

## Appendix I

### Quality Assurance and Quality Control Information

Proj. No.	Project Name				Analyses	Remarks	Sample Condition Upon Receipt
API-S2	Gulf of Mexico Synthetic Based Muds Monitoring Program				Methyl-Hg		
Samplers (Signatures) <i>John H. Trefry</i>							
Station I.D.	Sample I.D.	Date	Time	Preservation			
MP288	NF1 0-2	5/9/02		FROZEN	✓		BOX 1
	NF1 2-4				✓		
	NF1 4-6				✓		
	NF1 6-8				✓		
	NF1 8-10				✓		
	NF2				✓		
	NF3				✓		
	NF4				✓		
	NF5				✓		
	NF6				✓		
	MF1				✓		
	MF2				✓		
	MF3				✓		
	MF4	5/8/02			✓		
	MF5	"			✓		
Relinquished by (Signature) <i>[Signature]</i>		Date	Received by (Signature)		Shipped to:		
		5/16/02	<i>[Signature]</i>		Lucas Hawkins Tel: 206-622-6960		
			<i>[Signature]</i>		Frontier Geosciences Fax: 206-622-6870		
			<i>[Signature]</i>		414 Pontius Ave North		
			<i>[Signature]</i>		Seattle, WA 98109		
Relinquished by (Signature)		Date	Received for Laboratory by (Signature)		Date / Time	Carrier:	
					5/16/02 11:00	FEDEX: 833908645399	
					VSR: 10:30	Cooler Temp -18.7	

Proj. No.	Project Name				Analyses	Remarks	Sample Condition Upon Receipt
API-S2	Gulf of Mexico Synthetic Based Muds Monitoring Program				Methyl-Hg		
Samplers (Signatures) <i>John H. Trefry</i>							
Station I.D.	Sample I.D.	Date	Time	Preservation			
MP288	MF6	5/9/02		FROZEN	✓		BOX 1
	FF1 0-2	5/8/02			✓		
	FF1 2-4				✓		
	FF1 4-6				✓		
	FF1 6-8				✓		
	FF1 8-10				✓		
	FF2				✓		
	FF3				✓		
	FF4				✓		
	FF5				✓		BOX 2
	FF6	5/13/02			✓		
	DISC1 0-2	5/9/02			✓		
	DISC1 2-4				✓		
	DISC1 4-6				✓		
	DISC1 6-8				✓		
Relinquished by (Signature) <i>[Signature]</i>		Date	Received by (Signature)		Shipped to:		
		5/16/02	<i>[Signature]</i>		Lucas Hawkins Tel: 206-622-6960		
			<i>[Signature]</i>		Frontier Geosciences Fax: 206-622-6870		
			<i>[Signature]</i>		414 Pontius Ave North		
			<i>[Signature]</i>		Seattle, WA 98109		
Relinquished by (Signature)		Date	Received for Laboratory by (Signature)		Date / Time	Carrier:	
					5/17/02 11:00	FEDEX: 833908645399	
					VSR: 10:30	Cooler Temp -18.7	

**Chain of Custody Record**

Florida Institute of Technology  
Marine & Environmental Chemistry Lab  
150 W. University Blvd.  
Melbourne, FL 32901-6975  
Attn: Dr. John Trefry  
(321) 674-7305

Proj. No.	Project Name				Analyses	Remarks	Sample Condition Upon Receipt
API-S2	Gulf of Mexico Synthetic Based Muds Monitoring Program				Methyl-Hg		
Samplers (Signatures) <i>JL H. Trefry</i>							
Station I.D.	Sample I.D.	Date	Time	Preservation			
MP288	OSC1 8-10	5/15/02		FROZEN	✓		BOX 2
	OSC2 0-2				✓		
	OSC2 2-4				✓		
	OSC2 4-6				✓		
	OSC2 6-8				✓		
	OSC2 12-14				✓		
MP289	NF1 0-2	5/10/02			✓		
	NF1 2-4				✓		
	NF1 4-6				✓		
	NF1 6-8				✓		
	NF1 8-10				✓		
	NF2				✓		
	NF3				✓		
	NF4				✓		
	NF5				✓		
Relinquished by (Signature) <i>[Signature]</i>		Date 5/16/02	Received by (Signature) <i>[Signature]</i>		Shipped to: Lucas Hawkins Frontier Geosciences 414 Pontius Ave North Seattle, WA 98109		Tel: 206-622-6960 Fax: 206-622-6870
Relinquished by (Signature)		Date	Received for Laboratory by (Signature)		Date / Time 5/17/02 11:00	Carrier: FEDEX 83998645319 Carrier Temp -18.7	

**Chain of Custody Record**

Florida Institute of Technology  
Marine & Environmental Chemistry Lab  
150 W. University Blvd.  
Melbourne, FL 32901-6975  
Attn: Dr. John Trefry  
(321) 674-7305

Proj. No.	Project Name				Analyses	Remarks	Sample Condition Upon Receipt
API-S2	Gulf of Mexico Synthetic Based Muds Monitoring Program				Methyl-Hg		
Samplers (Signatures) <i>JL H. Trefry</i>							
Station I.D.	Sample I.D.	Date	Time	Preservation			
MP289	NF6	5/10/02		FROZEN	✓		BOX 2
	NF1				✓		
	NF2				✓		
Relinquished by (Signature) <i>[Signature]</i>		Date 5/16/02	Received by (Signature) <i>[Signature]</i>		Shipped to: Lucas Hawkins Frontier Geosciences 414 Pontius Ave North Seattle, WA 98109		Tel: 206-622-6960 Fax: 206-622-6870
Relinquished by (Signature)		Date	Received for Laboratory by (Signature)		Date / Time 5/17/02 11:00	Carrier: FEDEX 83998645319 Carrier Temp -18.7	

Chain of Custody Record

Florida Institute of Technology  
Marine & Environmental Chemistry Laboratories  
150 W. University Blvd.  
Melbourne, FL 32901-6975  
Attn: Dr. John Trefry  
(321) 674-7305

Proj. No. <b>API-S2</b>		Project Name <b>Gulf of Mexico Synthetic Based Muds Monitoring Program</b>			Analyses <b>Methyl-Hg</b>		Remarks		Sample Condition Upon Receipt
Samplers (Signatures) <i>JL H. Trefry</i>									
Station I.D.	Sample I.D.	Date	Time	Preservation					
MP 259	MF 3	5/10/02		FROZEN	✓				BOX 3
	MF 4				✓				
	MF 5				✓				
	MF 6				✓				
	FF1 0-2				✓				
	FF1 2-4				✓				
	FF1 4-6				✓				
	FF1 6-8				✓				
	FF1 8-10	↓			✓				
	FF2	5/9/02			✓				
	FF3				✓				
	FF4				✓				
	FF5				✓				
	FF6	↓			✓				
	DISC 0-2	5/10/02			✓				
Relinquished by (Signature) <i>[Signature]</i>		Date 5/16/02	Received by (Signature) <i>[Signature]</i>		5/17/02	Shipped to:		Lucas Hawkins Frontier Geosciences 414 Pontius Ave North Seattle, WA 98109	
Relinquished by (Signature)		Date	Received for Laboratory by (Signature)		11:00	Carrier:		Tel: 206-622-6960 Fax: 206-622-6870	
		Time				Date / Time		Carrier:	
						5/17/02 / 11:00		FEDEX: 833998645308	
						VTSR: 10:30		Cooler Temp: -19.1	

Chain of Custody Record

Florida Institute of Technology  
Marine & Environmental Chemistry Laboratories  
150 W. University Blvd.  
Melbourne, FL 32901-6975  
Attn: Dr. John Trefry  
(321) 674-7305

Proj. No. <b>API-S2</b>		Project Name <b>Gulf of Mexico Synthetic Based Muds Monitoring Program</b>			Analyses <b>Methyl-Hg</b>		Remarks		Sample Condition Upon Receipt
Samplers (Signatures) <i>JL H. Trefry</i>									
Station I.D.	Sample I.D.	Date	Time	Preservation					
MP 259	DISC 2-4	5/10/02		FROZEN	✓				BOX 3
	DISC 4-6				✓				
	DISC 6-8				✓				
	DISC 8-10				✓				
	DISC 0-2				✓				
	DISC 2-4				✓				
	DISC 4-6				✓				
	DISC 6-8				✓				
	DISC 8-10	↓			✓				
	DISC 2 14-16	↓			✓				
MC 496	NF1 0-2	5/15/02			✓				BOX 4
	NF1 2-4				✓				
	NF1 4-6				✓				
	NF1 6-8				✓				
	NF1 8-10				✓				
	NF2	↓			✓				
Relinquished by (Signature) <i>[Signature]</i>		Date 5/16/02	Received by (Signature) <i>[Signature]</i>			Shipped to:		Lucas Hawkins Frontier Geosciences 414 Pontius Ave North Seattle, WA 98109	
Relinquished by (Signature)		Date	Received for Laboratory by (Signature)			Carrier:		Tel: 206-622-6960 Fax: 206-622-6870	
		Time				Date / Time		Carrier:	
						5/17/02 / 11:00		FEDEX: 833998645308	
						VTSR: 10:30		Cooler Temp: -19.1	

Chain of Custody Record

Florida Institute of Technology  
Marine & Environmental Chemistry Lab  
150 W. University Blvd.  
Melbourne, FL 32901-6975

Attn: Dr. John Trefry  
(321) 674-7305 Page 2 of 4

Proj. No. API-S2		Project Name Gulf of Mexico Synthetic Based Muds Monitoring Program			Analyses	Remarks	Sample Condition Upon Receipt		
Samplers (Signatures)					Methyl-Hg				
Station I.D.	Sample I.D.	Date	Time	Preservation					
MC456	NF3	5/15/02		FROZEN				✓	BOX 4
	NF4							✓	
	NF5							✓	
	NF6							✓	
	MF1							✓	
	MF2							✓	
	MF3							✓	
	MF4							✓	
	MF5							✓	
	MF6							✓	
	FF1 0-2	5/14/02						✓	
	FF1 2-4							✓	
	FF1 4-6							✓	
	FF1 6-8				✓				
	FF1 8-10				✓				
Relinquished by (Signature)	Date	Received by (Signature)	Shipped to:		Tel: 206-622-6960				
<i>[Signature]</i>	5/14/02	<i>[Signature]</i>	Lucas Hawkins		Fax: 206-622-6870				
Relinquished by (Signature)	Date	Received for Laboratory by (Signature)	414 Pontius Ave North		Seattle, WA 98109				
		<i>[Signature]</i>	Date / Time		Carrier:				
			5/14/02 / 11:00		FEDEX 823998645308				
			VTSR: 10:30		Cooler Temp: -19.1				

Chain of Custody Record

Florida Institute of Technology  
Marine & Environmental Chemistry Lab  
150 W. University Blvd.  
Melbourne, FL 32901-6975

Attn: Dr. John Trefry  
(321) 674-7305 Page 4 of 4

Proj. No. API-S2		Project Name Gulf of Mexico Synthetic Based Muds Monitoring Program			Analyses	Remarks	Sample Condition Upon Receipt		
Samplers (Signatures)					Methyl-Hg				
Station I.D.	Sample I.D.	Date	Time	Preservation					
MC456	FF2	5/14/02		FROZEN				✓	BOX 4
	FF3							✓	
	FF4							✓	
	FF5							✓	
	FF6							✓	BOX 5
	DISC 1 0-2	5/15/02						✓	
	DISC 1 2-4							✓	
	DISC 1 4-6							✓	
	DISC 1 6-8							✓	
	DISC 1 8-10							✓	
	DISC 2 0-2							✓	
	DISC 2 2-4							✓	
	DISC 2 4-6							✓	
	DISC 2 6-8				✓				
	DISC 2 8-10				✓				
Relinquished by (Signature)	Date	Received by (Signature)	Shipped to:		Tel: 206-622-6960				
<i>[Signature]</i>	5/14/02	<i>[Signature]</i>	Lucas Hawkins		Fax: 206-622-6870				
Relinquished by (Signature)	Date	Received for Laboratory by (Signature)	414 Pontius Ave North		Seattle, WA 98109				
		<i>[Signature]</i>	Date / Time		Carrier:				
			5/14/02 / 11:00		FEDEX 823998645308				
			VTSR: 10:30		Cooler Temp: -19.1				

Table 2. Quality Assurance and Quality Control Data for Sediment Metal Analyses.

Results for the sediment Standard Reference Material (SRM) MESS-2 certified by the National Research Council of Canada (NRC) and Trace Elements in Water #1643d certified by the National Institute of Standards and Technology (NIST).

Standard Reference Material	Al (%)	Ba (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	TOC (%)
SRM MESS-2	8.68	1030	4.28	0.090	354	2.01
This Study	8.65	1030	4.20	0.089	351	2.08
	8.61	982	4.32	0.093	358	2.02
	8.60	988	4.33	0.098	361	2.03
	8.72	1000	4.47	0.095	364	2.00
	8.51	966	4.24	0.089	356	2.01
	8.64	1010	4.45	0.087	353	
	8.67	997	4.33	0.094	353	
	8.70	1030	4.36	-	362	
	8.69	1000	4.27	-	363	
	8.72	1040	4.41	-	363	
	8.64	1020	4.32	-	353	
SRM MESS-2	8.57	-	4.35	0.092	365	2.14*
NRC Certified Values	± 0.26	-	± 0.22	± 0.009	± 21	± 0.13
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
SRM #1643d	-	508.1	-	-	-	
This Study	-	506.0	-	-	-	
	-	513.1	-	-	-	
	-	508.2	-	-	-	
		503.7				
		511.3				
SRM #1643d	127.6	506.5	91.2	-	37.66	
NIST Certified Values	± 3.5	± 8.9	± 3.9	-	± 0.83	

\* Certified Value is Total Carbon (Inorganic + Organic).

Method Detection Limits (MDLs).

	Al (%)	Ba (µg/g)	Fe (%)	Hg (µg/g)	Mn (µg/g)	TOC (%)
Sediment MDL	0.01	2.0	0.01	0.001	2.5	0.02

Percent Spike Recovery. Mean and Standard Deviation.

	Al	Ba	Fe	Hg	Mn	TOC
Mean	97.1	98.5	99.8	90.7	98.0	-
Standard Deviation	3.1	4.6	2.7	5.5	2.2	-
(n =)	12	12	12	38	12	-

Table 2. Quality Assurance and Quality Control Data for Sediment Metal Analyses.

Estimate of Precision as Percent Relative Standard Deviation (RSD) of Lab Duplicates

	Al	Ba	Fe	Hg	Mn	TOC
API-S2 EI346 DISC-1 (0-2cm)	1.3	2.3	4.9	0.6	2.6	0.7
API-S2 EW963 DISC-1 (0-2cm)	0.5	1.8	1.4	0.7	3.6	0.9
API-S2 EW963 NF-2	0.5	1.3	2.0	1.2	1.6	1.7
API-S2 EW963 MF-6	0.3	1.6	0.3	2.0	0.3	1.3
API-S2 EW963 FF-2	0.7	2.5	0.3	5.0	3.0	0.0
API-S2 GC112 MF-1	0.8	2.4	1.7	0.9	0.9	0.0
API-S2 MC496 MF-6	0.8	1.8	0.3	1.5	2.1	1.4
API-S2 MP288 NF-2	0.2	1.7	0.4	1.4	1.3	1.8
API-S2 MP299 NF-4	6.0	1.0	1.5	2.4	1.2	0.6
API-S2 MP299 FF-1 (0-2cm)	0.0	0.7	0.3	1.1	1.8	1.7

Percent RSD = (standard deviation / mean) X 100

Estimate of Precision as Percent Relative Standard Deviation (RSD) of Field Duplicates

	Al	Ba	Fe	Hg	Mn	TOC
API-S2 EW963 NF-3	2.8	2.1	0.2	5.1	4.3	3.8
API-S2 EW963 MF-1	2.0	12.1	1.3	8.0	6.7	3.4
API-S2 EW963 FF-3	1.9	10.6	0.5	4.8	6.3	1.9
API-S2 GC112 FF-5	0.3	7.0	0.0	1.8	7.8	4.0

Percent RSD = (standard deviation / mean) X 100

Cold Vapor AAS

Analyst: Robert P. Trocine SOP: FIT-2014-Hg

Page 1 of 2

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
Calibration Blk.					N.D.						
1 ng/ml					10.7				1.000		
2.5 ng/ml					26.8				2.500		
5 ng/ml					53.0				5.000		pass
Procedure Blk #1	53			20.0	N.D.			1			
Procedure Blk #2	54			20.0	N.D.			1			
MESS-2 #1	55	0.6669		20.0	16.0		2	1	1.493	0.090	pass
+ SPIKE					40.9			1			92.9% rec
MESS-2 #2	56	0.5335		20.0	11.4		2	1	1.057	0.089	pass
+ SPIKE					35.3			1			89.2% rec
API-S2 MP288 NF-1 (0-2cm)	12	2.5587	59.7	20.0	15.9		2	1	1.483	0.064	
+ SPIKE					39.8			1			89.2% rec
5 ng/ml					51.5			1	4.852		pass
API-S2 MP288 NF-1 (2-4cm)	33	1.7446	57.3	20.0	10.1		2	1	0.934	0.050	
API-S2 MP288 NF-1 (4-6cm)	26	1.5766	55.8	20.0	8.6		2	1	0.792	0.045	
API-S2 MP288 NF-1 (6-8cm)	7	2.3562	57.0	20.0	9.0		2	1	0.830	0.033	
API-S2 MP288 NF-1 (8-10cm)	1	1.6072	59.6	20.0	5.2		2	1	0.470	0.032	
+ SPIKE					29.2			1			89.5% rec
API-S2 MP288 NF-2 #1	24	3.3598	70.2	20.0	13.2		2	1	1.228	0.049	Lab Duplicate
+ SPIKE					37.4			1			90.3% rec
API-S2 MP288 NF-2 #2	2	4.3011	70.2	20.0	17.3		2	1	1.616	0.050	Lab Duplicate
Calibration Blk.					N.D.						
1 ng/ml					10.0				1.000		
2.5 ng/ml					25.6				2.500		
5 ng/ml					49.9				5.000		pass
API-S2 MP288 NF-3	31	3.2517	73.5	20.0	9.0		2	2	0.874	0.041	
API-S2 MP288 NF-4	20	1.8930	59.3	20.0	7.8		2	2	0.753	0.039	
API-S2 MP288 NF-5	5	3.9019	68.0	20.0	14.8		2	2	1.457	0.052	
+ SPIKE					37.7			2			89.5% rec
API-S2 MP288 NF-6	9	3.3229	68.5	20.0	13.9		2	2	1.366	0.052	
API-S2 MP288 MF-1	6	1.6863	57.9	20.0	11.2		2	2	1.095	0.062	
API-S2 MP288 MF-2	30	4.0585	72.2	20.0	14.4		2	2	1.417	0.050	
API-S2 MP288 MF-3	13	3.4042	72.5	20.0	12.5		2	2	1.226	0.052	
5 ng/ml					48.7			2	4.863		pass
API-S2 MP288 MF-4	29	3.1723	68.4	20.0	14.2		2	2	1.396	0.056	
API-S2 MP288 MF-5	34	2.9845	66.9	20.0	12.0		2	2	1.175	0.048	
API-S2 MP288 MF-6	25	3.6388	72.1	20.0	13.9		2	2	1.366	0.054	
API-S2 MP288 FF-1 (0-2cm)	4	2.4237	26.4	20.0	4.6		2	2	0.432	0.011	
+ SPIKE					27.4			2			89.1% rec
API-S2 MP288 FF-1 (2-4cm)	23	2.4291	26.6	20.0	6.0		2	2	0.573	0.013	
API-S2 MP288 FF-1 (4-6cm)	11	2.8713	28.2	20.0	9.1		2	2	0.884	0.017	
API-S2 MP288 FF-1 (6-8cm)	27	1.9466	28.9	20.0	5.1		2	2	0.482	0.014	
Calibration Blk.					N.D.						
1 ng/ml					9.6				1.000		
2.5 ng/ml					23.8				2.500		
5 ng/ml					47.7				5.000		pass
API-S2 MP288 FF-1 (8-10cm)	16	2.5493	30.2	20.0	5.8		2	3	0.605	0.014	
API-S2 MP288 FF-2	32	2.4409	30.6	20.0	4.3		2	3	0.448	0.011	
API-S2 MP288 FF-3	22	2.4660	30.7	20.0	5.0		2	3	0.521	0.012	
+ SPIKE					28.0			3			96.6% rec
API-S2 MP288 FF-4	15	2.3991	56.8	20.0	9.2		2	3	0.962	0.037	
API-S2 MP288 FF-5	28	1.9843	63.3	20.0	9.4		2	3	0.983	0.054	
API-S2 MP288 FF-6	8	4.7352	72.3	20.0	14.8		2	3	1.549	0.047	
API-S2 MP288 DISC-1 (0-2cm)	3	4.9739	69.4	20.0	17.5		2	3	1.833	0.048	
5 ng/ml					46.0			3	4.824		pass



API-SBM Sampling Cruise 2

Hg Sediment Digest 1 File: HG1.WQ1

5/27/02

Cold Vapor AAS

Analyst: Robert P. Trocine SOP: FIT-2014-Hg

Page 2 of 2

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
API-S2 MP288 DISC-1 (2-4cm)	35	3.0061	67.5	20.0	11.8		2	3	1.235	0.051	
API-S2 MP288 DISC-1 (4-6cm)	21	1.5842	62.9	20.0	8.4		2	3	0.878	0.060	
API-S2 MP288 DISC-1 (6-8cm)	19	2.0516	60.7	20.0	14.6		2	3	1.528	0.090	
+ SPIKE					34.6			3			84.0% rec
API-S2 MP288 DISC-1 (8-10cm)	14	1.6906	62.5	20.0	9.2		2	3	0.962	0.061	
API-S2 MP288 DISC-2 (0-2cm)	17	3.8858	61.8	20.0	26.0		2	3	2.725	0.073	
API-S2 MP288 DISC-2 (2-4cm)	10	1.6662	56.5	20.0	13.3		2	3	1.392	0.077	
API-S2 MP288 DISC-2 (4-6cm)	18	2.4235	54.6	20.0	11.7		2	3	1.224	0.045	
Calibration BIK.					N.D.						
1 ng/ml					8.8				1.000		
2.5 ng/ml					22.5				2.500		
5 ng/ml					45.0				5.000		pass
API-S2 MP288 DISC-2 (6-8cm)	36	1.9932	55.0	20.0	9.1		2	4	1.028	0.046	
API-S2 MP288 DISC-2 (8-10cm)	37	2.4665	61.1	20.0	8.1		2	4	0.917	0.038	
+ SPIKE					31.0			4			101.8% rec
API-S2 MP299 NF-1 (0-2cm)	38	4.6114	68.9	20.0	15.4		2	4	1.724	0.048	
API-S2 MP299 NF-1 (2-4cm)	39	3.7927	62.3	20.0	18.0		2	4	2.012	0.056	
API-S2 MP299 NF-1 (4-6cm)	40	3.8940	60.3	20.0	19.9		2	4	2.222	0.057	
API-S2 MP299 NF-1 (6-8cm)	41	1.8368	58.2	20.0	9.0		2	4	1.016	0.053	
API-S2 MP299 NF-1 (8-10cm)	42	2.0371	58.3	20.0	10.2		2	4	1.149	0.054	
5 ng/ml					44.0			4	4.886		pass
API-S2 MP299 NF-2	43	5.3064	66.7	20.0	23.0		2	4	2.564	0.058	
API-S2 MP299 NF-3	44	2.1825	61.1	20.0	11.6		2	4	1.304	0.061	
+ SPIKE					33.0			4			95.1% rec
API-S2 MP299 NF-4 #1	45	3.9467	68.4	20.0	16.7		2	4	1.868	0.060	Lab Duplicate
API-S2 MP299 NF-4 #2	46	4.0685	68.4	20.0	16.6		2	4	1.857	0.058	Lab Duplicate
API-S2 MP299 NF-5	47	4.1781	70.6	20.0	13.9		2	4	1.558	0.051	
API-S2 MP299 NF-6	48	4.8393	69.9	20.0	17.7		2	4	1.978	0.054	
API-S2 MP299 NF-1 (8-10cm)	49	3.4779	71.0	20.0	13.7		2	4	1.536	0.061	
5 ng/ml					46.4			4	5.151		pass
API-S2 MP299 MF-2	50	4.3553	66.9	20.0	19.9		2	4	2.222	0.062	
API-S2 MP299 MF-3	51	4.0950	69.5	20.0	13.0		2	4	1.459	0.047	
+ SPIKE					33.4			4			90.7% rec
API-S2 MP299 MF-4	52	5.6309	70.8	20.0	19.7		2	4	2.199	0.054	
5 ng/ml					45.0			4	4.997		pass

Linear Regressions:

Line #1: Y = 0.095(X) - 0.021 r = 0.99998  
 Line #2: Y = 0.100(X) - 0.030 r = 0.99983  
 Line #3: Y = 0.105(X) - 0.004 r = 0.99999  
 Line #4: Y = 0.111(X) + 0.021 r = 0.99999

Spike recovery calculations:

Sample	Spike	Calculation
MESS-2 #1	2.5 ng/ml	(40.9-16.0)/26.8X100 = 92.9%
MESS-2 #2	2.5 ng/ml	(35.3-11.4)/26.8X100 = 89.2%
API-S2 MP288 NF-1 (0-2cm)	2.5 ng/ml	(39.8-15.9)/26.8X100 = 89.2%
API-S2 MP288 NF-1 (8-10cm)	2.5 ng/ml	(29.2-5.2)/26.8X100 = 89.5%
API-S2 MP288 NF-2 #1	2.5 ng/ml	(37.4-13.2)/26.8X100 = 90.3%
API-S2 MP288 NF-5	2.5 ng/ml	(37.7-14.8)/25.6X100 = 89.5%
API-S2 MP288 FF-1 (0-2cm)	2.5 ng/ml	(27.4-4.6)/25.6X100 = 89.1%
API-S2 MP288 FF-3	2.5 ng/ml	(28.0-5.0)/23.8X100 = 96.6%
API-S2 MP288 DISC-1 (6-8cm)	2.5 ng/ml	(34.6-14.6)/23.8X100 = 84.0%
API-S2 MP288 DISC-2 (8-10cm)	2.5 ng/ml	(31.0-8.1)/22.5X100 = 101.8%
API-S2 MP299 NF-3	2.5 ng/ml	(33.0-11.6)/22.5X100 = 95.1%
API-S2 MP299 MF-3	2.5 ng/ml	(33.4-13.0)/22.5X100 = 90.7%

Mean Spike Recovery of Experimental Samples (n=10): 91.6% Standard Deviation: 5.0%  
 Final Hg concentrations were corrected only when their individual spike recovery was <90%

Cold Vapor AAS

Analyst: Robert P. Trocine SOP: FIT-2014-Hg

Page 1 of 2

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
Calibration Blk.					N.D.						
1 ng/ml					10.4				1.000		
2.5 ng/ml					24.7				2.500		
5 ng/ml					51.0				5.000		pass
Procedure Blk #1	2			20.0	N.D.			1			
Procedure Blk #2	20			20.0	N.D.			1			
MESS-2 #1	26	0.5761		20.0	12.0		2	1	1.195	0.093	pass
+ SPIKE					34.0			1			89.1% rec
MESS-2 #2	44	0.6210		20.0	13.0		2	1	1.293	0.098	pass
+ SPIKE					34.0			1			85.0% rec
API-S2 MP299 MF-5	54	3.0694	63.0	20.0	16.0		2	1	1.588	0.066	
+ SPIKE					36.8			1			84.2% rec
5 ng/ml					47.5			1	4.677		pass
API-S2 MP299 MF-6	16	3.0220	70.5	20.0	12.1		2	1	1.205	0.061	
API-S2 MP299 FF-1 (0-2cm) #1	22	3.0098	63.9	20.0	15.6		2	1	1.548	0.064	Lab Duplicate
API-S2 MP299 FF-1 (0-2cm) #2	33	2.9599	63.9	20.0	15.1		2	1	1.499	0.063	Lab Duplicate
API-S2 MP299 FF-1 (2-4cm)	52	2.0360	60.9	20.0	11.5		2	1	1.146	0.058	
+ SPIKE					35.2			1			95.9% rec
API-S2 MP299 FF-1 (4-6cm)	32	2.1268	59.5	20.0	13.7		2	1	1.362	0.073	
+ SPIKE					35.2			1			87.0% rec
API-S2 MP299 FF-1 (6-8cm)	72	2.4658	58.5	20.0	17.5		2	1	1.735	0.076	
Calibration Blk.					N.D.						
1 ng/ml					9.2				1.000		
2.5 ng/ml					24.2				2.500		
5 ng/ml					49.1				5.000		pass
API-S2 MP299 FF-1 (8-10cm)	100	2.3010	58.4	20.0	14.4		2	2	1.520	0.072	
API-S2 MP299 FF-2	23	2.0583	63.2	20.0	9.7		2	2	1.049	0.062	
API-S2 MP299 FF-3	24	3.3269	60.2	20.0	16.0		2	2	1.680	0.051	
+ SPIKE					39.0			2			95.0% rec
API-S2 MP299 FF-4	31	2.1419	62.1	20.0	11.1		2	2	1.189	0.066	
API-S2 MP299 FF-5	17	3.2622	65.0	20.0	13.8		2	2	1.460	0.058	
API-S2 MP299 FF-6	9	2.8450	62.1	20.0	14.6		2	2	1.540	0.064	
API-S2 MP299 DISC-1 (0-2cm)	38	2.4407	52.9	20.0	14.0		2	2	1.480	0.058	
5 ng/ml					50.0			2	5.089		pass
API-S2 MP299 DISC-1 (2-4cm)	37	2.6751	52.0	20.0	16.3		2	2	1.710	0.060	
API-S2 MP299 DISC-1 (4-6cm)	81	2.1449	52.8	20.0	12.0		2	2	1.279	0.057	
API-S2 MP299 DISC-1 (6-8cm)	12	1.9654	56.8	20.0	9.1		2	2	0.988	0.052	
API-S2 MP299 DISC-1 (10-12cm)	95	1.9837	54.4	20.0	10.2		2	2	1.099	0.049	
+ SPIKE					32.0			2			90.1% rec
API-S2 MP299 DISC-2 (0-2cm)	28	3.2155	60.6	20.0	19.4		2	2	2.021	0.072	
API-S2 MP299 DISC-2 (2-4cm)	48	2.5772	59.0	20.0	18.7		2	2	1.951	0.083	
API-S2 MP299 DISC-2 (4-6cm)	36	2.1831	58.1	20.0	14.0		2	2	1.480	0.073	
Calibration Blk.					N.D.						
1 ng/ml					9.6				1.000		
2.5 ng/ml					24.8				2.500		
5 ng/ml					47.8				5.000		pass
API-S2 MP299 DISC-2 (6-8cm)	69	2.2241	57.3	20.0	13.0		2	3	1.321	0.063	
API-S2 MP299 DISC-1 (14-16cm)	35	2.1204	58.3	20.0	12.1		2	3	1.226	0.062	
API-S2 MC496 NF-1 (0-2cm)	96	3.0426	64.3	20.0	19.2		2	3	1.972	0.087	
+ SPIKE					40.0			3			83.9% rec
API-S2 MC496 NF-1 (2-4cm)	47	2.6080	59.5	20.0	18.2		2	3	1.867	0.080	
API-S2 MC496 NF-1 (4-6cm)	19	2.7330	62.3	20.0	18.3		2	3	1.878	0.082	
API-S2 MC496 NF-1 (6-8cm)	40	2.3738	65.7	20.0	14.3		2	3	1.457	0.081	
API-S2 MC496 NF-1 (8-10cm)	27	2.3684	63.3	20.0	16.4		2	3	1.678	0.087	
5 ng/ml					48.9			3	5.092		pass

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
API-S2 MC496 NF-2	65	2.9035	68.1	20.0	17.0		2	3	1.741	0.085	
API-S2 MC496 NF-3	25	3.0064	69.0	20.0	24.8		2	3	2.560	0.110	
API-S2 MC496 NF-4	60	3.1771	69.5	20.0	21.9		2	3	2.258	0.105	
+ SPIKE					43.3			3			86.3% rec
API-S2 MC496 NF-5	13	2.8273	62.7	20.0	15.2		2	3	1.552	0.066	
API-S2 MC496 NF-6	55	3.2437	68.2	20.0	17.5		2	3	1.793	0.078	
API-S2 MC496 MF-1	57	3.1927	71.8	20.0	14.2		2	3	1.447	0.072	
API-S2 MC496 MF-2	50	3.0780	67.6	20.0	16.7		2	3	1.709	0.077	
Calibration Blk.					N.D.						
1 ng/ml					9.5				1.000		
2.5 ng/ml					24.2				2.500		
5 ng/ml					47.5				5.000		pass
API-S2 MC496 MF-3	61	3.1336	68.9	20.0	17.0		2	4	1.772	0.082	
API-S2 MC496 MF-4	30	3.2433	71.7	20.0	14.8		2	4	1.540	0.067	
+ SPIKE					37.0			4			91.7% rec
API-S2 MC496 MF-5	71	4.4539	71.4	20.0	20.4		2	4	2.130	0.075	
API-S2 MC496 MF-6 #1	14	3.1403	73.4	20.0	16.9		2	4	1.761	0.095	Lab Duplicate
API-S2 MC496 MF-6 #2	41	4.3998	73.4	20.0	23.1		2	4	2.415	0.093	Lab Duplicate
API-S2 MC496 FF-1 (0-2cm)	1	2.9780	70.3	20.0	13.6		2	4	1.413	0.072	
API-S2 MC496 FF-1 (2-4cm)	45	3.1319	66.7	20.0	17.2		2	4	1.793	0.077	
5 ng/ml					45.8			4	4.809		pass
API-S2 MC496 FF-1 (4-6cm)	51	2.9526	66.2	20.0	15.9		2	4	1.658	0.075	
API-S2 MC496 FF-1 (6-8cm)	56	2.3984	64.9	20.0	14.2		2	4	1.477	0.083	
+ SPIKE					34.7			4			84.7% rec
API-S2 MC496 FF-1 (8-10cm)	67	2.0380	62.0	20.0	12.2		2	4	1.268	0.074	
API-S2 MC496 FF-2	49	3.3960	69.8	20.0	14.5		2	4	1.508	0.066	
API-S2 MC496 FF-3	21	3.0284	70.7	20.0	12.3		2	4	1.276	0.065	
API-S2 MC496 FF-4	15	3.2147	71.1	20.0	13.7		2	4	1.424	0.069	
API-S2 MC496 FF-5	8	3.2489	65.5	20.0	18.0		2	4	1.877	0.075	
Calibration Blk.					N.D.						
1 ng/ml					9.0				1.000		
2.5 ng/ml					23.4				2.500		
5 ng/ml					47.9				5.000		pass
API-S2 MC496 FF-6	7	3.7031	68.4	20.0	19.0		2	5	2.035	0.078	
API-S2 MC496 DISC-1 (0-2cm)	6	3.1390	66.7	20.0	34.1		2	5	3.587	0.154	
+ SPIKE					55.0			5			89.3% rec
API-S2 MC496 DISC-1 (2-4cm)	10	3.1620	68.5	20.0	16.2		2	5	1.748	0.079	
API-S2 MC496 DISC-1 (4-6cm)	18	2.6660	66.2	20.0	16.4		2	5	1.768	0.088	
API-S2 MC496 DISC-1 (6-8cm)	34	2.4804	66.7	20.0	15.2		2	5	1.645	0.090	
API-S2 MC496 DISC-1 (8-10cm)	43	2.3459	64.9	20.0	14.8		2	5	1.604	0.088	
API-S2 MC496 DISC-2 (0-2cm)	53	2.9097	66.2	20.0	16.9		2	5	1.820	0.083	
5 ng/ml					49.4			5	5.159		pass
API-S2 MC496 DISC-2 (2-4cm)	59	3.2658	68.6	20.0	17.1		2	5	1.840	0.081	
API-S2 MC496 DISC-2 (4-6cm)	62	2.5744	66.8	20.0	14.3		2	5	1.552	0.082	
5 ng/ml					48.5			5	5.066		pass

Linear Regressions:  
 Line #1: Y = 0.098(X) + 0.018 r = 0.99967  
 Line #2: Y = 0.100(X) + 0.076 r = 0.99999  
 Line #3: Y = 0.105(X) - 0.045 r = 0.99966  
 Line #4: Y = 0.105(X) - 0.021 r = 0.99991  
 Line #5: Y = 0.103(X) + 0.083 r = 0.99999

Spike recovery calculations:	Sample	Spike	Calculation
	MESS-2 #1	2.5 ng/ml	(34.0-12.0)/24.7×100 = 89.1%
	MESS-2 #2	2.5 ng/ml	(34.0-13.0)/24.7×100 = 85.0%
	API-S2 MP299 MF-5	2.5 ng/ml	(36.8-16.0)/24.7×100 = 84.2%
	API-S2 MP299 FF-1 (2-4cm)	2.5 ng/ml	(35.2-11.5)/24.7×100 = 95.9%
	API-S2 MP299 FF-1 (4-6cm)	2.5 ng/ml	(35.2-13.7)/24.7×100 = 87.0%
	API-S2 MP299 FF-3	2.5 ng/ml	(39.0-16.0)/24.2×100 = 95.0%
	API-S2 MP299 DISC-1 (10-12cm)	2.5 ng/ml	(32.0-10.2)/24.2×100 = 90.1%
	API-S2 MC496 NF-1 (0-2cm)	2.5 ng/ml	(40.0-19.2)/24.8×100 = 83.9%
	API-S2 MC496 NF-4	2.5 ng/ml	(43.3-21.9)/24.8×100 = 86.3%
	API-S2 MC496 MF-4	2.5 ng/ml	(37.0-14.8)/24.2×100 = 91.7%
	API-S2 MC496 FF-1 (6-8cm)	2.5 ng/ml	(34.7-14.2)/24.2×100 = 84.7%
	API-S2 MC496 DISC-1 (0-2cm)	2.5 ng/ml	(55.0-34.1)/23.4×100 = 89.3%

Mean Spike Recovery of Experimental Samples (n=10): 88.8% Standard Deviation: 4.3%  
 Final Hg concentrations were corrected (when <90%) with their individual spike recoveries or the mean value.

Cold Vapor AAS

Analyst: Robert P. Trocine

SOP: FIT-2014-Hg

Page 1 of 2

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
Calibration Blk.					N.D.						
1 ng/ml					10.0				1.000		
2.5 ng/ml					25.7				2.500		
5 ng/ml					49.5				5.000		pass
Procedure Blk #1	1			20.0	N.D.			1			
Procedure Blk #2	57			20.0	N.D.			1			
MESS-2 #1	59	0.7747		20.0	16.6		2	1	1.635	0.095	pass
+ SPIKE					39.4			1			88.7% rec
MESS-2 #2	60	0.6632		20.0	15.0		2	1	1.472	0.089	pass
+ SPIKE					38.8			1			92.6% rec
API-S2 MC496 DISC-2 (6-8cm)	2	2.6684	65.4	20.0	17.9		2	1	1.767	0.086	
+ SPIKE					40.7			1			88.7% rec
5 ng/ml					49.2			1	4.946		pass
API-S2 MC496 DISC-2 (8-10cm)	36	2.7369	65.7	20.0	18.2		2	1	1.797	0.085	
API-S2 EI346 NF-1	25	2.1810	54.8	20.0	14.5		2	1	1.421	0.064	
API-S2 EI346 NF-2	17	2.7995	56.7	20.0	22.5		2	1	2.234	0.082	
API-S2 EI346 NF-3	5	2.1379	48.0	20.0	38.0		2	1	3.808	0.164	
+ SPIKE					59.5			1			83.7% rec
API-S2 EI346 NF-4	18	2.2216	44.8	20.0	34.7		4	1	3.473	0.291	
+ SPIKE					54.7			1			77.8% rec
API-S2 EI346 NF-5	33	2.4742	44.5	20.0	38.5		4	1	3.859	0.251	
Calibration Blk.					N.D.						
1 ng/ml					9.8				1.000		
2.5 ng/ml					24.8				2.500		
5 ng/ml					49.7				5.000		pass
API-S2 EI346 NF-6	42	2.9909	52.3	20.0	37.2		4	2	3.746	0.234	
API-S2 EI346 MF-1	32	2.3855	57.0	20.0	20.0		2	2	2.021	0.088	
API-S2 EI346 MF-6	37	2.4913	60.3	20.0	13.3		2	2	1.349	0.055	
+ SPIKE					35.7			2			90.3% rec
API-S2 EI346 FF-1 (0-2cm)	15	3.0957	69.9	20.0	9.5		2	2	0.968	0.046	
API-S2 EI346 FF-1 (2-4cm)	8	4.2266	68.7	20.0	12.2		2	2	1.239	0.042	
API-S2 EI346 FF-1 (4-6cm)	23	2.7328	63.0	20.0	9.9		2	2	1.008	0.044	
API-S2 EI346 FF-1 (6-8cm)	22	2.8145	61.8	20.0	9.8		2	2	0.998	0.041	
5 ng/ml					46.9			2	4.718		pass
API-S2 EI346 FF-1 (8-10cm)	39	2.4348	59.8	20.0	8.4		2	2	0.858	0.039	
API-S2 EI346 FF-2	40	3.2904	67.7	20.0	10.7		2	2	1.089	0.046	
API-S2 EI346 FF-3	58	2.2285	65.1	20.0	8.4		2	2	0.858	0.049	
API-S2 EI346 FF-4	6	3.5103	68.7	20.0	11.3		2	2	1.149	0.042	
+ SPIKE					34.8			2			94.7% rec
API-S2 EI346 FF-5	44	2.5829	65.8	20.0	9.2		2	2	0.938	0.047	
API-S2 EI346 FF-6	41	2.7802	67.3	20.0	9.9		2	2	1.008	0.049	
API-S2 EI346 DISC-1 (0-2cm) #1	38	2.4756	53.2	20.0	31.9		4	2	3.214	0.247	Lab Duplicate
Calibration Blk.					N.D.						
1 ng/ml					9.7				1.000		
2.5 ng/ml					23.5				2.500		
5 ng/ml					48.7				5.000		pass
API-S2 EI346 DISC-1 (0-2cm) #2	14	2.9987	53.2	20.0	37.9		4	3	3.916	0.249	Lab Duplicate
API-S2 EI346 DISC-1 (2-4cm)	54	3.0472	46.1	20.0	49.4		4	3	5.091	0.276	
API-S2 EI346 DISC-1 (4-6cm)	53	2.6174	41.3	20.0	23.2		10	3	2.415	0.355	
+ SPIKE					44.0			3			88.5% rec
API-S2 EI346 DISC-1 (6-8cm)	56	2.1436	55.3	20.0	10.8		2	3	1.148	0.053	
API-S2 EI346 DISC-1 (16-18cm)	26	2.2541	50.4	20.0	9.3		2	3	0.995	0.040	
API-S2 EI346 DISC-2 (0-2cm)	24	2.3687	49.6	20.0	18.6		4	3	1.945	0.145	
API-S2 EI346 DISC-2 (2-4cm)	9	2.8572	54.9	20.0	15.5		4	3	1.628	0.113	
5 ng/ml					49.1			3	5.060		pass

Cold Vapor AAS

Analyst: Robert P. Trocine SOP: FIT-2014-Hg

Page 2 of 2

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
API-S2 EI346 DISC-2 (4-6cm)	7	2.3592	55.3	20.0	12.1		2	3	1.281	0.054	
API-S2 EI346 DISC-2 (6-8cm)	27	1.9704	53.9	20.0	7.6		2	3	0.821	0.040	
API-S2 EI346 DISC-2 (8-10cm)	29	2.1805	54.3	20.0	8.0		2	3	0.862	0.035	
+ SPIKE					31.3			3			99.1% rec
API-S2 GC112 NF-1	55	3.1957	62.9	22.0	32.6		4	3	3.375	0.279	
API-S2 GC112 NF-2	16	3.1285	71.0	20.0	11.2		4	3	1.189	0.117	
API-S2 GC112 NF-3	34	3.1180	66.2	20.0	26.2		4	3	2.721	0.230	
API-S2 GC112 NF-4	31	3.2527	61.1	20.0	30.3		4	3	3.140	0.221	
Calibration Blk.					N.D.						
1 ng/ml					9.3				1.000		
2.5 ng/ml					24.2				2.500		
5 ng/ml					49.0				5.000		pass
API-S2 GC112 NF-5	12	2.9634	59.4	20.0	31.0		4	4	3.186	0.236	
API-S2 GC112 NF-6	20	2.7377	61.3	20.0	33.0		4	4	3.388	0.323	
+ SPIKE					52.2			4			79.3% rec
API-S2 GC112 MF-1 #1	10	3.5423	71.4	20.0	17.8		2	4	1.856	0.082	Lab Duplicate
API-S2 GC112 MF-1 #2	45	2.5400	71.4	20.0	12.8		2	4	1.352	0.083	Lab Duplicate
API-S2 GC112 MF-6	28	3.0740	68.2	20.0	25.2		2	4	2.602	0.119	
API-S2 GC112 FF-1 (0-2cm)	3	2.8481	72.4	20.0	15.5		2	4	1.624	0.092	
API-S2 GC112 FF-1 (2-4cm)	19	2.8576	67.7	20.0	15.5		2	4	1.624	0.078	
5 ng/ml					49.0			4	5.000		pass
API-S2 GC112 FF-1 (4-6cm)	21	2.4120	64.5	20.0	14.4		2	4	1.513	0.079	
API-S2 GC112 FF-1 (6-8cm)	35	2.6247	62.9	20.0	14.9		2	4	1.564	0.064	
+ SPIKE					37.8			4			94.6% rec
API-S2 GC112 FF-1 (8-10cm)	13	2.0736	61.0	20.0	13.5		2	4	1.423	0.078	
API-S2 GC112 FF-2	48	2.9306	72.9	20.0	14.6		2	4	1.534	0.086	
API-S2 GC112 FF-3	46	2.6496	68.5	20.0	12.1		2	4	1.282	0.068	
API-S2 GC112 FF-4	11	4.1940	70.6	20.0	19.7		2	4	2.047	0.074	
API-S2 GC112 FF-5 #1	52	2.7214	70.1	20.0	14.1		2	4	1.483	0.081	Field Duplicate
Calibration Blk.					N.D.						
1 ng/ml					9.7				1.000		
2.5 ng/ml					25.0				2.500		
5 ng/ml					50.8				5.000		pass
API-S2 GC112 FF-5 #2	51	3.0958	70.3	20.0	16.2		2	5	1.637	0.079	Field Duplicate
API-S2 GC112 FF-6	50	3.0776	70.4	20.0	16.2		2	5	1.637	0.072	
+ SPIKE					41.2			5			100.0% rec
API-S2 GC112 DISC-1 (0-2cm)	4	2.5432	56.6	20.0	36.2		4	5	3.582	0.289	
API-S2 GC112 DISC-1 (2-4cm)	49	2.6099	43.3	20.0	35.2		4	5	3.485	0.210	
API-S2 GC112 DISC-1 (4-6cm)	47	3.6371	45.2	20.0	35.0		4	5	3.466	0.155	
API-S2 GC112 DISC-1 (6-8cm)	30	2.7304	58.8	20.0	15.2		4	5	1.540	0.122	
API-S2 GC112 DISC-1 (18-20cm)	43	2.2509	61.4	20.0	4.3		2	5	0.479	0.025	
5 ng/ml					49.7			5	4.896		pass

Linear Regressions:  
 Line #1: Y = 0.101(X) - 0.051 r = 0.99967  
 Line #2: Y = 0.100(X) + 0.016 r = 0.99999  
 Line #3: Y = 0.102(X) + 0.045 r = 0.99971  
 Line #4: Y = 0.101(X) + 0.062 r = 1  
 Line #5: Y = 0.097(X) + 0.061 r = 0.99999

Spike recovery calculations:	Sample	Spike	Calculation
	MESS-2 #1	2.5 ng/ml	(39.4-16.6)/25.7X100 = 88.7%
	MESS-2 #2	2.5 ng/ml	(38.8-15.0)/25.7X100 = 92.6%
	API-S2 MC496 DISC-2 (6-8cm)	2.5 ng/ml	(40.7-17.9)/25.7X100 = 88.7%
	API-S2 EI346 NF-3	2.5 ng/ml	(59.5-38.0)/25.7X100 = 83.7%
	API-S2 EI346 NF-4	2.5 ng/ml	(54.7-34.7)/25.7X100 = 77.8%
	API-S2 EI346 MF-6	2.5 ng/ml	(35.7-13.3)/24.8X100 = 90.3%
	API-S2 EI346 FF-4	2.5 ng/ml	(34.8-11.3)/24.8X100 = 94.7%
	API-S2 EI346 DISC-1 (4-6cm)	2.5 ng/ml	(44.0-23.2)/23.5X100 = 88.5%
	API-S2 EI346 DISC-2 (8-10cm)	2.5 ng/ml	(31.3-8.0)/23.5X100 = 99.1%
	API-S2 GC112 NF-6	2.5 ng/ml	(52.2-33.0)/24.2X100 = 79.3%
	API-S2 GC112 FF-1 (6-8cm)	2.5 ng/ml	(37.8-14.9)/24.2X100 = 94.6%
	API-S2 GC112 FF-6	2.5 ng/ml	(41.2-16.2)/25.0X100 = 100.0%

Mean Spike Recovery of Experimental Samples (n=10): 89.7% Standard Deviation: 7.7%  
 Final Hg concentrations were corrected with their individual spike recoveries (when <90%) or the mean value.

Cold Vapor AAS

Analyst: Robert P. Trocine

SOP: FIT-2014-Hg

Page 1 of 2

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D I L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
Calibration Blk.					N.D.						
1 ng/ml					10.8				1.000		
2.5 ng/ml					25.5				2.500		
5 ng/ml					52.2				5.000		pass
Procedure Blk #1	60			20.0	N.D.			1			
Procedure Blk #2	61			20.0	N.D.			1			
MESS-2 #1	51	0.5688		20.0	12.9		2	1	1.235	0.087	pass
+ SPIKE					37.0			1			94.5% rec
MESS-2 #2	57	0.5774		20.0	12.7		2	1	1.216	0.094	pass
+ SPIKE					35.6			1			89.8% rec
API-S2 GC112 DISC-2 (0-2cm)	96	2.8077	54.2	20.0	19.4		10	1	1.861	0.289	
+ SPIKE					42.6			1			91.0% rec
5 ng/ml					49.1			1	4.720		pass
API-S2 GC112 DISC-2 (2-4cm)	34	2.7116	61.5	20.0	8.8		10	1	0.841	0.161	
API-S2 GC112 DISC-2 (4-6cm)	62	2.6046	66.0	20.0	9.0		4	1	0.860	0.078	
API-S2 GC112 DISC-2 (6-8cm)	1	2.5062	64.8	20.0	14.4		2	1	1.380	0.063	
API-S2 GC112 DISC-2 (18-20cm)	19	2.2155	60.3	20.0	9.1		2	1	0.870	0.040	
+ SPIKE					33.1			1			94.1% rec
API-S2 EW963 NF-1	59	2.9289	69.9	20.0	32.3		2	1	3.103	0.157	
+ SPIKE					55.2			1			89.8% rec
API-S2 EW963 NF-2 #1	45	2.6781	64.2	20.0	35.1		4	1	3.372	0.281	Lab Duplicate
Calibration Blk.					N.D.						
1 ng/ml					9.7				1.000		
2.5 ng/ml					24.6				2.500		
5 ng/ml					51.1				5.000		pass
API-S2 EW963 NF-2 #2	15	2.6663	64.2	20.0	34.5		4	2	3.415	0.286	Lab Duplicate
API-S2 EW963 NF-3 #1	41	2.7053	66.9	20.0	15.8		4	2	1.613	0.144	Field Duplicate
API-S2 EW963 NF-3 #2	56	3.4170	67.8	20.0	18.2		4	2	1.844	0.134	Field Duplicate
+ SPIKE					43.0			2			100.8% rec
API-S2 EW963 NF-4	16	2.8288	67.7	20.0	21.3		4	2	2.143	0.188	
API-S2 EW963 NF-5	18	2.8775	64.5	20.0	8.9		4	2	0.948	0.074	
API-S2 EW963 NF-6	24	2.8205	70.3	20.0	12.6		4	2	1.305	0.125	
API-S2 EW963 MF-1 #1	67	3.5402	69.8	20.0	31.3		2	2	3.106	0.116	Field Duplicate
5 ng/ml					49.6			2	4.870		pass
API-S2 EW963 MF-1 #2	43	2.7362	71.2	20.0	25.7		2	2	2.567	0.130	Field Duplicate
API-S2 EW963 MF-6 #1	21	2.8563	71.6	20.0	13.7		2	2	1.411	0.070	Lab Duplicate
API-S2 EW963 MF-6 #2	49	2.6832	71.6	20.0	13.2		2	2	1.362	0.072	Lab Duplicate
API-S2 EW963 FF-1 (0-2cm)	6	3.3559	75.2	20.0	14.5		2	2	1.488	0.071	
+ SPIKE					37.5			2			93.5% rec
API-S2 EW963 FF-1 (2-4cm)	32	2.7121	72.5	20.0	13.3		2	2	1.372	0.074	
API-S2 EW963 FF-1 (4-6cm)	8	2.5671	70.1	20.0	14.0		2	2	1.439	0.075	
API-S2 EW963 FF-1 (6-8cm)	28	2.7017	68.1	20.0	18.2		2	2	1.844	0.086	
Calibration Blk.					N.D.						
1 ng/ml					9.5				1.000		
2.5 ng/ml					25.4				2.500		
5 ng/ml					49.3				5.000		pass
API-S2 EW963 FF-1 (8-10cm)	14	2.9497	67.4	20.0	13.5		2	3	1.365	0.057	
API-S2 EW963 FF-2 #1	72	2.8252	73.0	20.0	13.7		2	3	1.385	0.073	Lab Duplicate
API-S2 EW963 FF-2 #2	53	2.6570	73.0	20.0	12.0		2	3	1.213	0.068	Lab Duplicate
+ SPIKE					35.5			3			92.5% rec
API-S2 EW963 FF-3 #1	22	2.7518	71.3	20.0	14.8		2	3	1.496	0.076	Field Duplicate
API-S2 EW963 FF-3 #2	13	2.8363	69.0	20.0	15.4		2	3	1.556	0.071	Field Duplicate
API-S2 EW963 FF-4	17	2.9612	71.9	20.0	14.5		2	3	1.465	0.070	
API-S2 EW963 FF-5	9	2.7098	72.1	20.0	12.8		2	3	1.294	0.068	
5 ng/ml					48.4			3	4.884		pass

API-SBM Sampling Cruise 2

Hg Sediment Digest 4 File: HG4.WQ1

6/03/02

Cold Vapor AAS

Analyst: Robert P. Trocine SOP: FIT-2014-Hg

Page 2 of 2

SAMPLE	Tube (#)	Sediment Wet Wt. (g)	% H2O Sediment	Digest Volume (ml)	Abs.	Blank Corr. Abs.	D I L	L I N E	Solution Conc. (ng/ml)	Sediment Conc. (ug/g)	Comments and Qualifiers
API-S2 EW963 FF-6	2	2.7959	72.8	20.0	13.0		2	3	1.314	0.069	
API-S2 EW963 DISC-1 (0-2cm) #1	7	2.9659	68.1	20.0	22.0		2	3	2.222	0.094	Lab Duplicate
API-S2 EW963 DISC-1 (0-2cm) #2 + SPIKE	65	3.8005	68.1	20.0	27.8		2	3	2.806	0.093	Lab Duplicate
API-S2 EW963 DISC-1 (2-4cm)	55	2.6813	67.8	22.0	21.1		2	3	2.131	0.109	91.7% rec
API-S2 EW963 DISC-1 (4-6cm)	26	2.2879	66.0	20.0	12.9		2	3	1.304	0.067	
API-S2 EW963 DISC-1 (6-8cm)	54	2.2079	65.2	20.0	10.8		2	3	1.092	0.057	
API-S2 EW963 DISC-1 (18-20cm)	69	2.4808	62.7	20.0	9.0		2	3	0.911	0.039	
Calibration Blk.					N.D.						
1 ng/ml					9.9				1.000		
2.5 ng/ml					24.6				2.500		
5 ng/ml					50.2				5.000		pass
API-S2 EW963 DISC-2 (0-2cm)	25	2.5002	49.2	20.0	26.7		10	4	2.681	0.422	
API-S2 EW963 DISC-2 (2-4cm) + SPIKE	38	2.5896	42.3	20.0	41.7		10	4	4.168	0.558	
API-S2 EW963 DISC-2 (4-6cm)	50	2.8079	53.1	20.0	27.4		5	4	2.751	0.209	91.5% rec
API-S2 EW963 DISC-2 (6-8cm)	23	2.4974	55.9	20.0	31.0		5	4	3.107	0.282	
API-S2 EW963 DISC-2 (16-18cm) 5 ng/ml	10	2.1662	64.6	20.0	11.2		2	4	1.146	0.060	
					51.5		4		5.139		pass

Linear Regressions:

Line #1: Y = 0.096(X) - 0.006 r = 0.99975  
 Line #2: Y = 0.096(X) + 0.090 r = 0.99985  
 Line #3: Y = 0.101(X) - 0.003 r = 0.99961  
 Line #4: Y = 0.099(X) + 0.036 r = 0.99993

Spike recovery calculations:

Sample	Spike	Calculation
MESS-2 #1	2.5 ng/ml	(37.0-12.9)/25.5X100 = 94.5%
MESS-2 #2	2.5 ng/ml	(35.6-12.7)/25.5X100 = 89.8%
API-S2 GC112 DISC-2 (0-2cm)	2.5 ng/ml	(42.6-19.4)/25.5X100 = 91.0%
API-S2 GC112 DISC-2 (18-20cm)	2.5 ng/ml	(33.1-9.1)/25.5X100 = 94.1%
API-S2 EW963 NF-1	2.5 ng/ml	(55.2-32.3)/25.5X100 = 89.8%
API-S2 EW963 NF-3 #2	2.5 ng/ml	(43.0-18.2)/24.6X100 = 100.8%
API-S2 EW963 FF-1 (0-2cm)	2.5 ng/ml	(37.5-14.5)/24.6X100 = 93.5%
API-S2 EW963 FF-3 #1	2.5 ng/ml	(35.5-12.0)/25.4X100 = 92.5%
API-S2 EW963 DISC-1 (2-4cm)	2.5 ng/ml	(51.1-27.8)/25.4X100 = 91.7%
API-S2 EW963 DISC-2 (4-6cm)	2.5 ng/ml	(64.2-41.7)/24.6X100 = 91.5%

Mean Spike Recovery of Experimental Samples (n=8): 93.1% Standard Deviation: 3.4%  
 Final Hg concentrations were corrected with their individual spike recoveries when <90%, the rest are uncorrected.

# Frontier Geosciences Inc.

*Environmental Research & Specialty Analytical Laboratory*  
414 Pontius Ave N · Seattle WA 98109

June 14, 2002

Dr. John Trefry  
Florida Institute of Technology  
150 W. University Blvd.  
Melbourne, FL 32901-6975

Re: Gulf of Mexico Synthetic Based Muds Monitoring Program

Dear Dr. Trefry,

Enclosed are results for methyl mercury in sediment samples received May 17, 2002. All samples listed on the enclosed letter were received in good condition, with cooler temperatures of  $-18.7^{\circ}\text{C}$  and  $-19.1^{\circ}\text{C}$ . Following receipt, the samples were placed directly into frozen storage until sample preparation could take place.

Methyl mercury in sediments was prepared by acid bromide/methyl chloride extraction and analyzed by aqueous phase ethylation, isothermal GC separation, and CVAFS detection (Frontier SOP's FGS-045, FGS-070). All results are reported on both a wet and dry weight basis.

Overall, no significant analytical difficulties were encountered. There are some items to note, separated according to analytical batch identifier.

- MHG7-020530-1 During the preparation of the samples, the sample designated for matrix spikes was not spiked. The extract was spiked to accommodate this error, and after the remaining preparation and analysis the matrix spike recoveries were 102.4% and 102.3%. As the recoveries were in control and all subsequent preparations displayed good matrix spike recoveries, no further action was taken.
- MHG7-020606-1 The 0.1 ng calibration standard displayed low recoveries and was removed from the calibration curve. In order to assure that there were no issues with the trap or bubbler used to purge the standard, independent 0.1 ng recovery checks were performed on the bubbler and trap. As the recoveries were in control at 101.2% and 94.9%, the system was determined to be in control and analysis was resumed.

206 622 6960  
fax 206 622 6870  
email: [info@Frontier.WA.com](mailto:info@Frontier.WA.com)  
[www.FrontierGeosciences.com](http://www.FrontierGeosciences.com)



- MHG1-020611-1 The matrix replicate performed on sample MC496-FF6 was above the control limit of 25% RPD with a recovery of 57%. The sample was re-purged and analyzed yielding an RPD of 5.2%. One of the initial replicates was in good agreement with both re-run values while the other initial value was substantially lower. The initial out of control RPD is attributed to preparation error.

Please feel free to contact me if you have any questions regarding these results.

Best Wishes,

A handwritten signature in cursive script that reads "Lucas Hawkins".

Lucas Hawkins  
Project Manager

**Methyl Hg in Sediments - Results Page 1**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Analysis Batch ID#	Dry Fraction	methyl Hg, ng/g*	
					wet wt basis	dry wt basis
MP288	NF1 0-2	5/9/02	MHG1-020605-1	0.428	0.163	0.381
MP288	NF1 2-4	5/9/02	MHG1-020605-1	0.426	0.141	0.331
MP288	NF1 4-6	5/9/02	MHG1-020605-1	0.428	0.108	0.252
MP288	NF1 6-8	5/9/02	MHG1-020605-1	0.411	0.065	0.158
MP288	NF1 8-10	5/9/02	MHG1-020605-1	0.406	0.072	0.177
MP288	NF2	5/9/02	MHG1-020605-1	0.271	0.097	0.358
MP288	NF3	5/9/02	MHG1-020605-1	0.294	0.104	0.354
MP288	NF4	5/9/02	MHG1-020605-1	0.399	0.119	0.298
MP288	NF5	5/9/02	MHG1-020605-1	0.318	0.102	0.321
MP288	NF6	5/9/02	MHG1-020605-1	0.284	0.073	0.257
MP288	MF1	5/9/02	MHG1-020605-1	0.416	0.191	0.459
MP288	MF2	5/9/02	MHG1-020605-1	0.273	0.087	0.319
MP288	MF3	5/9/02	MHG1-020605-1	0.300	0.118	0.393
MP288	MF4	5/8/02	MHG7-020530-1	0.314	0.132	0.420
MP288	MF5	5/8/02	MHG7-020530-1	0.359	0.208	0.579
MP288	MF6	5/9/02	MHG7-020530-1	0.272	0.121	0.445
MP288	FF1 0-2	5/8/02	MHG7-020530-1	0.745	0.119	0.160
MP288	FF1 2-4	5/8/02	MHG7-020530-1	0.732	0.072	0.098
MP288	FF1 4-6	5/8/02	MHG7-020530-1	0.707	0.035	0.050
MP288	FF1 6-8	5/8/02	MHG7-020530-1	0.710	0.032	0.045
MP288	FF1 8-10	5/8/02	MHG7-020530-1	0.707	0.027	0.038
MP288	FF2	5/8/02	MHG7-020530-1	0.720	0.101	0.140
MP288	FF3	5/8/02	MHG7-020530-1	0.691	0.122	0.177
MP288	FF4	5/8/02	MHG7-020530-1	0.423	0.138	0.326
MP288	FF5	5/8/02	MHG7-020530-1	0.378	0.221	0.585
MP288	FF6	5/13/02	MHG7-020606-1	0.285	0.103	0.361
MP288	DISC1 0-2	5/9/02	MHG7-020530-1	0.294	0.140	0.476
MP288	DISC1 2-4	5/9/02	MHG7-020530-1	0.356	0.223	0.626
MP288	DISC1 4-6	5/9/02	MHG7-020530-1	0.375	0.249	0.664
MP288	DISC1 6-8	5/9/02	MHG7-020530-1	0.388	0.235	0.606
MP288	DISC1 8-10	5/9/02	MHG7-020530-1	0.378	0.181	0.479
MP288	DISC2 0-2	5/9/02	MHG7-020530-1	0.390	0.123	0.315

\*Blank corrected

**Methyl Hg in Sediments - Results Page 2**  
(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Analysis Batch ID#	Dry Fraction	methyl Hg, ng/g*	
					wet wt basis	dry wt basis
MP288	DISC2 2-4	5/9/02	MHG7-020530-1	0.447	0.165	0.369
MP288	DISC2 4-6	5/9/02	MHG7-020530-1	0.460	0.135	0.293
MP288	DISC2 6-8	5/9/02	MHG1-020605-1	0.458	0.108	0.236
MP288	DISC2 12-14	5/9/02	MHG1-020605-1	0.404	0.063	0.156
MP299	NF1 0-2	5/10/02	MHG7-020605-1	0.303	0.109	0.360
MP299	NF1 2-4	5/10/02	MHG7-020606-1	0.377	0.172	0.456
MP299	NF1 4-6	5/10/02	MHG7-020606-1	0.410	0.211	0.515
MP299	NF1 6-8	5/10/02	MHG7-020606-1	0.432	0.195	0.451
MP299	NF1 8-10	5/10/02	MHG7-020606-1	0.427	0.188	0.440
MP299	NF2	5/10/02	MHG7-020606-1	0.315	0.094	0.298
MP299	NF3	5/10/02	MHG7-020606-1	0.401	0.232	0.579
MP299	NF4	5/10/02	MHG7-020606-1	0.283	0.091	0.322
MP299	NF5	5/10/02	MHG7-020606-1	0.313	0.093	0.297
MP299	NF6	5/10/02	MHG7-020606-1	0.269	0.077	0.286
MP299	MF1	5/10/02	MHG7-020606-1	0.296	0.104	0.351
MP299	MF2	5/10/02	MHG7-020606-1	0.324	0.191	0.590
MP299	MF3	5/10/02	MHG7-020605-1	0.320	0.072	0.225
MP299	MF4	5/10/02	MHG7-020605-1	0.311	0.104	0.334
MP299	MF5	5/10/02	MHG7-020605-1	0.374	0.174	0.465
MP299	MF6	5/10/02	MHG7-020605-1	0.287	0.115	0.401
MP299	FF1 0-2	5/10/02	MHG7-020605-1	0.375	0.224	0.597
MP299	FF1 2-4	5/10/02	MHG7-020605-1	0.381	0.184	0.483
MP299	FF1 4-6	5/10/02	MHG7-020605-1	0.409	0.136	0.333
MP299	FF1 6-8	5/10/02	MHG7-020605-1	0.424	0.133	0.314
MP299	FF1 8-10	5/10/02	MHG7-020605-1	0.421	0.104	0.247
MP299	FF2	5/9/02	MHG1-020605-1	0.363	0.177	0.488
MP299	FF3	5/9/02	MHG1-020605-1	0.379	0.264	0.697
MP299	FF4	5/9/02	MHG1-020605-1	0.235	0.079	0.336
MP299	FF5	5/9/02	MHG1-020605-1	0.236	0.043	0.182
MP299	FF6	5/9/02	MHG1-020605-1	0.332	0.080	0.241
MP299	DISC1 0-2	5/10/02	MHG7-020605-1	0.459	0.115	0.251
MP299	DISC1 2-4	5/10/02	MHG7-020605-1	0.488	0.104	0.213

\*Blank corrected

**Methyl Hg in Sediments - Results Page 3**  
 (Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Analysis Batch ID#	Dry Fraction	methyl Hg, ng/g*	
					wet wt basis	dry wt basis
MP299	DISC1 4-6	5/10/02	MHG7-020605-1	0.452	0.078	0.173
MP299	DISC1 6-8	5/10/02	MHG7-020605-1	0.424	0.068	0.160
MP299	DISC1 10-12	5/10/02	MHG7-020605-1	0.481	0.087	0.181
MP299	DISC2 0-2	5/10/02	MHG7-020605-1	0.350	0.110	0.314
MP299	DISC2 2-4	5/10/02	MHG7-020605-1	0.389	0.142	0.365
MP299	DISC2 4-6	5/10/02	MHG7-020605-1	0.413	0.093	0.225
MP299	DISC2 6-8	5/10/02	MHG7-020605-1	0.394	0.058	0.147
MP299	DISC2 14-16	5/10/02	MHG7-020605-1	0.421	0.038	0.090
MC496	NF1 0-2	5/15/02	MHG1-020611-1	0.372	0.091	0.245
MC496	NF1 2-4	5/15/02	MHG1-020611-1	0.383	0.099	0.258
MC496	NF1 4-6	5/15/02	MHG1-020611-1	0.357	0.119	0.333
MC496	NF1 6-8	5/15/02	MHG1-020611-1	0.363	0.120	0.331
MC496	NF1 8-10	5/15/02	MHG1-020611-1	0.348	0.121	0.348
MC496	NF2	5/15/02	MHG1-020611-1	0.326	0.132	0.405
MC496	NF3	5/15/02	MHG1-020611-1	0.349	0.197	0.564
MC496	NF4	5/15/02	MHG1-020611-1	0.320	0.271	0.847
MC496	NF5	5/15/02	MHG7-020611-1	0.371	0.116	0.313
MC496	NF6	5/15/02	MHG7-020611-1	0.326	0.181	0.555
MC496	MF1	5/15/02	MHG7-020611-1	0.288	0.171	0.594
MC496	MF2	5/15/02	MHG7-020611-1	0.330	0.138	0.418
MC496	MF3	5/15/02	MHG7-020611-1	0.288	0.173	0.601
MC496	MF4	5/15/02	MHG7-020611-1	0.287	0.114	0.397
MC496	MF5	5/15/02	MHG7-020611-1	0.290	0.193	0.666
MC496	MF6	5/15/02	MHG7-020611-1	0.313	0.106	0.339
MC496	FF1 0-2	5/14/02	MHG7-020606-1	0.251	0.115	0.458
MC496	FF1 2-4	5/14/02	MHG7-020606-1	0.348	0.116	0.333
MC496	FF1 4-6	5/14/02	MHG7-020606-1	0.347	0.135	0.389
MC496	FF1 6-8	5/14/02	MHG7-020606-1	0.355	0.136	0.383
MC496	FF1 8-10	5/14/02	MHG7-020606-1	0.358	0.125	0.349
MC496	FF2	5/14/02	MHG7-020606-1	0.311	0.202	0.650
MC496	FF3	5/14/02	MHG7-020606-1	0.263	0.091	0.346
MC496	FF4	5/14/02	MHG7-020606-1	0.295	0.233	0.790

\*Blank corrected

**Methyl Hg in Sediments - Results Page 4**  
 (Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontiuis Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Analysis Batch ID#	Dry Fraction	methyl Hg, ng/g*	
					wet wt basis	dry wt basis
MC496	FF5	5/14/02	MHG1-020611-1	0.339	0.132	0.389
MC496	FF6	5/14/02	MHG1-020611-1	0.341	0.138	0.405
MC496	DISC1 0-2	5/15/02	MHG1-020611-1	0.345	0.245	0.710
MC496	DISC1 2-4	5/15/02	MHG1-020611-1	0.332	0.254	0.765
MC496	DISC1 4-6	5/15/02	MHG1-020611-1	0.320	0.163	0.509
MC496	DISC1 6-8	5/15/02	MHG1-020611-1	0.336	0.094	0.280
MC496	DISC1 8-10	5/15/02	MHG1-020611-1	0.349	0.099	0.284
MC496	DISC2 0-2	5/15/02	MHG1-020611-1	0.322	0.100	0.311
MC496	DISC2 2-4	5/15/02	MHG1-020611-1	0.328	0.145	0.442
MC496	DISC2 4-6	5/15/02	MHG1-020611-1	0.339	0.177	0.522
MC496	DISC2 6-8	5/15/02	MHG1-020611-1	0.353	0.163	0.462
MC496	DISC2 8-10	5/15/02	MHG1-020611-1	0.317	0.105	0.331

\*Blank corrected

**Methyl Hg in Sediments - Method Blanks**  
(Florida Institute of Technology c/o John Trefry)

*analyzed by*  
Frontier Geosciences, Inc.  
414 Pontiuis Avenue North  
phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g	
				wet wt basis	dry wt basis

**Method Blanks**

	Blank-1			0.004	
	Blank-2			0.003	
	Blank-3			0.005	
	Blank-4			0.004	
	Blank-5			0.013	
	Blank-6			0.009	
	Blank-7			0.008	
	Blank-8			0.008	
	Blank-9			0.013	
	Blank-10			-0.005	
	Blank-11			0.005	
	Blank-12			-0.001	
	Blank-13			0.003	
	Blank-14			0.010	
	Blank-15			0.002	
	Blank-16			0.001	
	Blank-17			0.000	
	Blank-18			0.001	
	<b>Mean</b>			<b>0.005</b>	
	<b>Estimated MDL</b>			<b>0.014</b>	
	<b>Method MDL</b>			<b>0.015</b>	

Estimated MDL = 3 X standard deviation of blanks

Blanks 1-3 from MHG7-020530-1

Blanks 4-6 from MHG1-020605-1

Blanks 7-9 from MHG7-020605-1

Blanks 10-12 from MHG7-020606-1

Blanks 13-15 from MHG1-020611-1

Blanks 16-18 from MHG7-020611-1

**Methyl Hg in Sediments - Certified Reference Materials**  
(Florida Institute of Technology c/o John Trefry)

*analyzed by*  
Frontier Geosciences, Inc.  
414 Pontiuis Avenue North  
phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g	
				wet wt basis	dry wt basis

**Certified Reference Materials**

	DORM-2 (Rep 1)			4,300	
	<b>recovery</b>			<b>96.2%</b>	
	DORM-2 (Rep 2)			3,819	
	<b>recovery</b>			<b>85.4%</b>	
	DORM-2 (Rep 3)			3,779	
	<b>recovery</b>			<b>84.5%</b>	
	DORM-2 (Rep 4)			3,880	
	<b>recovery</b>			<b>86.8%</b>	
	DORM-2 (Rep 5)			3,600	
	<b>recovery</b>			<b>80.5%</b>	
	DORM-2 (Rep 6)			4,137	
	<b>recovery</b>			<b>92.6%</b>	
	certified value			4,470	

Acceptance limit: 75-125%

DORM-2 (Rep 1) from MHG7-020530-1

DORM-2 (Rep 2) from MHG1-020605-1

DORM-2 (Rep 3) from MHG7-020605-1

DORM-2 (Rep 4) from MHG7-020606-1

DORM-2 (Rep 5) from MHG1-020611-1

DORM-2 (Rep 6) from MHG7-020611-1

**Methyl Hg in Sediments - Matrix Replicates Page 1**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis

**Matrix Replicates**

MP288	FF3	05/08/02	0.691	0.122	
MP288	FF3 MD	05/08/02	0.693	0.134	
	<b>Mean</b>		<b>0.692</b>	<b>0.128</b>	
	<b>RPD</b>		<b>0.3%</b>	<b>9.4%</b>	
MP288	DISC2 4-6	05/09/02	0.46		
MP288	DISC2 4-6 MD	05/09/02	0.459		
	<b>Mean</b>		<b>0.460</b>		
	<b>RPD</b>		<b>0.2%</b>		
MP288	DISC2 6-8	05/09/02	0.458	0.108	
MP288	DISC2 6-8 MD	05/09/02	0.459	0.102	
	<b>Mean</b>		<b>0.459</b>	<b>0.105</b>	
	<b>RPD</b>		<b>0.2%</b>	<b>5.7%</b>	
MP288	MF3	05/09/02	0.300		
MP288	MF3	05/09/02	0.301		
	<b>Mean</b>		<b>0.301</b>		
	<b>RPD</b>		<b>0.3%</b>		
MP299	DISC1 10-12	05/10/02	0.481	0.087	
MP299	DISC1 10-12 MD	05/10/02	0.479	0.096	
	<b>Mean</b>		<b>0.480</b>	<b>0.092</b>	
	<b>RPD</b>		<b>0.4%</b>	<b>9.8%</b>	
MP299	DISC1 6-8	05/10/02	0.424		
MP299	DISC1 6-8	05/10/02	0.426		
	<b>Mean</b>		<b>0.425</b>		
	<b>RPD</b>		<b>0.5%</b>		

\*Blank corrected

Acceptance limit: 25%



**Methyl Hg in Sediments - Matrix Replicates Page 2**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis

**Matrix Replicates**

MP299	NF1 2-4	05/10/02	0.377	0.172	
MP299	NF1 2-4 MD	05/10/02	0.379	0.175	
	<b>Mean</b>		<b>0.378</b>	<b>0.174</b>	
	<b>RPD</b>		<b>0.5%</b>	<b>1.7%</b>	
MC496	FF4	05/14/02	0.295		
MC496	FF4 MD	05/14/02	0.286		
	<b>Mean</b>		<b>0.291</b>		
	<b>RPD</b>		<b>3.1%</b>		
MC496	FF5	05/14/02	0.339	0.132	
MC496	FF5 MD	05/14/02	0.335	0.139	
	<b>Mean</b>		<b>0.337</b>	<b>0.136</b>	
	<b>RPD</b>		<b>1.2%</b>	<b>5.2%</b>	
MC496	FF6	05/14/02	0.341		
MC496	FF6 MD	05/14/02	0.335		
	<b>Mean</b>		<b>0.338</b>		
	<b>RPD</b>		<b>1.8%</b>		
MC496	NF5	05/15/02	0.371	0.116	
MC496	NF5 MD	05/15/02	0.369	0.130	
	<b>Mean</b>		<b>0.370</b>	<b>0.123</b>	
	<b>RPD</b>		<b>0.5%</b>	<b>11.4%</b>	

\*Blank corrected

Acceptance limit: 25%

**Methyl Hg in Sediments - Matrix Spikes Page 1**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis
<b>Matrix Replicates</b>					
MP288	FF3 MS <sup>#</sup>	37384		5.315	
	Spiking level			5.065	
	net			5.188	
	<b>recovery</b>			<b>102.4%</b>	
MP288	FF3 MSD <sup>#</sup>	37384		5.060	
	Spiking level			4.822	
	net			4.932	
	<b>recovery</b>			<b>102.3%</b>	
MP288	DISC2 6-8 MS	37385		3.890	
	Spiking level			4.580	
	net			3.785	
	<b>recovery</b>			<b>82.6%</b>	
MP288	DISC2 6-8 MSD	37385		3.990	
	Spiking level			4.740	
	net			3.885	
	<b>recovery</b>			<b>82.0%</b>	
MP299	DISC1 10-12 MS	37386		4.452	
	Spiking level			5.130	
	net			4.360	
	<b>recovery</b>			<b>85.0%</b>	
MP299	DISC1 10-12 MSD	37386		4.404	
	Spiking level			4.870	
	net			4.313	
	<b>recovery</b>			<b>88.6%</b>	

<sup>#</sup>Please see narrative regarding this result

Acceptance limit: 75-125%

MS-matrix spike

MSD-matrix spike duplicate

**Methyl Hg in Sediments - Matrix Spikes Page 2**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis

**Matrix Replicates**

MP299	NF1 2-4 MS	37386		4.419	
	Spiking level			4.900	
	net			4.245	
	<b>recovery</b>			<b>86.6%</b>	
MP299	NF1 2-4 MSD	37386		4.517	
	Spiking level			5.080	
	net			4.343	
	<b>recovery</b>			<b>85.5%</b>	
MC496	FF5 MS	37390		4.229	
	Spiking level			4.550	
	net			4.094	
	<b>recovery</b>			<b>90.0%</b>	
MC496	FF5 MSD	37390		4.908	
	Spiking level			5.180	
	net			4.772	
	<b>recovery</b>			<b>92.1%</b>	
MC496	NF5 MS	37391		4.720	
	Spiking level			5.090	
	net			4.596	
	<b>recovery</b>			<b>90.3%</b>	
MC496	NF5 MSD	37391		4.260	
	Spiking level			5.090	
	net			4.137	
	<b>recovery</b>			<b>81.3%</b>	

Acceptance limit: 75-125%

MS-matrix spike

MSD-matrix spike duplicate

# Frontier Geosciences Inc.

*Environmental Research & Specialty Analytical Laboratory*  
414 Pontius Ave N - Seattle WA 98109

June 27, 2002

Dr. John Trefry  
Florida Institute of Technology  
150 W. University Blvd.  
Melbourne, FL 32901-6975

Re: Gulf of Mexico Synthetic Based Muds Monitoring Program

Dear Dr. Trefry,

Enclosed are results for methyl mercury in sediment samples received May 23, 2002. All samples listed on the enclosed letter were received in good condition, with cooler temperatures of  $-11.3^{\circ}\text{C}$  and  $-10.0^{\circ}\text{C}$ . It was noted upon receipt that the sample listed on the COC as EI346 MF2 was labeled on the bottle as EI346 MF6. Upon discussion with the client, it was determined that EI346 MF6 was the correct sample ID. Following receipt, the samples were placed directly into frozen storage until sample preparation could take place.

Methyl mercury in sediments was prepared by acid bromide/methyl chloride extraction and analyzed by aqueous phase ethylation, isothermal GC separation, and CVAFS detection (Frontier SOP's FGS-045, FGS-070). All results are reported on both a wet and dry weight basis.

Overall, no significant analytical difficulties were encountered. There are some items to note, separated according to analytical batch identifier.

- MHG1-020613-1 The 0.100 ng calibration standard recovered low and was removed from the curve. In order to assure that there were no issues with the trap and bubbler involved, a 0.100 ng recovery checks was performed using the same bubbler/trap combination. As the recovery was acceptable at 97.6%, analysis was resumed. The initial low recovery was attributed to a loose or improper bubbler seal.
- MHG7-020613-1 The continuing calibration verification standard (CCV1) recovery was above the control limit of 120% with a recovery of 124.4%. Additional standards were immediately prepared to investigate if the bubbler or trap were responsible for

206 622 6860  
fax 206 622 6870  
email: [info@Frontier.WA.com](mailto:info@Frontier.WA.com)  
[www.FrontierGeosciences.com](http://www.FrontierGeosciences.com)

**Methyl Hg in Sediments - Results Page 1**  
 (Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.  
 414 Pontiuus Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Analysis Batch ID#	Dry Fraction	methyl Hg, ng/g*	
					wet wt basis	dry wt basis
EI 346	NF1	5/18/02	MHG1-020614-1	0.452	0.072	0.159
EI 346	NF2	5/17/02	MHG7-020611-1	0.437	0.096	0.220
EI 346	NF3	5/17/02	MHG7-020611-1	0.537	0.216	0.402
EI 346	NF4	5/17/02	MHG7-020611-1	0.529	0.186	0.352
EI 346	NF5	5/17/02	MHG7-020611-1	0.563	ND(<0.015)	ND(<0.027)
EI 346	NF6	5/17/02	MHG7-020611-1	0.480	ND(<0.015)	ND(<0.032)
EI 346	MF1	5/18/02	MHG1-020614-1	0.426	0.123	0.289
EI 346	MF6	5/18/02	MHG1-020614-1	0.365	0.141	0.386
EI 346	FF1 0-2	5/17/02	MHG7-020611-1	0.268	0.029	0.108
EI 346	FF1 2-4	5/17/02	MHG7-020611-1	0.310	0.021	0.068
EI 346	FF1 4-6	5/17/02	MHG7-020611-1	0.385	0.102	0.265
EI 346	FF1 6-8	5/17/02	MHG1-020614-1	0.378	0.080	0.212
EI 346	FF1 8-10	5/17/02	MHG1-020614-1	0.394	0.044	0.112
EI 346	FF2	5/17/02	MHG1-020614-1	0.326	0.119	0.365
EI 346	FF3	5/17/02	MHG1-020614-1	0.280	0.095	0.339
EI 346	FF4	5/17/02	MHG1-020614-1	0.319	0.089	0.279
EI 346	FF5	5/17/02	MHG1-020614-1	0.297	0.119	0.401
EI 346	FF6	5/17/02	MHG1-020614-1	0.324	0.107	0.330
EI 346	DISC1 0-2	5/17/02	MHG1-020614-1	0.484	ND(<0.015)	ND(<0.031)
EI 346	DISC1 2-4	5/17/02	MHG1-020614-1	0.577	ND(<0.015)	ND(<0.031)
EI 346	DISC1 4-6	5/17/02	MHG1-020614-1	0.508	0.032	0.063
EI 346	DISC1 6-8	5/17/02	MHG1-020614-1	0.446	0.060	0.135
EI 346	DISC1 16-18	5/17/02	MHG1-020614-1	0.489	0.065	0.133
EI 346	DISC2 0-2	5/18/02	MHG1-020614-1	0.515	0.148	0.287
EI 346	DISC2 2-4	5/18/02	MHG1-020614-1	0.466	0.099	0.212
EI 346	DISC2 4-6	5/18/02	MHG1-020614-1	0.448	0.076	0.170
EI 346	DISC2 6-8	5/18/02	MHG1-020614-1	0.455	0.052	0.114
EI 346	DISC2 8-10	5/18/02	MHG1-020614-1	0.453	0.057	0.126
GC112	NF1	5/19/02	MHG7-020613-1	0.340	0.468	1.376
GC112	NF2	5/19/02	MHG7-020613-1	0.266	0.092	0.346
GC112	NF3	5/19/02	MHG7-020613-1	0.322	0.743	2.307

\*Blank corrected

ND - Sample concentration below limit of detection

**Methyl Hg in Sediments - Results Page 2**  
 (Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Analysis Batch ID#	Dry Fraction	methyl Hg, ng/g*	
					wet wt basis	dry wt basis
GC112	NF4	5/19/02	MHG7-020613-1	0.375	0.998	2.661
GC112	NF5	5/19/02	MHG7-020613-1	0.364	0.369	1.014
GC112	NF6	5/19/02	MHG1-020613-1	0.406	0.755	1.860
GC112	MF1	5/20/02	MHG1-020613-1	0.293	0.194	0.662
GC112	MF6	5/19/02	MHG1-020613-1	0.302	0.169	0.560
GC112	FF1 0-2	5/19/02	MHG1-020613-1	0.287	0.284	0.990
GC112	FF1 2-4	5/19/02	MHG1-020613-1	0.317	0.233	0.735
GC112	FF1 4-6	5/19/02	MHG1-020613-1	0.364	0.148	0.407
GC112	FF1 6-8	5/19/02	MHG1-020613-1	0.379	0.267	0.704
GC112	FF1 8-10	5/19/02	MHG1-020613-1	0.381	0.087	0.228
GC112	FF2	5/19/02	MHG1-020613-1	0.296	0.209	0.706
GC112	FF3	5/19/02	MHG1-020613-1	0.304	0.149	0.490
GC112	FF4	5/19/02	MHG1-020613-1	0.303	0.283	0.934
GC112	FF5 #1	5/19/02	MHG1-020613-1	0.282	0.254	0.901
GC112	FF5 #2	5/19/02	MHG1-020613-1	0.276	0.290	1.051
GC112	FF6	5/19/02	MHG1-020613-1	0.289	0.289	1.000
GC112	DISC1 0-2	5/19/02	MHG1-020613-1	0.431	0.235	0.545
GC112	DISC1 2-4	5/19/02	MHG7-020613-1	0.527	0.126	0.239
GC112	DISC1 4-6	5/19/02	MHG7-020613-1	0.503	0.181	0.360
GC112	DISC1 6-8	5/19/02	MHG7-020613-1	0.385	0.435	1.130
GC112	DISC1 18-20	5/19/02	MHG7-020613-1	0.400	0.064	0.160
GC112	DISC2 0-2	5/19/02	MHG7-020613-1	0.434	0.554	1.276
GC112	DISC2 2-4	5/19/02	MHG7-020613-1	0.367	0.445	1.213
GC112	DISC2 4-6	5/19/02	MHG7-020613-1	0.339	0.300	0.885
GC112	DISC2 6-8	5/19/02	MHG7-020613-1	0.361	0.140	0.388
GC112	DISC2 18-20	5/19/02	MHG7-020613-1	0.395	0.069	0.175
EW963	NF1	5/20/02	MHG7-020613-1	0.296	0.228	0.770
EW963	NF2	5/20/02	MHG7-020613-1	0.359	0.226	0.630
EW963	NF3 #1	5/20/02	MHG7-020613-1	0.274	0.103	0.376
EW963	NF3 #2	5/20/02	MHG7-020613-1	0.315	0.154	0.489
EW963	NF4	5/20/02	MHG7-020613-1	0.326	0.185	0.567
EW963	NF5	5/19/02	MHG7-020613-1	0.355	0.153	0.431

\*Blank corrected

**Methyl Hg in Sediments - Results Page 3**  
 (Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Analysis Batch ID#	Dry Fraction	methyl Hg, ng/g*	
					wet wt basis	dry wt basis
EW963	NF6	5/20/02	MHG1-020613-1	0.301	0.244	0.811
EW963	MF1 #1	5/20/02	MHG1-020613-1	0.264	0.202	0.765
EW963	MF1 #2	5/20/02	MHG1-020613-1	0.185	0.187	1.011
EW963	MF6	5/20/02	MHG1-020613-1	0.282	0.148	0.525
EW963	FF1 0-2	5/20/02	MHG1-020613-1	0.288	0.296	1.028
EW963	FF1 2-4	5/20/02	MHG1-020625-1	0.281	0.222	0.790
EW963	FF1 4-6	5/20/02	MHG1-020625-1	0.316	0.117	0.370
EW963	FF1 6-8	5/20/02	MHG1-020625-1	0.335	0.101	0.301
EW963	FF1 8-10	5/20/02	MHG1-020625-1	0.345	0.097	0.281
EW963	FF2	5/20/02	MHG1-020625-1	0.274	0.174	0.635
EW963	FF3 #1	5/20/02	MHG1-020625-1	0.284	0.132	0.465
EW963	FF3 #2	5/20/02	MHG1-020625-1	0.269	0.174	0.647
EW963	FF4	5/20/02	MHG1-020625-1	0.263	0.214	0.814
EW963	FF5	5/20/02	MHG1-020625-1	0.245	0.168	0.686
EW963	FF6	5/20/02	MHG1-020625-1	0.273	0.079	0.289
EW963	DISC1 0-2	5/20/02	MHG1-020625-1	0.312	0.117	0.375
EW963	DISC1 2-4	5/20/02	MHG1-020625-1	0.336	0.050	0.149
EW963	DISC1 4-6	5/20/02	MHG1-020625-1	0.356	0.063	0.177
EW963	DISC1 6-8	5/20/02	MHG1-020625-1	0.359	0.065	0.181
EW963	DISC1 18-20	5/20/02	MHG1-020625-1	0.378	0.033	0.087
EW963	DISC2 0-2	5/20/02	MHG1-020625-1	0.524	0.125	0.239
EW963	DISC2 2-4	5/20/02	MHG1-020625-1	0.530	0.119	0.225
EW963	DISC2 4-6	5/20/02	MHG1-020625-1	0.469	0.144	0.307
EW963	DISC2 6-8	5/20/02	MHG1-020625-1	0.396	0.177	0.447
EW963	DISC2 16-18	5/20/02	MHG1-020625-1	0.355	0.116	0.327

\*Blank corrected

**Methyl Hg in Sediments - Method Blanks**  
(Florida Institute of Technology c/o John Trefry)

*analyzed by*  
Frontier Geosciences, Inc.  
414 Pontiuis Avenue North  
phone: (206) 622-6960 fax: (206) 622-6870

<b>Station ID</b>	<b>Sample Identification</b>	<b>Sampling Date</b>	<b>Dry Fraction</b>	<b>methyl Hg, ng/g</b>	
				<b>wet wt basis</b>	<b>dry wt basis</b>

**Method Blanks**

	Blank-1			0.003	
	Blank-2			0.006	
	Blank-3			0.000	
	Blank-4			0.008	
	Blank-5			0.003	
	Blank-6			0.002	
	Blank-7			0.005	
	Blank-8			0.014	
	Blank-9			0.014	
	Blank-10			0.004	
	Blank-11			0.010	
	Blank-12			0.002	
	Blank-13			0.001	
	Blank-14			0.000	
	Blank-15			0.001	
	<b>Mean</b>			<b>0.005</b>	
	<b>Estimated MDL</b>			<b>0.014</b>	
	<b>Method MDL</b>			<b>0.015</b>	

Estimated MDL = 3 X standard deviation of blanks

Blanks 1-3 from MHG1-020613-1

Blanks 4-6 from MHG7-020613-1

Blanks 7-9 from MHG1-020614-1

Blanks 10-12 from MHG1-020625-1

Blanks 13-15 from MHG7-020611-1



**Methyl Hg in Sediments - Certified Reference Materials**  
(Florida Institute of Technology c/o John Trefry)

*analyzed by*  
Frontier Geosciences, Inc.  
414 Pontiuus Avenue North  
phone: (206) 622-6960 fax: (206) 622-6870

<b>Station ID</b>	<b>Sample Identification</b>	<b>Sampling Date</b>	<b>Dry Fraction</b>	<b>methyl Hg, ng/g</b>	
				<b>wet wt basis</b>	<b>dry wt basis</b>

**Certified Reference Materials**

	DORM-2 (Rep 1)			4,347	
	<b>recovery</b>			<b>97.2%</b>	
	DORM-2 (Rep 2)			4,720	
	<b>recovery</b>			<b>105.6%</b>	
	DORM-2 (Rep 3)			4,503	
	<b>recovery</b>			<b>100.7%</b>	
	DORM-2 (Rep 4)			4,536	
	<b>recovery</b>			<b>101.5%</b>	
	DORM-2 (Rep 5)			4,137	
	<b>recovery</b>			<b>92.6%</b>	
	<b>certified value</b>			4,470	

Acceptance limit: 75-125%

DORM-2 (Rep 1) from MHG1-020613-1

DORM-2 (Rep 2) from MHG7-020613-1

DORM-2 (Rep 3) from MHG1-020614-1

DORM-2 (Rep 4) from MHG1-020625-1

DORM-2 (Rep 5) from MHG7-020611-1

**Methyl Hg in Sediments - Matrix Replicates Page 1**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis

**Matrix Replicates**

EI 346	FF1 4-6	05/17/02	0.385		
EI 346	FF1 4-6 MD	05/17/02	0.388		
	<b>Mean</b>		<b>0.387</b>		
	<b>RPD</b>		<b>0.8%</b>		
EI 346	NF1	05/18/02	0.452	0.072	
EI 346	NF1 MD	05/18/02	0.451	0.067	
	<b>Mean</b>		<b>0.452</b>	<b>0.070</b>	
	<b>RPD</b>		<b>0.2%</b>	<b>7.2%</b>	
EI 346	DISC2 8-10	05/18/02	0.453		
EI 346	DISC2 8-10 MD	05/18/02	0.453		
	<b>Mean</b>		<b>0.453</b>		
	<b>RPD</b>		<b>0.0%</b>		
GC112	NF6	05/19/02	0.406	0.755	
GC112	NF6 MD	05/19/02	0.349	0.846	
	<b>Mean</b>		<b>0.378</b>	<b>0.801</b>	
	<b>RPD</b>		<b>15.1%</b>	<b>11.4%</b>	
GC112	DISC1 0-2	05/19/02	0.431		
GC112	DISC1 0-2 MD	05/19/02	0.400		
	<b>Mean</b>		<b>0.416</b>		
	<b>RPD</b>		<b>7.5%</b>		
GC112	NF1	05/19/02	0.340	0.468	
GC112	NF1 MD	05/19/02	0.346	0.504	
	<b>Mean</b>		<b>0.343</b>	<b>0.486</b>	
	<b>RPD</b>		<b>1.7%</b>	<b>7.4%</b>	

\*Blank corrected

Acceptance limit: 25%

**Methyl Hg in Sediments - Matrix Replicates Page 2**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis

**Matrix Replicates**

EW963	NF5	05/19/02	0.355		
EW963	NF5 MD	05/19/02	0.356		
	<b>Mean</b>		<b>0.356</b>		
	<b>RPD</b>		<b>0.3%</b>		
EW963	DISC2 2-4	05/20/02	0.530	0.119	
EW963	DISC2 2-4 MD	05/20/02	0.530	0.133	
	<b>Mean</b>		<b>0.530</b>	<b>0.126</b>	
	<b>RPD</b>		<b>0.0%</b>	<b>11.1%</b>	
EW963	DISC2 16-18	05/20/02	0.355		
EW963	DISC2 16-18 MD	05/20/02	0.353		
	<b>Mean</b>		<b>0.354</b>		
	<b>RPD</b>		<b>0.6%</b>		

\*Blank corrected

Acceptance limit: 25%

**Methyl Hg in Sediments - Matrix Spikes Page 1**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis

**Matrix Replicates**

EI 346	NF1 MS	5/18/02		4.564	
	Spiking level			4.950	
	net			4.494	
	<b>recovery</b>			<b>90.8%</b>	
EI 346	NF1 MSD	5/18/02		5.211	
	Spiking level			5.040	
	net			5.141	
	<b>recovery</b>			<b>102.0%</b>	
GC112	NF6 MS	5/19/02		5.819	
	Spiking level			4.940	
	net			5.019	
	<b>recovery</b>			<b>101.6%</b>	
GC112	NF6 MSD	5/19/02		5.736	
	Spiking level			5.020	
	net			4.936	
	<b>recovery</b>			<b>98.3%</b>	
GC112	NF1 MS	5/19/02		5.851	
	Spiking level			4.840	
	net			5.365	
	<b>recovery</b>			<b>110.8%</b>	
GC112	NF1 MSD	5/19/02		5.143	
	Spiking level			4.840	
	net			4.657	
	<b>recovery</b>			<b>96.2%</b>	

Acceptance limit: 75-125%

MS-matrix spike

MSD-matrix spike duplicate

**Methyl Hg in Sediments - Matrix Spikes Page 2**

(Florida Institute of Technology c/o John Trefry)

*analyzed by*

Frontier Geosciences, Inc.

414 Pontius Avenue North

phone: (206) 622-6960 fax: (206) 622-6870

Station ID	Sample Identification	Sampling Date	Dry Fraction	methyl Hg, ng/g*	
				wet wt basis	dry wt basis

**Matrix Replicates**

EW963	DISC2 2-4 MS	5/20/02		4.606	
	Spiking level			4.864	
	net			4.480	
	<b>recovery</b>			<b>92.1%</b>	
EW963	DISC2 2-4 MSD	5/20/02		5.070	
	Spiking level			4.912	
	net			4.944	
	<b>recovery</b>			<b>100.7%</b>	

Acceptance limit: 75-125%

MS-matrix spike

MSD-matrix spike duplicate

From: Lucas Hawkins <lucash@frontiergeosciences.com>  
To: "John H. Trefry" <jtrefry@fit.edu>  
Subject: RE: Analysis dates  
Date: Tue, 8 Oct 2002 10:02:20 -0700  
MIME-Version: 1.0  
X-Mailer: Internet Mail Service (5.5.2653.19)  
Content-Type: multipart/mixed;  
    boundary="----=\_NextPart\_000\_01C26EEC.76CE6450"  
Content-Length: 169333  
Status:

Hello John,

I have revised your data tables to include the analytical run identifier that corresponds to each result. For instance, MHG7-020611-1 indicates Methyl Hg analyzer #7 ran on June 11, 2002 (YYMMDD format). The -1 extension simply refers to the first analytical calibration of the day for the associated instrument.

Best regards,

Lucas Hawkins  
Project Manager  
Frontier Geosciences Inc.  
414 Pontius Avenue North  
Seattle, WA 98109  
phone: (206) 622-6960  
fax: (206) 622-6870  
[www.frontiergeosciences.com](http://www.frontiergeosciences.com)

From: Lucas Hawkins <lucash@frontiergeosciences.com>  
To: "John H. Trefry (E-mail)" <jtrefry@fit.edu>  
Subject: Analysis dates  
Date: Mon, 7 Oct 2002 13:49:12 -0700  
MIME-Version: 1.0  
X-Mailer: Internet Mail Service (5.5.2653.19)  
Content-Type: text/plain;  
    charset="iso-8859-1"  
Content-Length: 716  
Status:

Hello John,

Below is a list of the analysis that you requested - the dataset ID numbers are in parenthesis.

For samples received 5/17/02:

May 30, 2002 (MHG7-020530-1)

June 5, 2002 (MHG7-020605-1)

June 6, 2002 (MHG1-020605-1 and MHG7-020606-1)

June 11, 2002 (MHG1-020611-1 and MHG7-020611-1)

For samples received 5/23/02:

June 11, 2002 (MHG7-020611-1)

June 13, 2002 (MHG1-020613-1 and MHG7-020613-1)

June 14, 2002 (MHG7-020614-1)

June 25, 2002 (MHG1-020625-1)

Please let me know if there is any other information that you need.

Take care,

Lucas Hawkins  
Project Manager  
Frontier Geosciences Inc.  
414 Pontius Avenue North  
Seattle, WA 98109  
phone: (206) 622-6960  
fax: (206) 622-6870  
[www.frontiergeosciences.com](http://www.frontiergeosciences.com)

## Appendix II

Data for Total Mercury, Methylmercury,  
Aluminum, Barium and Total Organic Carbon



Table 1. Concentrations of Metals and Total Organic Carbon in Sediment Samples (dry weight)

Page 1 of 6

Sample Identification	Al (%)	Ba (µg/g)	Total Hg (µg/g)	MeHg (ng/g)	TOC (%)	Comments
API-S2 MP299 DISC-1 (0-2cm)	9.38	5590	58	0.251	0.75	
API-S2 MP299 DISC-1 (2-4cm)	7.95	8010	60	0.213	0.86	
API-S2 MP299 DISC-1 (4-6cm)	8.33	5080	57	0.173	0.87	
API-S2 MP299 DISC-1 (6-8cm)	9.29	2070	52	0.160	0.69	
API-S2 MP299 DISC-1 (10-12cm)	8.83	1050	49	0.181	0.90	
API-S2 MP299 DISC-2 (0-2cm)	7.68	5610	72	0.314	1.93	
API-S2 MP299 DISC-2 (2-4cm)	7.92	6710	83	0.365	1.08	
API-S2 MP299 DISC-2 (4-6cm)	8.15	5830	73	0.225	1.04	
API-S2 MP299 DISC-2 (6-8cm)	8.69	2380	63	0.147	1.04	
API-S2 MP299 DISC-2 (14-16cm)	9.24	415	62	0.090	0.92	
API-S2 MP299 NF-1 (0-2cm)	6.90	1940	48	0.360	1.05	
API-S2 MP299 NF-1 (2-4cm)	7.57	2720	56	0.456	1.16	
API-S2 MP299 NF-1 (4-6cm)	7.67	2890	57	0.515	1.14	
API-S2 MP299 NF-1 (6-8cm)	7.55	2830	53	0.451	1.08	
API-S2 MP299 NF-1 (8-10cm)	7.53	2620	54	0.440	1.13	
API-S2 MP299 NF-2	7.57	2710	58	0.298	1.16	
API-S2 MP299 NF-3	7.44	5520	61	0.579	0.95	
API-S2 MP299 NF-4 #1	7.74	2170	60	0.322	1.20	Lab Duplicate
API-S2 MP299 NF-4 #2	7.81	2140	58	-	1.21	Lab Duplicate
API-S2 MP299 NF-5	8.14	1980	51	0.297	1.29	
API-S2 MP299 NF-6	7.82	2260	54	0.286	1.27	
API-S2 MP299 MF-1	7.87	1850	61	0.351	1.22	
API-S2 MP299 MF-2	7.57	3860	62	0.590	1.16	
API-S2 MP299 MF-3	7.05	1960	47	0.225	1.23	
API-S2 MP299 MF-4	8.01	2150	54	0.334	1.37	
API-S2 MP299 MF-5	7.87	2710	66	0.465	1.17	
API-S2 MP299 MF-6	8.04	1710	61	0.401	1.43	
API-S2 MP299 FF-1 (0-2cm) #1	7.90	1050	64	0.597	1.23	Lab Duplicate
API-S2 MP299 FF-1 (0-2cm) #2	7.90	1040	63	-	1.20	Lab Duplicate
API-S2 MP299 FF-1 (2-4cm)	8.07	1000	58	0.483	1.15	
API-S2 MP299 FF-1 (4-6cm)	8.53	956	73	0.333	1.08	
API-S2 MP299 FF-1 (6-8cm)	8.50	1000	76	0.314	1.11	
API-S2 MP299 FF-1 (8-10cm)	8.48	931	72	0.247	1.07	
API-S2 MP299 FF-2	8.06	738	62	0.488	1.29	
API-S2 MP299 FF-3	7.42	971	51	0.697	1.14	
API-S2 MP299 FF-4	8.01	826	66	0.336	1.39	
API-S2 MP299 FF-5	7.70	944	58	0.182	1.21	
API-S2 MP299 FF-6	7.94	1530	64	0.241	1.20	

Table 1. Continued.

Sample Identification	Al (%)	Ba (µg/g)	Hg (ng/g)	MeHg (ng/g)	TOC (%)	Comments
API-S2- MP288 DISC-1 (0-2cm)	7.19	2380	48	0.476	1.21	
API-S2- MP288 DISC-1 (2-4cm)	7.25	2470	51	0.626	0.85	
API-S2- MP288 DISC-1 (4-6cm)	6.57	2770	60	0.664	1.16	
API-S2- MP288 DISC-1 (6-8cm)	7.15	3470	90	0.606	1.02	
API-S2- MP288 DISC-1 (8-10cm)	7.17	3210	61	0.479	0.98	
API-S2- MP288 DISC-2 (0-2cm)	5.25	5520	73	0.315	0.67	
API-S2- MP288 DISC-2 (2-4cm)	5.05	6430	77	0.369	0.70	
API-S2- MP288 DISC-2 (4-6cm)	5.86	3650	45	0.293	0.52	
API-S2- MP288 DISC-2 (6-8cm)	6.49	2130	46	0.236	0.66	
API-S2- MP288 DISC-2 (8-10cm)	8.06	881	38	0.156	0.85	
API-S2 MP288 NF-1 (0-2cm)	6.76	4270	64	0.381	0.75	
API-S2 MP288 NF-1 (2-4cm)	6.71	4720	50	0.331	0.64	
API-S2 MP288 NF-1 (4-6cm)	6.79	18400	45	0.252	0.62	
API-S2 MP288 NF-1 (6-8cm)	7.90	1080	33	0.158	0.79	
API-S2 MP288 NF-1 (8-10cm)	8.21	501	32	0.177	0.82	
API-S2 MP288 NF-2 #1	6.93	2870	49	0.358	1.15	Lab Duplicate
API-S2 MP288 NF-2 #2	6.91	2800	50	-	1.18	Lab Duplicate
API-S2 MP288 NF-3	6.83	2370	41	0.354	0.99	
API-S2 MP288 NF-4	7.30	2030	39	0.298	0.97	
API-S2 MP288 NF-5	6.61	3460	52	0.321	0.84	
API-S2 MP288 NF-6	7.09	3380	52	0.257	1.10	
API-S2 MP288 MF-1	6.74	13100	62	0.459	0.76	
API-S2 MP288 MF-2	7.14	1970	50	0.319	1.07	
API-S2 MP288 MF-3	7.15	2510	52	0.393	0.73	
API-S2 MP288 MF-4	7.26	2780	56	0.420	1.00	
API-S2 MP288 MF-5	7.09	1750	48	0.579	1.30	
API-S2 MP288 MF-6	6.81	2680	54	0.445	1.21	
API-S2 MP288 FF-1 (0-2cm)	1.15	106	11	0.160	0.08	
API-S2 MP288 FF-1 (2-4cm)	1.70	112	13	0.098	0.18	
API-S2 MP288 FF-1 (4-6cm)	2.16	108	17	0.050	0.21	
API-S2 MP288 FF-1 (6-8cm)	2.61	124	14	0.045	0.19	
API-S2 MP288 FF-1 (8-10cm)	2.49	107	14	0.038	0.15	
API-S2 MP288 FF-2	1.05	129	11	0.140	0.13	
API-S2 MP288 FF-3	0.94	637	12	0.177	0.08	
API-S2 MP288 FF-4	4.71	3340	37	0.326	0.64	
API-S2 MP288 FF-5	8.25	510	54	0.585	0.86	
API-S2 MP288 FF-6	7.77	1350	47	0.361	1.24	

Table 1. Continued.

Sample Identification	Al (%)	Ba (µg/g)	Total Hg (ng/g)	MeHg (ng/g)	TOC (%)	Comments
API-S2 EI346 DISC-1 (0-2cm) #1	4.36	159000	247	<0.031	4.10	Lab Duplicate
API-S2 EI346 DISC-1 (0-2cm) #2	4.44	154000	249	-	4.06	Lab Duplicate
API-S2 EI346 DISC-1 (2-4cm)	3.34	203000	276	<0.031	4.28	
API-S2 EI346 DISC-1 (4-6cm)	3.21	222000	355	0.063	5.89	
API-S2 EI346 DISC-1 (6-8cm)	8.01	8870	53	0.135	0.76	
API-S2 EI346 DISC-1 (16-18cm)	7.96	356	40	0.133	0.76	
API-S2 EI346 DISC-2 (0-2cm)	4.56	113000	145	0.287	1.12	
API-S2 EI346 DISC-2 (2-4cm)	6.09	29100	113	0.212	0.76	
API-S2 EI346 DISC-2 (4-6cm)	7.59	21500	54	0.170	0.62	
API-S2 EI346 DISC-2 (6-8cm)	8.2	1890	40	0.114	0.68	
API-S2 EI346 DISC-2 (8-10cm)	8.19	582	35	0.126	0.67	
API-S2 EI346 NF-1 (0-2cm)	7.62	28400	64	0.159	0.73	
API-S2 EI346 NF-2	5.24	33100	82	0.220	0.83	
API-S2 EI346 NF-3	5.01	133000	164	0.402	2.63	
API-S2 EI346 NF-4	3.47	212000	291	0.352	1.58	
API-S2 EI346 NF-5	3.64	244000	251	<0.027	2.07	
API-S2 EI346 NF-6	3.04	263000	234	<0.032	1.44	
API-S2 EI346 MF-1	7.30	27500	88	0.289	1.01	
API-S2 EI346 MF-6	7.54	16200	55	0.386	1.00	
API-S2 EI346 FF-1 (0-2cm)	7.74	1490	46	0.108	0.92	
API-S2 EI346 FF-1 (2-4cm)	7.65	1330	42	0.068	0.88	
API-S2 EI346 FF-1 (4-6cm)	7.61	1130	44	0.265	0.79	
API-S2 EI346 FF-1 (6-8cm)	7.84	983	41	0.212	0.89	
API-S2 EI346 FF-1 (8-10cm)	7.66	736	39	0.112	0.71	
API-S2 EI346 FF-2	7.70	1230	46	0.365	0.85	
API-S2 EI346 FF-3	7.91	1410	49	0.339	0.85	
API-S2 EI346 FF-4	7.57	3260	42	0.279	0.82	
API-S2 EI346 FF-5	7.51	1390	47	0.401	0.87	
API-S2 EI346 FF-6	7.67	1300	49	0.330	0.85	

Table 1. Continued.

Sample Identification	Al (%)	Ba (µg/g)	Hg (ng/g)	MeHg (ng/g)	TOC (%)	Comments
API-S2 MC496 DISC-1 (0-2cm)	6.45	107000	154	0.710	3.28	
API-S2 MC496 DISC-1 (2-4cm)	8.33	5780	79	0.765	1.34	
API-S2 MC496 DISC-1 (4-6cm)	8.85	956	88	0.509	1.48	
API-S2 MC496 DISC-1 (6-8cm)	8.73	918	90	0.280	1.24	
API-S2 MC496 DISC-1 (8-10cm)	9.06	266	88	0.284	1.31	
API-S2 MC496 DISC-2 (0-2cm)	7.76	23300	83	0.311	1.19	
API-S2 MC496 DISC-2 (2-4cm)	8.22	13300	81	0.442	1.29	
API-S2 MC496 DISC-2 (4-6cm)	8.65	1240	82	0.522	1.34	
API-S2 MC496 DISC-2 (6-8cm)	8.77	192	86	0.462	1.33	
API-S2 MC496 DISC-2 (8-10cm)	8.73	764	85	0.331	1.35	
API-S2 MC496 NF-1 (0-2cm)	7.66	12000	87	0.245	1.66	
API-S2 MC496 NF-1 (2-4cm)	7.94	14500	80	0.258	1.39	
API-S2 MC496 NF-1 (4-6cm)	8.01	6280	82	0.333	1.42	
API-S2 MC496 NF-1 (6-8cm)	7.77	1390	81	0.331	1.30	
API-S2 MC496 NF-1 (8-10cm)	8.06	729	87	0.348	1.33	
API-S2 MC496 NF-2	7.64	16400	85	0.405	1.63	
API-S2 MC496 NF-3	7.16	51700	110	0.564	1.63	
API-S2 MC496 NF-4	7.64	32600	105	0.847	2.71	
API-S2 MC496 NF-5	7.88	12800	66	0.313	1.08	
API-S2 MC496 NF-6	7.87	8850	78	0.555	1.23	
API-S2 MC496 MF-1	8.03	2770	72	0.594	1.23	
API-S2 MC496 MF-2	8.20	4870	77	0.418	1.41	
API-S2 MC496 MF-3	7.81	9560	82	0.601	1.30	
API-S2 MC496 MF-4	7.79	2110	67	0.397	1.37	
API-S2 MC496 MF-5	8.01	2180	75	0.666	0.95	
API-S2 MC496 MF-6 #1	7.88	16100	95	0.339	1.55	Lab Duplicate
API-S2 MC496 MF-6 #2	7.97	15700	93	-	1.52	Lab Duplicate
API-S2 MC496 FF-1 (0-2cm)	8.27	926	72	0.458	1.42	
API-S2 MC496 FF-1 (2-4cm)	8.83	932	77	0.333	1.52	
API-S2 MC496 FF-1 (4-6cm)	8.45	377	75	0.389	1.38	
API-S2 MC496 FF-1 (6-8cm)	8.76	159	83	0.383	1.30	
API-S2 MC496 FF-1 (8-10cm)	8.64	186	74	0.349	1.23	
API-S2 MC496 FF-2	8.10	1120	66	0.650	1.06	
API-S2 MC496 FF-3	8.03	487	65	0.346	1.29	
API-S2 MC496 FF-4	8.58	1020	69	0.790	1.31	
API-S2 MC496 FF-5	8.66	687	75	0.389	1.39	
API-S2 MC496 FF-6	8.38	497	78	0.405	1.28	

Sample Identification	Al (%)	Ba (µg/g)	Hg (ng/g)	MeHg (ng/g)	TOC (%)	Comments
API-S2 EW963 DISC-1 (0-2cm) #1	8.15	23600	94	0.375	1.59	Lab Duplicate
API-S2 EW963 DISC-1 (0-2cm) #2	8.21	24200	93	-	1.61	Lab Duplicate
API-S2 EW963 DISC-1 (2-4cm)	8.36	1540	109	0.149	1.15	
API-S2 EW963 DISC-1 (4-6cm)	8.55	1410	67	0.177	1.05	
API-S2 EW963 DISC-1 (6-8cm)	8.30	536	57	0.181	0.99	
API-S2 EW963 DISC-1 (18-20cm)	8.33	536	39	0.087	0.87	
API-S2 EW963 DISC-2 (0-2cm)	5.05	227000	422	0.239	2.61	
API-S2 EW963 DISC-2 (2-4cm)	4.00	280000	558	0.225	4.07	
API-S2 EW963 DISC-2 (4-6cm)	6.65	42100	209	0.307	0.62	
API-S2 EW963 DISC-2 (6-8cm)	6.12	136000	282	0.447	1.74	
API-S2 EW963 DISC-2 (16-18cm)	8.54	792	60	0.327	1.04	
API-S2 EW963 NF-1 (0-2cm)	7.50	48000	157	0.770	1.73	
API-S2 EW963 NF-2 #1	6.72	88700	281	0.630	1.24	Lab Duplicate
API-S2 EW963 NF-2 #2	6.67	87100	286	-	1.21	Lab Duplicate
API-S2 EW963 NF-3 #1	7.72	34000	144	0.376	2.87	Field Duplicate
API-S2 EW963 NF-3 #2	8.03	33000	134	0.489	2.72	Field Duplicate
API-S2 EW963 NF-4	7.24	60700	188	0.567	1.17	
API-S2 EW963 NF-5	8.59	4070	74	0.431	1.15	
API-S2 EW963 NF-6	8.12	28800	125	0.811	1.17	
API-S2 EW963 MF-1 #1	7.67	36900	116	0.765	1.93	Field Duplicate
API-S2 EW963 MF-1 #2	7.89	31100	130	1.01	1.84	Field Duplicate
API-S2 EW963 MF-6 #1	8.12	6380	70	0.525	1.12	Lab Duplicate
API-S2 EW963 MF-6 #2	8.15	6240	72	-	1.10	Lab Duplicate
API-S2 EW963 FF-1 (0-2cm)	7.81	4640	71	1.03	1.19	
API-S2 EW963 FF-1 (2-4cm)	8.16	3480	74	0.790	1.19	
API-S2 EW963 FF-1 (4-6cm)	8.31	1210	75	0.370	1.19	
API-S2 EW963 FF-1 (6-8cm)	8.49	707	86	0.301	1.11	
API-S2 EW963 FF-1 (8-10cm)	8.01	565	57	0.281	1.16	
API-S2 EW963 FF-2 #1	8.17	2800	73	0.635	1.20	Lab Duplicate
API-S2 EW963 FF-2 #2	8.25	2900	68	-	1.20	Lab Duplicate
API-S2 EW963 FF-3 #1	8.34	2010	76	0.465	1.16	Field Duplicate
API-S2 EW963 FF-3 #2	8.12	1730	71	0.647	1.13	Field Duplicate
API-S2 EW963 FF-4	7.87	1770	70	0.814	1.03	
API-S2 EW963 FF-5	8.11	1770	68	0.686	1.09	
API-S2 EW963 FF-6	8.08	1930	69	0.289	1.10	

Table 1. Continued.

Sample Identification	Al (%)	Ba (µg/g)	Total Hg (ng/g)	MeHg (ng/g)	TOC (%)	Comments
API-S2 GC112 DISC-1 (0-2cm)	4.41	213000	289	0.545	2.66	
API-S2 GC112 DISC-1 (2-4cm)	5.13	138000	210	0.239	4.14	
API-S2 GC112 DISC-1 (4-6cm)	5.56	113000	155	0.360	2.89	
API-S2 GC112 DISC-1 (6-8cm)	7.22	57700	122	1.13	2.25	
API-S2 GC112 DISC-1 (18-20cm)	7.93	283	25	0.16	0.88	
API-S2 GC112 DISC-2 (0-2cm)	4.57	219000	289	1.28	2.32	
API-S2 GC112 DISC-2 (2-4cm)	6.46	118000	161	1.21	1.56	
API-S2 GC112 DISC-2 (4-6cm)	7.66	16100	78	0.885	1.08	
API-S2 GC112 DISC-2 (6-8cm)	8.07	3030	63	0.388	0.94	
API-S2 GC112 DISC-2 (18-20cm)	8.31	437	40	0.175	0.85	
API-S2 GC112 NF-1 (0-2cm)	6.06	154000	279	1.38	1.67	
API-S2 GC112 NF-2	7.42	29000	117	0.346	1.02	
API-S2 GC112 NF-3	6.53	106000	230	2.31	1.62	
API-S2 GC112 NF-4	5.55	152000	221	2.66	2.76	
API-S2 GC112 NF-5	6.18	125000	236	1.01	1.98	
API-S2 GC112 NF-6	6.43	143000	323	1.86	2.45	
API-S2 GC112 MF-1 #1	7.81	4130	82	0.660	0.97	Lab Duplicate
API-S2 GC112 MF-1 #2	7.72	3990	83	-	0.97	Lab Duplicate
API-S2 GC112 MF-6	7.33	44100	119	0.560	1.65	
API-S2 GC112 FF-1 (0-2cm)	7.74	3930	92	0.990	1.05	
API-S2 GC112 FF-1 (2-4cm)	8.15	2120	78	0.735	0.99	
API-S2 GC112 FF-1 (4-6cm)	7.50	875	79	0.407	0.98	
API-S2 GC112 FF-1 (6-8cm)	8.21	928	64	0.704	0.94	
API-S2 GC112 FF-1 (8-10cm)	8.13	356	78	0.228	0.83	
API-S2 GC112 FF-2	7.63	3900	86	0.706	0.94	
API-S2 GC112 FF-3	7.79	912	68	0.490	0.64	
API-S2 GC112 FF-4	7.83	2880	74	0.934	0.89	
API-S2 GC112 FF-5 #1	7.69	3950	81	0.901	0.91	Field Duplicate
API-S2 GC112 FF-5 #2	7.72	3500	79	1.05	0.86	Field Duplicate
API-S2 GC112 FF-6	7.88	1940	72	1.00	0.92	

## Appendix III

### Data for Statistical Tests

Note:

Results of the t-tests presented here are for  $\alpha = 0.05$ . Both one-tail and two-tail results are shown. The t-test data presented here are based on unequal variances (as tested with F test) that are observed because of much greater variability in concentrations of total Hg, MeHg and TOC in nearfield sediments versus farfield sediments.

In each table, when two means are significantly different, the t-statistic in the table is shown in **bold in a shaded block**. When the two means are not significantly different, the t-statistic is shown in **(bold in parentheses in a shaded block)**.

t-Test: Two-Sample Assuming Unequal Variances  
**MP299 THg all NF vs FF**

	Variable 1	Variable 2
Mean	59.05	64.4
Variance	74.3	59.6
Observations	20	10
Hypothesized Mean Difference	0	
df	20	
t Stat	<b>(-1.720)</b>	
P(T<=t) one-tail	0.050	
t Critical one-tail	1.725	
P(T<=t) two-tail	0.101	
t Critical two-tail	2.086	

t-Test: Two-Sample Assuming Unequal Variances  
**MP299 MeHg all NF vs FF**

	Variable 1	Variable 2
Mean	0.306	0.392
Variance	0.017	0.028
Observations	20	10
Hypothesized Mean Difference	0	
df	15	
t Stat	<b>(-1.411)</b>	
P(T<=t) one-tail	0.089	
t Critical one-tail	1.753	
P(T<=t) two-tail	0.179	
t Critical two-tail	2.131	

t-Test: Two-Sample Assuming Unequal Variances  
**MP299 THg sfc NF vs FF**

	Variable 1	Variable 2
Mean	57.750	60.833
Variance	53.357	30.567
Observations	8	6
Hypothesized Mean Difference	0	
df	12	
t Stat	<b>(-0.899)</b>	
P(T<=t) one-tail	0.193	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.386	
t Critical two-tail	2.179	

t-Test: Two-Sample Assuming Unequal Variances  
**MP299 MHg sfc NF vs FF**

	Variable 1	Variable 2
Mean	0.338	0.424
Variance	0.010	0.042
Observations	8	6
Hypothesized Mean Difference	0	
df	7	
t Stat	<b>(-0.937)</b>	
P(T<=t) one-tail	0.190	
t Critical one-tail	1.895	
P(T<=t) two-tail	0.380	
t Critical two-tail	2.365	

t-Test: Two-Sample Assuming Unequal Variances  
**MP288 THg all NF vs FF**

	Variable 1	Variable 2
Mean	52.30	23.00
Variance	221.48	271.11
Observations	20	10
Hypothesized Mean Difference	0	
df	17	
t Stat	<b>4.742</b>	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.740	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.110	

t-Test: Two-Sample Assuming Unequal Variances  
**MP288 MHg all NF vs FF**

	Variable 1	Variable 2
Mean	0.355	0.198
Variance	0.022	0.031
Observations	20	10
Hypothesized Mean Difference	0	
df	16	
t Stat	<b>2.429</b>	
P(T<=t) one-tail	0.014	
t Critical one-tail	1.746	
P(T<=t) two-tail	0.027	
t Critical two-tail	2.120	

t-Test: Two-Sample Assuming Unequal Variances  
**MP288 THg sfc NF vs FF**

	Variable 1	Variable 2
Mean	52.25	28.67
Variance	128.50	389.87
Observations	8	6
Hypothesized Mean Difference	0	
df	7	
t Stat	<b>2.620</b>	
P(T<=t) one-tail	0.017	
t Critical one-tail	1.895	
P(T<=t) two-tail	0.034	
t Critical two-tail	2.365	

t-Test: Two-Sample Assuming Unequal Variances  
**MP288 MHg sfc NF vs FF**

	Variable 1	Variable 2
Mean	0.345	0.292
Variance	0.004	0.029
Observations	8	6
Hypothesized Mean Difference	0	
df	6	
t Stat	<b>(0.729)</b>	
P(T<=t) one-tail	0.247	
t Critical one-tail	1.943	
P(T<=t) two-tail	0.494	
t Critical two-tail	2.447	



t-Test: Two-Sample Assuming Unequal Variances  
**EI346 THg all NF vs FF**

	Variable 1	Variable 2
Mean	152.75	44.50
Variance	11599.13	11.83
Observations	16	10
Hypothesized Mean Difference	0	
df	15	
t Stat	4.017	
P(T<=t) one-tail	0.001	
t Critical one-tail	1.753	
P(T<=t) two-tail	0.001	
t Critical two-tail	2.131	

t-Test: Two-Sample Assuming Unequal Variances  
**EI346 THg sfc NF vs FF**

	Variable 1	Variable 2
Mean	184.75	46.50
Variance	7018.21	6.70
Observations	8	6
Hypothesized Mean Difference	0	
df	7	
t Stat	4.665	
P(T<=t) one-tail	0.001	
t Critical one-tail	1.895	
P(T<=t) two-tail	0.002	
t Critical two-tail	2.365	

t-Test: Two-Sample Assuming Unequal Variances  
**MC496 THg all NF vs FF**

	Variable 1	Variable 2
Mean	88.85	73.40
Variance	319.29	30.93
Observations	20	10
Hypothesized Mean Difference	0	
df	25	
t Stat	3.539	
P(T<=t) one-tail	0.001	
t Critical one-tail	1.708	
P(T<=t) two-tail	0.002	
t Critical two-tail	2.060	

t-Test: Two-Sample Assuming Unequal Variances  
**MC496 THg sfc NF vs FF**

	Variable 1	Variable 2
Mean	96.00	70.83
Variance	748.00	26.17
Observations	8	6
Hypothesized Mean Difference	0	
df	8	
t Stat	2.544	
P(T<=t) one-tail	0.017	
t Critical one-tail	1.860	
P(T<=t) two-tail	0.034	
t Critical two-tail	2.306	

t-Test: Two-Sample Assuming Unequal Variances  
**EI346 MHg all NF vs FF**

	Variable 1	Variable 2
Mean	0.156	0.248
Variance	0.013	0.014
Observations	16	10
Hypothesized Mean Difference	0	
df	19	
t Stat	-1.953	
P(T<=t) one-tail	0.033	
t Critical one-tail	1.729	
P(T<=t) two-tail	0.066	
t Critical two-tail	2.093	

t-Test: Two-Sample Assuming Unequal Variances  
**EI346 MHg sfc NF vs FF**

	Variable 1	Variable 2
Mean	0.189	0.304
Variance	0.023	0.011
Observations	8	6
Hypothesized Mean Difference	0	
df	12	
t Stat	-1.686	
P(T<=t) one-tail	0.059	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.118	
t Critical two-tail	2.179	

t-Test: Two-Sample Assuming Unequal Variances  
**MC496 MHg all NF vs FF**

	Variable 1	Variable 2
Mean	0.441	0.449
Variance	0.031	0.023
Observations	20	10
Hypothesized Mean Difference	0	
df	21	
t Stat	-0.137	
P(T<=t) one-tail	0.446	
t Critical one-tail	1.721	
P(T<=t) two-tail	0.892	
t Critical two-tail	2.080	

t-Test: Two-Sample Assuming Unequal Variances  
**MC496 MHg sfc NF vs FF**

	Variable 1	Variable 2
Mean	0.494	0.506
Variance	0.045	0.031
Observations	8	6
Hypothesized Mean Difference	0	
df	12	
t Stat	-0.121	
P(T<=t) one-tail	0.453	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.905	
t Critical two-tail	2.179	

t-Test: Two-Sample Assuming Unequal Variances  
**EW963 THg all NF vs FF**

	Variable 1	Variable 2
Mean	176.47	72.10
Variance	19722.76	52.54
Observations	17	10
Hypothesized Mean Difference	0	
df	16	
t Stat	<b>3.057</b>	
P(T<=t) one-tail	0.004	
t Critical one-tail	1.746	
P(T<=t) two-tail	0.008	
t Critical two-tail	2.120	

t-Test: Two-Sample Assuming Unequal Variances  
**EW963 THg sfc NF vs FF**

	Variable 1	Variable 2
Mean	179.89	71.14
Variance	11803.36	7.14
Observations	9	7
Hypothesized Mean Difference	0	
df	8	
t Stat	<b>3.00167</b>	
P(T<=t) one-tail	0.008514	
t Critical one-tail	1.859548	
P(T<=t) two-tail	0.017028	
t Critical two-tail	2.306006	

t-Test: Two-Sample Assuming Unequal Variances  
**GC112 THg all NF vs FF**

	Variable 1	Variable 2
Mean	177.38	77.36
Variance	9210.38	61.45
Observations	16	11
Hypothesized Mean Difference	0	
df	15	
t Stat	<b>4.148</b>	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.753	
P(T<=t) two-tail	0.001	
t Critical two-tail	2.131	

t-Test: Two-Sample Assuming Unequal Variances  
**GC112 THg sfc NF vs FF**

	Variable 1	Variable 2
Mean	248.00	78.86
Variance	4043.71	69.48
Observations	8	7
Hypothesized Mean Difference	0	
df	7	
t Stat	<b>7.451</b>	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.895	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.365	

t-Test: Two-Sample Assuming Unequal Variances  
**EW963 MHg all NF vs FF**

	Variable 1	Variable 2
Mean	0.388	0.573
Variance	0.045	0.063
Observations	17	11
Hypothesized Mean Difference	0	
df	19	
t Stat	<b>(-2.031)</b>	
P(T<=t) one-tail	0.028	
t Critical one-tail	1.729	
P(T<=t) two-tail	0.057	
t Critical two-tail	2.093	

t-Test: Two-Sample Assuming Unequal Variances  
**EW963 MHg sfc NF vs FF**

	Variable 1	Variable 2
Mean	0.521	0.652
Variance	0.036	0.056
Observations	9	7
Hypothesized Mean Difference	0	
df	11	
t Stat	<b>(-1.196)</b>	
P(T<=t) one-tail	0.128	
t Critical one-tail	1.796	
P(T<=t) two-tail	0.257	
t Critical two-tail	2.201	

t-Test: Two-Sample Assuming Unequal Variances  
**GC112 MHg all NF vs FF**

	Variable 1	Variable 2
Mean	0.996	0.740
Variance	0.593	0.073
Observations	16	11
Hypothesized Mean Difference	0	
df	20	
t Stat	<b>(1.223)</b>	
P(T<=t) one-tail	0.118	
t Critical one-tail	1.725	
P(T<=t) two-tail	0.235	
t Critical two-tail	2.086	

t-Test: Two-Sample Assuming Unequal Variances  
**GC112 MHg sfc NF vs FF**

	Variable 1	Variable 2
Mean	1.42	0.87
Variance	0.66	0.04
Observations	8	7
Hypothesized Mean Difference	0	
df	8	
t Stat	<b>(1.872)</b>	
P(T<=t) one-tail	0.049	
t Critical one-tail	1.860	
P(T<=t) two-tail	0.098	
t Critical two-tail	2.306	

t-Test: Two-Sample Assuming Unequal Variances  
**MP299 TOC all NF vs FF**

	Variable 1	Variable 2
Mean	1.08	1.19
Variance	0.07	0.01
Observations	20	10
Hypothesized Mean Difference	0	
df	27	
t Stat	<b>(-1.695)</b>	
P(T<=t) one-tail	0.051	
t Critical one-tail	1.703	
P(T<=t) two-tail	0.102	
t Critical two-tail	2.052	

t-Test: Two-Sample Assuming Unequal Variances  
**MP299 TOC sfc NF vs FF**

	Variable 1	Variable 2
Mean	1.20	1.24
Variance	0.12	0.01
Observations	8	6
Hypothesized Mean Difference	0	
df	8	
t Stat	<b>(-0.341)</b>	
P(T<=t) one-tail	0.371	
t Critical one-tail	1.860	
P(T<=t) two-tail	0.742	
t Critical two-tail	2.306	

t-Test: Two-Sample Assuming Unequal Variances  
**MP288 TOC all NF vs FF**

	Variable 1	Variable 2
Mean	0.865	0.376
Variance	0.040	0.160
Observations	20	10
Hypothesized Mean Difference	0	
df	11	
t Stat	<b>3.642</b>	
P(T<=t) one-tail	0.002	
t Critical one-tail	1.796	
P(T<=t) two-tail	0.004	
t Critical two-tail	2.201	

t-Test: Two-Sample Assuming Unequal Variances  
**MP288 TOC sfc NF vs FF**

	Variable 1	Variable 2
Mean	0.960	0.505
Variance	0.037	0.237
Observations	8	6
Hypothesized Mean Difference	0	
df	6	
t Stat	<b>(2.164)</b>	
P(T<=t) one-tail	0.037	
t Critical one-tail	1.943	
P(T<=t) two-tail	0.074	
t Critical two-tail	2.447	

t-Test: Two-Sample Assuming Unequal Variances  
**EI346 TOC all NF vs FF**

	Variable 1	Variable 2
Mean	1.806	0.834
Variance	2.591	0.003
Observations	16	9
Hypothesized Mean Difference	0	
df	15	
t Stat	<b>2.412</b>	
P(T<=t) one-tail	0.015	
t Critical one-tail	1.753	
P(T<=t) two-tail	0.029	
t Critical two-tail	2.131	

t-Test: Two-Sample Assuming Unequal Variances  
**EI346 TOC sfc NF vs FF**

	Variable 1	Variable 2
Mean	1.813	0.860
Variance	1.254	0.001
Observations	8	6
Hypothesized Mean Difference	0	
df	7	
t Stat	<b>2.405</b>	
P(T<=t) one-tail	0.024	
t Critical one-tail	1.895	
P(T<=t) two-tail	0.047	
t Critical two-tail	2.365	

t-Test: Two-Sample Assuming Unequal Variances  
**MC496 TOC all NF vs FF**

	Variable 1	Variable 2
Mean	1.527	1.318
Variance	0.282	0.015
Observations	20	10
Hypothesized Mean Difference	0	
df	23	
t Stat	<b>(1.668)</b>	
P(T<=t) one-tail	0.054	
t Critical one-tail	1.714	
P(T<=t) two-tail	0.109	
t Critical two-tail	2.069	

t-Test: Two-Sample Assuming Unequal Variances  
**MC496 TOC sfc NF vs FF**

	Variable 1	Variable 2
Mean	1.801	1.292
Variance	0.616	0.016
Observations	8	6
Hypothesized Mean Difference	0	
df	7	
t Stat	<b>(1.805)</b>	
P(T<=t) one-tail	0.057	
t Critical one-tail	1.895	
P(T<=t) two-tail	0.114	
t Critical two-tail	2.365	

t-Test: Two-Sample Assuming Unequal Variances  
**EW963 TOC all NF vs FF**

	Variable 1	Variable 2
Mean	1.634	1.141
Variance	0.837	0.003
Observations	17	11
Hypothesized Mean Difference	0	
df	16	
t Stat	<b>2.217</b>	
P(T<=t) one-tail	0.021	
t Critical one-tail	1.746	
P(T<=t) two-tail	0.041	
t Critical two-tail	2.120	

t-Test: Two-Sample Assuming Unequal Variances  
**EW963 TOC sfc NF vs FF**

	Variable 1	Variable 2
Mean	1.815	1.129
Variance	0.603	0.004
Observations	8	7
Hypothesized Mean Difference	0	
df	7	
t Stat	<b>2.492</b>	
P(T<=t) one-tail	0.021	
t Critical one-tail	1.895	
P(T<=t) two-tail	0.041	
t Critical two-tail	2.365	

t-Test: Two-Sample Assuming Unequal Variances  
**GC112 TOC all NF vs FF**

	Variable 1	Variable 2
Mean	1.942	0.905
Variance	0.844	0.011
Observations	16	11
Hypothesized Mean Difference	0	
df	16	
t Stat	<b>4.474</b>	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.746	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.120	

t-Test: Two-Sample Assuming Unequal Variances  
**GC112 TOC sfc NF vs FF**

	Variable 1	Variable 2
Mean	2.060	0.887
Variance	0.358	0.015
Observations	8	7
Hypothesized Mean Difference	0	
df	8	
t Stat	<b>5.415</b>	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.860	
P(T<=t) two-tail	0.001	
t Critical two-tail	2.306	