

12/15

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 318113

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Magnesium Dissolved ICAP		0.1	0.103	mg/L	103	(50-150)		
MS_200910290042	Magnesium Dissolved ICAP	70	20	87.3	mg/L	88	(70-130)		
MS2_200910290258	Magnesium Dissolved ICAP	0.57	20	21.2	mg/L	103	(70-130)		
MSD_200910290042	Magnesium Dissolved ICAP	70	20	86.6	mg/L	85	(70-130)	20	4.3
MSD2_200910290258	Magnesium Dissolved ICAP	0.57	20	20.8	mg/L	101	(70-130)	20	2.0
LCS1	Magnesium Total ICAP		20	21.2	mg/L	106	(85-115)		
LCS2	Magnesium Total ICAP		20	20.4	mg/L	102	(85-115)	20	3.9
MBLK	Magnesium Total ICAP			<0.1	mg/L				
MRL_CHK	Magnesium Total ICAP		0.1	0.103	mg/L	103	(50-150)		
MS_200910290042	Magnesium Total ICAP	70	20	87.3	mg/L	88	(70-130)		
MS2_200910290258	Magnesium Total ICAP	0.57	20	21.2	mg/L	103	(70-130)		
MSD_200910290042	Magnesium Total ICAP	70	20	86.6	mg/L	85	(70-130)	20	4.3
MSD2_200910290258	Magnesium Total ICAP	0.57	20	20.8	mg/L	101	(70-130)	20	2.0
LCS1	Potassium Dissolved ICAP		20	20.5	mg/L	102	(85-115)		
LCS2	Potassium Dissolved ICAP		20	19.7	mg/L	98	(85-115)	20	4.0
MBLK	Potassium Dissolved ICAP			<1	mg/L				
MRL_CHK	Potassium Dissolved ICAP		1.0	0.932	mg/L	93	(50-150)		
MS_200910290042	Potassium Dissolved ICAP	ND	20	21.6	mg/L	103	(70-130)		
MS2_200910290258	Potassium Dissolved ICAP	ND	20	20.5	mg/L	98	(70-130)		
MSD_200910290042	Potassium Dissolved ICAP	ND	20	21.3	mg/L	102	(70-130)	20	0.98
MSD2_200910290258	Potassium Dissolved ICAP	ND	20	20.4	mg/L	97	(70-130)	20	0.82
LCS1	Potassium Total ICAP		20	20.5	mg/L	102	(85-115)		
LCS2	Potassium Total ICAP		20	19.7	mg/L	98	(85-115)	20	4.0
MBLK	Potassium Total ICAP			<1	mg/L				
MRL_CHK	Potassium Total ICAP		1.0	0.932	mg/L	93	(50-150)		
MS_200910290042	Potassium Total ICAP	ND	20	21.6	mg/L	103	(70-130)		
MS2_200910290258	Potassium Total ICAP	ND	20	20.5	mg/L	98	(70-130)		
MSD_200910290042	Potassium Total ICAP	ND	20	21.3	mg/L	102	(70-130)	20	0.98
MSD2_200910290258	Potassium Total ICAP	ND	20	20.4	mg/L	97	(70-130)	20	0.82

QC Ref# 531219 - ICP Metals by EPA 200.7

Analysis Date: 11/10/2009

LCS1	Boron Total ICAP		0.5	0.516	mg/L	103	(85-115)		
LCS2	Boron Total ICAP		0.5	0.494	mg/L	99	(85-115)	20	4.4
MBLK	Boron Total ICAP			<0.05	mg/L				
MRL_CHK	Boron Total ICAP		0.05	0.0500	mg/L	100	(50-150)		
MS_200910290042	Boron Total ICAP	12	0.1	12.8	mg/L	80	(70-130)		
MSD_200910290042	Boron Total ICAP	12	0.1	12.6	mg/L	<u>40</u>	(70-130)	20	<u>67</u>
LCS1	Calcium Total ICAP		50	54.1	mg/L	108	(85-115)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

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(S) Indicates surrogate compound.

13/15

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 318113

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Calcium Total ICAP		50	51.5	mg/L	103	(85-115)	20	4.9
MBLK	Calcium Total ICAP			<1	mg/L				
MRL_CHK	Calcium Total ICAP		1.0	1.05	mg/L	105	(50-150)		
LCS1	Chromium Total ICAP		1.0	1.07	mg/L	107	(85-115)		
LCS2	Chromium Total ICAP		1.0	1.02	mg/L	102	(85-115)	20	4.8
MBLK	Chromium Total ICAP			<0.01	mg/L				
MRL_CHK	Chromium Total ICAP		0.01	0.0110	mg/L	110	(50-150)		
MS_200910290042	Chromium Total ICAP	ND	0.2	1.01	mg/L	100	(70-130)		
MSD_200910290042	Chromium Total ICAP	ND	0.2	0.980	mg/L	97	(70-130)	20	3.0
LCS1	Iron Total ICAP		5.0	5.36	mg/L	107	(85-115)		
LCS2	Iron Total ICAP		5.0	5.15	mg/L	103	(85-115)	20	4.0
MBLK	Iron Total ICAP			<0.02	mg/L				
MRL_CHK	Iron Total ICAP		0.02	0.0200	mg/L	100	(50-150)		
MS_200910290042	Iron Total ICAP	0.12	1.0	5.25	mg/L	103	(70-130)		
MSD_200910290042	Iron Total ICAP	0.12	1.0	5.19	mg/L	101	(70-130)	20	2.0
LCS1	Magnesium Total ICAP		20	21.2	mg/L	106	(85-115)		
LCS2	Magnesium Total ICAP		20	20.4	mg/L	102	(85-115)	20	3.9
MBLK	Magnesium Total ICAP			<0.1	mg/L				
MRL_CHK	Magnesium Total ICAP		0.1	0.103	mg/L	103	(50-150)		
LCS1	Potassium Total ICAP		20	20.5	mg/L	103	(85-115)		
LCS2	Potassium Total ICAP		20	19.7	mg/L	99	(85-115)	20	4.0
MBLK	Potassium Total ICAP			<1	mg/L				
MRL_CHK	Potassium Total ICAP		1.0	0.932	mg/L	93	(50-150)		
LCS1	Sodium Total ICAP		50	51.3	mg/L	103	(85-115)		
LCS2	Sodium Total ICAP		50	49.4	mg/L	99	(85-115)	20	3.8
MBLK	Sodium Total ICAP			<1	mg/L				
MRL_CHK	Sodium Total ICAP		1.0	1.01	mg/L	101	(50-150)		
MS_200910290042	Sodium Total ICAP	720	10	767	mg/L	98	(70-130)		
MSD_200910290042	Sodium Total ICAP	720	10	756	mg/L	76	(70-130)	20	<u>25</u>

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14/15

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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

CDM-MA
GROUP# 318113
LAB# 200910290258

PREDOMINANT ALGAE;

Unidentified Flagellates 20%
Navicula 20%
Synedra 13%
Stephanodiscus 8%

OTHER ALGAE:

Achnanthes
Asterionella
Closteriopsis
Cocconeis
Crucigenia
Cryptomonas
Diatoma
Dinobryon
Elakatothrix
Gomphonema
Mougeotia
Nitzschia
Oocystis
Oscillatoria
Peridinium
Scenedesmus



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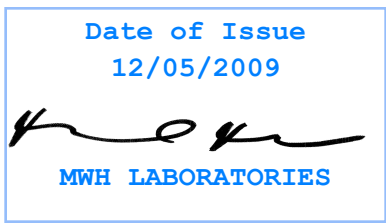
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Laboratory Report

for

CDM
50 Hampshire Street
Cambridge, MA 02139-1548
Attention: Jamie Lefkowitz
Fax: 617-452-8566



TDF: Thomas.D.French
Project Manager



Report#: 320075
Project: MERRIMACK-RIVER
Group: DW Study

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

Acknowledgement of Samples Received
CDM

 50 Hampshire Street
 Cambridge, MA 02139-1548
 Attn: Jamie Lefkowitz
 Phone: 617-452-6591

 Customer Code: CDM-MA
 Group #: 320075
 Project #: MERRIMACK-RIVER
 Sample Group: DW Study
 Project Manager: Thomas.D.French
 Phone: (480) 778-1558

The following samples were received from you on **November 24, 2009**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample #	Sample Id	Sample Date
200911240185	AMOSKEAG	23-Nov-2009 1100
	@MTBE9 @SPMELOW Actinomycetes Algae Enumeration Algae Identification CLO41PPB Dissolved Organic Carbon Iron Total ICAP Manganese Total ICAP/MS PH (H3=past HT not compliant) Total Organic Carbon UV absorbance at 254 nm	
200911240186	MTBE - TRAVEL BLANK - HOLD	23-Nov-2009 0000
	@MTBE9 TB	

Test Description

- @MTBE9 -- Volatile Organics by GCMS
- @MTBE9 TB -- Volatile Organics by GCMS
- @SPMELOW -- Taste and Odor Cmpds Low Level



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CHAIN OF CUSTODY RECORD

320075

MWH LABS USE ONLY:

LOGIN COMMENTS: _____	SAMPLES CHECKED AGAINST COC BY: <u>JS</u>
_____	SAMPLES LOGGED IN BY: <u>JS</u>
SAMPLE TEMP WHEN REC'D AT LAB: <u>2</u> (Compliance: 4 +/- 2°C)	SAMPLES REC'D DAY OF COLLECTION? <input type="checkbox"/> (check for yes)
CONDITION OF BLUE ICE: FROZEN <input checked="" type="checkbox"/> PARTIALLY FROZEN <input type="checkbox"/> THAWED <input type="checkbox"/>	

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: <u>CDM-MA</u>		PROJECT CODE: <u>MERRIMACK</u>		COMPLIANCE SAMPLES - Requires state forms <input type="checkbox"/>		NON-COMPLIANCE SAMPLES REGULATION INVOLVED: <input checked="" type="checkbox"/>	
MWH LABS CLIENT CODE:	COC ID:	SAMPLE GROUP: <u>ROUNDS</u>		Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, Phase V, NPDES, FDA,...)			
SAMPLER PRINTED NAME AND SIGNATURE:		TAT requested: rush by adv notice only STD ___ 1 wk ___ 3 day ___ 2 day ___ 1 day ___		SEE ATTACHED BOTTLE ORDER FOR ANALYSES <input checked="" type="checkbox"/> (check for yes), OR list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)			
SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	Field Data	Field Data	SAMPLER COMMENTS
<u>11/23</u>	<u>11:00</u>		<u>AMOSKEAG</u>				<u>Spore 11/24/09 10:37</u>
	<u>3/24</u>						
				This portion can be removed for Recipient's records. Date <u>11/23/2009</u> FedEx Tracking Number <u>866513078599</u> Sender's Name <u>JAMIE LEFKOWITZ</u> Phone <u>603 801-1051</u> Company <u>CDM</u> Address <u>50 HAMPSHIRE ST</u> Dept./Floor/Suite/Room _____ City <u>CAMBRIDGE</u> State <u>MA</u> ZIP <u>02139-1548</u> Our Internal Billing Reference <u>66465.6162.004.102.TSK03</u>			

* MATRIX TYPES: RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil O = Other - Please Identify
 RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge

SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
<u>Jamie Lefkowitz</u>	<u>JAMIE LEFKOWITZ</u>	<u>CDM</u>	<u>11/23/09</u>	<u>12:00 PM</u>
<u>Joe Sanchez</u>	<u>JOE Sanchez</u>	<u>MWH</u>	<u>11-24-09</u>	<u>9:59</u>
RELINQUISHED BY:				
RECEIVED BY:				

Thomas.D.French Your MWHL Project Manager

BO #: 10417
 Created By: TDF
 Order Date: 10/23/2009
 Bottle Orders

**Sampler: please return
 this paper with your samples**

Client Code CDM-MA
 Project Code MERRIMACK-RIVER Bottle Orders
 Group Name DW Study
 PO# / Job#

Group#
Date Sampled
Date Received

Ship By:
 11/06/2009

Ship Sample Kits to
 CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

Send Report to
 CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

Billing Address
 CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

# of Samples	Tests	Qteline#	Bottles - Qty for each sample, type & preservative if any	UN DOT #
1	@MTBE9		3 40ml amber glass vial 4drops 6N HCL (36%)	
1	@MTBE9 TB		2 40ml amber glass vial 4drops of 1:1 HCL + H2O	
1	@SPMELOW		4 40ml amber glass vial no preservative	
1	Actinomycetes		1 100ml poly sterilized 0.25ml thio (8%)	
1	Algae Enumeration, Algae Identification		1 500ml poly sterilized no preservative	
1	CLO41PPB		1 125ml poly CLO4 - no preservative	
1	Dissolved Organic Carbon, UV absorbance at 254 nm		1 125ml amber glass no preservative	
1	Iron Total ICAP, Manganese Total ICAP/MS		1 250ml acid rinsed 1ml HNO3 (18%)	
1	PH (H3=past HT not compliant)		1 125ml poly no preservative	
1	Total Organic Carbon		1 125ml amber glass 0.5ml H2SO4 (50%)	

Comments

Include COC, sampling/packing, blue ice. Client is responsible for return shipment to MWH Laboratories, 750 Royal Oaks Drive, Monrovia, CA 91016. (626) 386 1100.



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CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Laboratory Comments
Report: #320075



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Laboratory
Hits Report: 320075

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Samples Received on:
11/24/2009

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	200911240185	<u>AMOSKEAG</u>				
12/01/2009	14:21 Actinomycetes		2.0		CFU/ml	
11/25/2009	14:03 Algae Enumeration		64		#/ml	1
11/25/2009	14:03 Algae Identification		See Comments		Not Appl.	
11/30/2009	21:11 Dissolved Organic Carbon		4.2		mg/L	0.6
11/24/2009	14:30 Dissolved UV Abs. at 254 nm		0		cm -1	0.009
11/25/2009	11:30 Geosmin		2.3		ng/L	1
12/02/2009	6:17 Iron Total ICAP		0.24	0.3	mg/L	0.02
11/26/2009	00:54 Manganese Total ICAP/MS		22	50	ug/L	2
11/25/2009	12:42 PH (H3=past HT not compliant)		6.90		Units	0.1
11/30/2009	21:36 Total Organic Carbon		4.2		mg/L	0.6



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Laboratory Data
Report: 320075

CDM

Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Samples Received on:
11/24/2009

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
AMOSKEAG (200911240185)						Sampled on 11/23/2009 1100		
EPA 200.8 - ICPMS Metals								
	11/26/2009	00:54	532932 (EPA 200.8)	Manganese Total ICAP/MS	22	ug/L	2	1
EPA 200.7 - ICP Metals								
	12/02/2009	6:17	533261 (EPA 200.7)	Iron Total ICAP	0.24	mg/L	0.02	1
SM 10900 - Algae Identification								
	11/25/2009	14:03	532916 (SM 10900)	Algae Identification	See Comments	Not Appl.		1
SM 10200F - Algae Enumeration								
	11/25/2009	14:03	533148 (SM 10200F)	Algae Enumeration	64	#/ml	1	1
11/24/2009	12/01/2009	14:21	533756 (SM 9250B)	Actinomycetes	2.0	CFU/ml		1
SM5310C/E415.3 - Total Organic Carbon								
	11/30/2009	21:36	533128 (SM5310C/E415.3)	Total Organic Carbon	4.2	mg/L	0.6	2
SM 5310C - Dissolved Organic Carbon								
11/24/2009	11/30/2009	21:11	533055 (SM 5310C)	Dissolved Organic Carbon	4.2	mg/L	0.6	2
SM 5910 - Dissolved UV Abs. at 254 nm								
	11/24/2009	14:30	532872 (SM 5910)	Dissolved UV Abs. at 254 nm	0	cm -1	0.009	1
SM 6040D - Taste and Odor Cmpds Low Level								
11/25/2009	11/25/2009	11:30	532322 (SM 6040D)	Geosmin	2.3	ng/L	1	1
11/25/2009	11/25/2009	11:30	532322 (SM 6040D)	Methylisoborneol	ND	ng/L	1	1
11/25/2009	11/25/2009	11:30	532322 (SM 6040D)	Isobutyl methoxypyrazine	137	%		1
11/25/2009	11/25/2009	11:30	532322 (SM 6040D)	Isopropyl methoxypyrazine	84	%		1
EPA 314.0 - Perchlorate with 0.5 ppb DL								
	12/01/2009	02:08	533257 (EPA 314.0)	Perchlorate	ND	ug/L	0.5	1
EPA 524.2 - Volatile Organics by GCMS								
11/24/2009	11/24/2009	20:07	532768 (EPA 524.2)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5	1
11/24/2009	11/24/2009	20:07	532768 (EPA 524.2)	1,2-Dichloroethane-d4	101	%		1
SM4500-HB - PH (H3=past HT not compliant)								
	11/25/2009	12:42	532066 (SM4500-HB)	PH (H3=past HT not compliant)	6.90	Units	0.1	1
MTBE - TRAVEL BLANK - HOLD (200911240186)						Sampled on 11/23/2009 0000		
EPA 524.2 - Volatile Organics by GCMS								
11/24/2009	11/24/2009	20:35	532768 (EPA 524.2)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5	1
11/24/2009	11/24/2009	20:35	532768 (EPA 524.2)	1,2-Dichloroethane-d4	102	%		1



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Laboratory
QC Summary: 320075

CDM

QC Ref # 532066 - PH (H3=past HT not compliant)

200911240185 AMOSKEAG

Analysis Date: 11/25/2009

Analyzed by: NEM

QC Ref # 532322 - Taste and Odor Cmpds Low Level

200911240185 AMOSKEAG

Analysis Date: 11/25/2009

Analyzed by: KAM

QC Ref # 532768 - Volatile Organics by GCMS

200911240185 AMOSKEAG
200911240186 MTBE - TRAVEL BLANK - HOLD

Analysis Date: 11/24/2009

Analyzed by: KCP

Analyzed by: KCP

QC Ref # 532872 - Dissolved UV Abs. at 254 nm

200911240185 AMOSKEAG

Analysis Date: 11/24/2009

Analyzed by: KXS

QC Ref # 532916 - Algae Identification

200911240185 AMOSKEAG

Analysis Date: 11/25/2009

Analyzed by: NWM

QC Ref # 532932 - ICPMS Metals

200911240185 AMOSKEAG

Analysis Date: 11/26/2009

Analyzed by: DYH

QC Ref # 533055 - Dissolved Organic Carbon

200911240185 AMOSKEAG

Analysis Date: 11/30/2009

Analyzed by: KXS

QC Ref # 533128 - Total Organic Carbon

200911240185 AMOSKEAG

Analysis Date: 11/30/2009

Analyzed by: KXS

QC Ref # 533148 - Algae Enumeration

200911240185 AMOSKEAG

Analysis Date: 11/25/2009

Analyzed by: NWM

QC Ref # 533257 - Perchlorate with 0.5 ppb DL

200911240185 AMOSKEAG

Analysis Date: 12/01/2009

Analyzed by: MCE

QC Ref # 533261 - ICP Metals

200911240185 AMOSKEAG

Analysis Date: 12/02/2009

Analyzed by: VXT

QC Ref # 533756 - Actinomycetes

200911240185 AMOSKEAG

Analysis Date: 12/01/2009

Analyzed by: NWM



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Laboratory
QC Report: 320075

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 532066 - PH (H3=past HT not compliant) by SM4500-HB					Analysis Date: 11/25/2009				
DUP_200911240185	PH (H3=past HT not compliant)	6.90		6.9	Units		(0-20)	20	0.29
LCS1	PH (H3=past HT not compliant)		6.0	6.05	Units	101	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	6.1	Units	102	(98-102)	20	0.82
QC Ref# 532322 - Taste and Odor Cmpds Low Level by SM 6040D					Analysis Date: 11/25/2009				
LCS1	Geosmin		10	9.68	ng/L	97	(75-125)		
LCS2	Geosmin		10	9.34	ng/L	93	(75-125)	20	3.6
MBLK	Geosmin			<1	ng/L				
MRLLW	Geosmin		1.0	0.665	ng/L	67	(50-150)		
MS_200911250004	Geosmin	6.0	10	18.1	ng/L	120	(70-130)		
MSD_200911250004	Geosmin	6.0	10	17.5	ng/L	114	(70-130)	20	5.1
LCS1	Isobutyl methoxypyrazine (I)			89.0	%	89	(50-150)		
LCS2	Isobutyl methoxypyrazine (I)			109	%	109	(50-150)		
MBLK	Isobutyl methoxypyrazine (I)			92.0	%	92	(50-150)		
MRLLW	Isobutyl methoxypyrazine (I)			101	%	101	(50-150)		
MS_200911250004	Isobutyl methoxypyrazine (I)			123	%	123	(50-150)		
MSD_200911250004	Isobutyl methoxypyrazine (I)			125	%	125	(50-150)		
LCS1	Isopropyl methoxy pyrazine (S)			103	%	103	(70-130)		
LCS2	Isopropyl methoxy pyrazine (S)			95.9	%	96	(70-130)		
MBLK	Isopropyl methoxy pyrazine (S)			77.7	%	78	(70-130)		
MRLLW	Isopropyl methoxy pyrazine (S)			92.8	%	93	(70-130)		
MS_200911250004	Isopropyl methoxy pyrazine (S)			99.1	%	99	(70-130)		
MSD_200911250004	Isopropyl methoxy pyrazine (S)			93.2	%	93	(70-130)		
LCS1	Methylisoborneol		10	9.15	ng/L	92	(75-125)		
LCS2	Methylisoborneol		10	10.2	ng/L	102	(75-125)	20	11
MBLK	Methylisoborneol			<1	ng/L				
MRLLW	Methylisoborneol		1.0	0.970	ng/L	97	(50-150)		
MS_200911250004	Methylisoborneol	12	10	23.7	ng/L	112	(70-130)		
MSD_200911250004	Methylisoborneol	12	10	27.9	ng/L	<u>154</u>	(70-130)	20	<u>32</u>
QC Ref# 532768 - Volatile Organics by GCMS by EPA 524.2					Analysis Date: 11/24/2009				
LCS1	1,1,1,2-Tetrachloroethane		5.0	4.7	ug/L	94	(70-130)		
LCS2	1,1,1,2-Tetrachloroethane		5.0	4.68	ug/L	94	(70-130)	20	0.43
MBLK	1,1,1,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,1,2-Tetrachloroethane		0.5	0.530	ug/L	106	(50-150)		
LCS1	1,1,1-Trichloroethane		5.0	4.29	ug/L	86	(70-130)		
LCS2	1,1,1-Trichloroethane		5.0	4.43	ug/L	89	(70-130)	20	3.2
MBLK	1,1,1-Trichloroethane			<0.25	ug/L				

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

9/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	1,1,1-Trichloroethane		0.5	0.540	ug/L	108	(50-150)		
LCS1	1,1,2,2-Tetrachloroethane		5.0	4.42	ug/L	88	(70-130)		
LCS2	1,1,2,2-Tetrachloroethane		5.0	4.37	ug/L	87	(70-130)	20	1.1
MBLK	1,1,2,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,2,2-Tetrachloroethane		0.5	0.640	ug/L	128	(50-150)		
LCS1	1,1,2-Trichloroethane		5.0	4.77	ug/L	95	(70-130)		
LCS2	1,1,2-Trichloroethane		5.0	4.93	ug/L	99	(70-130)	20	3.3
MBLK	1,1,2-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,2-Trichloroethane		0.5	0.580	ug/L	116	(50-150)		
LCS1	1,1-Dichloroethane		5.0	4.69	ug/L	94	(70-130)		
LCS2	1,1-Dichloroethane		5.0	4.5	ug/L	90	(70-130)	20	4.1
MBLK	1,1-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethane		0.5	0.600	ug/L	120	(50-150)		
LCS1	1,1-Dichloroethylene		5.0	4.56	ug/L	91	(70-130)		
LCS2	1,1-Dichloroethylene		5.0	4.42	ug/L	88	(70-130)	20	3.1
MBLK	1,1-Dichloroethylene			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethylene		0.5	0.660	ug/L	132	(50-150)		
LCS1	1,1-Dichloropropene		5.0	4.45	ug/L	89	(70-130)		
LCS2	1,1-Dichloropropene		5.0	4.32	ug/L	86	(70-130)	20	3.0
MBLK	1,1-Dichloropropene			<0.25	ug/L				
MRL_CHK	1,1-Dichloropropene		0.5	0.580	ug/L	116	(50-150)		
LCS1	1,2,3-Trichlorobenzene		5.0	4.33	ug/L	87	(70-130)		
LCS2	1,2,3-Trichlorobenzene		5.0	4.4	ug/L	88	(70-130)	20	1.6
MBLK	1,2,3-Trichlorobenzene			<0.25	ug/L				
MRL_CHK	1,2,3-Trichlorobenzene		0.5	0.570	ug/L	114	(50-150)		
LCS1	1,2,3-Trichloropropane		5.0	4.9	ug/L	98	(70-130)		
LCS2	1,2,3-Trichloropropane		5.0	4.47	ug/L	89	(70-130)	20	9.2
MBLK	1,2,3-Trichloropropane			<0.25	ug/L				
MRL_CHK	1,2,3-Trichloropropane		0.5	0.450	ug/L	90	(50-150)		
LCS1	1,2,4-Trichlorobenzene		5.0	4.58	ug/L	92	(70-130)		
LCS2	1,2,4-Trichlorobenzene		5.0	4.53	ug/L	91	(70-130)	20	1.1
MBLK	1,2,4-Trichlorobenzene			<0.25	ug/L				
MRL_CHK	1,2,4-Trichlorobenzene		0.5	0.450	ug/L	90	(50-150)		
LCS1	1,2,4-Trimethylbenzene		5.0	4.37	ug/L	87	(70-130)		
LCS2	1,2,4-Trimethylbenzene		5.0	4.42	ug/L	88	(70-130)	20	1.1
MBLK	1,2,4-Trimethylbenzene			<0.25	ug/L				
MRL_CHK	1,2,4-Trimethylbenzene		0.5	0.560	ug/L	112	(50-150)		
LCS1	1,2-Dichloroethane		5.0	4.5	ug/L	90	(70-130)		

Spike recovery is already corrected for native results.

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10/24

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

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CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	1,2-Dichloroethane		5.0	4.58	ug/L	92	(70-130)	20	1.8
MBLK	1,2-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,2-Dichloroethane		0.5	0.530	ug/L	106	(50-150)		
LCS1	1,2-Dichloroethane-d4 (S)			104	%	104	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			101	%	101	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			104	%	104	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
LCS1	1,2-Dichloropropane		5.0	4.64	ug/L	93	(70-130)		
LCS2	1,2-Dichloropropane		5.0	4.6	ug/L	92	(70-130)	20	0.87
MBLK	1,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,2-Dichloropropane		0.5	0.610	ug/L	122	(50-150)		
LCS1	1,3,5-Trimethylbenzene		5.0	4.44	ug/L	89	(70-130)		
LCS2	1,3,5-Trimethylbenzene		5.0	4.43	ug/L	89	(70-130)	20	0.23
MBLK	1,3,5-Trimethylbenzene			<0.25	ug/L				
MRL_CHK	1,3,5-Trimethylbenzene		0.5	0.600	ug/L	120	(50-150)		
LCS1	1,3-Dichloropropane		5.0	4.53	ug/L	91	(70-130)		
LCS2	1,3-Dichloropropane		5.0	4.55	ug/L	91	(70-130)	20	0.44
MBLK	1,3-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,3-Dichloropropane		0.5	0.570	ug/L	114	(50-150)		
LCS1	2,2-Dichloropropane		5.0	4.74	ug/L	95	(70-130)		
LCS2	2,2-Dichloropropane		5.0	4.76	ug/L	95	(70-130)	20	0.42
MBLK	2,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	2,2-Dichloropropane		0.5	0.660	ug/L	132	(50-150)		
LCS1	2-Butanone (MEK)		50	51.8	ug/L	104	(70-130)		
LCS2	2-Butanone (MEK)		50	51.6	ug/L	103	(70-130)	20	0.77
MBLK	2-Butanone (MEK)			<2.5	ug/L				
MRL_CHK	2-Butanone (MEK)		5.0	4.44	ug/L	89	(50-150)		
LCS1	4-Bromofluorobenzene (S)			93.0	%	93	(70-130)		
LCS2	4-Bromofluorobenzene (S)			92.2	%	92	(70-130)		
MBLK	4-Bromofluorobenzene (S)			91.4	%	91	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			96.2	%	96	(70-130)		
LCS1	4-Methyl-2-Pentanone (MIBK)		50	46.2	ug/L	92	(70-130)		
LCS2	4-Methyl-2-Pentanone (MIBK)		50	45.7	ug/L	92	(70-130)	20	1.1
MBLK	4-Methyl-2-Pentanone (MIBK)			<2.5	ug/L				
MRL_CHK	4-Methyl-2-Pentanone (MIBK)		5.0	5.33	ug/L	107	(50-150)		
LCS1	Benzene		5.0	4.67	ug/L	93	(70-130)		
LCS2	Benzene		5.0	4.66	ug/L	93	(70-130)	20	0.21
MBLK	Benzene			<0.25	ug/L				

Spike recovery is already corrected for native results.

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Benzene		0.5	0.570	ug/L	114	(50-150)		
LCS1	Bromobenzene		5.0	4.26	ug/L	85	(70-130)		
LCS2	Bromobenzene		5.0	4.36	ug/L	87	(70-130)	20	2.3
MBLK	Bromobenzene			<0.25	ug/L				
MRL_CHK	Bromobenzene		0.5	0.550	ug/L	110	(50-150)		
LCS1	Bromochloromethane		5.0	4.61	ug/L	92	(70-130)		
LCS2	Bromochloromethane		5.0	4.66	ug/L	93	(70-130)	20	1.1
MBLK	Bromochloromethane			<0.25	ug/L				
MRL_CHK	Bromochloromethane		0.5	0.530	ug/L	106	(50-150)		
LCS1	Bromodichloromethane		5.0	4.58	ug/L	92	(70-130)		
LCS2	Bromodichloromethane		5.0	4.52	ug/L	90	(70-130)	20	1.3
MBLK	Bromodichloromethane			<0.25	ug/L				
MRL_CHK	Bromodichloromethane		0.5	0.560	ug/L	112	(50-150)		
LCS1	Bromoethane		5.0	4.34	ug/L	87	(70-130)		
LCS2	Bromoethane		5.0	4.25	ug/L	85	(70-130)	20	2.1
MBLK	Bromoethane			<0.25	ug/L				
MRL_CHK	Bromoethane		0.5	0.560	ug/L	112	(50-150)		
LCS1	Bromoform		5.0	4.33	ug/L	87	(70-130)		
LCS2	Bromoform		5.0	4.16	ug/L	83	(70-130)	20	4.0
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.480	ug/L	96	(50-150)		
LCS1	Bromomethane (Methyl Bromide)		5.0	4.66	ug/L	93	(70-130)		
LCS2	Bromomethane (Methyl Bromide)		5.0	4.86	ug/L	97	(70-130)	20	4.2
MBLK	Bromomethane (Methyl Bromide)			<0.25	ug/L				
MRL_CHK	Bromomethane (Methyl Bromide)		0.5	0.640	ug/L	128	(50-150)		
LCS1	Carbon Tetrachloride		5.0	4.25	ug/L	85	(70-130)		
LCS2	Carbon Tetrachloride		5.0	4.25	ug/L	85	(70-130)	20	0.0
MBLK	Carbon Tetrachloride			<0.25	ug/L				
MRL_CHK	Carbon Tetrachloride		0.5	0.500	ug/L	100	(50-150)		
LCS1	Chlorobenzene		5.0	4.67	ug/L	93	(70-130)		
LCS2	Chlorobenzene		5.0	4.65	ug/L	93	(70-130)	20	0.43
MBLK	Chlorobenzene			<0.25	ug/L				
MRL_CHK	Chlorobenzene		0.5	0.540	ug/L	108	(50-150)		
LCS1	Chlorodibromomethane		5.0	4.72	ug/L	94	(70-130)		
LCS2	Chlorodibromomethane		5.0	4.59	ug/L	92	(70-130)	20	2.8
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.520	ug/L	104	(50-150)		
LCS1	Chloroethane		5.0	4.96	ug/L	99	(70-130)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

12/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Chloroethane		5.0	4.77	ug/L	95	(70-130)	20	3.9
MBLK	Chloroethane			<0.25	ug/L				
MRL_CHK	Chloroethane		0.5	0.530	ug/L	106	(50-150)		
LCS1	Chloroform (Trichloromethane)		5.0	4.51	ug/L	90	(70-130)		
LCS2	Chloroform (Trichloromethane)		5.0	4.49	ug/L	90	(70-130)	20	0.44
MBLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.540	ug/L	108	(50-150)		
LCS1	Chloromethane(Methyl Chloride)		5.0	4.93	ug/L	99	(70-130)		
LCS2	Chloromethane(Methyl Chloride)		5.0	4.93	ug/L	99	(70-130)	20	0.0
MBLK	Chloromethane(Methyl Chloride)			<0.25	ug/L				
MRL_CHK	Chloromethane(Methyl Chloride)		0.5	0.530	ug/L	106	(50-150)		
LCS1	cis-1,2-Dichloroethylene		5.0	4.7	ug/L	94	(70-130)		
LCS2	cis-1,2-Dichloroethylene		5.0	4.63	ug/L	93	(70-130)	20	1.5
MBLK	cis-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	cis-1,2-Dichloroethylene		0.5	0.620	ug/L	124	(50-150)		
LCS1	cis-1,3-Dichloropropene		5.0	4.64	ug/L	93	(70-130)		
LCS2	cis-1,3-Dichloropropene		5.0	4.46	ug/L	89	(70-130)	20	4.0
MBLK	cis-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	cis-1,3-Dichloropropene		0.5	0.580	ug/L	116	(50-150)		
LCS1	Di-isopropyl ether		5.0	4.48	ug/L	90	(70-130)		
LCS2	Di-isopropyl ether		5.0	4.46	ug/L	89	(70-130)	20	0.45
MBLK	Di-isopropyl ether			<1.5	ug/L				
MRL_CHK	Di-isopropyl ether		0.5	0.530	ug/L	106	(50-150)		
LCS1	Dibromomethane		5.0	4.59	ug/L	92	(70-130)		
LCS2	Dibromomethane		5.0	4.68	ug/L	94	(70-130)	20	1.9
MBLK	Dibromomethane			<0.25	ug/L				
MRL_CHK	Dibromomethane		0.5	0.640	ug/L	128	(50-150)		
LCS1	Dichlorodifluoromethane		5.0	4.56	ug/L	91	(70-130)		
LCS2	Dichlorodifluoromethane		5.0	4.43	ug/L	89	(70-130)	20	2.9
MBLK	Dichlorodifluoromethane			<0.25	ug/L				
MRL_CHK	Dichlorodifluoromethane		0.5	0.620	ug/L	124	(50-150)		
LCS1	Dichloromethane		5.0	4.51	ug/L	90	(70-130)		
LCS2	Dichloromethane		5.0	4.47	ug/L	89	(70-130)	20	0.89
MBLK	Dichloromethane			<0.25	ug/L				
MRL_CHK	Dichloromethane		0.5	0.600	ug/L	120	(50-150)		
LCS1	Ethyl benzene		5.0	4.46	ug/L	89	(70-130)		
LCS2	Ethyl benzene		5.0	4.47	ug/L	89	(70-130)	20	0.22
MBLK	Ethyl benzene			<0.25	ug/L				

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

13/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Ethyl benzene		0.5	0.550	ug/L	110	(50-150)		
LCS1	Hexachlorobutadiene		5.0	4.87	ug/L	97	(70-130)		
LCS2	Hexachlorobutadiene		5.0	4.88	ug/L	98	(70-130)	20	0.21
MBLK	Hexachlorobutadiene			<0.25	ug/L				
MRL_CHK	Hexachlorobutadiene		0.5	0.420	ug/L	84	(50-150)		
LCS1	Isopropylbenzene		5.0	4.17	ug/L	83	(70-130)		
LCS2	Isopropylbenzene		5.0	4.16	ug/L	83	(70-130)	20	0.24
MBLK	Isopropylbenzene			<0.25	ug/L				
MRL_CHK	Isopropylbenzene		0.5	0.540	ug/L	108	(50-150)		
LCS1	m,p-Xylenes		10	9.44	ug/L	94	(70-130)		
LCS2	m,p-Xylenes		10	9.49	ug/L	95	(70-130)	20	0.53
MBLK	m,p-Xylenes			<0.25	ug/L				
MRL_CHK	m,p-Xylenes		1.0	1.05	ug/L	105	(50-150)		
LCS1	m-Dichlorobenzene (1,3-DCB)		5.0	4.34	ug/L	87	(70-130)		
LCS2	m-Dichlorobenzene (1,3-DCB)		5.0	4.19	ug/L	84	(70-130)	20	3.5
MBLK	m-Dichlorobenzene (1,3-DCB)			<0.25	ug/L				
MRL_CHK	m-Dichlorobenzene (1,3-DCB)		0.5	0.520	ug/L	104	(50-150)		
LCS1	Methyl Tert-butyl ether (MTBE)		5.0	4.53	ug/L	91	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		5.0	4.58	ug/L	92	(70-130)	20	1.1
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.560	ug/L	112	(50-150)		
LCS1	n-Butylbenzene		5.0	4.71	ug/L	94	(70-130)		
LCS2	n-Butylbenzene		5.0	4.57	ug/L	91	(70-130)	20	3.0
MBLK	n-Butylbenzene			<0.25	ug/L				
MRL_CHK	n-Butylbenzene		0.5	0.550	ug/L	110	(50-150)		
LCS1	n-Propylbenzene		5.0	4.33	ug/L	87	(70-130)		
LCS2	n-Propylbenzene		5.0	4.19	ug/L	84	(70-130)	20	3.3
MBLK	n-Propylbenzene			<0.25	ug/L				
MRL_CHK	n-Propylbenzene		0.5	0.580	ug/L	116	(50-150)		
LCS1	Naphthalene		5.0	4.84	ug/L	97	(70-130)		
LCS2	Naphthalene		5.0	4.6	ug/L	92	(70-130)	20	5.1
MBLK	Naphthalene			<0.25	ug/L				
MRL_CHK	Naphthalene		0.5	0.410	ug/L	82	(50-150)		
LCS1	o-Chlorotoluene		5.0	4.42	ug/L	88	(70-130)		
LCS2	o-Chlorotoluene		5.0	4.29	ug/L	86	(70-130)	20	3.0
MBLK	o-Chlorotoluene			<0.25	ug/L				
MRL_CHK	o-Chlorotoluene		0.5	0.540	ug/L	108	(50-150)		
LCS1	o-Dichlorobenzene (1,2-DCB)		5.0	4.6	ug/L	92	(70-130)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

14/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	<u>o-Dichlorobenzene (1,2-DCB)</u>		5.0	4.59	ug/L	92	(70-130)	20	0.22
MBLK	<u>o-Dichlorobenzene (1,2-DCB)</u>			<0.25	ug/L				
MRL_CHK	<u>o-Dichlorobenzene (1,2-DCB)</u>		0.5	0.510	ug/L	102	(50-150)		
LCS1	<u>o-Xylene</u>		5.0	4.6	ug/L	92	(70-130)		
LCS2	<u>o-Xylene</u>		5.0	4.54	ug/L	91	(70-130)	20	1.3
MBLK	<u>o-Xylene</u>			<0.25	ug/L				
MRL_CHK	<u>o-Xylene</u>		0.5	0.530	ug/L	106	(50-150)		
LCS1	<u>p-Chlorotoluene</u>		5.0	4.38	ug/L	88	(70-130)		
LCS2	<u>p-Chlorotoluene</u>		5.0	4.36	ug/L	87	(70-130)	20	0.46
MBLK	<u>p-Chlorotoluene</u>			<0.25	ug/L				
MRL_CHK	<u>p-Chlorotoluene</u>		0.5	0.610	ug/L	122	(50-150)		
LCS1	<u>p-Dichlorobenzene (1,4-DCB)</u>		5.0	4.18	ug/L	84	(70-130)		
LCS2	<u>p-Dichlorobenzene (1,4-DCB)</u>		5.0	4.21	ug/L	84	(70-130)	20	0.72
MBLK	<u>p-Dichlorobenzene (1,4-DCB)</u>			<0.25	ug/L				
MRL_CHK	<u>p-Dichlorobenzene (1,4-DCB)</u>		0.5	0.510	ug/L	102	(50-150)		
LCS1	<u>p-Isopropyltoluene</u>		5.0	4.41	ug/L	88	(70-130)		
LCS2	<u>p-Isopropyltoluene</u>		5.0	4.33	ug/L	87	(70-130)	20	1.8
MBLK	<u>p-Isopropyltoluene</u>			<0.25	ug/L				
MRL_CHK	<u>p-Isopropyltoluene</u>		0.5	0.570	ug/L	114	(50-150)		
LCS1	<u>sec-Butylbenzene</u>		5.0	4.39	ug/L	88	(70-130)		
LCS2	<u>sec-Butylbenzene</u>		5.0	4.22	ug/L	84	(70-130)	20	4.0
MBLK	<u>sec-Butylbenzene</u>			<0.25	ug/L				
MRL_CHK	<u>sec-Butylbenzene</u>		0.5	0.520	ug/L	104	(50-150)		
LCS1	<u>Styrene</u>		5.0	4.51	ug/L	90	(70-130)		
LCS2	<u>Styrene</u>		5.0	4.49	ug/L	90	(70-130)	20	0.44
MBLK	<u>Styrene</u>			<0.25	ug/L				
MRL_CHK	<u>Styrene</u>		0.5	0.480	ug/L	96	(50-150)		
LCS1	<u>tert-amyl Methyl Ether</u>		5.0	4.29	ug/L	86	(70-130)		
LCS2	<u>tert-amyl Methyl Ether</u>		5.0	4.18	ug/L	84	(70-130)	20	2.6
MBLK	<u>tert-amyl Methyl Ether</u>			<1.5	ug/L				
MRL_CHK	<u>tert-amyl Methyl Ether</u>		0.5	0.530	ug/L	106	(50-150)		
LCS1	<u>tert-Butyl Ethyl Ether</u>		5.0	4.48	ug/L	90	(70-130)		
LCS2	<u>tert-Butyl Ethyl Ether</u>		5.0	4.32	ug/L	86	(70-130)	20	3.6
MBLK	<u>tert-Butyl Ethyl Ether</u>			<1.5	ug/L				
MRL_CHK	<u>tert-Butyl Ethyl Ether</u>		0.5	0.520	ug/L	104	(50-150)		
LCS1	<u>tert-Butylbenzene</u>		5.0	4.38	ug/L	88	(70-130)		
LCS2	<u>tert-Butylbenzene</u>		5.0	4.23	ug/L	85	(70-130)	20	3.5

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

15/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	tert-Butylbenzene			<0.25	ug/L				
MRL_CHK	tert-Butylbenzene		0.5	0.570	ug/L	114	(50-150)		
LCS1	Tetrachloroethylene (PCE)		5.0	4.61	ug/L	92	(70-130)		
LCS2	Tetrachloroethylene (PCE)		5.0	4.43	ug/L	89	(70-130)	20	4.0
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.560	ug/L	112	(50-150)		
LCS1	Toluene		5.0	4.69	ug/L	94	(70-130)		
LCS2	Toluene		5.0	4.63	ug/L	93	(70-130)	20	1.3
MBLK	Toluene			<0.25	ug/L				
MRL_CHK	Toluene		0.5	0.600	ug/L	120	(50-150)		
LCS1	Toluene-d8 (S)			99.4	%	99	(70-130)		
LCS2	Toluene-d8 (S)			104	%	104	(70-130)		
MBLK	Toluene-d8 (S)			100	%	100	(70-130)		
MRL_CHK	Toluene-d8 (S)			98.6	%	99	(70-130)		
LCS1	trans-1,2-Dichloroethylene		5.0	4.58	ug/L	92	(70-130)		
LCS2	trans-1,2-Dichloroethylene		5.0	4.34	ug/L	87	(70-130)	20	5.4
MBLK	trans-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	trans-1,2-Dichloroethylene		0.5	0.590	ug/L	118	(50-150)		
LCS1	trans-1,3-Dichloropropene		5.0	4.54	ug/L	91	(70-130)		
LCS2	trans-1,3-Dichloropropene		5.0	4.61	ug/L	92	(70-130)	20	1.5
MBLK	trans-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	trans-1,3-Dichloropropene		0.5	0.580	ug/L	116	(50-150)		
LCS1	Trichloroethylene (TCE)		5.0	4.72	ug/L	94	(70-130)		
LCS2	Trichloroethylene (TCE)		5.0	4.74	ug/L	95	(70-130)	20	0.42
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.600	ug/L	120	(50-150)		
LCS1	Trichlorofluoromethane		5.0	4.88	ug/L	98	(70-130)		
LCS2	Trichlorofluoromethane		5.0	4.76	ug/L	95	(70-130)	20	2.5
MBLK	Trichlorofluoromethane			<0.25	ug/L				
MRL_CHK	Trichlorofluoromethane		0.5	0.570	ug/L	114	(50-150)		
LCS1	Trichlorotrifluoroethane(Freon)		5.0	4.88	ug/L	98	(70-130)		
LCS2	Trichlorotrifluoroethane(Freon)		5.0	4.69	ug/L	94	(70-130)	20	4.0
MBLK	Trichlorotrifluoroethane(Freon)			<0.25	ug/L				
MRL_CHK	Trichlorotrifluoroethane(Freon)		0.5	0.570	ug/L	114	(50-150)		
LCS1	Vinyl chloride (VC)		5.0	4.52	ug/L	90	(70-130)		
LCS2	Vinyl chloride (VC)		5.0	4.39	ug/L	88	(70-130)	20	2.9
MBLK	Vinyl chloride (VC)			<0.15	ug/L				
MRL_CHK	Vinyl chloride (VC)		0.5	0.570	ug/L	114	(50-150)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

16/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 532872 - Dissolved UV Abs. at 254 nm by SM 5910					Analysis Date: 11/24/2009				
DUP1_200911240185	UV absorbance at 254 nm	0		0.167	cm -1		(0-15)	15	0.60
LCS1	UV absorbance at 254 nm		0.37	0.331	cm -1	90	(83-121)		
MBLK	UV absorbance at 254 nm			<0.004	cm -1				
MRL_CHK	UV absorbance at 254 nm		0.009	0.00800	cm -1	89	(85-115)		
QC Ref# 532932 - ICPMS Metals by EPA 200.8					Analysis Date: 11/25/2009				
LCS1	Aluminum Total ICAP/MS		200	204	ug/L	102	(85-115)		
LCS2	Aluminum Total ICAP/MS		200	196	ug/L	98	(85-115)	20	4.0
MBLK	Aluminum Total ICAP/MS			<20	ug/L				
MRL_CHK	Aluminum Total ICAP/MS		20	21.9	ug/L	110	(50-150)		
MS_200911190480	Aluminum Total ICAP/MS	ND	200	199	ug/L	99	(70-130)		
MS2_200911250203	Aluminum Total ICAP/MS	ND	200	201	ug/L	100	(70-130)		
MSD_200911190480	Aluminum Total ICAP/MS	ND	200	196	ug/L	98	(70-130)	20	1.2
MSD2_200911250203	Aluminum Total ICAP/MS	ND	200	213	ug/L	106	(70-130)	20	5.8
LCS1	Antimony Total ICAP/MS		50	49.3	ug/L	99	(85-115)		
LCS2	Antimony Total ICAP/MS		50	47.8	ug/L	96	(85-115)	20	3.1
MBLK	Antimony Total ICAP/MS			<1	ug/L				
MRL_CHK	Antimony Total ICAP/MS		1.0	0.965	ug/L	97	(50-150)		
MS_200911190480	Antimony Total ICAP/MS	ND	50	50.3	ug/L	101	(70-130)		
MS2_200911250203	Antimony Total ICAP/MS	ND	50	49.8	ug/L	100	(70-130)		
MSD_200911190480	Antimony Total ICAP/MS	ND	50	49.9	ug/L	100	(70-130)	20	1.4
MSD2_200911250203	Antimony Total ICAP/MS	ND	50	53.3	ug/L	107	(70-130)	20	7.2
LCS1	Arsenic Total ICAP/MS		20	19.1	ug/L	95	(85-115)		
LCS2	Arsenic Total ICAP/MS		20	18.4	ug/L	92	(85-115)	20	3.7
MBLK	Arsenic Total ICAP/MS			<1	ug/L				
MRL_CHK	Arsenic Total ICAP/MS		1.0	0.952	ug/L	95	(50-150)		
MS_200911190480	Arsenic Total ICAP/MS	2.1	20	23.6	ug/L	108	(70-130)		
MS2_200911250203	Arsenic Total ICAP/MS	ND	20	19.8	ug/L	98	(70-130)		
MSD_200911190480	Arsenic Total ICAP/MS	2.1	20	23.3	ug/L	106	(70-130)	20	1.9
MSD2_200911250203	Arsenic Total ICAP/MS	ND	20	21.1	ug/L	105	(70-130)	20	6.5
LCS1	Barium Total ICAP/MS		100	97.5	ug/L	98	(85-115)		
LCS2	Barium Total ICAP/MS		100	94.1	ug/L	94	(85-115)	20	3.5
MBLK	Barium Total ICAP/MS			<2	ug/L				
MRL_CHK	Barium Total ICAP/MS		2.0	1.93	ug/L	97	(50-150)		
MS_200911190480	Barium Total ICAP/MS	130	100	226	ug/L	91	(70-130)		
MS2_200911250203	Barium Total ICAP/MS	8.3	100	108	ug/L	99	(70-130)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

17/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MSD_200911190480	Barium Total ICAP/MS	130	100	224	ug/L	89	(70-130)	20	2.2
MSD2_200911250203	Barium Total ICAP/MS	8.3	100	114	ug/L	106	(70-130)	20	6.4
LCS1	Beryllium Total ICAP/MS		5.0	4.64	ug/L	93	(85-115)		
LCS2	Beryllium Total ICAP/MS		5.0	4.43	ug/L	89	(85-115)	20	4.6
MBLK	Beryllium Total ICAP/MS			<1	ug/L				
MRL_CHK	Beryllium Total ICAP/MS		1.0	0.942	ug/L	94	(50-150)		
MS_200911190480	Beryllium Total ICAP/MS	ND	5.0	5.94	ug/L	119	(70-130)		
MS2_200911250203	Beryllium Total ICAP/MS	ND	5.0	4.89	ug/L	98	(70-130)		
MSD_200911190480	Beryllium Total ICAP/MS	ND	5.0	5.75	ug/L	115	(70-130)	20	3.4
MSD2_200911250203	Beryllium Total ICAP/MS	ND	5.0	5.22	ug/L	104	(70-130)	20	6.3
LCS1	Cadmium Total ICAP/MS		20	18.7	ug/L	93	(85-115)		
LCS2	Cadmium Total ICAP/MS		20	18.4	ug/L	92	(85-115)	20	1.6
MBLK	Cadmium Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Cadmium Total ICAP/MS		0.5	0.477	ug/L	95	(50-150)		
MS_200911190480	Cadmium Total ICAP/MS	ND	20	18.3	ug/L	92	(70-130)		
MS2_200911250203	Cadmium Total ICAP/MS	ND	20	19.8	ug/L	99	(70-130)		
MSD_200911190480	Cadmium Total ICAP/MS	ND	20	18.0	ug/L	90	(70-130)	20	2.1
MSD2_200911250203	Cadmium Total ICAP/MS	ND	20	21.3	ug/L	107	(70-130)	20	7.6
LCS1	Chromium Total ICAP/MS		100	97.3	ug/L	97	(85-115)		
LCS2	Chromium Total ICAP/MS		100	93.1	ug/L	93	(85-115)	20	4.4
MBLK	Chromium Total ICAP/MS			<1	ug/L				
MRL_CHK	Chromium Total ICAP/MS		1.0	1.00	ug/L	100	(50-150)		
MS_200911190480	Chromium Total ICAP/MS	ND	100	97.8	ug/L	97	(70-130)		
MS2_200911250203	Chromium Total ICAP/MS	ND	100	93.5	ug/L	93	(70-130)		
MSD_200911190480	Chromium Total ICAP/MS	ND	100	97.0	ug/L	96	(70-130)	20	0.73
MSD2_200911250203	Chromium Total ICAP/MS	ND	100	100	ug/L	100	(70-130)	20	6.8
LCS1	Copper Total ICAP/MS		100	100	ug/L	100	(85-115)		
LCS2	Copper Total ICAP/MS		100	95.2	ug/L	95	(85-115)	20	4.9
MBLK	Copper Total ICAP/MS			<2	ug/L				
MRL_CHK	Copper Total ICAP/MS		2.0	2.00	ug/L	100	(50-150)		
MS_200911190480	Copper Total ICAP/MS	ND	100	93.8	ug/L	93	(70-130)		
MS2_200911250203	Copper Total ICAP/MS	ND	100	97.2	ug/L	97	(70-130)		
MSD_200911190480	Copper Total ICAP/MS	ND	100	92.5	ug/L	92	(70-130)	20	1.4
MSD2_200911250203	Copper Total ICAP/MS	ND	100	105	ug/L	104	(70-130)	20	7.0
LCS1	Lead Total ICAP/MS		20	19.4	ug/L	97	(85-115)		
LCS2	Lead Total ICAP/MS		20	18.9	ug/L	95	(85-115)	20	2.6
MBLK	Lead Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.477	ug/L	95	(50-150)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

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18/24

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_200911190480	Lead Total ICAP/MS	ND	20	19.6	ug/L	96	(70-130)		
MS2_200911250203	Lead Total ICAP/MS	ND	20	17.7	ug/L	89	(70-130)		
MSD_200911190480	Lead Total ICAP/MS	ND	20	19.1	ug/L	94	(70-130)	20	2.4
MSD2_200911250203	Lead Total ICAP/MS	ND	20	19.1	ug/L	96	(70-130)	20	7.8
LCS1	Manganese Total ICAP/MS		50	49.6	ug/L	99	(85-115)		
LCS2	Manganese Total ICAP/MS		50	47.3	ug/L	95	(85-115)	20	4.8
MBLK	Manganese Total ICAP/MS			<2	ug/L				
MRL_CHK	Manganese Total ICAP/MS		2.0	2.01	ug/L	100	(50-150)		
MS_200911190480	Manganese Total ICAP/MS	ND	50	50.2	ug/L	98	(70-130)		
MS2_200911250203	Manganese Total ICAP/MS	ND	50	49.3	ug/L	96	(70-130)		
MSD_200911190480	Manganese Total ICAP/MS	ND	50	50.0	ug/L	98	(70-130)	20	0.41
MSD2_200911250203	Manganese Total ICAP/MS	ND	50	52.8	ug/L	103	(70-130)	20	6.6
LCS1	Molybdenum Total ICAP/MS		100	98.8	ug/L	99	(85-115)		
LCS2	Molybdenum Total ICAP/MS		100	96.1	ug/L	96	(85-115)	20	2.8
MBLK	Molybdenum Total ICAP/MS			<2	ug/L				
MRL_CHK	Molybdenum Total ICAP/MS		2.0	2.00	ug/L	100	(50-150)		
MS_200911190480	Molybdenum Total ICAP/MS	ND	100	100	ug/L	98	(70-130)		
MS2_200911250203	Molybdenum Total ICAP/MS	ND	100	90.4	ug/L	90	(70-130)		
MSD_200911190480	Molybdenum Total ICAP/MS	ND	100	99.3	ug/L	97	(70-130)	20	0.92
MSD2_200911250203	Molybdenum Total ICAP/MS	ND	100	97.0	ug/L	97	(70-130)	20	7.0
LCS1	Nickel Total ICAP/MS		50	48.7	ug/L	97	(85-115)		
LCS2	Nickel Total ICAP/MS		50	46.3	ug/L	93	(85-115)	20	5.0
MBLK	Nickel Total ICAP/MS			<5	ug/L				
MRL_CHK	Nickel Total ICAP/MS		5.0	4.99	ug/L	100	(50-150)		
MS_200911190480	Nickel Total ICAP/MS	ND	50	46.1	ug/L	91	(70-130)		
MS2_200911250203	Nickel Total ICAP/MS	ND	50	48.6	ug/L	96	(70-130)		
MSD_200911190480	Nickel Total ICAP/MS	ND	50	45.6	ug/L	90	(70-130)	20	1.1
MSD2_200911250203	Nickel Total ICAP/MS	ND	50	51.6	ug/L	102	(70-130)	20	6.4
LCS1	Selenium Total ICAP/MS		20	19.4	ug/L	97	(85-115)		
LCS2	Selenium Total ICAP/MS		20	18.7	ug/L	93	(85-115)	20	3.7
MBLK	Selenium Total ICAP/MS			<5	ug/L				
MRL_CHK	Selenium Total ICAP/MS		5.0	4.37	ug/L	88	(50-150)		
MS_200911190480	Selenium Total ICAP/MS	ND	20	26.0	ug/L	117	(70-130)		
MS2_200911250203	Selenium Total ICAP/MS	ND	20	23.2	ug/L	116	(70-130)		
MSD_200911190480	Selenium Total ICAP/MS	ND	20	25.9	ug/L	116	(70-130)	20	0.86
MSD2_200911250203	Selenium Total ICAP/MS	ND	20	24.5	ug/L	122	(70-130)	20	5.0
LCS1	Silver Total ICAP/MS		50	49.8	ug/L	100	(85-115)		
LCS2	Silver Total ICAP/MS		50	48.8	ug/L	98	(85-115)	20	2.0

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Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

19/24

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Silver Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Silver Total ICAP/MS		0.5	0.430	ug/L	86	(50-150)		
MS_200911190480	Silver Total ICAP/MS	ND	50	38.6	ug/L	77	(70-130)		
MS2_200911250203	Silver Total ICAP/MS	ND	50	48.5	ug/L	97	(70-130)		
MSD_200911190480	Silver Total ICAP/MS	ND	50	36.0	ug/L	72	(70-130)	20	6.8
MSD2_200911250203	Silver Total ICAP/MS	ND	50	52.1	ug/L	104	(70-130)	20	7.0
LCS1	Thallium Total ICAP/MS		20	19.9	ug/L	100	(85-115)		
LCS2	Thallium Total ICAP/MS		20	19.5	ug/L	97	(85-115)	20	2.0
MBLK	Thallium Total ICAP/MS			<1	ug/L				
MRL_CHK	Thallium Total ICAP/MS		1.0	0.980	ug/L	98	(50-150)		
MS_200911190480	Thallium Total ICAP/MS	ND	20	19.7	ug/L	98	(70-130)		
MS2_200911250203	Thallium Total ICAP/MS	ND	20	19.5	ug/L	98	(70-130)		
MSD_200911190480	Thallium Total ICAP/MS	ND	20	19.5	ug/L	98	(70-130)	20	0.72
MSD2_200911250203	Thallium Total ICAP/MS	ND	20	21.0	ug/L	105	(70-130)	20	7.4
LCS1	Uranium ICAP/MS		20	20.3	ug/L	102	(85-115)		
LCS2	Uranium ICAP/MS		20	19.7	ug/L	99	(85-115)	20	3.0
MBLK	Uranium ICAP/MS			<1	ug/L				
MRL_CHK	Uranium ICAP/MS		1.0	1.05	ug/L	105	(50-150)		
MS_200911190480	Uranium ICAP/MS	15	20	34.2	ug/L	94	(70-130)		
MS2_200911250203	Uranium ICAP/MS	ND	20	20.3	ug/L	101	(70-130)		
MSD_200911190480	Uranium ICAP/MS	15	20	34.5	ug/L	96	(70-130)	20	1.5
MSD2_200911250203	Uranium ICAP/MS	ND	20	20.4	ug/L	102	(70-130)	20	0.99
LCS1	Vanadium Total ICAP/MS		100	99.3	ug/L	99	(85-115)		
LCS2	Vanadium Total ICAP/MS		100	97.0	ug/L	97	(85-115)	20	2.3
MBLK	Vanadium Total ICAP/MS			<3	ug/L				
MRL_CHK	Vanadium Total ICAP/MS		3.0	3.01	ug/L	100	(50-150)		
MS_200911190480	Vanadium Total ICAP/MS	11	100	115	ug/L	104	(70-130)		
MS2_200911250203	Vanadium Total ICAP/MS	ND	100	90.1	ug/L	90	(70-130)		
MSD_200911190480	Vanadium Total ICAP/MS	11	100	113	ug/L	103	(70-130)	20	0.97
MSD2_200911250203	Vanadium Total ICAP/MS	ND	100	96.4	ug/L	96	(70-130)	20	6.8
LCS1	Zinc Total ICAP/MS		100	97.0	ug/L	97	(85-115)		
LCS2	Zinc Total ICAP/MS		100	94.4	ug/L	94	(85-115)	20	2.7
MBLK	Zinc Total ICAP/MS			<20	ug/L				
MRL_CHK	Zinc Total ICAP/MS		20	19.5	ug/L	97	(50-150)		
MS_200911190480	Zinc Total ICAP/MS	ND	100	106	ug/L	97	(70-130)		
MS2_200911250203	Zinc Total ICAP/MS	ND	100	114	ug/L	113	(70-130)		
MSD_200911190480	Zinc Total ICAP/MS	ND	100	104	ug/L	95	(70-130)	20	2.1
MSD2_200911250203	Zinc Total ICAP/MS	ND	100	121	ug/L	121	(70-130)	20	6.8

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(S) Indicates surrogate compound.

20/24

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 533055 - Dissolved Organic Carbon by SM 5310C					Analysis Date: 11/30/2009				
LCS3	Dissolved Organic Carbon		5.0	4.86	mg/L	97	(90-110)		
LCS4	Dissolved Organic Carbon		5.0	4.95	mg/L	99	(90-110)	20	1.0
MBLK	Dissolved Organic Carbon			<0.3	mg/L				
MRL_CHK	Dissolved Organic Carbon		0.2	0.177	mg/L	88	(50-150)		
MS_200912020019	Dissolved Organic Carbon	8.6	4.0	15.9	mg/L	92	(80-120)		
MSD_200912020019	Dissolved Organic Carbon	8.6	4.0	16.0	mg/L	93	(80-120)	20	1.6
QC Ref# 533128 - Total Organic Carbon by SM5310C/E415.3					Analysis Date: 11/30/2009				
LCS3	Total Organic Carbon		5.0	4.86	mg/L	97	(90-110)		
LCS4	Total Organic Carbon		5.0	4.95	mg/L	99	(90-110)	20	1.0
MBLK	Total Organic Carbon			<0.3	mg/L				
MRL_CHK	Total Organic Carbon		0.2	0.177	mg/L	88	(50-150)		
MS_200911190693	Total Organic Carbon	8.6	4.0	15.9	mg/L	92	(80-120)		
MS2_200911210078	Total Organic Carbon		2.0	472	mg/L	<u>0</u>	(80-120)		
MSD_200911190693	Total Organic Carbon	8.6	4.0	16.0	mg/L	93	(80-120)	20	1.6
QC Ref# 533257 - Perchlorate with 0.5 ppb DL by EPA 314.0					Analysis Date: 11/30/2009				
DUP_200911210002	Perchlorate- 0.5 ppb	ND		ND	ug/L		(0-15)		
ICCS	Perchlorate- 0.5 ppb		1.0	0.985	ug/L	99	(85-115)		
LCS1	Perchlorate- 0.5 ppb		25	24.3	ug/L	97	(85-115)		
LCS2	Perchlorate- 0.5 ppb		25	24.4	ug/L	97	(85-115)	15	0.41
MBLK	Perchlorate- 0.5 ppb			<0.25	ug/L				
MRL_CHK	Perchlorate- 0.5 ppb		0.5	0.471	ug/L	94	(70-130)		
MRLHI	Perchlorate- 0.5 ppb		1.0	0.992	ug/L	99	(75-125)		
MS1_200911210002	Perchlorate- 0.5 ppb	ND	1.0	0.906	ug/L	91	(70-130)		
MSD1_200911210002	Perchlorate- 0.5 ppb	ND	1.0	0.893	ug/L	89	(70-130)	15	1.5
QC Ref# 533261 - ICP Metals by EPA 200.7					Analysis Date: 12/02/2009				
LCS1	Boron Total ICAP		0.5	0.469	mg/L	94	(85-115)		
LCS2	Boron Total ICAP		0.5	0.477	mg/L	95	(85-115)	20	1.7
MBLK	Boron Total ICAP			<0.05	mg/L				
MRL_CHK	Boron Total ICAP		0.05	0.0413	mg/L	83	(50-150)		
MS_200911270005	Boron Total ICAP	0.15	0.5	0.655	mg/L	100	(70-130)		
MS2_200911270006	Boron Total ICAP	0.16	0.5	0.674	mg/L	103	(70-130)		
MSD_200911270005	Boron Total ICAP	0.15	0.5	0.646	mg/L	99	(70-130)	20	1.5
MSD2_200911270006	Boron Total ICAP	0.16	0.5	0.670	mg/L	102	(70-130)	20	0.98
LCS1	Calcium Total ICAP		50	50.7	mg/L	101	(85-115)		

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(S) Indicates surrogate compound.

21/24

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Calcium Total ICAP		50	50.7	mg/L	101	(85-115)	20	0.0
MBLK	Calcium Total ICAP			<1	mg/L				
MRL_CHK	Calcium Total ICAP		1.0	1.04	mg/L	104	(50-150)		
MS_200911270005	Calcium Total ICAP	40	50	89.7	mg/L	99	(70-130)		
MS2_200911270006	Calcium Total ICAP	40	50	91.5	mg/L	104	(70-130)		
MSD_200911270005	Calcium Total ICAP	40	50	88.3	mg/L	96	(70-130)	20	2.8
MSD2_200911270006	Calcium Total ICAP	40	50	91.3	mg/L	103	(70-130)	20	0.97
LCS1	Iron Total ICAP		5.0	4.83	mg/L	97	(85-115)		
LCS2	Iron Total ICAP		5.0	4.88	mg/L	98	(85-115)	20	1.0
MBLK	Iron Total ICAP			<0.02	mg/L				
MRL_CHK	Iron Total ICAP		0.02	0.0131	mg/L	66	(50-150)		
MS_200911270005	Iron Total ICAP	ND	5.0	4.88	mg/L	98	(70-130)		
MS2_200911270006	Iron Total ICAP	ND	5.0	4.94	mg/L	99	(70-130)		
MSD_200911270005	Iron Total ICAP	ND	5.0	4.71	mg/L	94	(70-130)	20	3.5
MSD2_200911270006	Iron Total ICAP	ND	5.0	4.92	mg/L	98	(70-130)	20	0.41
LCS1	Magnesium Total ICAP		20	19.9	mg/L	99	(85-115)		
LCS2	Magnesium Total ICAP		20	20.0	mg/L	100	(85-115)	20	0.50
MBLK	Magnesium Total ICAP			<0.1	mg/L				
MRL_CHK	Magnesium Total ICAP		0.1	0.101	mg/L	101	(50-150)		
MS_200911270005	Magnesium Total ICAP	11	20	30.4	mg/L	97	(70-130)		
MS2_200911270006	Magnesium Total ICAP	9.9	20	30.6	mg/L	103	(70-130)		
MSD_200911270005	Magnesium Total ICAP	11	20	30.0	mg/L	95	(70-130)	20	2.1
MSD2_200911270006	Magnesium Total ICAP	9.9	20	30.1	mg/L	101	(70-130)	20	2.0
LCS1	Potassium Total ICAP		20	19.1	mg/L	96	(85-115)		
LCS2	Potassium Total ICAP		20	19.2	mg/L	96	(85-115)	20	0.52
MBLK	Potassium Total ICAP			<1	mg/L				
MRL_CHK	Potassium Total ICAP		1.0	0.995	mg/L	100	(50-150)		
MS_200911270005	Potassium Total ICAP	3.7	20	22.8	mg/L	95	(70-130)		
MS2_200911270006	Potassium Total ICAP	3.5	20	23.2	mg/L	98	(70-130)		
MSD_200911270005	Potassium Total ICAP	3.7	20	22.2	mg/L	92	(70-130)	20	3.1
MSD2_200911270006	Potassium Total ICAP	3.5	20	23.0	mg/L	97	(70-130)	20	1.0
LCS1	Sodium Total ICAP		50	49.1	mg/L	98	(85-115)		
LCS2	Sodium Total ICAP		50	49.3	mg/L	99	(85-115)	20	0.41
MBLK	Sodium Total ICAP			<1	mg/L				
MRL_CHK	Sodium Total ICAP		1.0	1.00	mg/L	100	(50-150)		
MS_200911270005	Sodium Total ICAP	48	50	94.8	mg/L	94	(70-130)		
MS2_200911270006	Sodium Total ICAP	46	50	96.0	mg/L	100	(70-130)		
MSD_200911270005	Sodium Total ICAP	48	50	93.4	mg/L	91	(70-130)	20	2.8

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

22/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 320075

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MSD2_200911270006	Sodium Total ICAP	46	50	95.2	mg/L	99	(70-130)	20	1.2

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

23/24

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

CDM-MA
GROUP# 320075
LAB# 200911240185

PREDOMINANT ALGAE:

Diatoma 17%
Navicula 16%
Synedra 13%
Achnanthes 11%

OTHER ALGAE:

Ankistrodesmus
Asterionella
Cryptomonas
Cymbella
Dinobryon
Gloeocystis
Gomphonema
Mallomonas
Micractinium
Pinnularia
Scenedesmus
Stauroneis
Stephanodiscus



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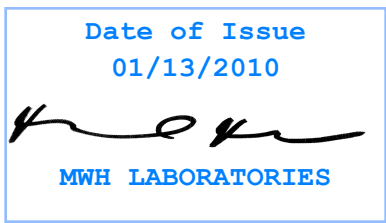
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Fax: 626 386 1101
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Laboratory Report

for

CDM
50 Hampshire Street
Cambridge, MA 02139-1548
Attention: Jamie Lefkowitz
Fax: 617-452-8566



TDF: Thomas.D.French
Project Manager



Report#: 322470
Project: MERRIMACK-RIVER
Group: DW Study

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

Acknowledgement of Samples Received
CDM

 50 Hampshire Street
 Cambridge, MA 02139-1548
 Attn: Jamie Lefkowitz
 Phone: 617-452-6591

 Customer Code: CDM-MA
 Group #: 322470
 Project #: MERRIMACK-RIVER
 Sample Group: DW Study
 Project Manager: Thomas.D.French
 Phone: (480) 778-1558

The following samples were received from you on **December 30, 2009**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample #	Sample Id	Sample Date
200912300069	AMOSKEAG	29-Dec-2009 1200
	@MTBE9 @SPMELOW Actinomycetes Algae Enumeration Algae Identification CLO41PPB Dissolved Organic Carbon Iron Total ICAP Manganese Total ICAP/MS PH (H3=past HT not compliant) Total Organic Carbon UV absorbance at 254 nm	
200912300070	MTBE - TRAVEL BLANK - HOLD	29-Dec-2009 0000
	@MTBE9 TB	

Test Description

- @MTBE9 -- Volatile Organics by GCMS
- @MTBE9 TB -- Volatile Organics by GCMS
- @SPMELOW -- Taste and Odor Cmpds Low Level



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CHAIN OF CUSTODY RECORD

322470

MWH LABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: JLW

SAMPLES LOGGED IN BY: JS

SAMPLE TEMP WHEN REC'D AT LAB: 30 (Compliance: 4 +/- 2°C)

SAMPLES REC'D DAY OF COLLECTION? (check for yes)

CONDITION OF BLUE ICE: FROZEN PARTIALLY FROZEN THAWED (check for yes)

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: CDM PROJECT CODE: UPPER MERRIMACK

COMPLIANCE SAMPLES NON-COMPLIANCE SAMPLES REGULATION INVOLVED: _____ (eg. SDWA, Phase V, NPDES, FDA,...)

MWH LABS CLIENT CODE: _____ COC ID: _____ SAMPLE GROUP: _____

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

SEE ATTACHED BOTTLE ORDER FOR ANALYSES (check for yes), OR list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

SAMPLER PRINTED NAME AND SIGNATURE: JLEFKOWITZ TAT requested: rush by adv notice only

STD ___ 1 wk ___ 3 day ___ 2 day ___ 1 day ___

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	Field Data	Field Data	ALGAE	AGAE-10	DOC	UV	PA	SAMPLER COMMENTS
<u>12-29-09</u>	<u>12:30</u>	<u>AMOSKEAG</u>										<u>12/30/09 10:06</u>

This portion can be removed for recipient's records.

Date: 12/29/09 FedEx Tracking Number: 869698503676

Under's name: Jamie Lefkowitz Phone: 603 801-7051

Company: CDM

Address: 50 Hampshire St Dept./Floor/Suite/Room: _____

City: Cambridge State: MA ZIP: 02139

Our Internal Billing Reference: _____

* MATRIX TYPES: RSW = Raw Surface Water CFW = Chlor(am)inated Finished Water SEAW = Sea Water BW = Bottled Water SO = Soil O = Other - Please Identify
 RGW = Raw Ground Water FW = Other Finished Water WW = Waste Water SW = Storm Water SL = Sludge

RELINQUISHED BY:	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	<u>Jamie Lefkowitz</u>	<u>JAMIE LEFKOWITZ</u>	<u>CDM</u>	<u>12/29/09</u>	<u>12:30 PM</u>
RECEIVED BY:		<u>M. Della</u>	<u>MWD</u>	<u>12-30-9</u>	<u>0955</u>
RELINQUISHED BY:					
RECEIVED BY:					

Thomas.D.French Your MWHL Project Manager

BO #: 10362
 Created By: TDF
 Order Date: 10/16/2009
 Bottle Orders

**Sampler: please return
 this paper with your samples**

Client Code CDM-MA
 Project Code MERRIMACK-RIVER Bottle Orders
 Group Name DW Study
 PO# / Job#

Group#
 Date Sampled
 12/29/2009
 Date Received

Ship Sample Kits to

CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

Send Report to

CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

Billing Address

CDM
 50 Hampshire Street
 Cambridge, MA 02139-1548

 Attn: Jamie Lefkowitz
 Phone: 617-452-6591
 Fax: 617-452-8566

Ship By:
 10/09/2009

# of Samples	Tests	Qteline#	Bottles - Qty for each sample, type & preservative if any	UN DOT #
1	@RTBE9		3 40ml amber glass vial 4drops 6N HCL (36%)	
1	@RTBE9 TB		2 40ml amber glass vial 4drops of 1:1 HCL + H2O	
1	@SPMELOW		4 40ml amber glass vial no preservative	
1	Actinomycetes		1 100ml poly sterilized 0.25ml thio (8%)	
1	Algae Enumeration, Algae Identification		1 500ml poly sterilized no preservative	
1	CLO41PPB		1 125ml poly CLO4 - no preservative	
1	Dissolved Organic Carbon, UV absorbance at 254 nm		1 125ml amber glass no preservative	
1	Iron Total ICAP, Manganese Total ICAP/MS		1 250ml acid rinsed 1ml HNO3 (18%)	
1	PH (H3=past HT not compliant)		1 125ml poly no preservative	
1	Total Organic Carbon		1 125ml amber glass 0.5ml H2SO4 (50%)	

Comments

Include COC, sampling/packing, blue ice. Client is responsible for return shipment to MWH Laboratories, 750 Royal Oaks Drive, Monrovia, CA 91016. (626) 386 1100.



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CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

**Laboratory Comments
Report: #322470**

Flags Legend:

- L4 - The associated blank spike recovery was below method acceptance limits.
- Q2 - Sample received with head space.



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Laboratory
Hits Report: 322470

CDM
Jamie Lefkowitz
50 Hampshire Street
Cambridge, MA 02139-1548

Samples Received on:
12/30/2009

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	200912300069	<u>AMOSKEAG</u>				
01/06/2010	16:20 Actinomycetes		3.0		CFU/ml	
01/06/2010	10:55 Algae Enumeration		97		#/ml	1
01/06/2010	10:55 Algae Identification		See Comments		Not Appl.	
12/30/2009	21:16 Dissolved Organic Carbon		3.5		mg/L	1.5
12/30/2009	12:34 Dissolved UV Abs. at 254 nm		0.14		cm -1	0.009
01/04/2010	16:00 Geosmin		2.5		ng/L	1
01/06/2010	13:30 Iron Total ICAP		0.46	0.3	mg/L	0.02
01/11/2010	14:10 Manganese Total ICAP/MS		45	50	ug/L	2
12/30/2009	14:57 PH (H3=past HT not compliant)		6.9		Units	0.1
12/30/2009	21:41 Total Organic Carbon		3.7		mg/L	1.5



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Laboratory Data
 Report: 322470

CDM

Jamie Lefkowitz
 50 Hampshire Street
 Cambridge, MA 02139-1548

Samples Received on:
 12/30/2009

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
AMOSKEAG (200912300069)						Sampled on 12/29/2009 1200		
			EPA 200.8 - ICPMS Metals					
	01/11/2010	14:10 537534	(EPA 200.8)	Manganese Total ICAP/MS	45	ug/L	2	1
			EPA 200.7 - ICP Metals					
	01/06/2010	13:30 536904	(EPA 200.7)	Iron Total ICAP	0.46	mg/L	0.02	1
			SM 10900 - Algae Identification					
	01/06/2010	10:55 536923	(SM 10900)	Algae Identification	See Comments	Not Appl.		1
			SM 10200F - Algae Enumeration					
	01/06/2010	10:55 536922	(SM 10200F)	Algae Enumeration	97	#/ml	1	1
12/30/2009	01/06/2010	16:20 537308	(SM 9250B)	Actinomycetes	3.0	CFU/ml		1
			SM5310C/E415.3 - Total Organic Carbon					
	12/30/2009	21:41 536373	(SM5310C/E415.3)	Total Organic Carbon	3.7	mg/L	1.5	5
			SM 5310C - Dissolved Organic Carbon					
12/30/2009	12/30/2009	21:16 536528	(SM 5310C)	Dissolved Organic Carbon	3.5	mg/L	1.5	5
			SM 5910 - Dissolved UV Abs. at 254 nm					
	12/30/2009	12:34 536525	(SM 5910)	Dissolved UV Abs. at 254 nm	0.14	cm -1	0.009	1
			SM 6040D - Taste and Odor Cmpds Low Level					
1/4/2010	01/04/2010	16:00 536815	(SM 6040D)	Geosmin	2.5	ng/L	1	1
1/4/2010	01/04/2010	16:00 536815	(SM 6040D)	Methylisoborneol	ND (L4)	ng/L	1	1
1/4/2010	01/04/2010	16:00 536815	(SM 6040D)	Isobutyl methoxypyrazine	95	%		1
1/4/2010	01/04/2010	16:00 536815	(SM 6040D)	Isopropyl methoxypyrazine	102	%		1
			EPA 314.0 - Perchlorate with 0.5 ppb DL					
	01/05/2010	07:48 536850	(EPA 314.0)	Perchlorate	ND	ug/L	0.5	1
			EPA 524.2 - Volatile Organics by GCMS					
12/30/2009	12/30/2009	23:42 536745	(EPA 524.2)	Methyl Tert-butyl ether (MTBE)	ND (Q2)	ug/L	0.5	1
12/30/2009	12/30/2009	23:42 536745	(EPA 524.2)	1,2-Dichloroethane-d4	97 (Q2)	%		1
			SM4500-HB - PH (H3=past HT not compliant)					
	12/30/2009	14:57 536486	(SM4500-HB)	PH (H3=past HT not compliant)	6.9	Units	0.1	1
MTBE - TRAVEL BLANK - HOLD (200912300070)						Sampled on 12/29/2009 0000		
			EPA 524.2 - Volatile Organics by GCMS					
12/30/2009	12/31/2009	00:09 536745	(EPA 524.2)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5	1
12/30/2009	12/31/2009	00:09 536745	(EPA 524.2)	1,2-Dichloroethane-d4	100	%		1



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Laboratory
QC Summary: 322470

CDM

QC Ref # 536373 - Total Organic Carbon

200912300069 AMOSKEAG

Analysis Date: 12/30/2009

Analyzed by: KXS

QC Ref # 536486 - PH (H3=past HT not compliant)

200912300069 AMOSKEAG

Analysis Date: 12/30/2009

Analyzed by: SAR

QC Ref # 536525 - Dissolved UV Abs. at 254 nm

200912300069 AMOSKEAG

Analysis Date: 12/30/2009

Analyzed by: KXS

QC Ref # 536528 - Dissolved Organic Carbon

200912300069 AMOSKEAG

Analysis Date: 12/30/2009

Analyzed by: KXS

QC Ref # 536745 - Volatile Organics by GCMS

200912300069 AMOSKEAG
200912300070 MTBE - TRAVEL BLANK - HOLD

Analysis Date: 12/30/2009

Analyzed by: MCB

Analyzed by: MCB

QC Ref # 536815 - Taste and Odor Cmpds Low Level

200912300069 AMOSKEAG

Analysis Date: 01/04/2010

Analyzed by: KAM

QC Ref # 536850 - Perchlorate with 0.5 ppb DL

200912300069 AMOSKEAG

Analysis Date: 01/05/2010

Analyzed by: MCE

QC Ref # 536904 - ICP Metals

200912300069 AMOSKEAG

Analysis Date: 01/06/2010

Analyzed by: VXT

QC Ref # 536922 - Algae Enumeration

200912300069 AMOSKEAG

Analysis Date: 01/06/2010

Analyzed by: NWM

QC Ref # 536923 - Algae Identification

200912300069 AMOSKEAG

Analysis Date: 01/06/2010

Analyzed by: NWM

QC Ref # 537308 - Actinomycetes

200912300069 AMOSKEAG

Analysis Date: 01/06/2010

Analyzed by: PAB

QC Ref # 537534 - ICPMS Metals

200912300069 AMOSKEAG

Analysis Date: 01/11/2010

Analyzed by: NINA



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Laboratory
QC Report: 322470

CDM

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 536373 - Total Organic Carbon by SM5310C/E415.3					Analysis Date: 12/30/2009				
LCS3	Total Organic Carbon		5.0	4.87	mg/L	97	(90-110)		
LCS4	Total Organic Carbon		5.0	4.96	mg/L	99	(90-110)	20	0.60
MBLK	Total Organic Carbon			<0.3	mg/L				
MRL_CHK	Total Organic Carbon		0.2	0.153	mg/L	76	(50-150)		
MS_200912290363	Total Organic Carbon	2.4	4.0	5.72	mg/L	83	(80-120)		
MS2_200912290197	Total Organic Carbon	ND	2.0	1.96	mg/L	94	(80-120)		
MSD_200912290363	Total Organic Carbon	2.4	4.0	5.72	mg/L	83	(80-120)	20	0.0
QC Ref# 536486 - PH (H3=past HT not compliant) by SM4500-HB					Analysis Date: 12/30/2009				
DUP1_200912280286	PH (H3=past HT not compliant)	8.1		8.1	Units		(0-20)	20	0.25
DUP2_200912300069	PH (H3=past HT not compliant)	6.9		6.93	Units		(0-20)	20	0.14
LCS1	PH (H3=past HT not compliant)		6.0	6.02	Units	100	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	6.07	Units	101	(98-102)	20	0.83
QC Ref# 536525 - Dissolved UV Abs. at 254 nm by SM 5910					Analysis Date: 12/30/2009				
DUP1_200912300069	UV absorbance at 254 nm	0.14		0.140	cm -1		(0-15)	15	0.0
LCS1	UV absorbance at 254 nm		0.37	0.332	cm -1	90	(83-121)		
MBLK	UV absorbance at 254 nm			<0.004	cm -1				
MRL_CHK	UV absorbance at 254 nm		0.009	0.00800	cm -1	89	(85-115)		
QC Ref# 536528 - Dissolved Organic Carbon by SM 5310C					Analysis Date: 12/30/2009				
LCS3	Dissolved Organic Carbon		5.0	4.87	mg/L	97	(90-110)		
LCS4	Dissolved Organic Carbon		5.0	4.96	mg/L	99	(90-110)	20	0.60
MBLK	Dissolved Organic Carbon			<0.3	mg/L				
MRL_CHK	Dissolved Organic Carbon		0.2	0.153	mg/L	76	(50-150)		
MS_201001040001	Dissolved Organic Carbon	2.4	4.0	5.72	mg/L	83	(80-120)		
MSD_201001040001	Dissolved Organic Carbon	2.4	4.0	5.72	mg/L	83	(80-120)	20	0.0
QC Ref# 536745 - Volatile Organics by GCMS by EPA 524.2					Analysis Date: 12/30/2009				
LCS1	1,2-Dichloroethane-d4 (S)			96.0	%	96	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			97.2	%	97	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
LCS1	4-Bromofluorobenzene (S)			98.2	%	98	(70-130)		
LCS2	4-Bromofluorobenzene (S)			101	%	101	(70-130)		
MBLK	4-Bromofluorobenzene (S)			91.8	%	92	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			95.0	%	95	(70-130)		
LCS1	Methyl Tert-butyl ether (MTBE)		5.0	4.84	ug/L	97	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		5.0	4.95	ug/L	99	(70-130)	20	2.3

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

9/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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Laboratory
QC Report: 322470

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.490	ug/L	98	(50-150)		
LCS1	Tetrachloroethylene (PCE)		5.0	4.92	ug/L	98	(70-130)		
LCS2	Tetrachloroethylene (PCE)		5.0	4.88	ug/L	98	(70-130)	20	0.82
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.550	ug/L	110	(50-150)		
LCS1	Toluene-d8 (S)			99.8	%	100	(70-130)		
LCS2	Toluene-d8 (S)			100	%	100	(70-130)		
MBLK	Toluene-d8 (S)			97.6	%	98	(70-130)		
MRL_CHK	Toluene-d8 (S)			101	%	101	(70-130)		
LCS1	Trichloroethylene (TCE)		5.0	5.19	ug/L	104	(70-130)		
LCS2	Trichloroethylene (TCE)		5.0	4.96	ug/L	99	(70-130)	20	4.5
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.530	ug/L	106	(50-150)		

QC Ref# 536815 - Taste and Odor Cmpds Low Level by SM 6040D

Analysis Date: 01/04/2010

LCS1	Geosmin		10	8.59	ng/L	86	(75-125)		
LCS2	Geosmin		10	9.75	ng/L	98	(75-125)	20	13
MBLK	Geosmin			<1	ng/L				
MRLLW	Geosmin			1.0	1.11	ng/L	111	(50-150)	
MS_200912300069	Geosmin	2.5	10	11.4	ng/L	88	(70-130)		
MSD_200912300069	Geosmin	2.5	10	11.6	ng/L	91	(70-130)	20	2.7
LCS1	Isobutyl methoxypyrazine (I)			115	%	115	(50-150)		
LCS2	Isobutyl methoxypyrazine (I)			109	%	109	(50-150)		
MBLK	Isobutyl methoxypyrazine (I)			81.0	%	81	(50-150)		
MRLLW	Isobutyl methoxypyrazine (I)			100	%	100	(50-150)		
MS_200912300069	Isobutyl methoxypyrazine (I)			102	%	102	(50-150)		
MSD_200912300069	Isobutyl methoxypyrazine (I)			104	%	104	(50-150)		
LCS1	Isopropyl methoxy pyrazine (S)			102	%	102	(70-130)		
LCS2	Isopropyl methoxy pyrazine (S)			94.7	%	95	(70-130)		
MBLK	Isopropyl methoxy pyrazine (S)			88.9	%	89	(70-130)		
MRLLW	Isopropyl methoxy pyrazine (S)			87.7	%	88	(70-130)		
MS_200912300069	Isopropyl methoxy pyrazine (S)			101	%	101	(70-130)		
MSD_200912300069	Isopropyl methoxy pyrazine (S)			128	%	128	(70-130)		
LCS1	Methylisoborneol		10	9.45	ng/L	95	(75-125)		
LCS2	Methylisoborneol		10	6.98	ng/L	<u>70</u>	(75-125)	20	<u>30</u>
MBLK	Methylisoborneol			<1	ng/L				
MRLLW	Methylisoborneol		1.0	0.857	ng/L	86	(50-150)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

10/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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QC Report: 322470

CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_200912300069	Methylisoborneol	ND	10	9.45	ng/L	95	(70-130)		
MSD_200912300069	Methylisoborneol	ND	10	9.04	ng/L	90	(70-130)	20	4.4
QC Ref# 536850 - Perchlorate with 0.5 ppb DL by EPA 314.0					Analysis Date: 01/04/2010				
ICCS	Perchlorate- 0.5 ppb		1.0	0.880	ug/L	88	(85-115)		
LCS1	Perchlorate- 0.5 ppb		25	23.5	ug/L	94	(85-115)		
LCS2	Perchlorate- 0.5 ppb		25	23.8	ug/L	95	(85-115)	15	1.3
MBLK	Perchlorate- 0.5 ppb			<0.25	ug/L				
MRL_CHK	Perchlorate- 0.5 ppb		0.5	0.385	ug/L	77	(70-130)		
MRLHI	Perchlorate- 0.5 ppb		1.0	0.964	ug/L	96	(75-125)		
MS1_200912290200	Perchlorate- 0.5 ppb	2.6	1.0	3.32	ug/L	77	(70-130)		
MSD1_200912290200	Perchlorate- 0.5 ppb	2.6	1.0	3.66	ug/L	111	(70-130)	15	<u>36</u>
QC Ref# 536904 - ICP Metals by EPA 200.7					Analysis Date: 01/06/2010				
LCS1	Boron Total ICAP		0.5	0.502	mg/L	100	(85-115)		
LCS2	Boron Total ICAP		0.5	0.505	mg/L	101	(85-115)	20	0.60
MBLK	Boron Total ICAP			<0.05	mg/L				
MRL_CHK	Boron Total ICAP		0.05	0.0642	mg/L	128	(50-150)		
MS_200912310097	Boron Total ICAP	0.82	0.5	1.37	mg/L	111	(70-130)		
MS2_200912310102	Boron Total ICAP	1.1	0.5	1.56	mg/L	95	(70-130)		
MSD_200912310097	Boron Total ICAP	0.82	0.5	1.35	mg/L	106	(70-130)	20	4.6
MSD2_200912310102	Boron Total ICAP	1.1	0.5	1.57	mg/L	97	(70-130)	20	2.8
LCS1	Calcium Total ICAP		50	52.8	mg/L	106	(85-115)		
LCS2	Calcium Total ICAP		50	50.3	mg/L	101	(85-115)	20	4.8
MBLK	Calcium Total ICAP			<1	mg/L				
MRL_CHK	Calcium Total ICAP		1.0	1.08	mg/L	108	(50-150)		
MS_200912310097	Calcium Total ICAP	170	50	228	mg/L	116	(70-130)		
MS2_200912310102	Calcium Total ICAP	140	50	179	mg/L	88	(70-130)		
MSD_200912310097	Calcium Total ICAP	170	50	226	mg/L	111	(70-130)	20	4.4
MSD2_200912310102	Calcium Total ICAP	140	50	181	mg/L	92	(70-130)	20	4.3
LCS1	Iron Total ICAP		5.0	5.19	mg/L	104	(85-115)		
LCS2	Iron Total ICAP		5.0	4.96	mg/L	99	(85-115)	20	4.5
MBLK	Iron Total ICAP			<0.02	mg/L				
MRL_CHK	Iron Total ICAP		0.02	0.0283	mg/L	142	(50-150)		
MS_200912310097	Iron Total ICAP	0.15	5.0	4.91	mg/L	95	(70-130)		
MS2_200912310102	Iron Total ICAP	0.040	5.0	5.03	mg/L	100	(70-130)		
MSD_200912310097	Iron Total ICAP	0.15	5.0	4.99	mg/L	97	(70-130)	20	1.7
MSD2_200912310102	Iron Total ICAP	0.040	5.0	4.99	mg/L	99	(70-130)	20	0.91

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

11/16

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RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Magnesium Total ICAP		20	21.0	mg/L	105	(85-115)		
LCS2	Magnesium Total ICAP		20	19.9	mg/L	100	(85-115)	20	5.4
MBLK	Magnesium Total ICAP			<0.1	mg/L				
MRL_CHK	Magnesium Total ICAP		0.1	0.110	mg/L	110	(50-150)		
MS_200912310097	Magnesium Total ICAP		20	218	mg/L	<u>134</u>	(70-130)		
MS_200912310102	Magnesium Total ICAP	170	20	189	mg/L	75	(70-130)		
MS2_200912310102	Magnesium Total ICAP		20	181	mg/L	<u>904</u>	(70-130)		
MSD_200912310097	Magnesium Total ICAP		20	216	mg/L	125	(70-130)	20	7.0
MSD_200912310102	Magnesium Total ICAP	170	20	186	mg/L	<u>60</u>	(70-130)	20	<u>22</u>
MSD2_200912310102	Magnesium Total ICAP		20	184	mg/L	<u>919</u>	(70-130)	20	1.6
LCS1	Potassium Total ICAP		20	20.2	mg/L	101	(85-115)		
LCS2	Potassium Total ICAP		20	19.1	mg/L	96	(85-115)	20	5.6
MBLK	Potassium Total ICAP			<1	mg/L				
MRL_CHK	Potassium Total ICAP		1.0	1.03	mg/L	103	(50-150)		
MS_200912310097	Potassium Total ICAP	27	20	49.0	mg/L	108	(70-130)		
MS2_200912310102	Potassium Total ICAP	30	20	49.8	mg/L	98	(70-130)		
MSD_200912310097	Potassium Total ICAP	27	20	50.1	mg/L	113	(70-130)	20	4.5
MSD2_200912310102	Potassium Total ICAP	30	20	50.6	mg/L	102	(70-130)	20	4.1
LCS1	Sodium Total ICAP		50	52.1	mg/L	104	(85-115)		
LCS2	Sodium Total ICAP		50	49.6	mg/L	99	(85-115)	20	4.9
MBLK	Sodium Total ICAP			<1	mg/L				
MRL_CHK	Sodium Total ICAP		1.0	1.1	mg/L	110	(50-150)		
MS_200912310097	Sodium Total ICAP		50	1320	mg/L	<u>171</u>	(70-130)		
MS2_200912310102	Sodium Total ICAP		50	1130	mg/L	<u>27</u>	(70-130)		
MSD_200912310097	Sodium Total ICAP		50	1330	mg/L	<u>186</u>	(70-130)	20	8.4
MSD2_200912310102	Sodium Total ICAP		50	1140	mg/L	<u>65</u>	(70-130)	20	<u>84</u>

QC Ref# 537534 - ICPMS Metals by EPA 200.8

Analysis Date: 01/11/2010

LCS1	Antimony Total ICAP/MS		50	50.0	ug/L	100	(85-115)		
LCS2	Antimony Total ICAP/MS		50	51.1	ug/L	102	(85-115)	20	2.2
MBLK	Antimony Total ICAP/MS			<1	ug/L				
MRL_CHK	Antimony Total ICAP/MS		1.0	1.1	ug/L	110	(50-150)		
MS_200912310132	Antimony Total ICAP/MS	1.010121	50	50.6	ug/L	99	(70-130)		
MS2_200912300047	Antimony Total ICAP/MS	ND	50	50.8	ug/L	101	(70-130)		
MSD_200912310132	Antimony Total ICAP/MS	1.010121	50	49.9	ug/L	98	(70-130)	20	1.4
MSD2_200912300047	Antimony Total ICAP/MS	ND	50	50.8	ug/L	101	(70-130)	20	0.0
LCS1	Arsenic Total ICAP/MS		20	20.4	ug/L	102	(85-115)		
LCS2	Arsenic Total ICAP/MS		20	20.6	ug/L	103	(85-115)	20	0.98

Spike recovery is already corrected for native results.

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are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

12/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Arsenic Total ICAP/MS			<1	ug/L				
MRL_CHK	Arsenic Total ICAP/MS		1.0	1.27	ug/L	127	(50-150)		
MS_200912310132	Arsenic Total ICAP/MS	4.454067	20	25.0	ug/L	103	(70-130)		
MS2_200912300047	Arsenic Total ICAP/MS	ND	20	21.7	ug/L	105	(70-130)		
MSD_200912310132	Arsenic Total ICAP/MS	4.454067	20	24.7	ug/L	101	(70-130)	20	2.0
MSD2_200912300047	Arsenic Total ICAP/MS	ND	20	21.7	ug/L	105	(70-130)	20	0.0
LCS1	Beryllium Total ICAP/MS		5.0	4.97	ug/L	99	(85-115)		
LCS2	Beryllium Total ICAP/MS		5.0	4.94	ug/L	99	(85-115)	20	0.61
MBLK	Beryllium Total ICAP/MS			<1	ug/L				
MRL_CHK	Beryllium Total ICAP/MS		1.0	0.992	ug/L	99	(50-150)		
MS_200912310132	Beryllium Total ICAP/MS	ND	5.0	4.31	ug/L	86	(70-130)		
MS2_200912300047	Beryllium Total ICAP/MS	ND	5.0	5.3	ug/L	106	(70-130)		
MSD_200912310132	Beryllium Total ICAP/MS	ND	5.0	4.26	ug/L	85	(70-130)	20	1.1
MSD2_200912300047	Beryllium Total ICAP/MS	ND	5.0	5.48	ug/L	109	(70-130)	20	2.8
LCS1	Cadmium Total ICAP/MS		20	21.7	ug/L	109	(85-115)		
LCS2	Cadmium Total ICAP/MS		20	21.9	ug/L	109	(85-115)	20	0.92
MBLK	Cadmium Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Cadmium Total ICAP/MS		0.5	0.563	ug/L	113	(50-150)		
MS_200912310132	Cadmium Total ICAP/MS	ND	20	19.9	ug/L	99	(70-130)		
MS2_200912300047	Cadmium Total ICAP/MS	ND	20	22.2	ug/L	111	(70-130)		
MSD_200912310132	Cadmium Total ICAP/MS	ND	20	19.2	ug/L	96	(70-130)	20	3.5
MSD2_200912300047	Cadmium Total ICAP/MS	ND	20	22.1	ug/L	111	(70-130)	20	0.0
LCS1	Chromium Total ICAP/MS		100	101	ug/L	101	(85-115)		
LCS2	Chromium Total ICAP/MS		100	101	ug/L	101	(85-115)	20	0.0
MBLK	Chromium Total ICAP/MS			<1	ug/L				
MRL_CHK	Chromium Total ICAP/MS		1.0	1.23	ug/L	123	(50-150)		
MS_200912310132	Chromium Total ICAP/MS	ND	100	107	ug/L	106	(70-130)		
MS2_200912300047	Chromium Total ICAP/MS	ND	100	108	ug/L	107	(70-130)		
MSD_200912310132	Chromium Total ICAP/MS	ND	100	105	ug/L	104	(70-130)	20	1.9
MSD2_200912300047	Chromium Total ICAP/MS	ND	100	107	ug/L	107	(70-130)	20	0.0
LCS1	Copper Total ICAP/MS		100	99.8	ug/L	100	(85-115)		
LCS2	Copper Total ICAP/MS		100	100	ug/L	100	(85-115)	20	0.20
MBLK	Copper Total ICAP/MS			<2	ug/L				
MRL_CHK	Copper Total ICAP/MS		2.0	2.07	ug/L	104	(50-150)		
MS_200912310132	Copper Total ICAP/MS	3.2	100	94.3	ug/L	91	(70-130)		
MS2_200912300047	Copper Total ICAP/MS	ND	100	102	ug/L	102	(70-130)		
MSD_200912310132	Copper Total ICAP/MS	3.2	100	91.7	ug/L	89	(70-130)	20	3.0
MSD2_200912300047	Copper Total ICAP/MS	ND	100	101	ug/L	101	(70-130)	20	0.99

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(S) Indicates surrogate compound.

13/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Lead Total ICAP/MS		20	20.5	ug/L	103	(85-115)		
LCS2	Lead Total ICAP/MS		20	20.6	ug/L	103	(85-115)	20	0.49
MBLK	Lead Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Lead Total ICAP/MS		0.5	0.531	ug/L	106	(50-150)		
MS_200912310132	Lead Total ICAP/MS	ND	20	22.4	ug/L	111	(70-130)		
MS2_200912300047	Lead Total ICAP/MS	ND	20	21.7	ug/L	108	(70-130)		
MSD_200912310132	Lead Total ICAP/MS	ND	20	21.9	ug/L	109	(70-130)	20	1.8
MSD2_200912300047	Lead Total ICAP/MS	ND	20	21.6	ug/L	107	(70-130)	20	0.93
LCS1	Manganese Total ICAP/MS		50	50.0	ug/L	100	(85-115)		
LCS2	Manganese Total ICAP/MS		50	50.2	ug/L	100	(85-115)	20	0.40
MBLK	Manganese Total ICAP/MS			<2	ug/L				
MRL_CHK	Manganese Total ICAP/MS		2.0	2.09	ug/L	105	(50-150)		
MS_200912310132	Manganese Total ICAP/MS	ND	50	54.3	ug/L	106	(70-130)		
MS2_200912300047	Manganese Total ICAP/MS	3.8	50	56.9	ug/L	106	(70-130)		
MSD_200912310132	Manganese Total ICAP/MS	ND	50	52.9	ug/L	103	(70-130)	20	2.9
MSD2_200912300047	Manganese Total ICAP/MS	3.8	50	56.2	ug/L	105	(70-130)	20	0.95
LCS1	Molybdenum Total ICAP/MS		100	98.2	ug/L	98	(85-115)		
LCS2	Molybdenum Total ICAP/MS		100	99.8	ug/L	100	(85-115)	20	1.6
MBLK	Molybdenum Total ICAP/MS			<2	ug/L				
MRL_CHK	Molybdenum Total ICAP/MS		2.0	2.05	ug/L	102	(50-150)		
MS_200912310132	Molybdenum Total ICAP/MS	3.20408E	100	117	ug/L	114	(70-130)		
MS2_200912300047	Molybdenum Total ICAP/MS	ND	100	107	ug/L	107	(70-130)		
MSD_200912310132	Molybdenum Total ICAP/MS	3.20408E	100	114	ug/L	111	(70-130)	20	2.7
MSD2_200912300047	Molybdenum Total ICAP/MS	ND	100	106	ug/L	106	(70-130)	20	0.94
LCS1	Nickel Total ICAP/MS		50	51.0	ug/L	102	(85-115)		
LCS2	Nickel Total ICAP/MS		50	50.5	ug/L	101	(85-115)	20	0.99
MBLK	Nickel Total ICAP/MS			<5	ug/L				
MRL_CHK	Nickel Total ICAP/MS		5.0	5.17	ug/L	103	(50-150)		
MS_200912310132	Nickel Total ICAP/MS	6.232657	50	54.5	ug/L	97	(70-130)		
MS2_200912300047	Nickel Total ICAP/MS	ND	50	54.1	ug/L	105	(70-130)		
MSD_200912310132	Nickel Total ICAP/MS	6.232657	50	52.6	ug/L	93	(70-130)	20	3.9
MSD2_200912300047	Nickel Total ICAP/MS	ND	50	53.6	ug/L	104	(70-130)	20	0.96
LCS1	Selenium Total ICAP/MS		20	22.2	ug/L	111	(85-115)		
LCS2	Selenium Total ICAP/MS		20	22.0	ug/L	110	(85-115)	20	0.91
MBLK	Selenium Total ICAP/MS			<5	ug/L				
MRL_CHK	Selenium Total ICAP/MS		5.0	5.7	ug/L	114	(50-150)		
MS_200912310132	Selenium Total ICAP/MS	22.8548E	20	44.0	ug/L	106	(70-130)		
MS2_200912300047	Selenium Total ICAP/MS	ND	20	23.1	ug/L	114	(70-130)		

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

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are advisory only, unless otherwise specified in the method.

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14/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



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CDM, Inc.
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MSD_200912310132	Selenium Total ICAP/MS	22.85485	20	42.3	ug/L	97	(70-130)	20	8.6
MSD2_200912300047	Selenium Total ICAP/MS	ND	20	23.1	ug/L	114	(70-130)	20	0.0
LCS1	Silver Total ICAP/MS		50	52.6	ug/L	105	(85-115)		
LCS2	Silver Total ICAP/MS		50	52.9	ug/L	106	(85-115)	20	0.57
MBLK	Silver Total ICAP/MS			<0.5	ug/L				
MRL_CHK	Silver Total ICAP/MS		0.5	0.545	ug/L	109	(50-150)		
MS_200912310132	Silver Total ICAP/MS	ND	50	46.2	ug/L	92	(70-130)		
MS2_200912300047	Silver Total ICAP/MS	ND	50	52.5	ug/L	105	(70-130)		
MSD_200912310132	Silver Total ICAP/MS	ND	50	45.0	ug/L	90	(70-130)	20	2.4
MSD2_200912300047	Silver Total ICAP/MS	ND	50	52.1	ug/L	104	(70-130)	20	0.96
LCS1	Thallium Total ICAP/MS		20	20.2	ug/L	101	(85-115)		
LCS2	Thallium Total ICAP/MS		20	20.4	ug/L	102	(85-115)	20	0.99
MBLK	Thallium Total ICAP/MS			<1	ug/L				
MRL_CHK	Thallium Total ICAP/MS		1.0	1.08	ug/L	108	(50-150)		
MS_200912310132	Thallium Total ICAP/MS	ND	20	22.9	ug/L	114	(70-130)		
MS2_200912300047	Thallium Total ICAP/MS	ND	20	22.0	ug/L	110	(70-130)		
MSD_200912310132	Thallium Total ICAP/MS	ND	20	22.6	ug/L	112	(70-130)	20	1.8
MSD2_200912300047	Thallium Total ICAP/MS	ND	20	21.8	ug/L	109	(70-130)	20	0.91
LCS1	Zinc Total ICAP/MS		100	104	ug/L	104	(85-115)		
LCS2	Zinc Total ICAP/MS		100	106	ug/L	106	(85-115)	20	1.9
MBLK	Zinc Total ICAP/MS			<20	ug/L				
MRL_CHK	Zinc Total ICAP/MS		20	22.4	ug/L	112	(50-150)		
MS_200912310132	Zinc Total ICAP/MS	ND	100	95.4	ug/L	90	(70-130)		
MS2_200912300047	Zinc Total ICAP/MS	ND	100	110	ug/L	108	(70-130)		
MSD_200912310132	Zinc Total ICAP/MS	ND	100	92.6	ug/L	87	(70-130)	20	3.2
MSD2_200912300047	Zinc Total ICAP/MS	ND	100	112	ug/L	111	(70-130)	20	2.7

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates

are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

15/16

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

CDM

Group # 322470

Lab# 200912300069

PPREDOMINANT ALGAE:

Navicula 13%

Closteriopsis 11%

Synedra 11%

Unidentified Flagellates 11%

OTHER ALAGE:

Achnanthes

Asterionella

Ceratium

Cocconeis

Crucigenia

Cymbella

Diatoma

Dinobryon

Fragilaria

Glenodinium

Gomphonema

Mallomonas

Melosira

Oscillatoria

Planktosphaeria

Scenedesmus

Stauroneis

Stephanodiscus

Phormidium