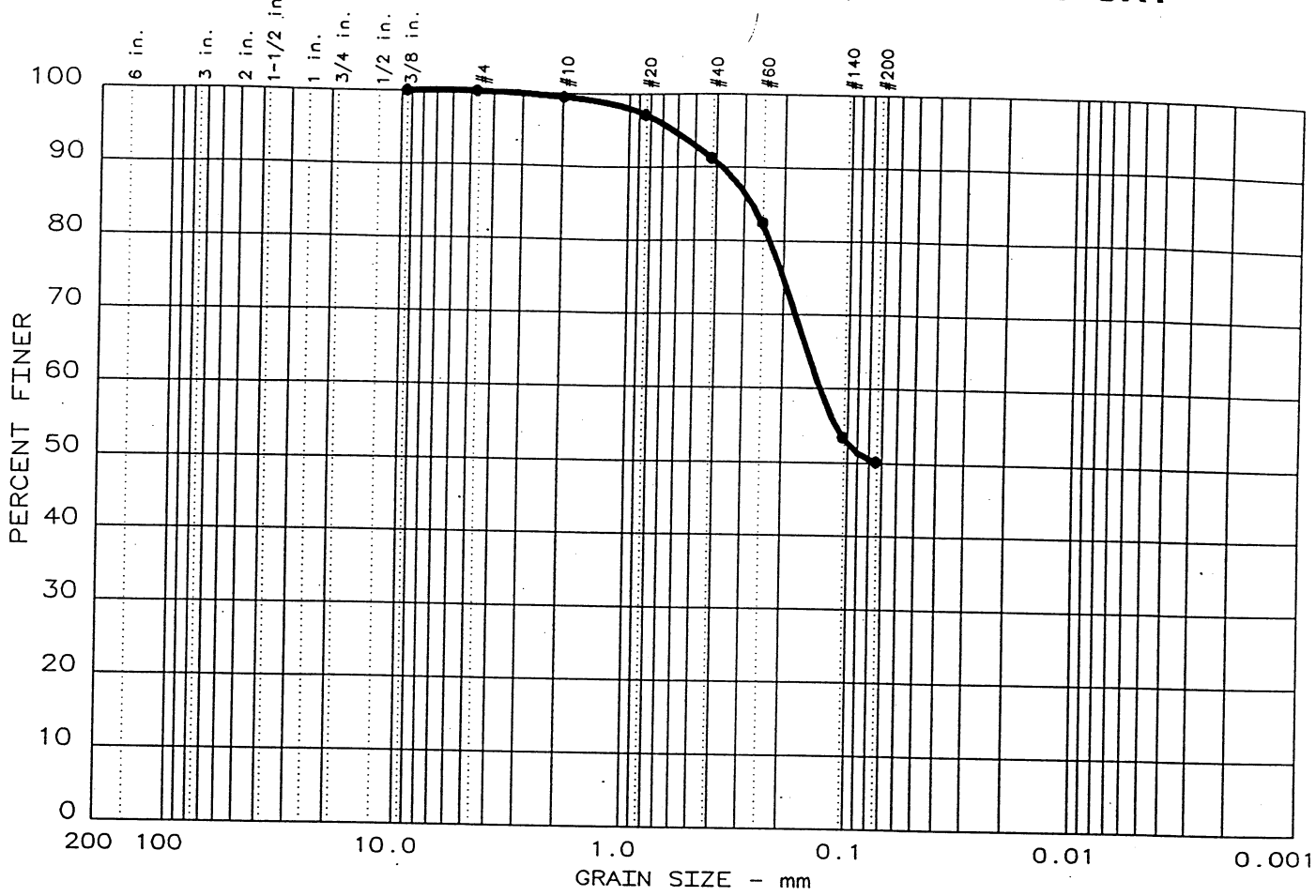
PARTICLE SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	0.0	49.9	50.1		ML		

SIEVE inches size	PERCENT FINER ●		
0.375	100.0		
	GRAIN SIZE		
D_{60} D_{30} D_{10}	0.135		
	COEFFICIENTS		
C_c C_u			

SIEVE number size	PERCENT FINER ●		
4	100.0		
10	99.4		
20	97.1		
40	91.2		
60	82.5		
140	53.5		
200	50.1		

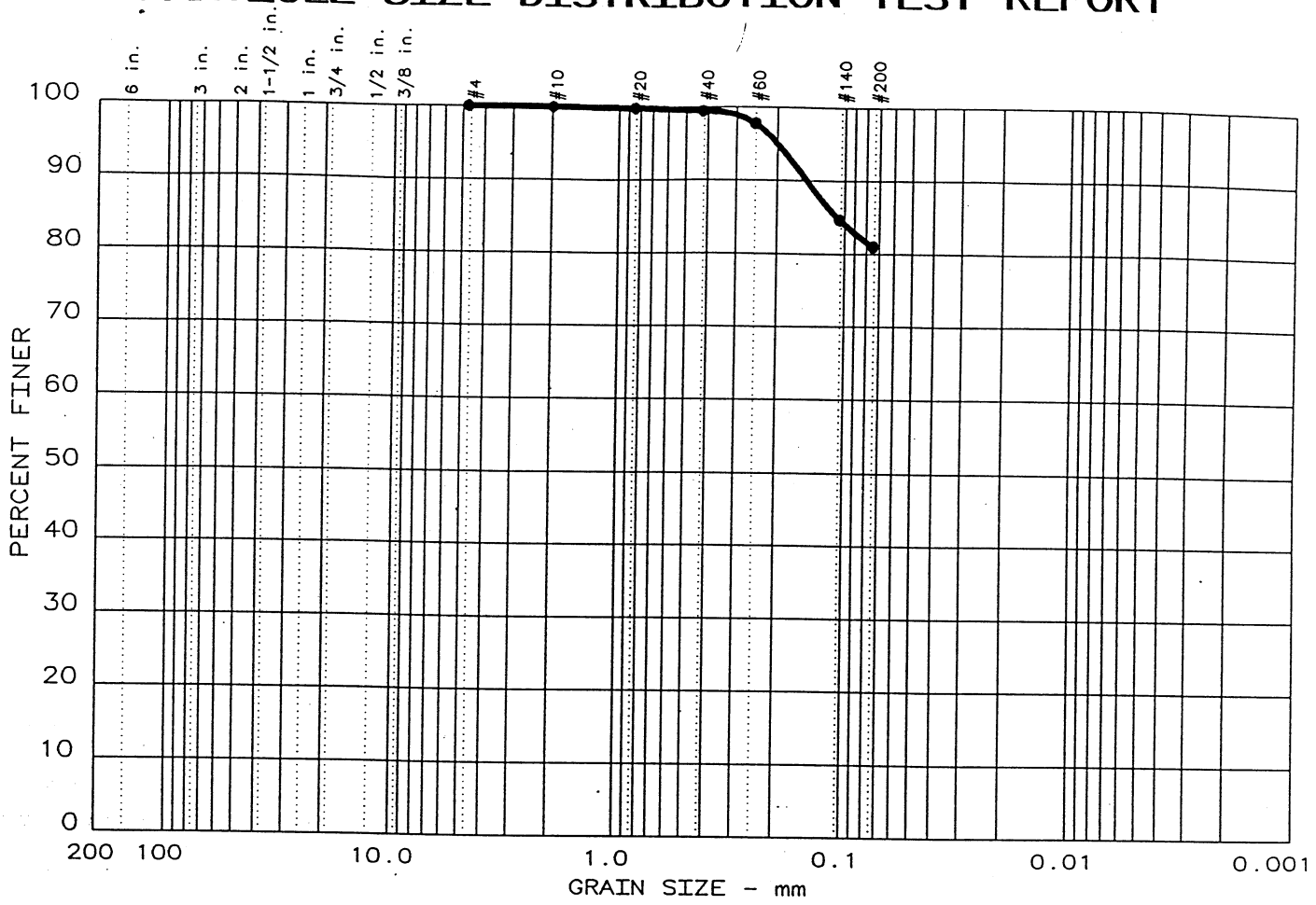
Sample information:
● Station No. H-MR97-3
Dark Grey Very Sandy
SILT w/ some shell

Remarks:
PPB Sample No. 142540

LAW ENGINEERING

Project No.: 40564-5-1484
Project: COE Miami River
Client: PPB Environmental Laboratories
Date: 5-5-97
Reviewed By BDW

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	0.0	19.0	81.0		ML		

SIEVE inches size	PERCENT FINER ●		
GRAIN SIZE			
D_{60} D_{30} D_{10}			
COEFFICIENTS			
C_c C_u			

SIEVE number size	PERCENT FINER ●		
4	100.0		
10	100.0		
20	99.8		
40	99.4		
60	97.7		
140	84.7		
200	81.0		

Sample information:
● Station No. H-MR97-4
Dark Grey Sandy SILT

Remarks:
PPB Sample No. 142541

LAW ENGINEERING

Project No.: 40564-5-1484
Project: COE Miami River
Client: PPB Environmental Laboratories
Date: 5-5-97
Reviewed By: BDW

EXCERPTS FROM

FINAL REPORT FOR
MIAMI RIVER WATER AND SEDIMENT TESTING

CONTRACT DACW17-97-D-0001
DELIVERY ORDER 0036

JUNE 2000

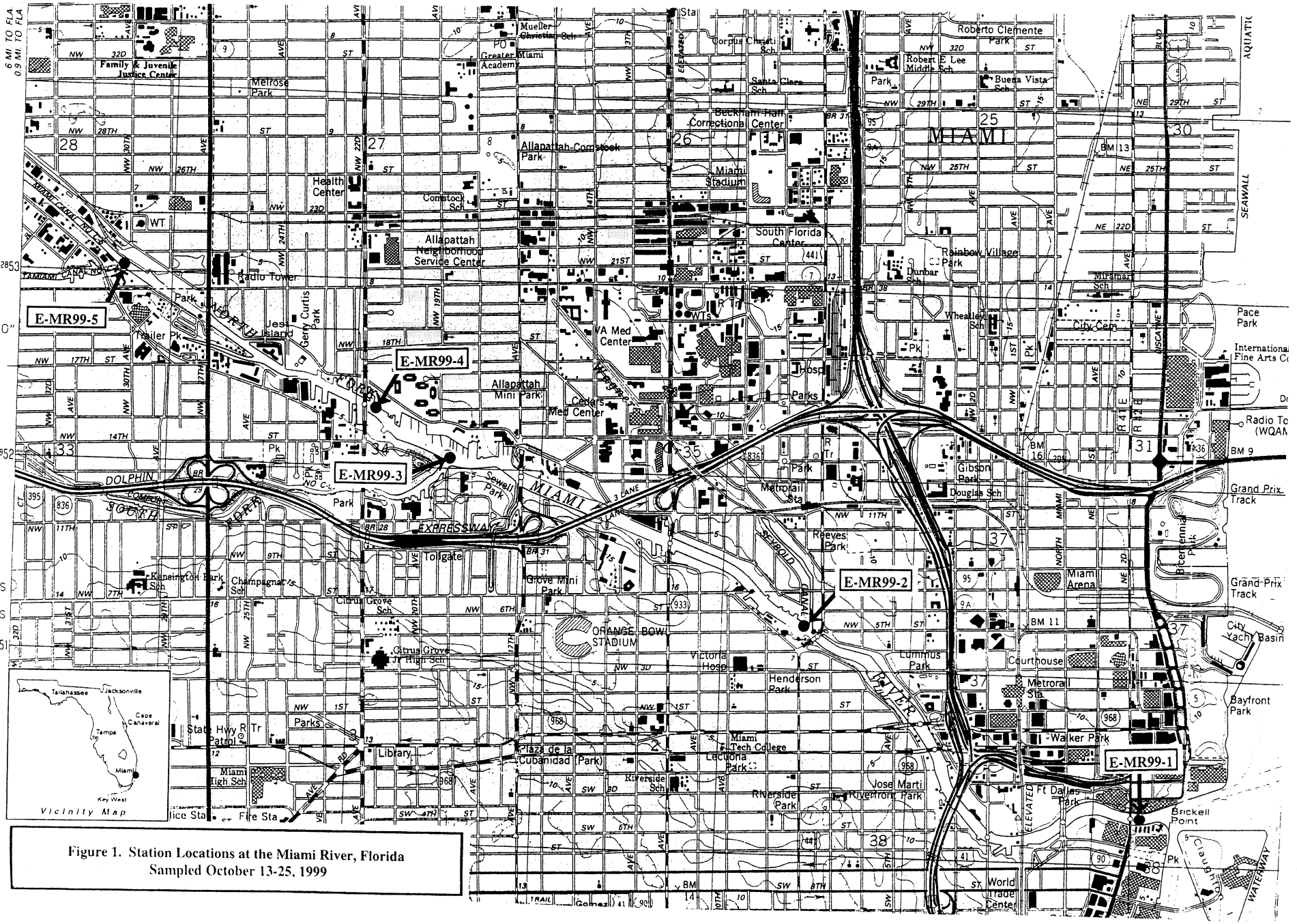


Figure 1. Station Locations at the Miami River, Florida
Sampled October 13-25, 1999

Table 5. Metals Results for Waters from the Miami River Collected October 12, 1999 (Page 1 of 5)
Note: Samples 1 through 12 collected hourly from 0800 to 1900 hours

	E-MR99W-1-1	E-MR99W-1-2	E-MR99W-1-3	E-MR99W-1-3 DUP	E-MR99W-1-4	E-MR99W-1-5	E-MR99W-1-6	E-MR99W-1-7	E-MR99W-1-8	E-MR99W-1-9	E-MR99W-1-10	E-MR99W-1-11	E-MR99W-1-12
	174106	174107	174108	174109	174110	174111	174112	174113	174114	174115	174116	174117	174118
	STATION 1												
Arsenic, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium, Total (ug/L)	12.4	10.7	11.7	11.9	10.8	11.7	28.1	13.0	13.0	29.2	14.4	13.9	12.9
Cadmium, Total (ug/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium, Total (mg/L)	313	326	329	333	343	350	346	322	324	295	247	265	305
Chromium, Total (ug/l)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.4	<1.0	<1.0	7.1	<1.0	<1.0	<1.0
Copper, Total (ug/L)	11.0	43.7	6.7	10.3	9.7	28.5	24.8	13.4	32.3	17.2	23.0	16.6	<2.0
Lead, Total (ug/L)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Magnesium, Total (mg/L)	928	947	957	961	1000	1020	1020	908	928	827	669	709	846
Mercury, Total (ug/L)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Selenium, Total (ug/L)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	46.5	<10
Silver, Total (ug/L)	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	<1.0	1.1	<1.0	<1.0	<1.0
Zinc, Total (ug/L)	<2.0	9.7	2.0	3.4	2.8	2.3	6.2	10.5	7.4	10.2	17.4	16.5	14.8

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Table 5. Metals Results for Waters from the Miami River Collected October 12, 1999 (Page 2 of 5)
Note: Samples 1 through 12 collected hourly from 0800 to 1900 hours

	E-MR99W-2-1	E-MR99W-2-2	E-MR99W-2-3	E-MR99W-2-3DUP	E-MR99W-2-4	E-MR99W-2-5	E-MR99W-2-6	E-MR99W-2-7	E-MR99W-2-8	E-MR99W-2-9	E-MR99W-2-10	E-MR99W-2-11	E-MR99W-2-12
	174119	174120	174121	174122	174123	174124	174125	174126	174127	174128	174129	174130	174131
	STATION 2												
Arsenic, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium, Total (ug/L)	23.7	22.2	15.3	15.1	16.3	14.3	18.2	21.0	22.5	22.6	22.5	23.9	24.1
Cadmium, Total (ug/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium, Total (mg/L)	91.6	111	283	262	251	290	191	145	99.1	86.8	83.5	80.6	76.8
Chromium, Total (ug/l)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Copper, Total (ug/L)	8.7	6.8	21.0	39.9	12.3	5.8	19.8	17.2	70.2	97.0	98.0	15.7	9.8
Lead, Total (ug/L)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Magnesium, Total (mg/L)	82.2	156	758	703	648	786	442	269	111	68.9	55.2	39.9	33.9
Mercury, Total (ug/L)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Selenium, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver, Total (ug/L)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc, Total (ug/L)	9.5	8.9	13.1	9.5	11.3	12.2	7.3	5.8	11.3	8.7	9.5	7.6	7.0

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Table 5. Metals Results for Waters from the Miami River Collected October 12, 1999 (Page 3 of 5)
Note: Samples 1 through 12 collected hourly from 0800 to 1900 hours

	E-MR99W-3-1	E-MR99W-3-2	E-MR99W-3-3	E-MR99W-3-3DUP	E-MR99W-3-4	E-MR99W-3-5	E-MR99W-3-6	E-MR99W-3-7	E-MR99W-3-8	E-MR99W-3-9	E-MR99W-3-10	E-MR99W-3-11	E-MR99W-3-12
	174132	174133	174134	174135	174136	174137	174138	174139	174140	174141	174142	174143	174144
	STATION 3												
Arsenic, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium, Total (ug/L)	23.9	24.4	24.2	25.3	24.8	25.1	24.0	24.1	24.8	26.0	28.3	26.1	24.9
Cadmium, Total (ug/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium, Total (mg/L)	72.1	73.5	73.7	76.7	74.9	74.6	72.6	74.3	74.1	70.6	73.1	71.4	71.3
Chromium, Total (ug/l)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Copper, Total (ug/L)	5.2	6.0	6.7	6.5	9.5	7.9	6.6	6.7	7.4	6.1	7.7	7.5	7.9
Lead, Total (ug/L)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Magnesium, Total (mg/L)	9.30	9.46	9.40	9.72	9.67	9.52	9.13	8.69	8.81	10.5	11.4	10.4	10.1
Mercury, Total (ug/L)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Selenium, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver, Total (ug/L)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc, Total (ug/L)	3.4	4.3	4.9	6.4	7.9	3.4	4.9	8.3	4.0	12.6	5.0	4.4	5.0

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Table 5. Metals Results for Waters from the Miami River Collected October 12, 1999 (Page 4 of 5)
Note: Samples 1 through 12 collected hourly from 0800 to 1900 hours

	E-MR99W-4-1	E-MR99W-4-2	E-MR99W-4-3	E-MR99W-4-3DUP	E-MR99W-4-4	E-MR99W-4-5	E-MR99W-4-6	E-MR99W-4-7	E-MR99W-4-8	E-MR99W-4-9	E-MR99W-4-10	E-MR99W-4-11	E-MR99W-4-12
	174145	174146	174147	174148	174149	174150	174151	174152	174153	174154	174155	174156	174157
	STATON 4												
Arsenic, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium, Total (ug/L)	23.6	23.6	23.4	24.0	23.6	24.1	23.8	23.6	24.7	26.9	26.9	26.0	25.4
Cadmium, Total (ug/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium, Total (mg/L)	69.2	70.3	70.8	72.8	70.3	72.6	72.9	70.2	70.5	73.3	72.2	72.0	71.2
Chromium, Total (ug/l)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Copper, Total (ug/L)	8.0	10.0	6.4	8.2	8.9	7.4	8.0	7.6	9.1	8.5	8.4	7.0	9.0
Lead, Total (ug/L)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Magnesium, Total (mg/L)	8.99	8.89	8.44	8.66	8.75	9.53	8.80	8.44	9.41	11.9	11.2	9.79	9.75
Mercury, Total (ug/L)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Selenium, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver, Total (ug/L)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc, Total (ug/L)	4.7	4.4	5.0	6.6	11.0	5.0	5.7	5.0	4.7	6.6	4.7	5.3	4.7

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Table 5. Metals Results for Waters from the Miami River Collected October 12, 1999 (Page 5 of 5)
Note: Samples 1 through 12 collected hourly from 0800 to 1900 hours

	E-MR99W-5-1	E-MR99W-5-2	E-MR99W-5-3	E-MR99W-5-3 DUP	E-MR99W-5-4	E-MR99W-5-5	E-MR99W-5-6	E-MR99W-5-7	E-MR99W-5-8	E-MR99W-5-9	E-MR99W-5-10	E-MR99W-5-11	E-MR99W-5-12
	174158	174159	174160	174161	174162	174163	174164	174165	174166	174167	174168	174169	174170
	STATION 5												
Arsenic, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium, Total (ug/L)	20.8	20.8	20.3	20.3	23.6	27.6	21.6	21.6	20.5	21.2	20.8	21.9	21.6
Cadmium, Total (ug/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium, Total (mg/L)	70.6	71.2	68.4	69.5	72.1	72.8	71.2	72.1	71.1	70.8	71.5	73.1	72.7
Chromium, Total (ug/l)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Copper, Total (ug/L)	6.1	2.9	5.3	4.8	4.2	6.1	5.0	5.0	3.8	4.7	7.0	7.1	5.1
Lead, Total (ug/L)	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Magnesium, Total (mg/L)	6.64	6.68	6.48	6.53	7.87	9.28	6.84	6.75	6.72	6.66	6.71	6.89	6.89
Mercury, Total (ug/L)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Selenium, Total (ug/L)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Silver, Total (ug/L)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc, Total (ug/L)	3.2	3.5	3.5	5.7	5.0	5.0	2.8	5.7	5.3	6.0	5.2	5.0	<2.0

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