

# **Attachment F**

## **MIAMI RIVER CORE BORINGS AND LABORATORY ANALYSIS**

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Hole No. CB-MR00-2

<b>DRILLING LOG</b>	<b>DIVISION</b> South Atlantic	<b>JACKSONVILLE DISTRICT</b>	<b>SHEET 1 OF 1</b>
<b>1. PROJECT</b> Hahn Tower	<b>10. SIZE AND TYPE OF BIT</b> 4-inch Vibrocure Tube		<b>11. DATE FOR ELEVATION SHOW</b> 7/24/00
<b>2. LOCATION (ADDRESS or BARRIO)</b> X=016,442 Y=525,000	<b>11. DATUM FOR ELEVATION SHOW</b> FLE HAD 83		<b>12. MANUFACTURER'S DESIGNATION OF DRILL</b> Vibrocure
<b>3. DRILLING AGENCY</b> USACI Washington	<b>13. TOTAL NO. OF SWERDREN SAMPLES TAKEN</b> collected: 2    independent: 0		<b>14. TOTAL NUMBER OF CORE BOXES</b> 1
<b>4. HOLE NO. (As shown on drawing and the number)</b> CB-MR00-2	<b>15. ELEVATION GROUND WATER</b> 7.00		<b>16. DATE HOLE STARTED</b> 4/23/00
<b>5. NAME OF DRILLER</b> Svein	<b>17. ELEVATION TOP OF HOLE</b> -15.5 F.L.		<b>18. TOTAL CORE RECOVERY FOR SOILS</b> 0.3
<b>6. DIRECTION OF HOLE</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED	<b>19. SIGNATURE OF CIVIL ENGINEER</b> Brian Hathaway (LAW)		
<b>7. THICKNESS OF BURDEN</b> 0 F.L.			
<b>8. DEPTH DRILLED INTO ROCK</b> 0 F.L.			
<b>9. TOTAL DEPTH OF HOLE</b> 3.7 F.L.			

ELEV.	DEPTH	LOGGED	CLASSIFICATION OF MATERIALS (Description)	CORE REC #	SAMP. NUMBER	REMARKS Vibrocure									
-15.5	0					-15.5									
			SAND, fine quartz, fine silt, brown-gray (SM)		1										
			LIMESTONE, coarse sand to medium gravel sized fragments, light tan (LS)	10	2										
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM  NOTE: Elevation is based on predicted hole depth.  <table border="1" style="font-size: small;"> <tr> <td>SAMPLE NO.</td> <td>DEPTH</td> <td>LOG CLASSIF.</td> </tr> <tr> <td>1.</td> <td>0.0 - 1.7</td> <td>SM</td> </tr> <tr> <td>2.</td> <td>1.7 - 3.7</td> <td>SM</td> </tr> </table> Also classification based on gradation curve with no Atterberg Limits.	SAMPLE NO.	DEPTH	LOG CLASSIF.	1.	0.0 - 1.7	SM	2.	1.7 - 3.7	SM			-15.7
SAMPLE NO.	DEPTH	LOG CLASSIF.													
1.	0.0 - 1.7	SM													
2.	1.7 - 3.7	SM													
						Vibrocure tubes split and logged by Lew Engineering and Environmental Services, Inc., Jacksonville, Florida.									

END OF HOLE PREVIOUS SECTION IS ISOLATE.

PROJECT  
Hahn Tower

HOLE NUMBER  
CB-MR00-2

Hole No. CB-MR00-5

DRILLING LOG		DIVISION South Atlantic		INSTITUTION Jacksonville District		SHEET # OF 7	
1. PROJECT High Rise		10. SIZE AND TYPE OF BIT 4-1/2" Vibracore Tube		11. DATUM FOR ELEVATION SHOWS (TOP of HOLE) NLL of Horizontal Datum: FLE NAD 83		12. MANUFACTURER DESIGNATION OF DRILL Vibrocra	
2. LOCATION (City/State or Station) 3-400, 651 Y=30,050		13. TOTAL NO. OF OVERCURED SAMPLES TAKEN cuttings: 2     undisturbed: 0		14. TOTAL NUMBER OF CORE BOXES 1		15. ELEVATION GROUND WATER Table	
3. DRILLING AGENCY USAFI Memphis		16. DATE HOLE STARTED - COMPLETED 4/2/00 - 4/2/00		17. ELEVATION TOP OF HOLE -33.1 F.		18. TOTAL CORE RECOVERY FOR BORING 00 %	
4. HOLE NO. (or show or survey file and file number) CB-MR00-5		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)			
5. NAME OF DRILLER Snel		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)			
7. THICKNESS OF SURFACE 0 F.		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)			
8. DEPTH DRILLED INTO ROCK 0 F.		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)			
9. TOTAL DEPTH OF HOLE 33.1 F.		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)		19. SIGNATURE OF CIVIL ENGINEER Brian Mathewson (LAW)			
ELEV. DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC #	SAMPLE NUMBER	REMARKS Vibrocra		
-33.1	0						0
		SAND, fine quartz, some silt, light tan-gray (10)		1			2.5
		LIMESTONE, fine sand to gravel sized fragments, trace sil, gray- light tan (15)	00	2			5
							7.5
							10
							12.5
							15
							17.5
							20
							22.5
							25
							27.5
							30
							32.5
							35
							37.5
							40
							42.5
							45
							47.5
							50
							52.5
							55
							57.5
							60
							62.5
							65
							67.5
							70
							72.5
							75
							77.5
							80
							82.5
							85
							87.5
							90
							92.5
							95
							97.5
							100
							102.5
							105
							107.5
							110
							112.5
							115
							117.5
							120
							122.5
							125
							127.5
							130
							132.5
							135
							137.5
							140
							142.5
							145
							147.5
							150
							152.5
							155
							157.5
							160
							162.5
							165
							167.5
							170
							172.5
							175
							177.5
							180
							182.5
							185
							187.5
							190
							192.5
							195
							197.5
							200
							202.5
							205
							207.5
							210
							212.5
							215
							217.5
							220
							222.5
							225
							227.5
							230
							232.5
							235
							237.5
							240
							242.5
							245
							247.5
							250
							252.5
							255
							257.5
							260
							262.5
							265
							267.5
							270
							272.5
							275
							277.5
							280
							282.5
							285
							287.5
							290
							292.5
							295
							297.5
							300
							302.5
							305
							307.5
							310
							312.5
							315
							317.5
							320
							322.5
							325
							327.5
							330
							332.5
							335
							337.5
							340
							342.5
							345
							347.5
							350
							352.5
							355
							357.5
							360
							362.5
							365
							367.5
							370
							372.5
							375
							377.5
							380
							382.5
							385
							387.5
							390
							392.5
							395
							397.5
							400
							402.5
							405
							407.5
							410
							412.5
							415
							417.5
							420
							422.5
							425
							427.5
							430
							432.5
							435
							437.5
							440
							442.5
							445
							447.5
							450
							452.5
							455
							457.5
							460
							462.5
							465
							467.5
							470
							472.5
							475
							477.5
							480
							482.5
							485
							487.5
							490
							492.5
							495
							497.5
							500
							502.5
							505
							507.5
							510
							512.5
							515
							517.5
							520
							522.5
							525
							527.5
							530
							532.5
							535

Hole No. CB-MR00-8

DRILLING LOG		DISTRICT	INSTALLATION	SHEET /
Mays River		South Atlantic	Jacksonville District	OF 7
1. PROJECT		10. SIZE AND TYPE OF BIT: 4-inch Voracore Tool		
2. LOCATION (Coordinates of Boring)		11. DAY(S) FOR ELEVATION GIVEN (TBM or MSL)		
3. DRILLING AGENCY		12. MANUFACTURER'S DESIGNATION OF DRILL		
4. HOLE NO. (as shown on drawing and see notes)		13. TOTAL NO. OF OVERFLOW SAMPLES TAKEN		
5. NAME OF DRILLER		14. TOTAL NUMBER OF CORE BORES		
6. CORRECTION OF HOLE		15. ELEVATION (GROUND WATER) Test		
7. THICKNESS OF BURDEN (0/1)		16. DATE HOLE STARTED COMPLETED		
8. DEPTH DRILLED INTO ROCK (0/1)		17. ELEVATION TOP OF HOLE (-3.0 FT.)		
9. TOTAL DEPTH OF HOLE (7.3 FT.)		18. TOTAL CORE RECOVERY FOR BORES (7/3)		
		19. SIGNATURE OF CONTRACTOR		
		Brian Hathaway (LAW)		

ELEV.	DEPTH	LOGGING	CLASSIFICATION OF MATERIALS (Description)	CORE REC. #	SAMPLE NUMBER	REMARKS									
-0.0	0					-0.0									
			SAND, fine (sw-1), fine sat, light tan (SP-54)		1										
				2											
-0.0	4.1		LIMESTONE, some good limestone fragments, fine sat, light tan (L-5)		2										
-0.0	3.0		LIMESTONE, light tan (L-5)		3										
-0.0	7.3					-0.0									
			<p>SOLS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.</p> <p>NOTE: Elevation is based on predicted hole tables.</p> <table border="1"> <tr> <th>SAMPLE NO.</th> <th>SAMPLE DEPTH</th> <th>LOG CLASSIF.</th> </tr> <tr> <td>1</td> <td>0.0 - 4.1</td> <td>SP-54</td> </tr> <tr> <td>2</td> <td>3.0 - 7.3</td> <td>SP-54</td> </tr> </table> <p>LAB classification based on prediction (SP-54) with no laboratory tests.</p>		SAMPLE NO.	SAMPLE DEPTH	LOG CLASSIF.	1	0.0 - 4.1	SP-54	2	3.0 - 7.3	SP-54		<p>Voracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.</p>
SAMPLE NO.	SAMPLE DEPTH	LOG CLASSIF.													
1	0.0 - 4.1	SP-54													
2	3.0 - 7.3	SP-54													

SEE FORM 8888 PREVIOUS EDITIONS ARE OBSOLETE. (Rev. 7)

PROJECT: Mays River

HOLE NUMBER: CB-MR00-8



Hole No. CB-MR00-7

DRILLING LOG		LOCATION		INSTALLATION		SHEET / OF	
PROJECT Miss River		South Atlantic		Jacksonville District		01 / 1	
E. LOCATION (Coordinates or Station) X=800,803 Y=670,303		K. SIZE AND TYPE OF BIT 4-1/2" Vibrocure bits		L. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN Observed: 3 Unobserved: 0		M. ELEVATION GROUND WATER Total	
F. DRILLING AGENCY USACE, Washington		N. DATE HOLE STARTED / COMPLETED 4/20/00 / 4/22/00		O. SIGNATURE OF CIVIL Engineer D. Lee Hathaway (LAW)		P. REMARKS Vibrocure holes split and logged by Lee Engineering and Environmental Services, Inc., Jacksonville, Florida.	
G. HOLE NO. (As shown on drawing title and the number) CB-MR00-7		H. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINE		I. THICKNESS OF BURDEN 0 FT.		J. DEPTH DRILLED INTO ROCK 0 FT.	
I. NAME OF DRILLER Snel		R. TOTAL DEPTH OF HOLE 13.8 FT.		S. CORE RECOVERY FOR BORING 93 %		T. SIGNATURE OF CIVIL Engineer D. Lee Hathaway (LAW)	
ELEV.	DEPTH	LOGGING	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	NO. SAMPLES	REMARKS	VIBROSCORE
-12.1	0		CLT, sandy fine quartz sand. (Site decayed organic, dark brown O6.)		1		-12.7
-15.2	3.1		SAND, fine quartz with sil. trace fine gravel x200 limestone fragments, light tan (SF-SM)	90	2		-15.2
-17.2	5.1		LIMESTONE, w/c cemented, gravel sized rock fragments, light tan (LS)	3	3		-18.0
-18.0	5.9		SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.  NOTE: Elevation is based on predicted tide tables.  SAMPLE NO. SAMPLE DEPTH (ft.) 1 2.4 - 2.1 SM 2 2.1 - 2.2 SP-SM 3 2.1 - 2.0 SF				
			Rock classification based on geotechnical cores with no stemming logs.				

ENR FORM 1030 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT  
Miss River

HOLE NUMBER  
CB-MR00-7

Hole No. CB-MR00-4

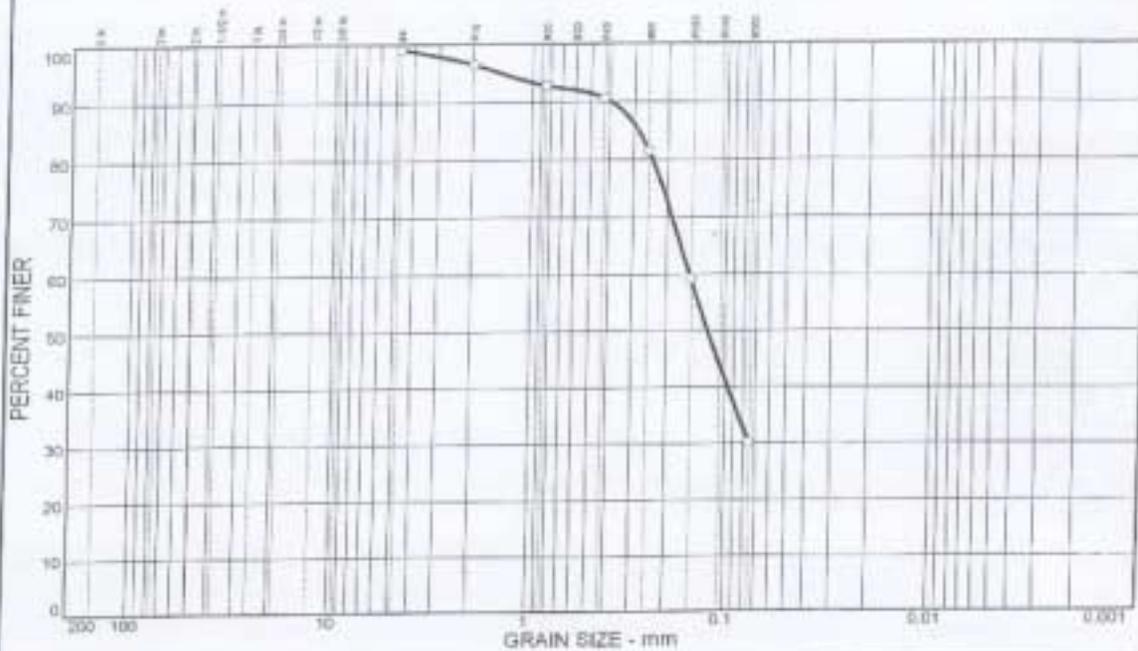
DRILLING LOG		INVESTOR		INSTALLATION	
PROJECT Miss River		South Atlantic		Jacksonville District Spec 7 / DP 1	
1. LOCATION (Coordinates of Station) X=607.10, Y=330.45		2. DATE OF ELEVATION BROWN 7/26/82		3. SIZE AND TYPE OF BIT 4-inch Vibrocure Tube	
3. DRILLING AGENCY USACD Jacksonville		4. ELEVATION GROUND WATER (Total) 4/2/00 4/2/00		5. MANUFACTURE'S DESIGNATION OF DRILL Vibrocure	
6. NAME OF DRILLER Socet		7. THICKNESS OF BURDEN 0 FT.		8. TOTAL REC OF OVERBURDEN SAMPLES TAKEN Subsist 2 included 0	
8. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		9. DEPTH DRILLED INTO ROCK 0 FT.		9. TOTAL NUMBER OF CORE BOXES 1	
10. TOTAL DEPTH OF HOLE 7.3 FT.		10. DEPTH DRILLED INTO ROCK 0 FT.		10. ELEVATION GROUND WATER (Total) 4/2/00 4/2/00	
11. THICKNESS OF BURDEN 0 FT.		11. DATE HOLE STARTED COMPLETED 4/2/00 4/2/00		11. ELEVATION TOP OF HOLE -0.3 FT.	
12. DEPTH DRILLED INTO ROCK 0 FT.		12. SIGNATURE EPC Engineer Brian Hathaway (LAW)		12. TOTAL CORE RECOVERY FOR BORING 74 %	
13. TOTAL DEPTH OF HOLE 7.3 FT.					

ELEV.	DEPTH	CLASSIFICATION OF MATERIALS (DESCRIPTION)	CORE REC %	REMARKS Vibrocure
-0.3	0			-0.3
		SILT, fine to quartz sand, trace organic, tan brown-grey (M)	14	
-4.2	4.2	LIMESTONE, fine sand to gravel sized fragments, light tan (LS)	0	
-7.3	7.3	SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.  NOTE: Elevation is based on predicted HGL LODPS.  SAMPLE NO. SAMPLE DEPTH CLASSIF. # 1 0.3 - 4.2 M 2 4.2 - 7.3 SH-W  HGL Classification based on prediction of GWS with no standing limits.		Vibrocure tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.

END FORM 800 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT MISS RIVER HOLE NUMBER CB-MR00-4

## Grain Size Distribution Report



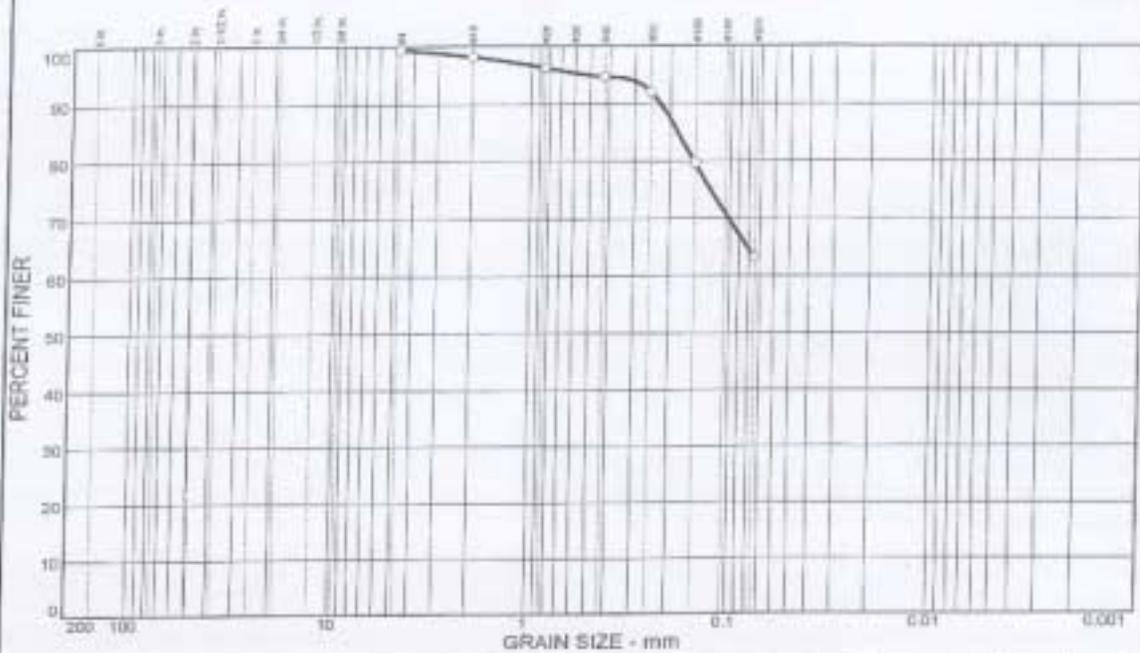
% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		68.9		30.2	SM	A-2-4(II)		

SIEVE Inches mm	PERCENT FINER			SIEVE number mm	PERCENT FINER			SOIL DESCRIPTION
	○				C			
				#4	99.1			○ SAND, fine quartz, some silt, trace clayey (greenish, dark brown)
				#10	96.5			
				#20	92.8			
				#40	90.6			
				#60	81.5			
				#100	59.2			
				#200	30.2			
GRAIN SIZE								
	D <sub>100</sub>	0.153						
	D <sub>30</sub>							
	D <sub>10</sub>							
COEFFICIENTS								
	C <sub>u</sub>							
	C <sub>c</sub>							

○ Source: CB-MROO-7      Sample No.: 1      Elev./Depth: 0.0'-3.1'

<b>Law Engineering and Environmental Services, Inc.</b>	Client: USACE, Jacksonville District Project: Miami River Project No.: 40521-8-8051-18
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## Grain Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	FL	LL
		36.2	63.2		ML	A-4(0)		

SIEVE number size	PERCENT FINER		SIEVE number size	PERCENT FINER		SOIL DESCRIPTION	
	O			O			
			#4	99.4		SILT, lower fine quartz sand, trace organics, dark brown-gray	
			#10	98.2			
			#20	96.5			
			#40	94.7			
			#60	92.0			
			#100	79.6			
			#200	63.2			
GRAIN SIZE							REMARKS
D <sub>60</sub>					0		
D <sub>30</sub>							
D <sub>10</sub>							
COEFFICIENTS							
C <sub>c</sub>							
C <sub>u</sub>							

Soils: CB-MROO-4

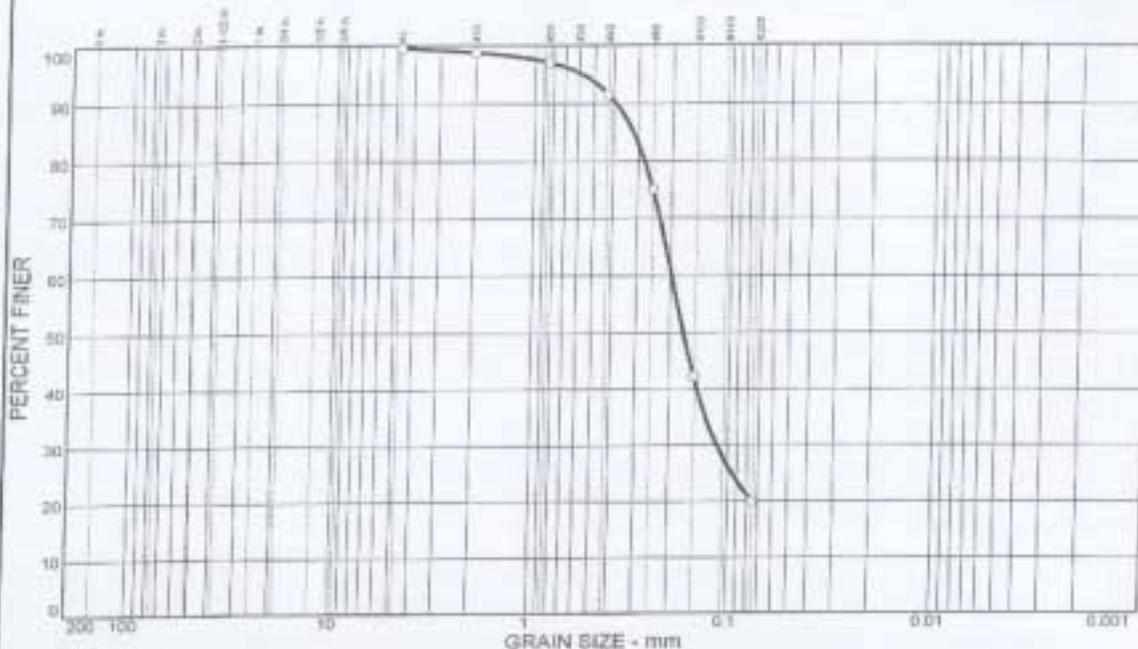
Sample No.: 1

Elev./Depth: 0.0'-4.2'

<b>Law Engineering and Environmental Services, Inc.</b>	Client: USACE, Jacksonville District Project: Miami River Project No.: 40521-R-8051-38
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## Grain Size Distribution Report



%	CORBLES	GRAVEL	SAND	SILT	CLAY	USCS	AASHTO	PL	LL
0			79.8		19.8	SM	A-2-4(0)		

SIEVE nominal size	PERCENT FINER			SIEVE number	PERCENT FINER			SOIL DESCRIPTION
	0				0			
				#4	99.6			0 SAND, fine quartz, little silt, grey-light tan.  REMARKS: 0
				#10	98.8			
				#20	97.1			
				#40	91.5			
				#60	75.1			
				#100	42.2			
				#200	19.8			
GRAIN SIZE								
D <sub>60</sub>	0.197							
D <sub>30</sub>	0.114							
D <sub>10</sub>								
COEFFICIENTS								
C <sub>u</sub>								
C <sub>u</sub>								

0 Source: CB-MROD-5

Sample No.: 1

Elev./Depth: 0.0'-3.0'

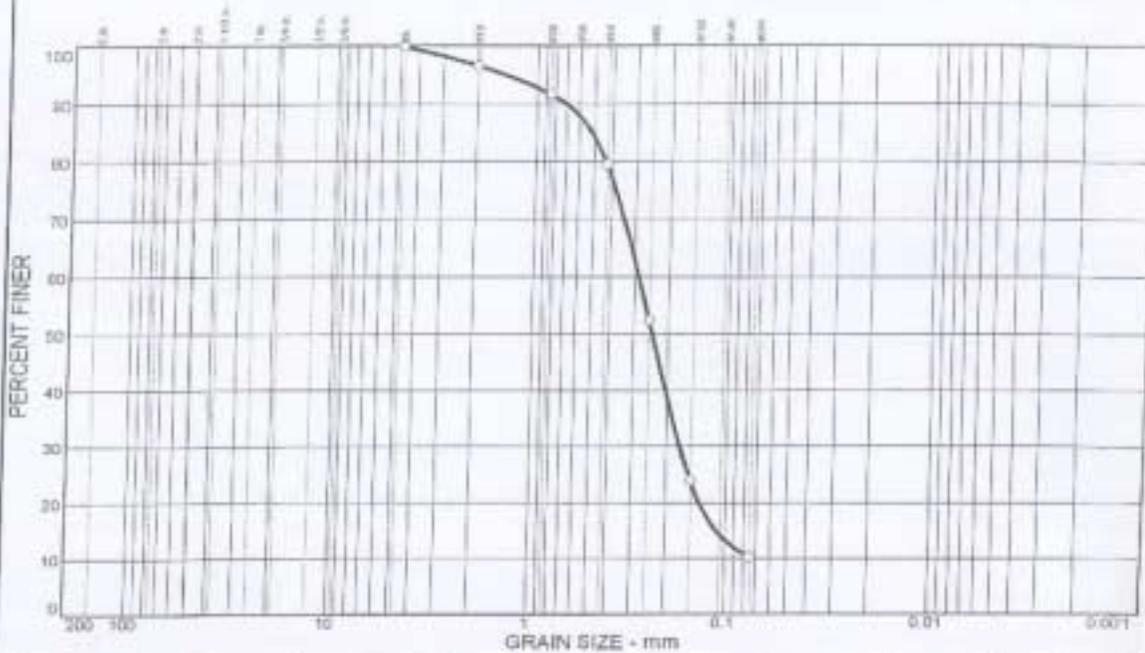
**Law Engineering and  
Environmental Services, Inc.**

Client: USACE, Jacksonville District

Project: Miami River

Project No.: 40521-R-8051-38

## Grain Size Distribution Report



%	CORBLES	GRAVEL	SAND	SILT	CLAY	USCS	AASHTO	PL	LL
0			89.7	10.3		SP-SM	A-3		

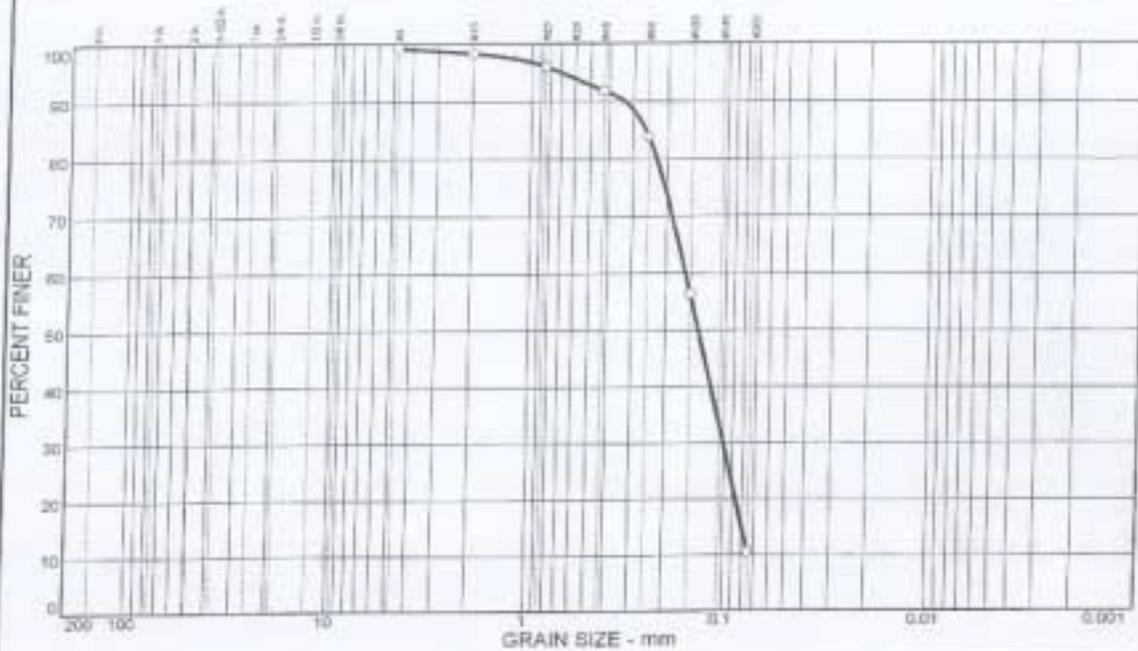
SIEVE	PERCENT FINER			SIEVE	PERCENT FINER			SOIL DESCRIPTION
nominal size	0			number	0			O SAND, see quartz, little silt, tan.
				#4			99.9	
				#10			96.6	
				#20			91.6	
				#40			79.4	
				#60			52.4	
				#100			23.9	
				#200			10.2	
GRAIN SIZE								
D60	0.284							
D30	0.171							
D10								
COEFFICIENTS								
C <sub>u</sub>								
C <sub>u</sub>								

**REMARKS**  
O

Source: CB-MROO-8      Sample No.: 1      Elev./Depth: 0.0'-4.1'

<p style="text-align: center;"><b>Law Engineering and Environmental Services, Inc.</b></p>	<p>Client: USACE, Jacksonville District Project: Miami River Project No.: 40521-R-8051-38</p>
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## Grain Size Distribution Report



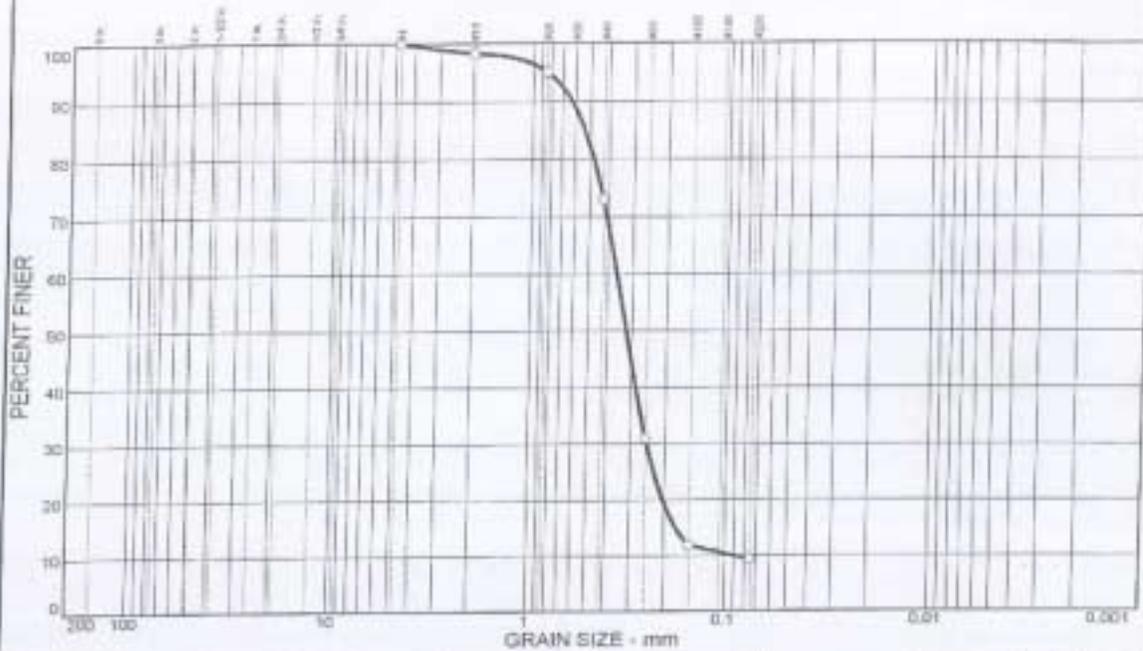
% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	FL	LL
0		88.7	10.3		SP-SM	A-3		

SIEVE apert. mm	PERCENT FINER		SIEVE number size	PERCENT FINER		SOIL DESCRIPTION O SAND, fine quartz, little silt, light fw
	O			O		
			#4	99.2		
			#10	98.3		
			#20	96.1		
			#40	91.8		
			#60	83.9		
			#100	56.4		
			#200	10.5		
GRAIN SIZE						REMARKS O
D <sub>60</sub>	0.159					
D <sub>30</sub>	0.100					
D <sub>10</sub>						
COEFFICIENTS						
C <sub>u</sub>						
C <sub>w</sub>						

Source: CB-MROO-6
Sample No.: 1
Elev./Depth: 0.0'-6.4'

<b>Law Engineering and Environmental Services, Inc.</b>	Client: USACE, Jacksonville District Project: Miami River Project No.: 40521-6-R031-38
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## Grain Size Distribution Report



%	COBBLES	GRAVEL	SAND	SILT	CLAY	USCS	AASHTO	PL	LL
0			90.7	9.3		SP-SM	A-3		

SIEVE		PERCENT FINER		SIEVE		PERCENT FINER		SOIL DESCRIPTION ○ SAND; fine quartz, silt and sized (extreme) Slightly, trace silt, bit
number	size	○		number	size	○		
				#4	100.0			REMARKS: ○
				#10	98.3			
				#20	95.1			
				#40	73.0			
				#60	31.0			
				#100	11.9			
				#200	9.3			
GRAIN SIZE								
D <sub>60</sub>	0.358							
D <sub>30</sub>	0.246							
D <sub>10</sub>	0.0914							
COEFFICIENTS								
C <sub>u</sub>	1.87							
C <sub>v</sub>	3.97							

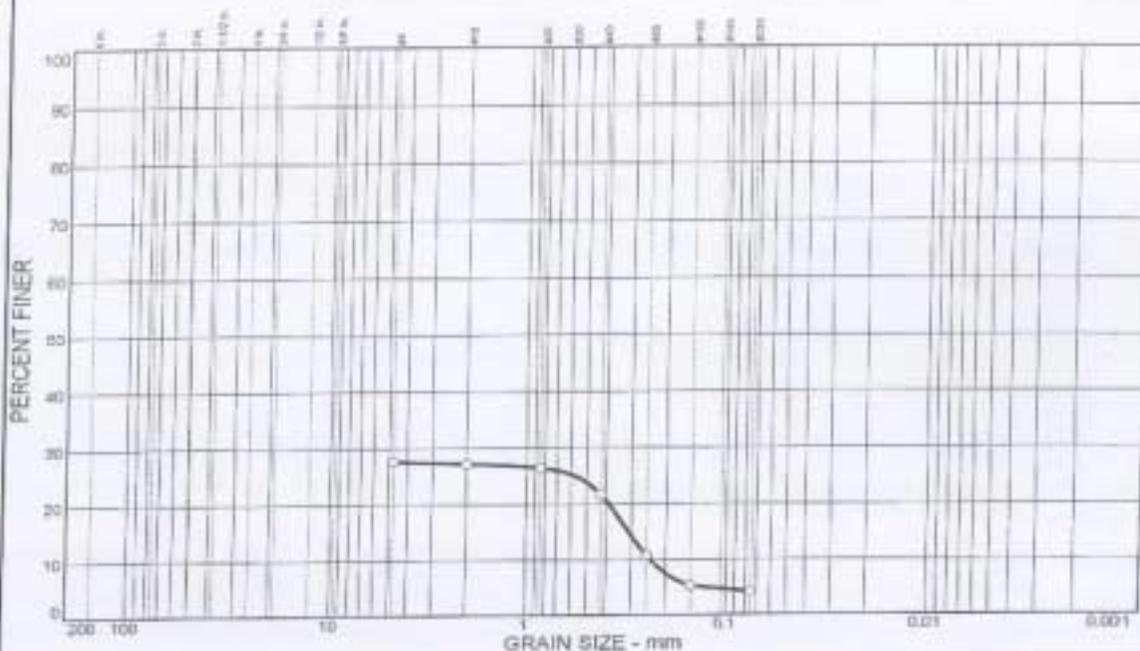
○ Source: CD-MROO-7

Sample No.: 2

Elev./Depth: 3.1'-5.1'

<b>Law Engineering and Environmental Services, Inc.</b>	Client: USACE, Jacksonville District Project: Miami River Project No.: 40521-8-8051-38
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## Grain Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	FL	LL
		23.5	4.1		GP	A-1-a		

SIEVE number mm	PERCENT FINER		
	○		
GRAN SIZE			
D <sub>100</sub>			
D <sub>75</sub>			
D <sub>10</sub>	0.240		
COEFFICIENTS			
C <sub>u</sub>			
C <sub>u</sub>			

SIEVE number mm	PERCENT FINER		
	○		
#4	27.6		
#10	27.2		
#20	26.4		
#40	21.6		
#60	10.7		
#100	5.2		
#200	4.1		

**SOIL DESCRIPTION**  
 ○ LIMESTONE, hard, trace silt, light tan.

**REMARKS**  
 C

○ Source: CB-MR00-7

Sample No.: 3

Elev./Depth: 3.1'-5.9'

**Law Engineering and  
 Environmental Services, Inc.**

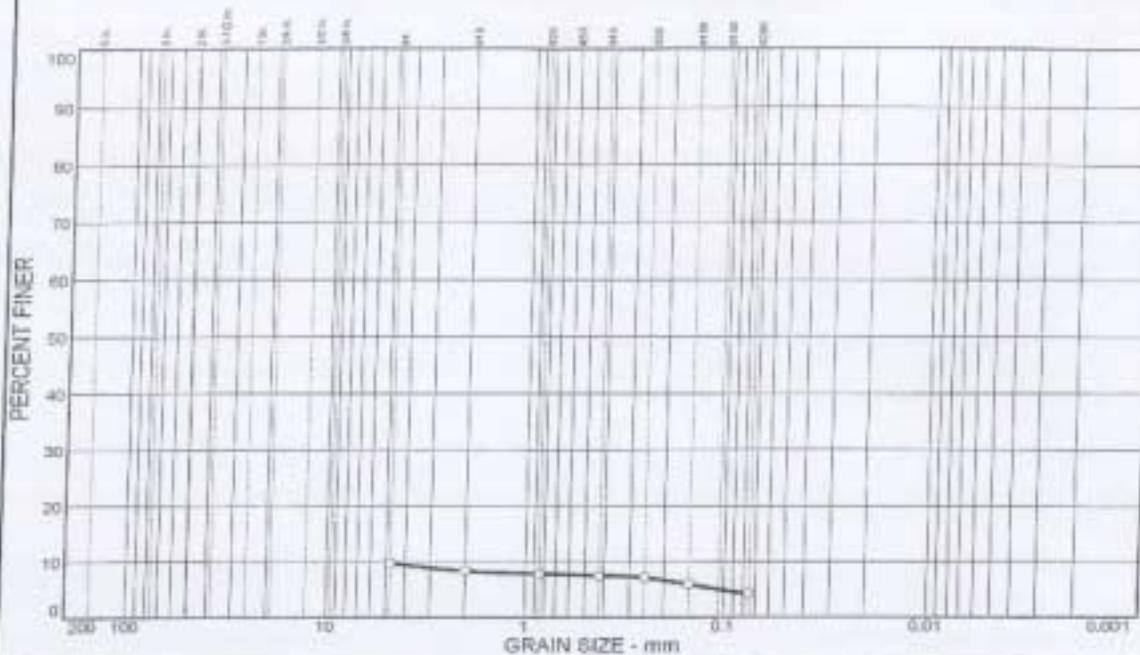
Client: USACE, Jacksonville District

Project: Miami River

Project No.: 40521-8-8051-38



## Grain Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	FL	LL
		5.6		4.1	GP	A-1-a		

SIEVE	PERCENT FINER		SIEVE	PERCENT FINER		SOIL DESCRIPTION	
number mm	○		number mm	○			
			#4	9.7		○ LIMESTONE, med, trace silt, light tan	
			#10	8.3			
			#20	7.8			
			#40	7.5			
			#60	7.1			
			#100	5.9			
			#200	4.1			
GRAIN SIZE							REMARKS: ○
COEFFICIENTS							

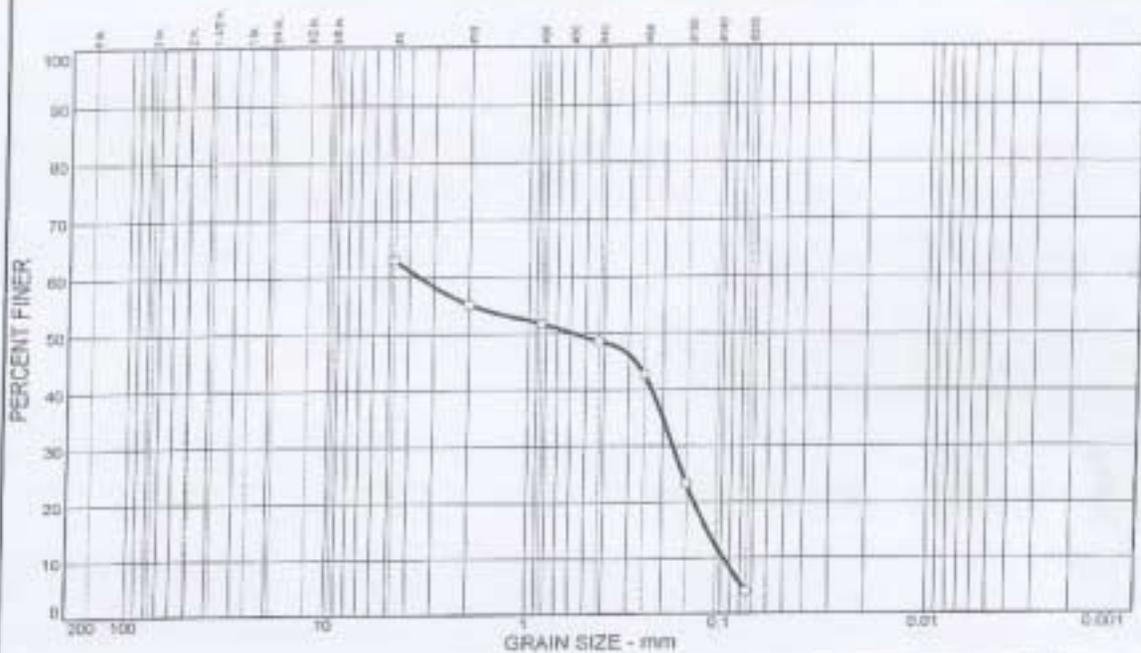
○ Source: CB-MROD-5

Sample No.: 2

Elev./Depth: 3.0'-5.6'

<p style="text-align: center;"><b>Law Engineering and Environmental Services, Inc.</b></p>	<p>Client: USACE, Jacksonville District Project: Miami River Project No.: 40321-8-8031-38</p>
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## Grain Size Distribution Report



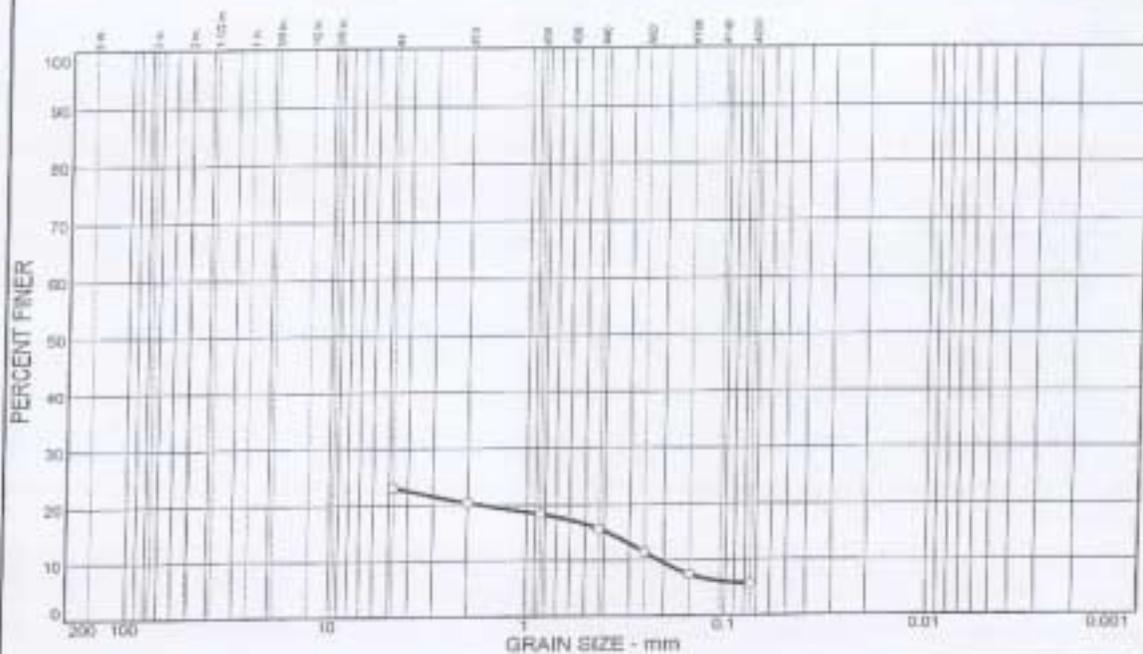
% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LI
0		59.1		3.9	SP	A-1-b		

SIEVE	PERCENT FINER			SIEVE	PERCENT FINER			SOIL DESCRIPTION	
number	0			number	0			O LIMESTONE, hard, light tan	
#4				#4	63.0				
#10				#10	55.2				
#20				#20	51.8				
#40				#40	48.6				
#60				#60	42.7				
#100				#100	21.3				
#200				#200	3.9				
GRAIN SIZE								REMARKS O	
D <sub>60</sub>	1.55								
D <sub>30</sub>	0.177								
COEFFICIENTS									
C <sub>u</sub>	0.09								
C <sub>g</sub>	36.56								

Source: CB-MROO-2
Sample No.: 2
Elev./Depth: 1.7'-3.7'

<b>Law Engineering and Environmental Services, Inc.</b>	Client: USACE, Jacksonville District Project: Miami River Project No.: 40521-8-8031-38
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## Grain Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		17.5	5.6		GP-GM	A-1-a		

SIEVE inches mill	PERCENT FINER			SIEVE number mill	PERCENT FINER			SOIL DESCRIPTION
	0				0			
				#4			23.1	LIMESTONE, hard, mass silt, light tan
				#10			20.4	
				#20			18.3	
				#40			15.6	
				#60			11.4	
				#100			7.4	
				#200			5.6	
GRAIN SIZE								REMARKS
D <sub>60</sub>								
D <sub>30</sub>								
D <sub>10</sub>			0.213					
COEFFICIENTS								
C <sub>u</sub>								
C <sub>w</sub>								

Source: CB-MROO-4

Sample No.: 2

Elev./Depth: 4.2'-7.2'

<p style="text-align: center;"><b>Law Engineering and Environmental Services, Inc.</b></p>	<p>Client: USACE, Jacksonville District Project: Miami River Project No.: 40521-8-8051-38</p>
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# LAW

ENGINEERING AND ENVIRONMENTAL SERVICES  
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(904)396-5173

## REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-8-8051-38

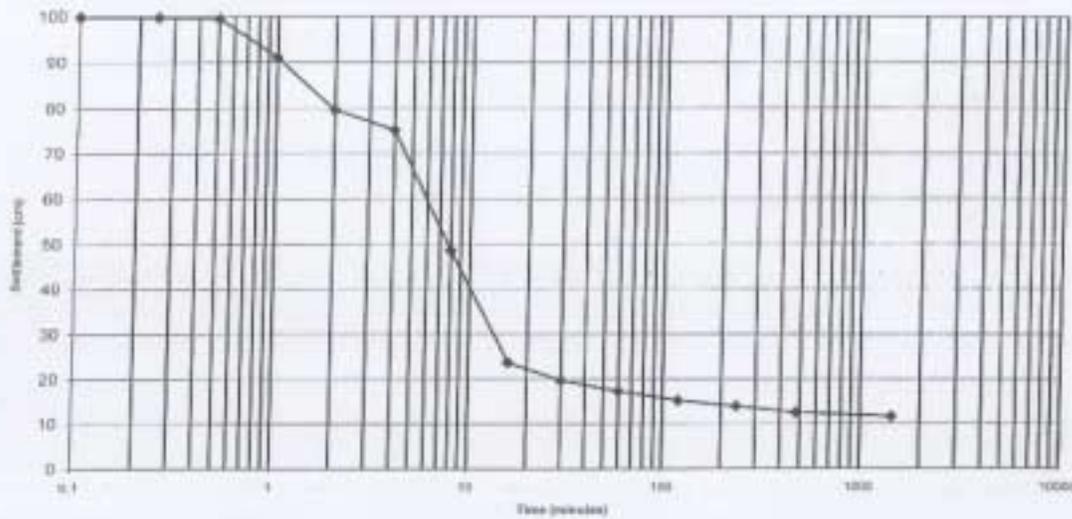
SAMPLE NO 1

PROJECT: Miami River

STATION CB-MROO-4

CLIENT: USACE, Jacksonville District

CONCENTRATION: 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	99.9	16	23.7
0.25	99.8	30	19.7
0.5	99.5	60	17.2
1	91	120	15.1
2	79.6	240	13.8
4	75.2	480	12.4
8	48.6	1440	11.5

Final Concentration: 889.57 g/L

Salinity: 11 ppt



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JACKSONVILLE, FLORIDA 32217  
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## REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-8-8051-38

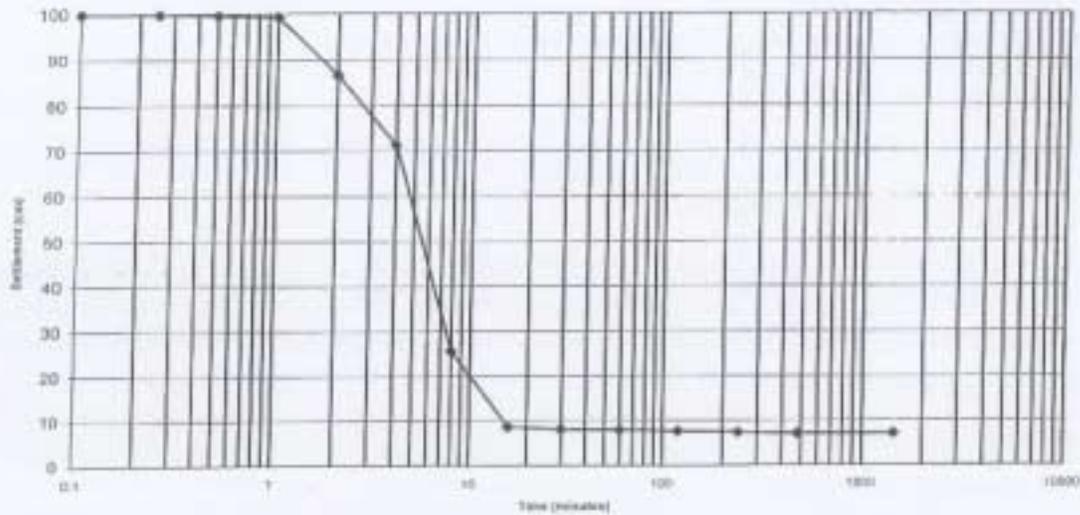
PROJECT: Miami River

CLIENT: USACE, Jacksonville District

SAMPLE NO 1

STATION CB-MROO-5

CONCENTRATION 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	99.9	16	8.6
0.25	99.8	30	8.1
0.5	99.6	60	7.9
1	99.2	120	7.6
2	86.8	240	7.3
4	71.2	480	7
8	25.8	1440	7

Final Concentration: 1426.6 g/L

Salinity: 11 ppt



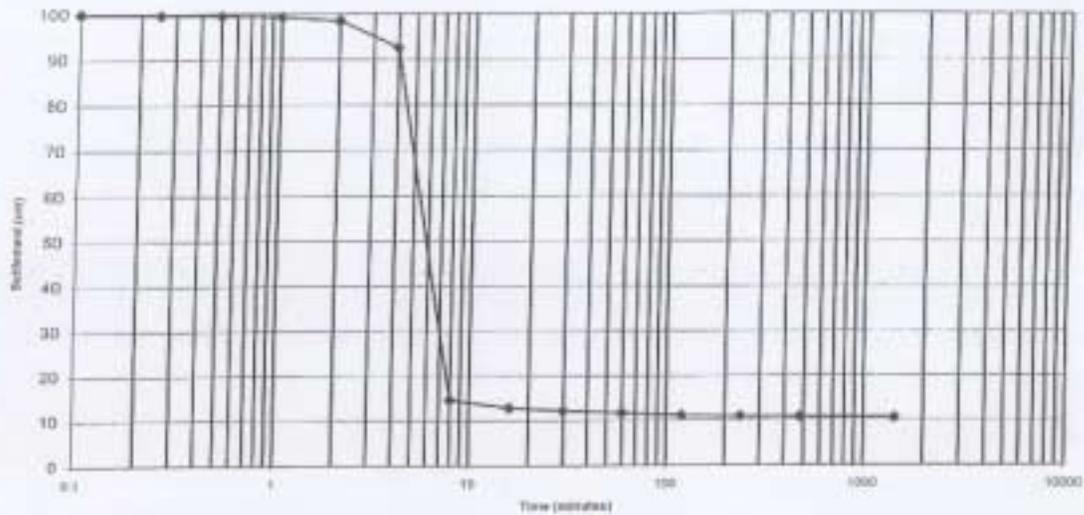
# LAW

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## REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-8-8051-38  
PROJECT: Miami River  
CLIENT: USACE, Jacksonville District

SAMPLE NO: 1  
STATION: CB-MROO-7  
CONCENTRATION: 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	99.9	16	12.7
0.25	99.7	30	12.1
0.5	99.5	60	11.6
1	99.2	120	11.1
2	98.4	240	10.8
4	92.5	480	10.7
6	14.5	1440	10.5

Final Concentration: 952.38 g/L

Solids: 11 ppt



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## REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-6-6051-38

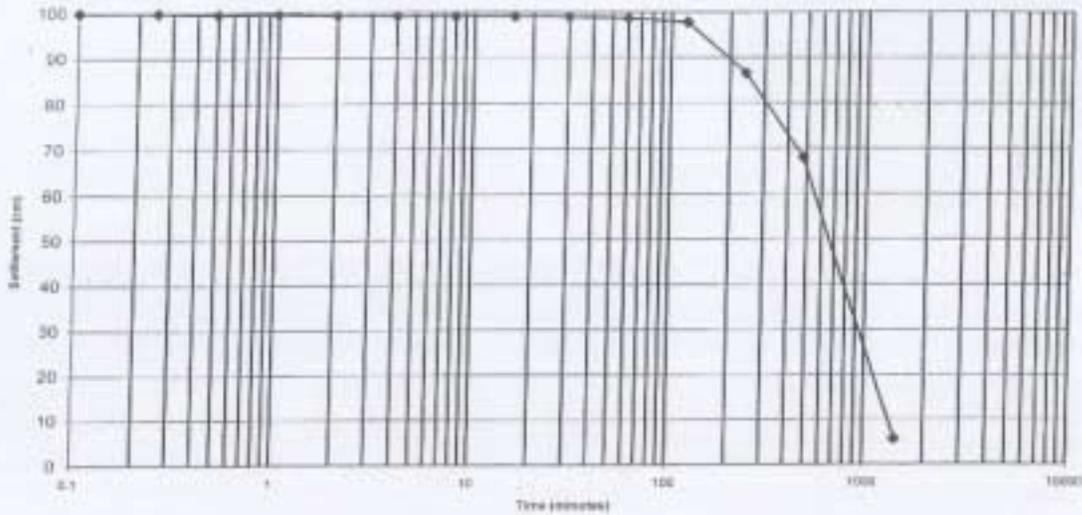
PROJECT: Miami River

CLIENT: USACE, Jacksonville District

SAMPLE NO 2

STATION CB-MROO-7

CONCENTRATION: 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	99.9	16	99.1
0.25	99.8	30	99
0.5	99.6	60	98.7
1	99.5	120	97.8
2	99.3	240	86.5
4	99.2	480	68
8	99.1	1440	5.6

Final Concentration: 1785.7 g/L

Salinity: 11 ppt

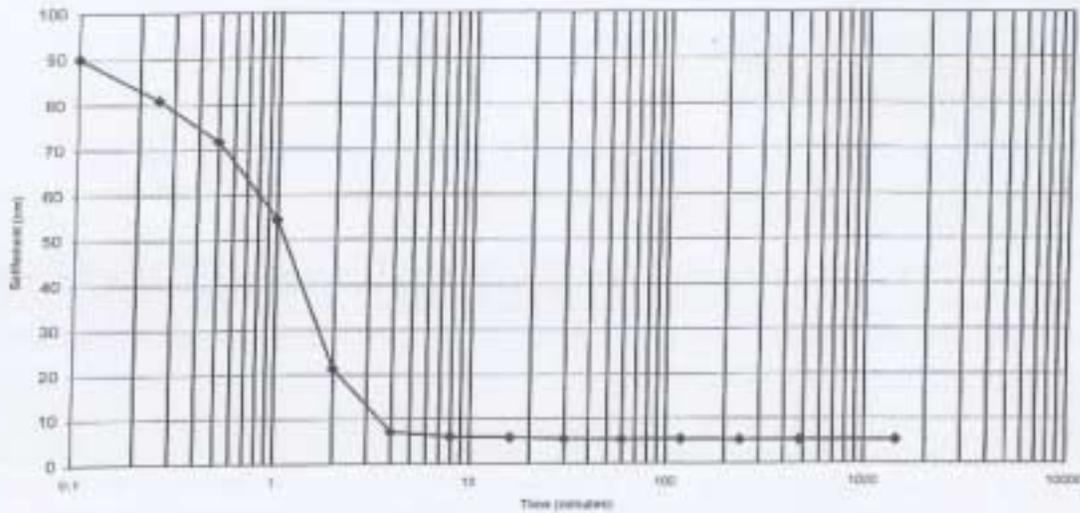


**LAW**  
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REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-6-8051-38  
PROJECT: Miami River  
CLIENT: USACE, Jacksonville District

SAMPLE NO 1  
STATION CB-MROO-8  
CONCENTRATION: 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	90	16	5.8
0.25	80.9	30	5.5
0.5	71.8	60	5.4
1	54.5	120	5.4
2	21.4	240	5.2
4	7.1	480	5.2
8	6	1440	5.2

Final Concentration: 1923.1 g/L

Salinity: 11 ppt

**SUMMARY OF LABORATORY TESTING**

Miami River  
LAW Project No. 40521-B-8051-38

Boring No.	Sample No.	Laboratory Testing USACE Contract Designators		
		3027 (GS)	3032 (SG)	3035(SR)
CB-MR00-2	1	SM	2.63	*
	2	SP	2.59	
CB-MR00-4	1	ML		*
	2	GP-GM		
CB-MR00-5	1	SM	2.69	*
	2	GP		
CB-MR00-6	1	SP-SM	2.66	
CB-MR00-7	1	SM		*
	2	SP-SM	2.66	*
	3	GP		
CB-MR00-8	1	SP-SM	2.64	*
	3	GP-GM		

Note: \* See attached "Report of Settling Rate Testing" sheet for results.



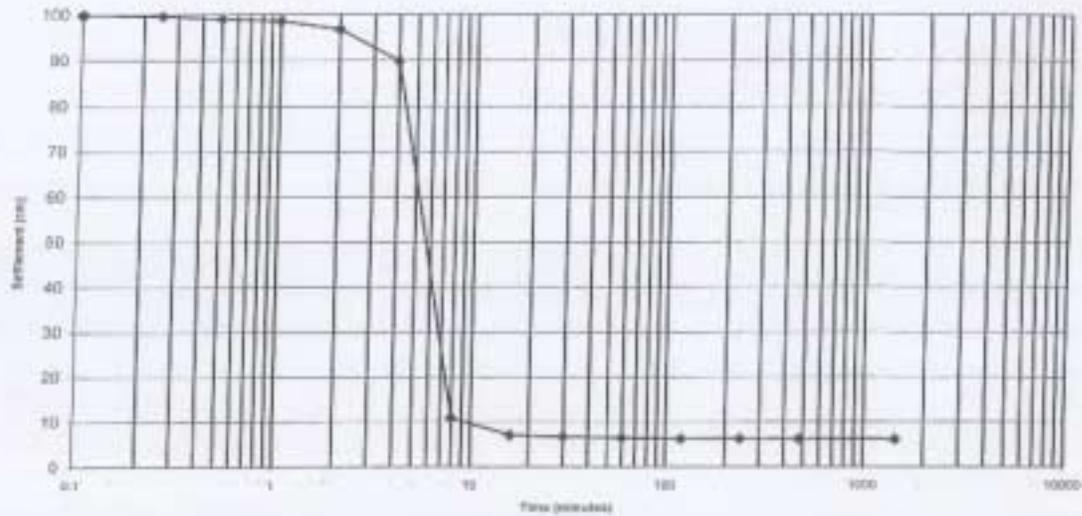
# LAW

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3901 CARMICHAEL AVENUE  
JACKSONVILLE, FLORIDA 32207  
(904)386-5173

## REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-6-6051-38  
PROJECT: Miami River  
CLIENT: USACE, Jacksonville District

SAMPLE NO 1  
STATION CB-MROO-2  
CONCENTRATION: 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	99.9	16	7.1
0.25	99.6	30	6.7
0.5	99	60	6.5
1	98.5	120	6.3
2	96.8	240	6.3
4	89.8	480	6.2
8	10.9	1440	6.2

Final Concentration: 1612.9 g/L

Safety: 11 ppt