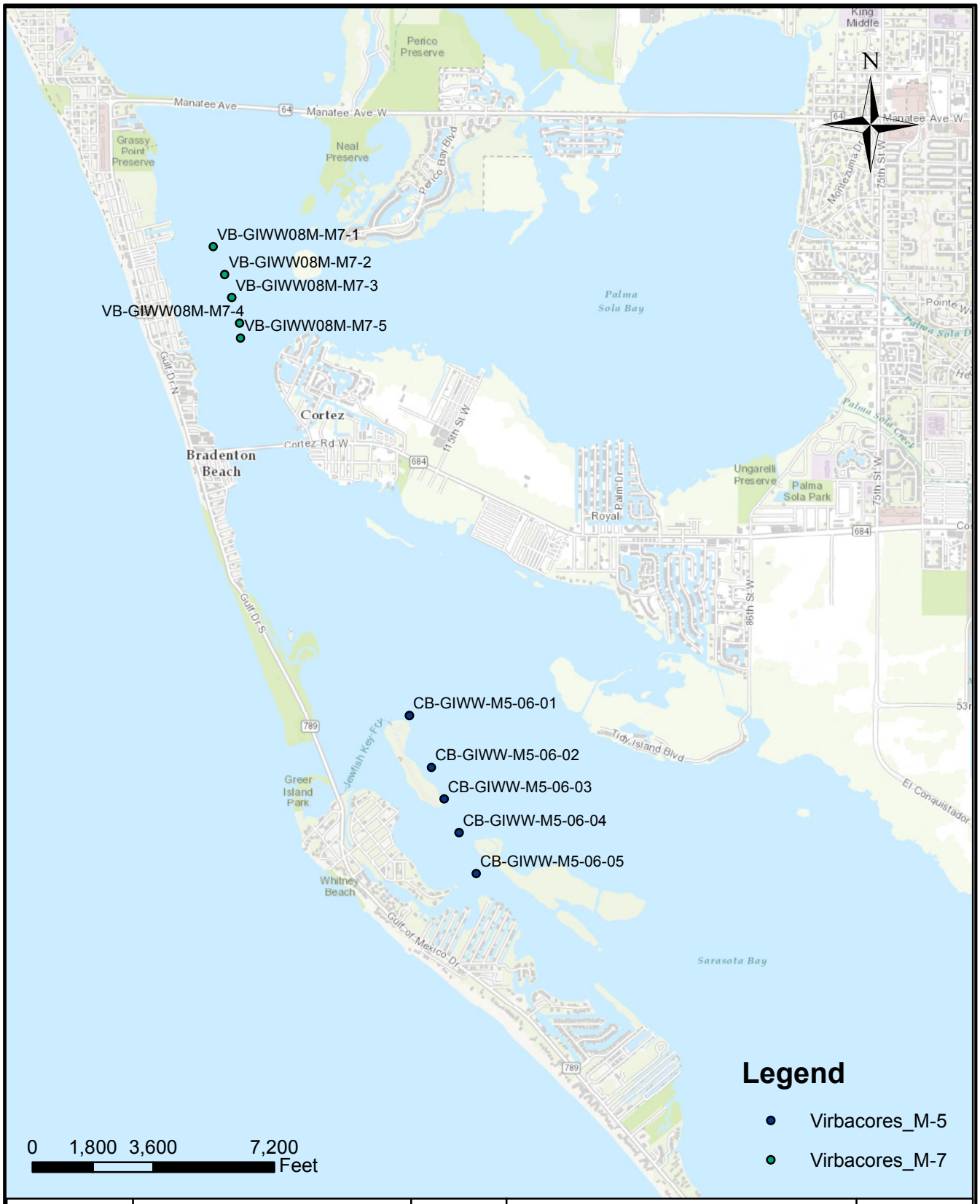
APPENDIX B – PART 1

MANATEE COUNTY GEOTECHNICAL DATA



US Army Corps of Engineers ® Jacksonville District	Manatee County GIWW CR-AR	Dsn by: AMH Dwn by: AMH Ckd by: JW Dated: 13NOV15	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	PLATE NO. **B-1**

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-01 @ 0 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
279,558	1,132,187	State Plane, FLW (U.S. Ft.)	-7.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	5Y 6/1	#200 - 2.80 #230 - 2.80		2.00	1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	0.10	0.10
#7	-1.50	2.83	0.10	0.20
#10	-1.00	2.00	0.10	0.30
#14	-0.50	1.41	0.20	0.50
#18	0.00	1.00	0.20	0.70
#25	0.50	0.71	0.10	0.80
#35	1.00	0.50	0.20	1.00
#45	1.50	0.35	0.30	1.30
#60	2.00	0.25	1.30	2.60
#80	2.50	0.18	10.60	13.20
#120	3.00	0.13	67.60	80.80
#170	3.50	0.09	15.80	96.60
#200	3.75	0.08	0.60	97.20
#230	4.00	0.06	0.00	97.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.45	3.10	2.96	2.77	2.59	2.52	2.11

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.73	0.15	2.77	0.15	0.47	-4.97	45.89

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-01 @ 1.5 ft

Analysis Date: 7/25/2006

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
279,558	1,132,187	State Plane, FLW (U.S. Ft.)	-8.7 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	5Y 6/1	#230 - 2.60			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.76	0.00	0.00
#7	-1.50	2.83	0.30	0.30
#10	-1.00	2.00	0.10	0.40
#14	-0.50	1.41	0.10	0.50
#18	0.00	1.00	0.20	0.70
#25	0.50	0.71	0.10	0.80
#35	1.00	0.50	0.10	0.90
#45	1.50	0.35	0.30	1.20
#60	2.00	0.25	1.30	2.50
#80	2.50	0.18	11.60	14.10
#120	3.00	0.13	66.90	81.00
#170	3.50	0.09	15.80	96.80
#200	3.75	0.07	0.50	97.30
#230	4.00	0.06	0.10	97.40

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	3.09	2.96	2.77	2.58	2.51	2.11

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.73	0.15	2.77	0.15	0.47	-4.8	42.74

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-01 @ 4.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
279,558	1,132,187	State Plane, FLW (U.S. Ft.)	-11.7 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	5Y 6/1	#200 - 2.80 #230 - 2.80			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#10	-1.00	2.00	0.00	0.00
#14	-0.50	1.41	0.10	0.10
#18	0.00	1.00	0.10	0.20
#25	0.50	0.71	0.10	0.30
#35	1.00	0.50	0.10	0.40
#45	1.50	0.35	0.20	0.60
#60	2.00	0.25	0.80	1.40
#80	2.50	0.18	9.70	11.10
#120	3.00	0.13	70.40	81.50
#170	3.50	0.09	15.10	96.60
#200	3.75	0.08	0.60	97.20
#230	4.00	0.06	0.00	97.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.45	3.08	2.95	2.78	2.60	2.53	2.19

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.76	0.15	2.78	0.15	0.34	-2.71	26.07

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-01 @ 9 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
279,558	1,132,187	State Plane, FLW (U.S. Ft.)	-16.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 6.70 #230 - 6.40			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	3.70	3.70
#7	-1.50	2.83	2.90	6.60
#10	-1.00	2.00	2.50	9.10
#14	-0.50	1.41	2.30	11.40
#18	-0.25	1.25	2.80	14.20
#25	0.00	1.00	2.30	16.50
#35	0.50	0.71	1.90	18.40
#45	1.00	0.50	1.50	19.90
#60	1.50	0.35	2.40	22.30
#80	2.00	0.25	9.90	32.20
#120	2.50	0.18	46.80	79.00
#170	3.50	0.09	13.20	92.20
#200	3.75	0.08	1.10	93.30
#230	4.00	0.06	0.30	93.60

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.88	2.46	2.19	1.64	-0.05	-1.91

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.60	0.33	2.19	0.22	1.51	-1.54	4.45

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-01 @ 15 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
279,558	1,132,187	State Plane, FLW (U.S. Ft.)	-22.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#230 - 7.30			30

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.51	1.50	1.50
#4	-2.25	4.76	5.90	7.40
#7	-1.50	2.83	6.10	13.50
#10	-1.00	2.00	5.50	19.00
#14	-0.50	1.41	6.80	25.80
#18	0.00	1.00	6.00	31.80
#25	0.50	0.71	4.60	36.40
#35	1.00	0.50	3.10	39.50
#45	1.50	0.35	2.50	42.00
#60	2.00	0.25	2.50	44.50
#80	2.50	0.18	8.30	52.80
#120	3.00	0.13	23.30	76.10
#170	3.50	0.09	14.40	90.50
#200	3.75	0.07	1.80	92.30
#230	4.00	0.06	0.40	92.70

	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.27	2.98	2.33	-0.56	-1.27	-2.66

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.10	0.47	2.33	0.20	2.08	-0.6	1.99

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-02 @ 1.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,218	1,130,639	State Plane, FLW (U.S. Ft.)	-10.9 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	5Y 6/1	#200 - 2.90 #230 - 2.80		2.00	1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.76	0.00	0.00
#7	-1.50	2.83	0.10	0.10
#10	-1.00	2.00	0.10	0.20
#14	-0.50	1.41	0.10	0.30
#18	0.00	1.00	0.10	0.40
#25	0.50	0.71	0.10	0.50
#35	1.00	0.50	0.20	0.70
#45	1.50	0.35	0.10	0.80
#60	2.00	0.25	0.40	1.20
#80	2.50	0.18	4.00	5.20
#120	3.00	0.13	65.10	70.30
#170	3.50	0.09	25.60	95.90
#200	3.75	0.08	1.20	97.10
#230	4.00	0.06	0.10	97.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.48	3.27	3.09	2.84	2.65	2.58	2.48

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.85	0.14	2.84	0.14	0.4	-4.54	46.66

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-02 @ 4.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,218	1,130,639	State Plane, FLW (U.S. Ft.)	-13.9 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10Y 3/1	#200 - 4.20 #230 - 4.10			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#10	-1.00	2.00	0.00	0.00
#14	-0.50	1.41	0.10	0.10
#18	0.00	1.00	0.00	0.10
#25	0.50	0.71	0.00	0.10
#35	1.00	0.50	0.10	0.20
#45	1.50	0.35	0.20	0.40
#60	2.00	0.25	0.80	1.20
#80	2.50	0.18	6.30	7.50
#120	3.00	0.13	74.10	81.60
#170	3.50	0.09	13.70	95.30
#200	3.75	0.08	0.50	95.80
#230	4.00	0.06	0.10	95.90

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.49	3.09	2.96	2.79	2.62	2.56	2.30

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.78	0.15	2.79	0.14	0.29	-2.38	28.75

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-02 @ 9 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,218	1,130,639	State Plane, FLW (U.S. Ft.)	-18.4 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 6/1	#200 - 6.00 #230 - 5.70			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	2.00	2.00
#7	-1.50	2.83	1.90	3.90
#10	-1.00	2.00	1.90	5.80
#14	-0.50	1.41	2.60	8.40
#18	0.00	1.00	2.50	10.90
#25	0.50	0.71	2.20	13.10
#35	1.00	0.50	1.70	14.80
#45	1.50	0.35	1.40	16.20
#60	2.00	0.25	2.60	18.80
#80	2.50	0.18	10.10	28.90
#120	3.00	0.13	46.70	75.60
#170	3.50	0.09	17.00	92.60
#200	3.75	0.08	1.40	94.00
#230	4.00	0.06	0.30	94.30

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.25	2.99	2.73	2.31	1.43	-1.21

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.19	0.22	2.73	0.15	1.42	-1.98	6.04

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-02 @ 13.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,218	1,130,639	State Plane, FLW (U.S. Ft.)	-22.9 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 6/2	#200 - 8.60 #230 - 8.10			20

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.51	3.10	3.10
#4	-2.25	4.76	8.90	12.00
#7	-1.50	2.83	9.70	21.70
#10	-1.00	2.00	5.40	27.10
#14	-0.50	1.41	4.60	31.70
#18	0.00	1.00	3.40	35.10
#25	0.50	0.71	3.00	38.10
#35	1.00	0.50	2.40	40.50
#45	1.50	0.35	1.80	42.30
#60	2.00	0.25	1.50	43.80
#80	2.50	0.18	2.80	46.60
#120	3.00	0.13	29.50	76.10
#170	3.50	0.09	12.90	89.00
#200	3.75	0.08	2.40	91.40
#230	4.00	0.06	0.50	91.90

	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.31	2.98	2.56	-1.19	-1.94	-3.04

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.89	0.54	2.56	0.17	2.34	-0.51	1.68

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-03 @ 0 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,591	1,129,701	State Plane, FLW (U.S. Ft.)	-7.7 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 4/1	#200 - 4.70 #230 - 4.30		0.50	1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#10	-1.00	2.00	0.00	0.00
#14	-0.50	1.41	0.10	0.10
#18	0.00	1.00	0.10	0.20
#25	0.50	0.71	0.10	0.30
#35	1.00	0.50	0.00	0.30
#45	1.50	0.35	0.20	0.50
#60	2.00	0.25	0.70	1.20
#80	2.50	0.18	4.30	5.50
#120	3.00	0.13	76.30	81.80
#170	3.50	0.09	12.80	94.60
#200	3.75	0.08	0.70	95.30
#230	4.00	0.06	0.40	95.70

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.64	3.09	2.96	2.79	2.63	2.57	2.44

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.79	0.14	2.79	0.14	0.31	-3.14	37.05

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-03 @ 1.5 ft

Analysis Date: 7/25/2006

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,591	1,129,701	State Plane, FLW (U.S. Ft.)	-9.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 4/1	#200 - 2.40 #230 - 2.40			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.76	0.00	0.00
#7	-1.50	2.83	0.10	0.10
#10	-1.00	2.00	0.00	0.10
#14	-0.50	1.41	0.10	0.20
#18	0.00	1.00	0.00	0.20
#25	0.50	0.71	0.00	0.20
#35	1.00	0.50	0.10	0.30
#45	1.50	0.35	0.10	0.40
#65	2.00	0.25	0.70	1.10
#80	2.50	0.18	5.70	6.80
#120	3.00	0.13	80.10	86.90
#170	3.50	0.09	10.30	97.20
#200	3.75	0.08	0.40	97.60
#230	4.00	0.06	0.00	97.60

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	2.98	2.93	2.77	2.61	2.56	2.34

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.76	0.15	2.77	0.15	0.3	-5.64	78.87

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-03 @ 4.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,591	1,129,701	State Plane, FLW (U.S. Ft.)	-12.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 5.20 #230 - 4.80			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#7	-1.50	2.83	0.00	0.00
#10	-1.00	2.00	0.10	0.10
#14	-0.50	1.41	0.20	0.30
#18	0.00	1.00	0.10	0.40
#25	0.50	0.71	0.10	0.50
#35	1.00	0.50	0.10	0.60
#45	1.50	0.35	0.10	0.70
#60	2.00	0.25	0.70	1.40
#80	2.50	0.18	4.40	5.80
#120	3.00	0.13	80.40	86.20
#170	3.50	0.09	7.70	93.90
#200	3.75	0.08	0.90	94.80
#230	4.00	0.06	0.40	95.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.88	2.99	2.93	2.77	2.62	2.56	2.41

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.75	0.15	2.77	0.15	0.34	-5.15	55.82

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-03 @ 10.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
280,591	1,129,701	State Plane, FLW (U.S. Ft.)	-18.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 4/1	#200 - 4.70 #230 - 4.60			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#14	-0.50	1.41	0.00	0.00
#18	0.00	1.00	0.10	0.10
#25	0.50	0.71	0.00	0.10
#35	1.00	0.50	0.30	0.40
#45	1.50	0.35	0.80	1.20
#60	2.00	0.25	6.30	7.50
#80	2.50	0.18	22.70	30.20
#120	3.00	0.13	52.00	82.20
#170	3.50	0.09	11.90	94.10
#200	3.75	0.08	1.20	95.30
#230	4.00	0.06	0.10	95.40

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.69	3.08	2.93	2.69	2.39	2.19	1.80

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.62	0.16	2.69	0.15	0.44	-0.88	5.92

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-04 @ 0 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,038	1,128,700	State Plane, FLW (U.S. Ft.)	-5.4 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 7/1	#200 - 2.90 #230 - 2.90		4.00	1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	0.10	0.10
#7	-1.50	2.83	0.20	0.30
#10	-1.00	2.00	0.20	0.50
#14	-0.50	1.41	0.20	0.70
#18	0.00	1.00	0.30	1.00
#25	0.50	0.71	0.20	1.20
#35	1.00	0.50	0.30	1.50
#45	1.50	0.35	0.30	1.80
#60	2.00	0.25	0.60	2.40
#80	2.50	0.18	5.30	7.70
#120	3.00	0.13	80.60	88.30
#170	3.50	0.09	8.50	96.80
#200	3.75	0.08	0.30	97.10
#230	4.00	0.06	0.00	97.10

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	2.97	2.92	2.76	2.61	2.55	2.25

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.71	0.15	2.76	0.15	0.49	-6.26	54.19

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-04 @ 1.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,038	1,128,700	State Plane, FLW (U.S. Ft.)	-6.9 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 6/1	#200 - 1.80 #230 - 1.80			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	0.10	0.10
#7	-1.50	2.83	0.10	0.20
#10	-1.00	2.00	0.00	0.20
#14	-0.50	1.41	0.10	0.30
#18	0.00	1.00	0.20	0.50
#25	0.50	0.71	0.20	0.70
#35	1.00	0.50	0.10	0.80
#45	1.50	0.35	0.20	1.00
#60	2.00	0.25	0.20	1.20
#80	2.50	0.18	4.60	5.80
#120	3.00	0.13	80.80	86.60
#170	3.50	0.09	11.40	98.00
#200	3.75	0.08	0.20	98.20
#230	4.00	0.06	0.00	98.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.37	2.98	2.93	2.77	2.62	2.56	2.41

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.75	0.15	2.77	0.15	0.39	-7.11	82.87

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-04 @ 6 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,038	1,128,700	State Plane, FLW (U.S. Ft.)	-11.4 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 7/1	#200 - 3.80 #230 - 3.70			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.76	0.00	0.00
#7	-1.50	2.83	0.10	0.10
#10	-1.00	2.00	0.20	0.30
#14	-0.50	1.41	0.20	0.50
#18	0.00	1.00	0.20	0.70
#25	0.50	0.71	0.20	0.90
#35	1.00	0.50	0.40	1.30
#45	1.50	0.35	0.30	1.60
#60	2.00	0.25	0.90	2.50
#80	2.50	0.18	5.30	7.80
#120	3.00	0.13	74.90	82.70
#170	3.50	0.09	12.80	95.50
#200	3.75	0.08	0.70	96.20
#230	4.00	0.06	0.10	96.30

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.48	3.05	2.95	2.78	2.61	2.55	2.24

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.74	0.15	2.78	0.15	0.45	-5.01	41.86

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-04 @ 15 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,038	1,128,700	State Plane, FLW (U.S. Ft.)	-20.4 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 5.30 #230 - 5.10			30

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.10	1.10
#4	-2.25	4.76	10.50	11.60
#7	-1.50	2.83	8.00	19.60
#10	-1.00	2.00	4.90	24.50
#14	-0.50	1.41	4.80	29.30
#18	0.00	1.00	3.60	32.90
#25	0.50	0.71	2.60	35.50
#35	1.00	0.50	1.50	37.00
#45	1.50	0.35	0.80	37.80
#60	2.00	0.25	1.20	39.00
#80	2.50	0.18	6.00	45.00
#120	3.00	0.13	35.50	80.50
#170	3.50	0.09	13.00	93.50
#200	3.75	0.08	1.20	94.70
#230	4.00	0.06	0.20	94.90

	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.13	2.92	2.57	-0.95	-1.84	-2.88

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.10	0.47	2.57	0.17	2.25	-0.67	1.81

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-05 @ 1.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,551	1,127,480	State Plane, FLW (U.S. Ft.)	-13.1 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 5/1	#200 - 2.00 #230 - 1.90		5.00	5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#4	-2.25	4.76	1.40	1.40
#7	-1.50	2.83	1.40	2.80
#10	-1.00	2.00	1.30	4.10
#14	-0.50	1.41	1.80	5.90
#18	0.00	1.00	1.30	7.20
#25	0.50	0.71	1.30	8.50
#35	1.00	0.50	1.00	9.50
#45	1.50	0.35	1.40	10.90
#60	2.00	0.25	3.80	14.70
#80	2.50	0.18	18.80	33.50
#120	3.00	0.13	58.10	91.60
#170	3.50	0.09	6.30	97.90
#200	3.75	0.08	0.10	98.00
#230	4.00	0.06	0.10	98.10

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.27	2.93	2.86	2.64	2.27	2.03	-0.75

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.27	0.21	2.64	0.16	1.15	-2.73	10.13

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-05 @ 4.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,551	1,127,480	State Plane, FLW (U.S. Ft.)	-16.1 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 5.40 #230 - 5.30			25

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.80	0.80
#4	-2.25	4.76	5.90	6.70
#7	-1.50	2.83	5.30	12.00
#10	-1.00	2.00	5.30	17.30
#14	-0.50	1.41	7.40	24.70
#18	0.00	1.00	6.10	30.80
#25	0.50	0.71	4.80	35.60
#35	1.00	0.50	3.70	39.30
#45	1.50	0.35	5.10	44.40
#60	2.00	0.25	8.50	52.90
#80	2.50	0.18	10.40	63.30
#120	3.00	0.13	24.80	88.10
#170	3.50	0.09	5.90	94.00
#200	3.75	0.08	0.60	94.60
#230	4.00	0.06	0.10	94.70

	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		2.92	2.74	1.83	-0.48	-1.12	-2.54

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.01	0.50	1.83	0.28	1.89	-0.64	2.16

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-05 @ 10.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,551	1,127,480	State Plane, FLW (U.S. Ft.)	-22.1 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 6/2	#200 - 7.20 #230 - 6.80			15

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#4	-2.25	4.76	0.30	0.30
#7	-1.50	2.83	3.90	4.20
#10	-1.00	2.00	3.20	7.40
#14	-0.50	1.41	5.80	13.20
#18	0.00	1.00	2.90	16.10
#25	0.50	0.71	2.10	18.20
#35	1.00	0.50	1.50	19.70
#45	1.50	0.35	1.00	20.70
#60	2.00	0.25	1.50	22.20
#80	2.50	0.18	8.20	30.40
#120	3.00	0.13	45.20	75.60
#170	3.50	0.09	15.30	90.90
#200	3.75	0.08	1.90	92.80
#230	4.00	0.06	0.40	93.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.27	2.99	2.72	2.17	-0.02	-1.37

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.03	0.24	2.72	0.15	1.55	-1.44	3.64

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-M5-06-05 @ 18 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
281,551	1,127,480	State Plane, FLW (U.S. Ft.)	-29.6 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 5/1	#200 - 12.20 #230 - 11.80			65

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	10.90	10.90
3/8"	-3.25	9.50	4.80	15.70
#4	-2.25	4.76	19.60	35.30
#7	-1.50	2.83	15.40	50.70
#10	-1.00	2.00	5.10	55.80
#14	-0.50	1.41	4.00	59.80
#18	0.00	1.00	3.10	62.90
#25	0.50	0.71	2.80	65.70
#35	1.00	0.50	2.20	67.90
#45	1.50	0.35	1.60	69.50
#60	2.00	0.25	1.40	70.90
#80	2.50	0.18	1.60	72.50
#120	3.00	0.13	6.80	79.30
#170	3.50	0.09	7.20	86.50
#200	3.75	0.08	1.30	87.80
#230	4.00	0.06	0.40	88.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.33	2.68	-1.53	-2.78	-3.23	

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	-1.18	2.27			2.21	1.28	2.89

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 0 ft

Analysis Date: 7/24/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,515	1,010,619	State Plane, FLW (U.S. Ft.)	-7.0 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 9.70 #230 - 8.80		10.00	2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.76	0.00	0.00
#7	-1.50	2.83	0.40	0.40
#10	-1.00	2.00	0.30	0.70
#14	-0.50	1.41	0.10	0.80
#18	0.00	1.00	0.10	0.90
#25	0.50	0.70	0.20	1.10
#35	1.00	0.50	0.10	1.20
#45	1.50	0.35	0.30	1.50
#60	2.00	0.25	0.60	2.10
#80	2.50	0.18	4.10	6.20
#120	3.00	0.13	44.10	50.30
#170	3.50	0.09	35.50	85.80
#200	3.75	0.08	4.50	90.30
#230	4.00	0.06	0.90	91.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.47	3.35	3.00	2.71	2.61	2.35

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.92	0.13	3.00	0.13	0.58	-4.49	34.47

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 1.5 ft

Analysis Date: 7/24/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,515	1,010,619	State Plane, FLW (U.S. Ft.)	-8.5 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 5.90 #230 - 5.80			5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	0.50	0.50
#7	-1.50	2.83	0.10	0.60
#10	-1.00	2.00	0.90	1.50
#14	-0.50	1.41	0.80	2.30
#18	0.00	1.00	0.90	3.20
#25	0.50	0.71	1.50	4.70
#35	1.00	0.50	1.80	6.50
#45	1.50	0.35	2.70	9.20
#60	2.00	0.25	7.30	16.50
#80	2.50	0.18	17.00	33.50
#120	3.00	0.13	41.60	75.10
#170	3.50	0.09	17.40	92.50
#200	3.75	0.08	1.60	94.10
#230	4.00	0.06	0.10	94.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.26	3.00	2.70	2.25	1.97	0.58

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.44	0.18	2.70	0.15	0.92	-2.49	11.11

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 4.5 ft

Analysis Date: 7/24/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,515	1,010,619	State Plane, FLW (U.S. Ft.)	-11.5 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 5/1	#200 - 10.60 #230 - 9.70			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#4	-2.25	4.76	0.50	0.50
#7	-1.50	2.83	0.10	0.60
#10	-1.00	2.00	0.10	0.70
#14	-0.50	1.41	0.20	0.90
#18	0.00	1.00	0.10	1.00
#25	0.50	0.71	0.10	1.10
#35	1.00	0.50	0.10	1.20
#45	1.50	0.35	0.30	1.50
#60	2.00	0.25	0.50	2.00
#80	2.50	0.18	4.00	6.00
#120	3.00	0.13	42.00	48.00
#170	3.50	0.09	36.60	84.60
#200	3.75	0.08	4.80	89.40
#230	4.00	0.06	0.90	90.30

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.49	3.37	3.03	2.73	2.62	2.38

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.92	0.13	3.03	0.12	0.64	-5.36	44.26

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 9 ft

Analysis Date: 7/24/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,515	1,010,619	State Plane, FLW (U.S. Ft.)	-16.0 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 6/1	#200 - 6.40 #230 - 6.20			45

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	2.00	2.00
3/8"	-3.25	9.51	0.00	2.00
#4	-2.25	4.76	14.00	16.00
#7	-1.50	2.83	6.80	22.80
#10	-1.00	2.00	4.30	27.10
#14	-0.50	1.41	3.60	30.70
#18	0.00	1.00	3.20	33.90
#25	0.50	0.71	4.20	38.10
#35	1.00	0.50	5.40	43.50
#45	1.50	0.35	6.60	50.10
#60	2.00	0.25	9.10	59.20
#80	2.50	0.18	10.80	70.00
#120	3.00	0.13	16.40	86.40
#170	3.50	0.09	6.60	93.00
#200	3.75	0.08	0.60	93.60
#230	4.00	0.06	0.20	93.80

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.93	2.65	1.49	-1.24	-2.25	-3.82

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.57	0.67	1.49	0.36	2.06	-0.32	1.72

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 0 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,048	1,010,780	State Plane, FLW (U.S. Ft.)	-5.3 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 6/1	#200 - 4.70 #230 - 4.60		18.00	25

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.51	0.80	0.80
#4	-2.25	4.76	13.30	14.10
#7	-1.50	2.83	12.40	26.50
#10	-1.00	2.00	4.00	30.50
#14	-0.50	1.41	7.60	38.10
#18	0.00	1.00	4.40	42.50
#25	0.50	0.71	4.50	47.00
#35	1.00	0.50	4.60	51.60
#45	1.50	0.35	5.30	56.90
#60	2.00	0.25	7.50	64.40
#80	2.50	0.18	9.40	73.80
#120	3.00	0.13	16.00	89.80
#170	3.50	0.09	5.10	94.90
#200	3.75	0.08	0.40	95.30
#230	4.00	0.06	0.10	95.40

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.56	2.82	2.54	0.83	-1.59	-2.14	-2.93

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.35	0.78	0.83	0.56	2.09	-0.18	1.59

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 1.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,048	1,010,780	State Plane, FLW (U.S. Ft.)	-6.8 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 5/1	#200 - 2.00 #230 - 1.90			20

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	2.90	2.90
#7	-1.50	2.83	2.20	5.10
#10	-1.00	2.00	1.90	7.00
#14	-0.50	1.41	4.00	11.00
#18	0.00	1.00	4.90	15.90
#25	0.50	0.71	7.70	23.60
#35	1.00	0.50	10.90	34.50
#45	1.50	0.35	12.90	47.40
#60	2.00	0.25	15.70	63.10
#80	2.50	0.18	15.90	79.00
#120	3.00	0.13	15.10	94.10
#170	3.50	0.09	3.60	97.70
#200	3.75	0.08	0.30	98.00
#230	4.00	0.06	0.10	98.10

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.13	2.67	2.37	1.58	0.56	0.01	-1.53

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.28	0.41	1.58	0.33	1.38	-0.97	3.67

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 4.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,048	1,010,780	State Plane, FLW (U.S. Ft.)	-9.8 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 5.70 #230 - 5.70			75

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.51	13.70	13.70
#4	-2.25	4.76	26.00	39.70
#7	-1.50	2.83	16.00	55.70
#10	-1.00	2.00	6.50	62.20
#14	-0.50	1.41	5.40	67.60
#18	0.00	1.00	3.80	71.40
#25	0.50	0.71	3.20	74.60
#35	1.00	0.50	3.00	77.60
#45	1.50	0.35	3.30	80.90
#60	2.00	0.25	4.60	85.50
#80	2.50	0.18	4.00	89.50
#120	3.00	0.13	3.50	93.00
#170	3.50	0.09	1.10	94.10
#200	3.75	0.08	0.20	94.30
#230	4.00	0.06	0.00	94.30

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	1.84	0.57	-1.77	-2.82	-3.16	-3.89

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	-1.36	2.57			1.97	0.75	2.44

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 6 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
349,048	1,010,780	State Plane, FLW (U.S. Ft.)	-11.3 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 5.70 #230 - 5.60			15

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	3.60	3.60
#7	-1.50	2.83	3.00	6.60
#10	-1.00	2.00	3.50	10.10
#14	-0.50	1.41	3.70	13.80
#120	-0.25	1.25	3.20	17.00
#18	0.00	1.00	3.10	20.10
#25	0.50	0.71	3.20	23.30
#35	1.00	0.50	3.90	27.20
#45	1.50	0.35	6.90	34.10
#60	2.00	0.25	14.10	48.20
#80	2.50	0.18	34.40	82.60
#170	3.50	0.09	10.90	93.50
#200	3.75	0.08	0.80	94.30
#230	4.00	0.06	0.10	94.40

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.63	2.39	2.03	0.72	-0.33	-1.90

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.34	0.40	2.03	0.24	1.52	-1.15	3.44

GRANULARMETRIC REPORT % GIWW_CR-AR_ALL_BORINGS.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-1 @ 1 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,888	1,146,193	State Plane, FLW (U.S. Ft.)	-11.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 3.49 #230 - 3.31		10.80	20

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.35	0.35
#4	-2.25	4.75	0.11	0.46
#5	-2.00	4.00	0.33	0.79
#7	-1.50	2.80	0.90	1.69
#10	-1.00	2.00	1.50	3.19
#14	-0.50	1.40	4.19	7.38
#18	0.00	1.00	1.18	8.56
#25	0.50	0.71	1.31	9.87
#35	1.00	0.50	1.37	11.24
#45	1.50	0.36	1.78	13.02
#60	2.00	0.25	3.87	16.89
#80	2.50	0.18	28.70	45.59
#120	3.00	0.13	45.96	91.55
#170	3.50	0.09	4.56	96.11
#200	3.75	0.08	0.40	96.51
#230	4.00	0.06	0.18	96.69

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.38	2.92	2.82	2.55	2.14	1.89	-0.78

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.17	0.22	2.55	0.17	1.13	-2.25	7.51

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-1 @ 3 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,888	1,146,193	State Plane, FLW (U.S. Ft.)	-13.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 3.64 #230 - 2.92			45

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.44	0.44
#3.5	-2.50	5.60	2.52	2.96
#4	-2.25	4.75	1.47	4.43
#5	-2.00	4.00	2.06	6.49
#7	-1.50	2.80	4.04	10.53
#10	-1.00	2.00	5.37	15.90
#14	-0.50	1.40	9.36	25.26
#18	0.00	1.00	2.13	27.39
#25	0.50	0.71	2.08	29.47
#35	1.00	0.50	1.58	31.05
#45	1.50	0.36	1.67	32.72
#60	2.00	0.25	3.13	35.85
#80	2.50	0.18	18.45	54.30
#120	3.00	0.13	37.43	91.73
#170	3.50	0.09	4.02	95.75
#200	3.75	0.08	0.61	96.36
#230	4.00	0.06	0.72	97.08

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.90	2.78	2.38	-0.51	-0.99	-2.18

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.38	0.38	2.38	0.19	1.86	-0.93	2.4

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-1 @ 5 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,888	1,146,193	State Plane, FLW (U.S. Ft.)	-15.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
		#200 - 4.61 #230 - 4.10			45

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	3.04	3.04
3/8"	-3.25	9.50	6.67	9.71
#3.5	-2.50	5.60	4.29	14.00
#4	-2.25	4.75	1.40	15.40
#5	-2.00	4.00	2.13	17.53
#7	-1.50	2.80	3.97	21.50
#10	-1.00	2.00	4.38	25.88
#14	-0.50	1.40	7.55	33.43
#18	0.00	1.00	1.13	34.56
#25	0.50	0.71	0.94	35.50
#35	1.00	0.50	0.79	36.29
#45	1.50	0.36	0.88	37.17
#60	2.00	0.25	2.30	39.47
#80	2.50	0.18	16.31	55.78
#120	3.00	0.13	35.47	91.25
#170	3.50	0.09	3.36	94.61
#200	3.75	0.08	0.78	95.39
#230	4.00	0.06	0.51	95.90

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.63	2.90	2.77	2.32	-1.10	-2.18	-3.96

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.81	0.57	2.32	0.20	2.27	-0.62	1.99

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-2 @ 1 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,232	1,145,367	State Plane, FLW (U.S. Ft.)	-10.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 2.30 #230 - 2.02		7.50	10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.06	0.06
#7	-1.50	2.80	0.23	0.29
#10	-1.00	2.00	0.31	0.60
#14	-0.50	1.40	0.70	1.30
#18	0.00	1.00	0.48	1.78
#25	0.50	0.71	0.67	2.45
#35	1.00	0.50	0.98	3.43
#45	1.50	0.36	1.97	5.40
#60	2.00	0.25	4.78	10.18
#80	2.50	0.18	35.68	45.86
#120	3.00	0.13	46.55	92.41
#170	3.50	0.09	4.75	97.16
#200	3.75	0.08	0.54	97.70
#230	4.00	0.06	0.28	97.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.27	2.91	2.81	2.54	2.21	2.08	1.40

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.42	0.19	2.54	0.17	0.65	-2.93	15.95

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-2 @ 2.5 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,232	1,145,367	State Plane, FLW (U.S. Ft.)	-11.7 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 3.56 #230 - 2.93			45

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.37	0.37
#3.5	-2.50	5.60	1.49	1.86
#4	-2.25	4.75	0.78	2.64
#5	-2.00	4.00	1.06	3.70
#7	-1.50	2.80	2.44	6.14
#10	-1.00	2.00	3.32	9.46
#14	-0.50	1.40	5.70	15.16
#18	0.00	1.00	1.37	16.53
#25	0.50	0.71	1.37	17.90
#35	1.00	0.50	1.41	19.31
#45	1.50	0.36	1.97	21.28
#60	2.00	0.25	4.25	25.53
#80	2.50	0.18	23.51	49.04
#120	3.00	0.13	42.12	91.16
#170	3.50	0.09	4.48	95.64
#200	3.75	0.08	0.80	96.44
#230	4.00	0.06	0.63	97.07

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	2.92	2.81	2.51	1.94	-0.19	-1.73

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.82	0.28	2.51	0.18	1.58	-1.6	4.39

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-2 @ 5 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,232	1,145,367	State Plane, FLW (U.S. Ft.)	-14.2 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 3.66 #230 - 3.16			30

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.11	0.11
#3.5	-2.50	5.60	0.52	0.63
#4	-2.25	4.75	0.34	0.97
#5	-2.00	4.00	0.41	1.38
#7	-1.50	2.80	1.00	2.38
#10	-1.00	2.00	1.35	3.73
#14	-0.50	1.40	2.43	6.16
#18	0.00	1.00	0.60	6.76
#25	0.50	0.71	0.60	7.36
#35	1.00	0.50	0.75	8.11
#45	1.50	0.36	1.08	9.19
#60	2.00	0.25	2.98	12.17
#80	2.50	0.18	30.57	42.74
#120	3.00	0.13	48.87	91.61
#170	3.50	0.09	4.02	95.63
#200	3.75	0.08	0.71	96.34
#230	4.00	0.06	0.50	96.84

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.42	2.92	2.83	2.57	2.21	2.06	-0.74

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.26	0.21	2.57	0.17	1.09	-2.83	11.07

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-3 @ 1 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,439	1,144,683	State Plane, FLW (U.S. Ft.)	-11.0 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 3.09 #230 - 2.44		11.90	40

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.37	1.37
#3.5	-2.50	5.60	2.08	3.45
#4	-2.25	4.75	0.67	4.12
#5	-2.00	4.00	0.72	4.84
#7	-1.50	2.80	1.32	6.16
#10	-1.00	2.00	1.84	8.00
#14	-0.50	1.40	4.33	12.33
#18	0.00	1.00	0.94	13.27
#25	0.50	0.71	0.75	14.02
#35	1.00	0.50	1.10	15.12
#45	1.50	0.36	1.69	16.81
#60	2.00	0.25	3.24	20.05
#80	2.50	0.18	24.95	45.00
#120	3.00	0.13	45.96	90.96
#170	3.50	0.09	5.14	96.10
#200	3.75	0.08	0.81	96.91
#230	4.00	0.06	0.65	97.56

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	2.92	2.83	2.55	2.10	1.26	-1.94

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.96	0.26	2.55	0.17	1.57	-2.07	6.4

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-3 @ 2 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,439	1,144,683	State Plane, FLW (U.S. Ft.)	-12.0 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
		#200 - 3.48 #230 - 2.91			45

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	2.81	2.81
3/8"	-3.25	9.50	7.91	10.72
#3.5	-2.50	5.60	10.36	21.08
#4	-2.25	4.75	2.49	23.57
#5	-2.00	4.00	3.30	26.87
#7	-1.50	2.80	5.03	31.90
#10	-1.00	2.00	4.46	36.36
#14	-0.50	1.40	7.58	43.94
#18	0.00	1.00	1.04	44.98
#25	0.50	0.71	1.11	46.09
#35	1.00	0.50	1.19	47.28
#45	1.50	0.36	1.46	48.74
#60	2.00	0.25	2.75	51.49
#80	2.50	0.18	12.64	64.13
#120	3.00	0.13	27.43	91.56
#170	3.50	0.09	4.18	95.74
#200	3.75	0.08	0.78	96.52
#230	4.00	0.06	0.57	97.09

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.86	2.70	1.73	-2.14	-2.87	-3.97

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.25	0.84	1.73	0.30	2.46	-0.18	1.47

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-3 @ 4 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,439	1,144,683	State Plane, FLW (U.S. Ft.)	-14.0 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 4.39 #230 - 3.68			20

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.61	0.61
#3.5	-2.50	5.60	0.80	1.41
#4	-2.25	4.75	0.37	1.78
#5	-2.00	4.00	0.45	2.23
#7	-1.50	2.80	0.94	3.17
#10	-1.00	2.00	0.79	3.96
#14	-0.50	1.40	2.81	6.77
#18	0.00	1.00	0.68	7.45
#25	0.50	0.71	0.90	8.35
#35	1.00	0.50	1.32	9.67
#45	1.50	0.36	1.87	11.54
#60	2.00	0.25	3.69	15.23
#80	2.50	0.18	26.16	41.39
#120	3.00	0.13	47.31	88.70
#170	3.50	0.09	5.92	94.62
#200	3.75	0.08	0.99	95.61
#230	4.00	0.06	0.71	96.32

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.60	2.95	2.86	2.59	2.19	2.01	-0.81

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.21	0.22	2.59	0.17	1.22	-2.68	10.43

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-4 @ 1 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,671	1,143,916	State Plane, FLW (U.S. Ft.)	-10.9 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 1.10 #230 - 0.99		6.20	5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.02	0.02
#7	-1.50	2.80	0.02	0.04
#10	-1.00	2.00	0.04	0.08
#14	-0.50	1.40	0.42	0.50
#18	0.00	1.00	0.12	0.62
#25	0.50	0.71	0.17	0.79
#35	1.00	0.50	0.30	1.09
#45	1.50	0.36	0.46	1.55
#60	2.00	0.25	1.38	2.93
#80	2.50	0.18	37.83	40.76
#120	3.00	0.13	53.77	94.53
#170	3.50	0.09	4.02	98.55
#200	3.75	0.08	0.35	98.90
#230	4.00	0.06	0.11	99.01

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.06	2.90	2.82	2.59	2.29	2.17	2.03

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.53	0.17	2.59	0.17	0.43	-3.31	26.49

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-4 @ 3 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,671	1,143,916	State Plane, FLW (U.S. Ft.)	-12.9 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 3.45 #230 - 3.33			5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.01	0.01
#7	-1.50	2.80	0.02	0.03
#10	-1.00	2.00	0.10	0.13
#14	-0.50	1.40	0.33	0.46
#18	0.00	1.00	0.36	0.82
#25	0.50	0.71	0.58	1.40
#35	1.00	0.50	0.81	2.21
#45	1.50	0.36	1.02	3.23
#60	2.00	0.25	2.01	5.24
#80	2.50	0.18	22.76	28.00
#120	3.00	0.13	61.97	89.97
#170	3.50	0.09	5.90	95.87
#200	3.75	0.08	0.68	96.55
#230	4.00	0.06	0.12	96.67

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	2.95	2.88	2.68	2.43	2.24	1.94

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.57	0.17	2.68	0.16	0.51	-3.18	19.15

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-4 @ 4.5 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,671	1,143,916	State Plane, FLW (U.S. Ft.)	-14.4 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 4.47 #230 - 4.03			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.71	0.71
#3.5	-2.50	5.60	0.76	1.47
#4	-2.25	4.75	0.19	1.66
#5	-2.00	4.00	0.40	2.06
#7	-1.50	2.80	0.38	2.44
#10	-1.00	2.00	0.37	2.81
#14	-0.50	1.40	1.28	4.09
#18	0.00	1.00	0.35	4.44
#25	0.50	0.71	0.50	4.94
#35	1.00	0.50	0.77	5.71
#45	1.50	0.36	1.08	6.79
#60	2.00	0.25	2.08	8.87
#80	2.50	0.18	25.06	33.93
#120	3.00	0.13	55.77	89.70
#170	3.50	0.09	5.15	94.85
#200	3.75	0.08	0.68	95.53
#230	4.00	0.06	0.44	95.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.56	2.95	2.87	2.64	2.32	2.14	0.54

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.38	0.19	2.64	0.16	1.06	-3.73	18.28

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-5 @ 1 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,702	1,143,474	State Plane, FLW (U.S. Ft.)	-12.7 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 2.07 #230 - 2.01		12.50	15

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.01	0.01
#5	-2.00	4.00	0.10	0.11
#7	-1.50	2.80	0.20	0.31
#10	-1.00	2.00	0.33	0.64
#14	-0.50	1.40	0.67	1.31
#18	0.00	1.00	0.37	1.68
#25	0.50	0.71	0.58	2.26
#35	1.00	0.50	1.00	3.26
#45	1.50	0.36	1.49	4.75
#60	2.00	0.25	5.13	9.88
#80	2.50	0.18	44.69	54.57
#120	3.00	0.13	39.70	94.27
#170	3.50	0.09	3.40	97.67
#200	3.75	0.08	0.26	97.93
#230	4.00	0.06	0.06	97.99

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.11	2.87	2.76	2.45	2.17	2.07	1.52

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.37	0.19	2.45	0.18	0.62	-3.2	18.4

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-5 @ 3 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,702	1,143,474	State Plane, FLW (U.S. Ft.)	-14.7 MLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP		#200 - 1.91 #230 - 1.78			5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#14	-0.50	1.40	0.00	0.00
#18	0.00	1.00	0.09	0.09
#25	0.50	0.71	0.17	0.26
#35	1.00	0.50	0.36	0.62
#45	1.50	0.36	0.62	1.24
#60	2.00	0.25	1.75	2.99
#80	2.50	0.18	36.18	39.17
#120	3.00	0.13	53.44	92.61
#170	3.50	0.09	4.95	97.56
#200	3.75	0.08	0.53	98.09
#230	4.00	0.06	0.13	98.22

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.24	2.92	2.84	2.60	2.30	2.18	2.03

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.56	0.17	2.60	0.16	0.37	-1.29	10.29

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

Granularmetric Report

Project Name: IWW CR to AR

Sample Name: VB-GIWW08M-M7-5 @ 5 ft

Analysis Date: 8/25/2008

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,702	1,143,474	State Plane, FLW (U.S. Ft.)	-16.7 MLW

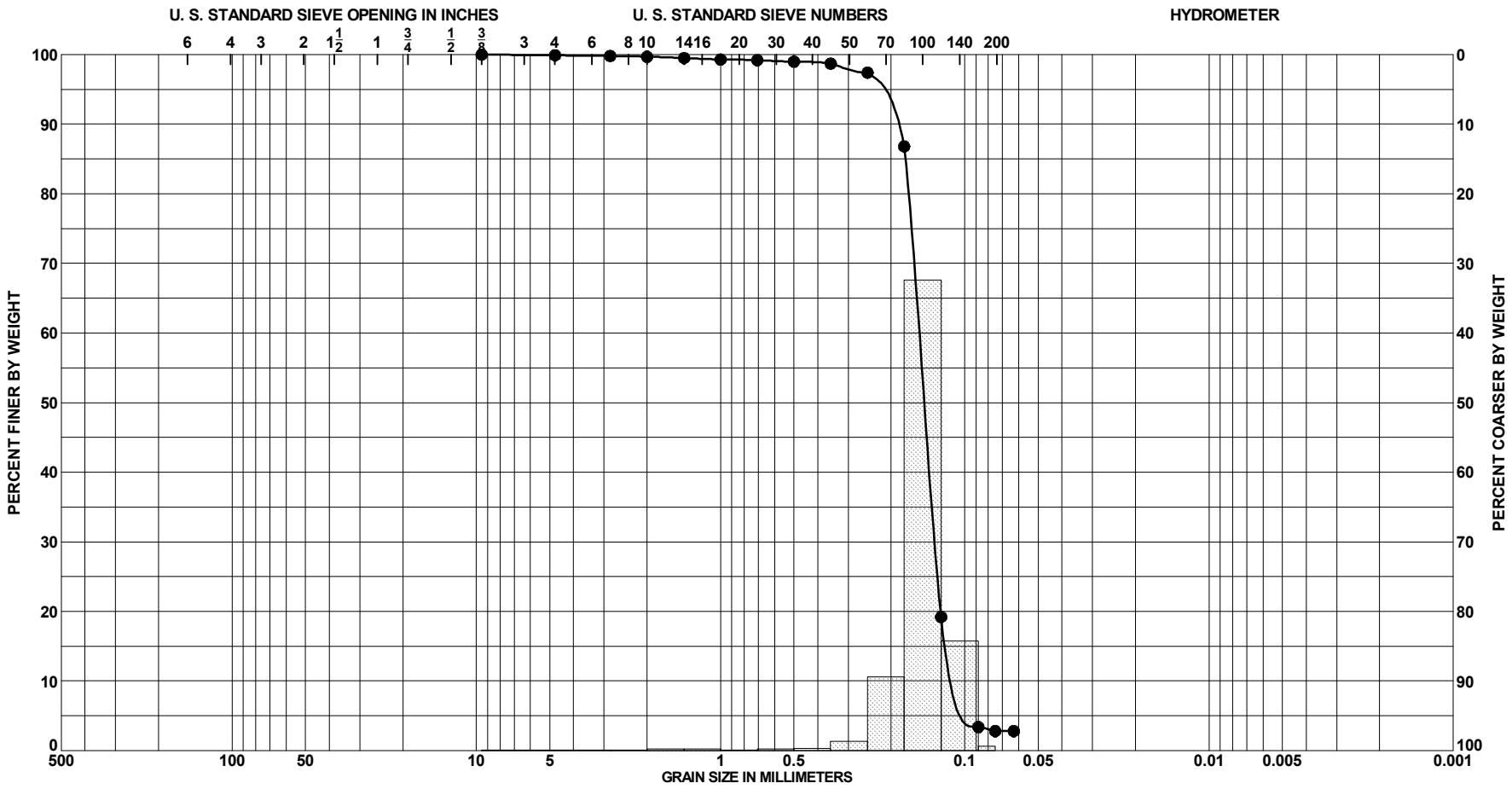
USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
		#200 - 5.75 #230 - 5.04			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.40	0.40
#4	-2.25	4.75	0.14	0.54
#5	-2.00	4.00	0.05	0.59
#7	-1.50	2.80	0.21	0.80
#10	-1.00	2.00	0.22	1.02
#14	-0.50	1.40	0.64	1.66
#18	0.00	1.00	0.37	2.03
#25	0.50	0.71	0.58	2.61
#35	1.00	0.50	0.90	3.51
#45	1.50	0.36	1.27	4.78
#60	2.00	0.25	2.18	6.96
#80	2.50	0.18	22.94	29.90
#120	3.00	0.13	57.64	87.54
#170	3.50	0.09	5.83	93.37
#200	3.75	0.08	0.88	94.25
#230	4.00	0.06	0.71	94.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.97	2.89	2.67	2.39	2.20	1.55

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.51	0.18	2.67	0.16	0.74	-3.92	23.83

GRANULARMETRIC REPORT % GIWW_CR-AR_VC_M-7_NAD83.GPJ CESAJ3.GDT 6/3/16

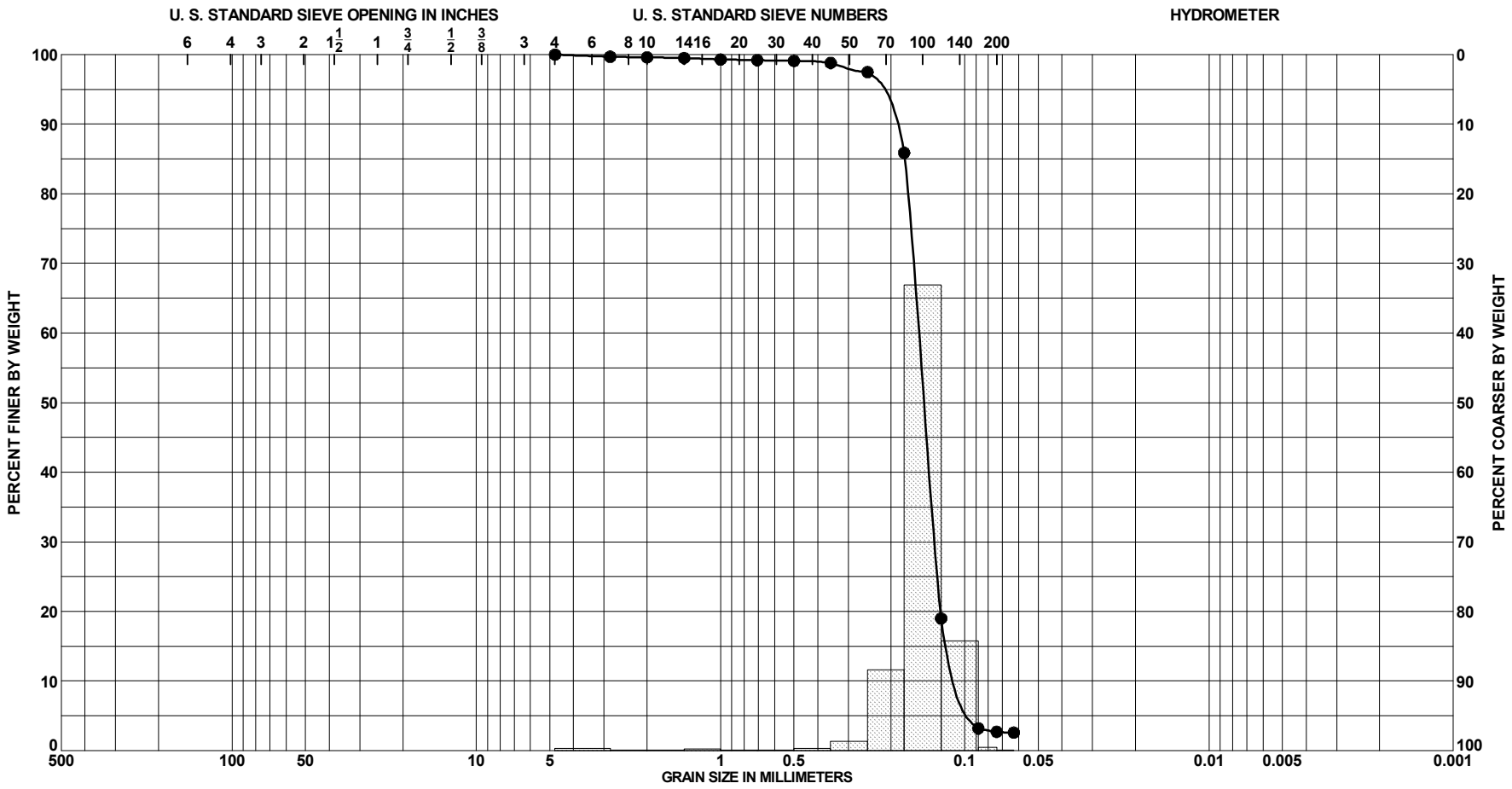


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● #1&#3	to 21.0 Ft.	SAND, poorly-graded, gray (SP)	5Y 6/1	2/1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-01
BORING ELEV.	-7.2 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

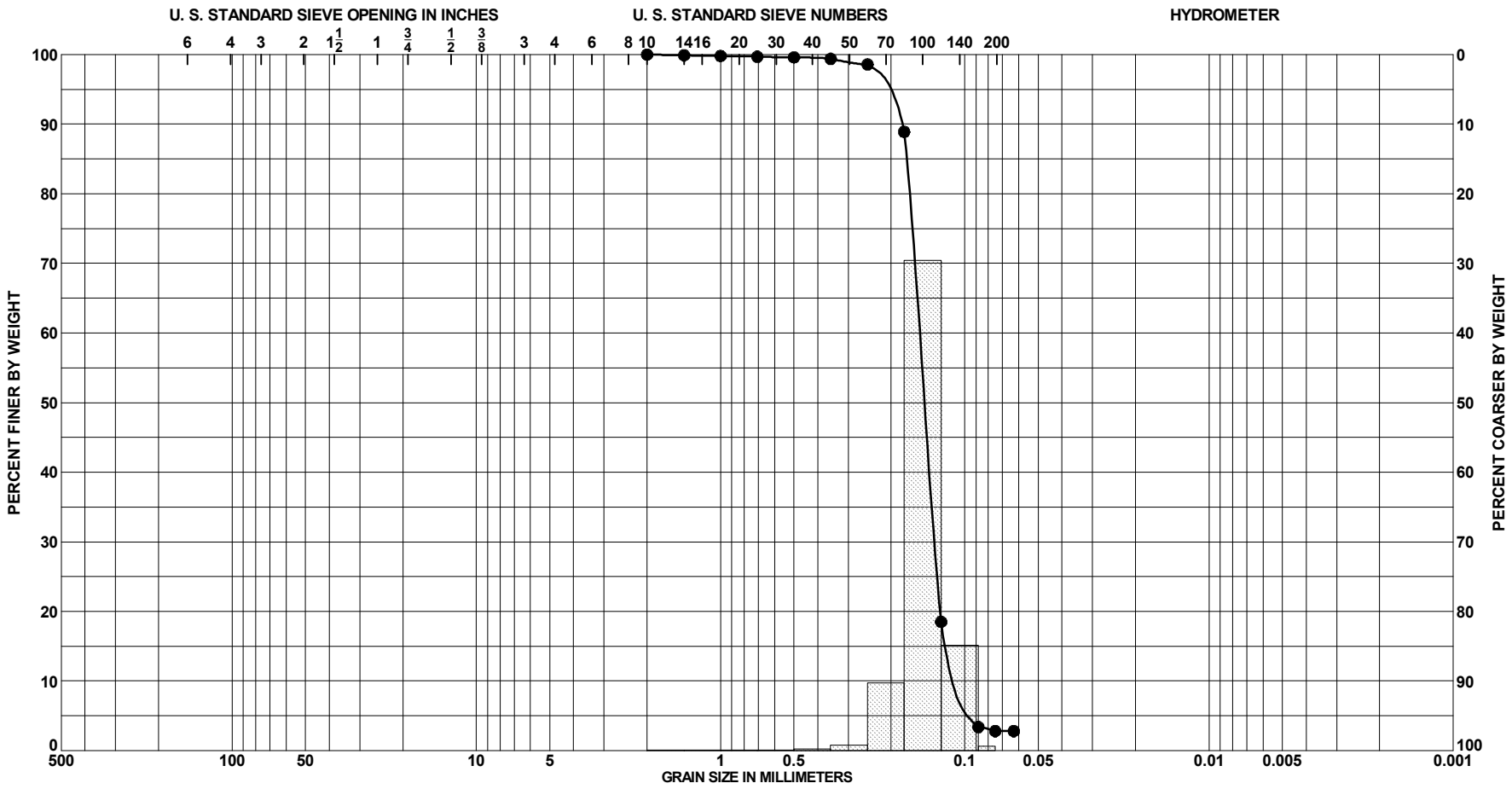


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	SAND, poorly-graded, gray (SP)	5Y 6/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-01
BORING ELEV.	-7.2 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

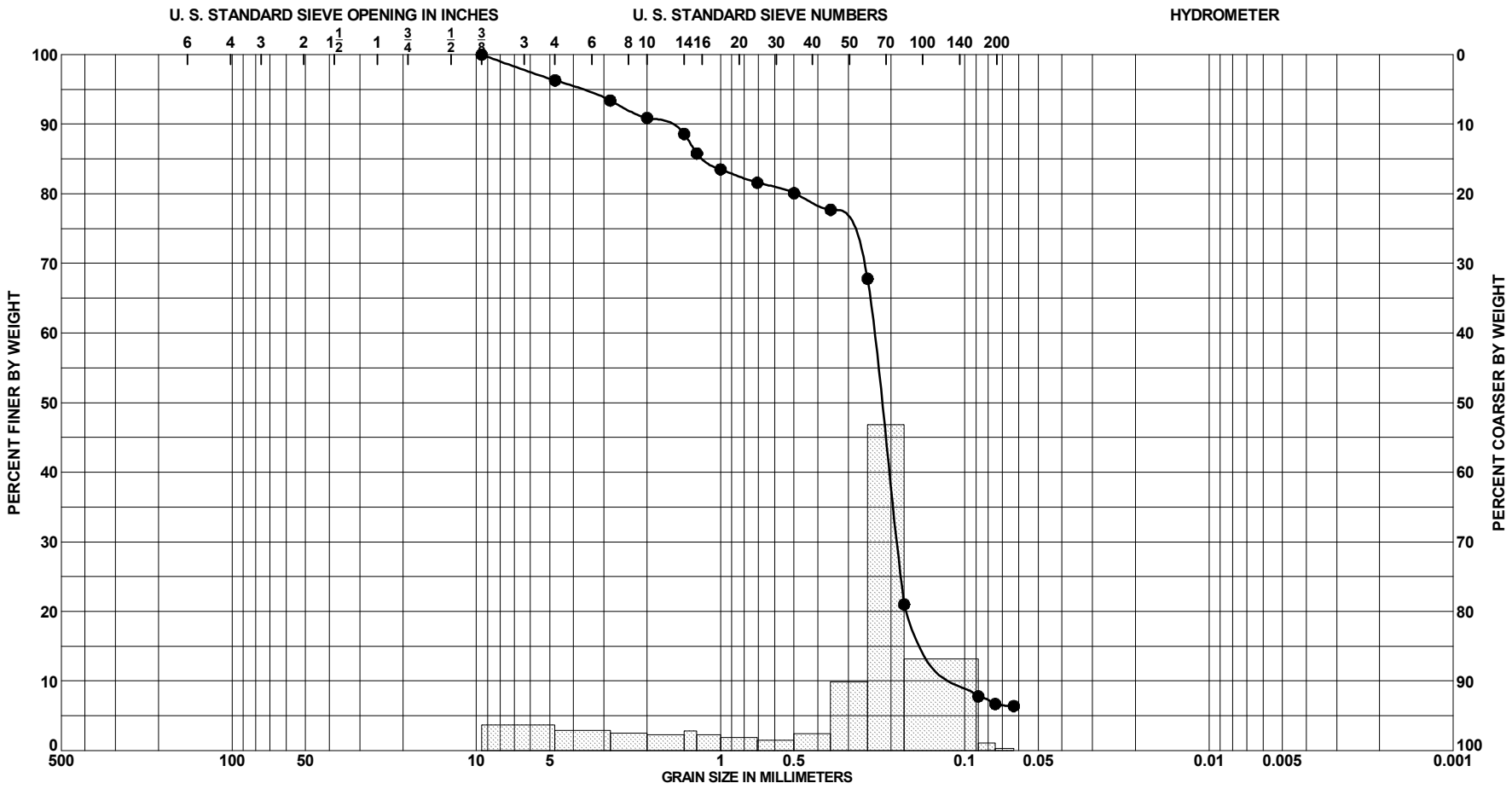


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	3.0 to 4.5 Ft.	SAND, poorly-graded, gray (SP)	5Y 6/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-01
BORING ELEV.	-7.2 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 6	7.5 to 9.0 Ft.	, gray (SP-SM)	2.5Y 6/1	10 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-01
BORING ELEV.	-7.2 Ft., MLW
DATE	7/25/2006

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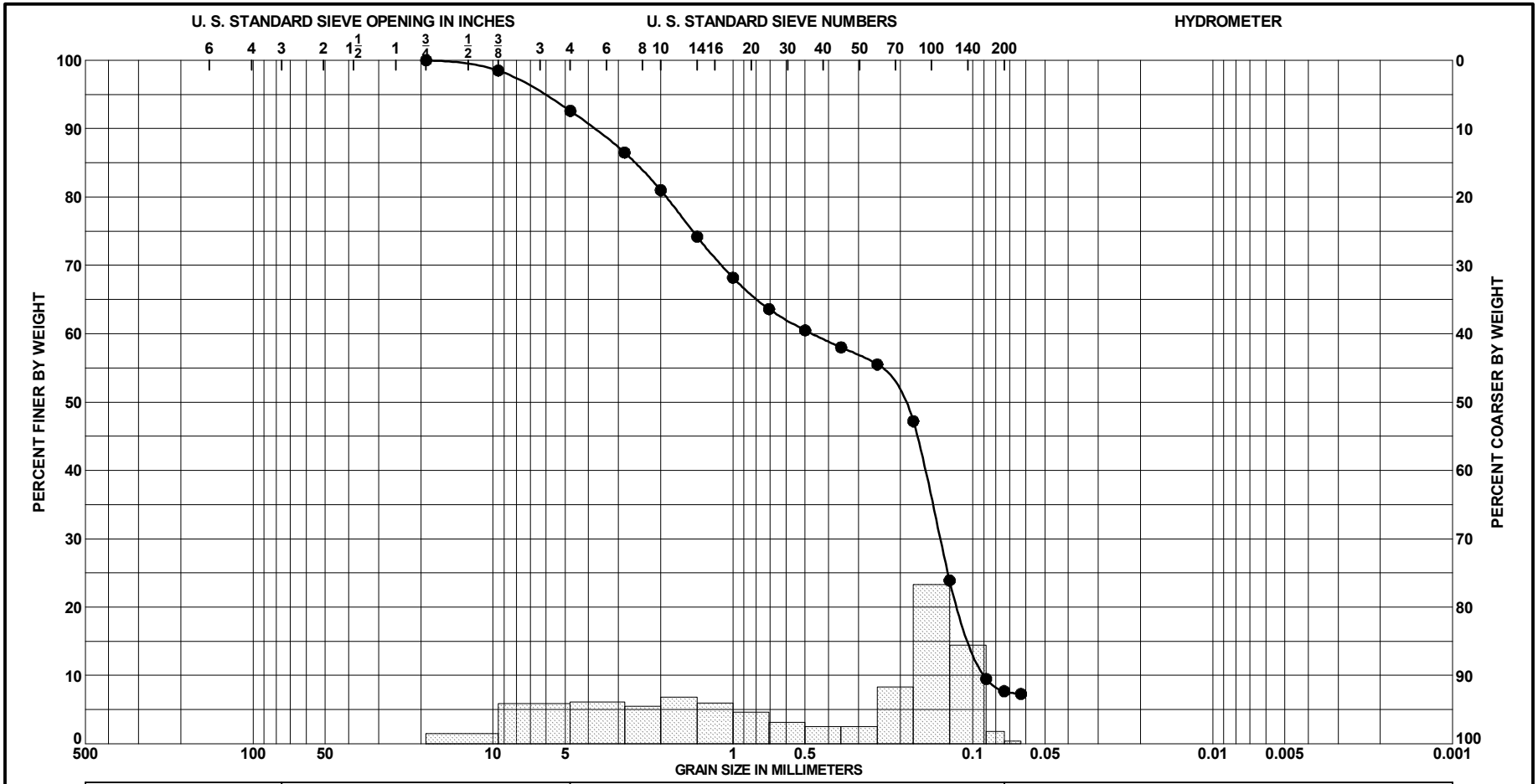

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 10	13.5 to 15.0 Ft.	, gray (SP-SM)	2.5Y 6/1	30 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-01
BORING ELEV.	-7.2 Ft., MLW
DATE	7/25/2006

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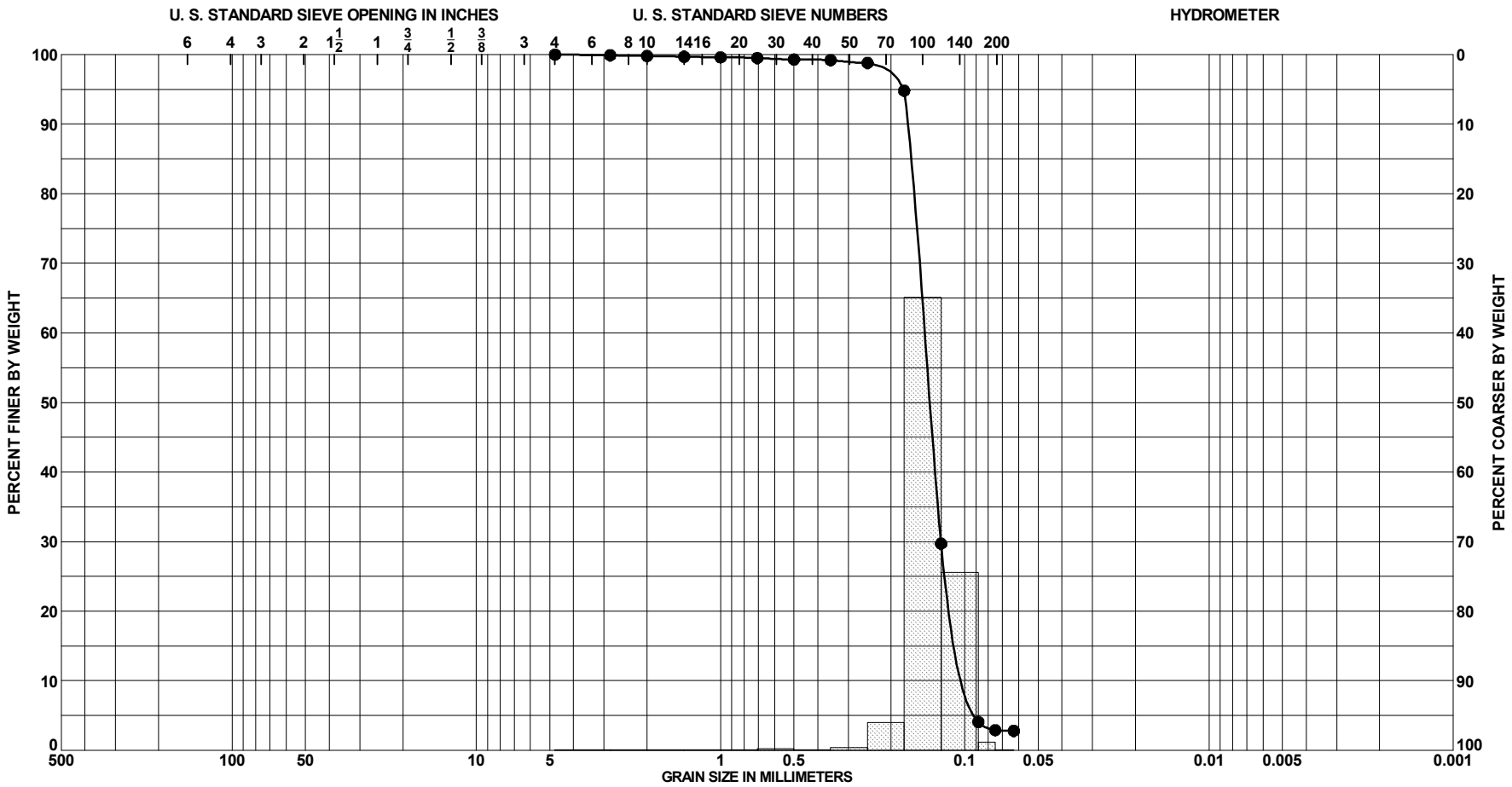
JUN 02

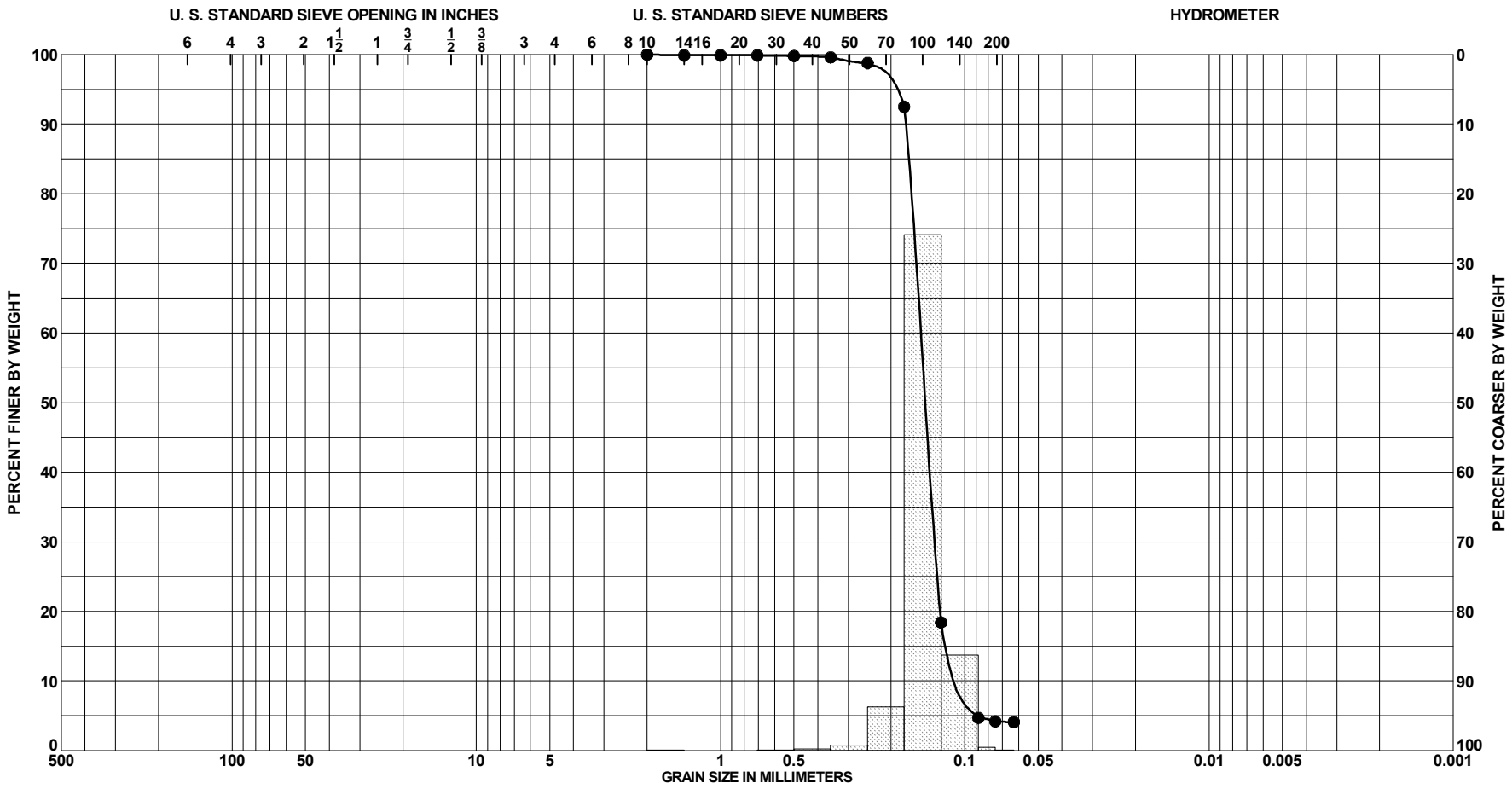


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	SAND, poorly-graded, gray (SP)	5Y 6/1	2/1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-02
BORING ELEV.	-9.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

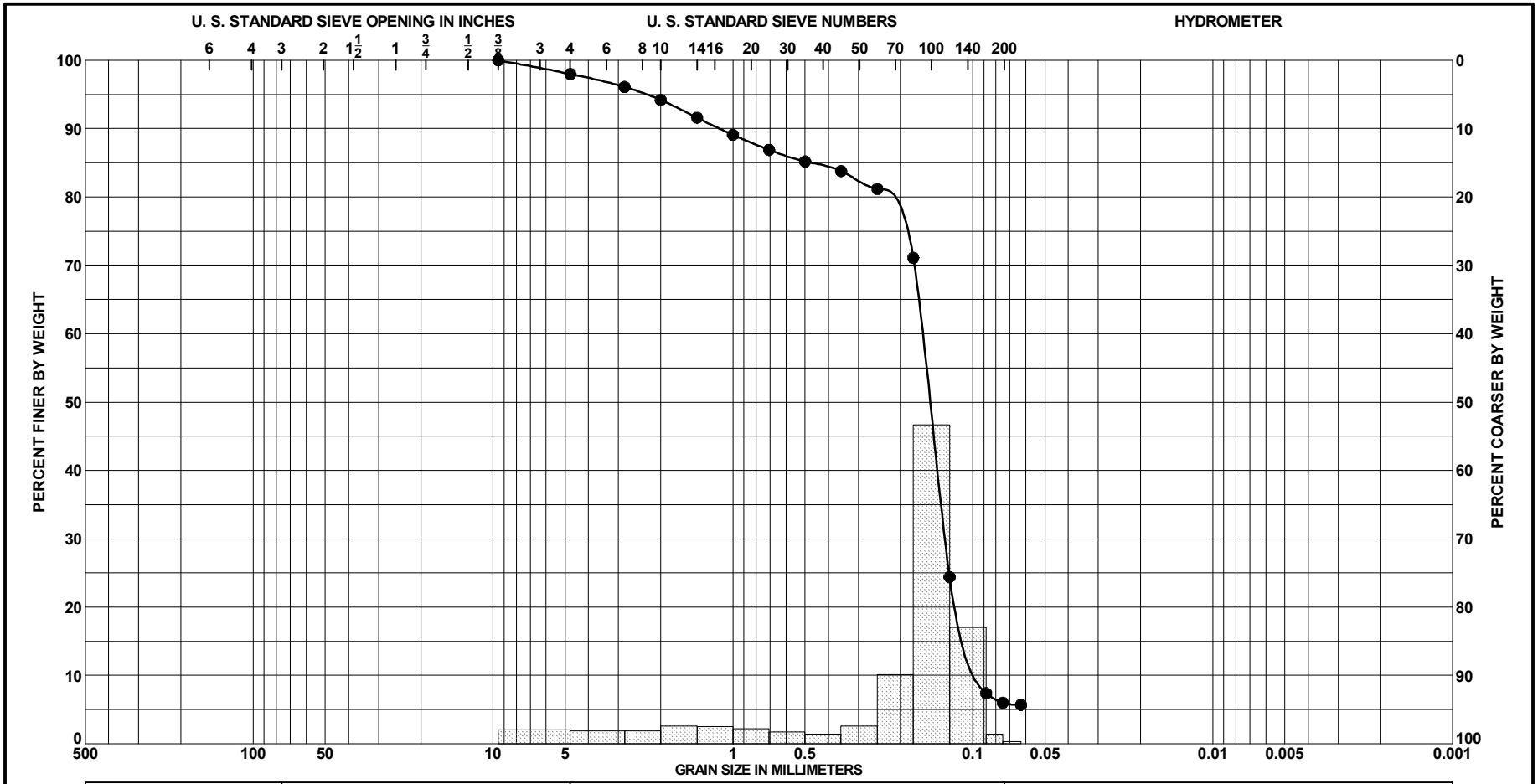


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	3.0 to 4.5 Ft.	SAND, poorly-graded, very dark greenish gray (SP)	10Y 3/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-02
BORING ELEV.	-9.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

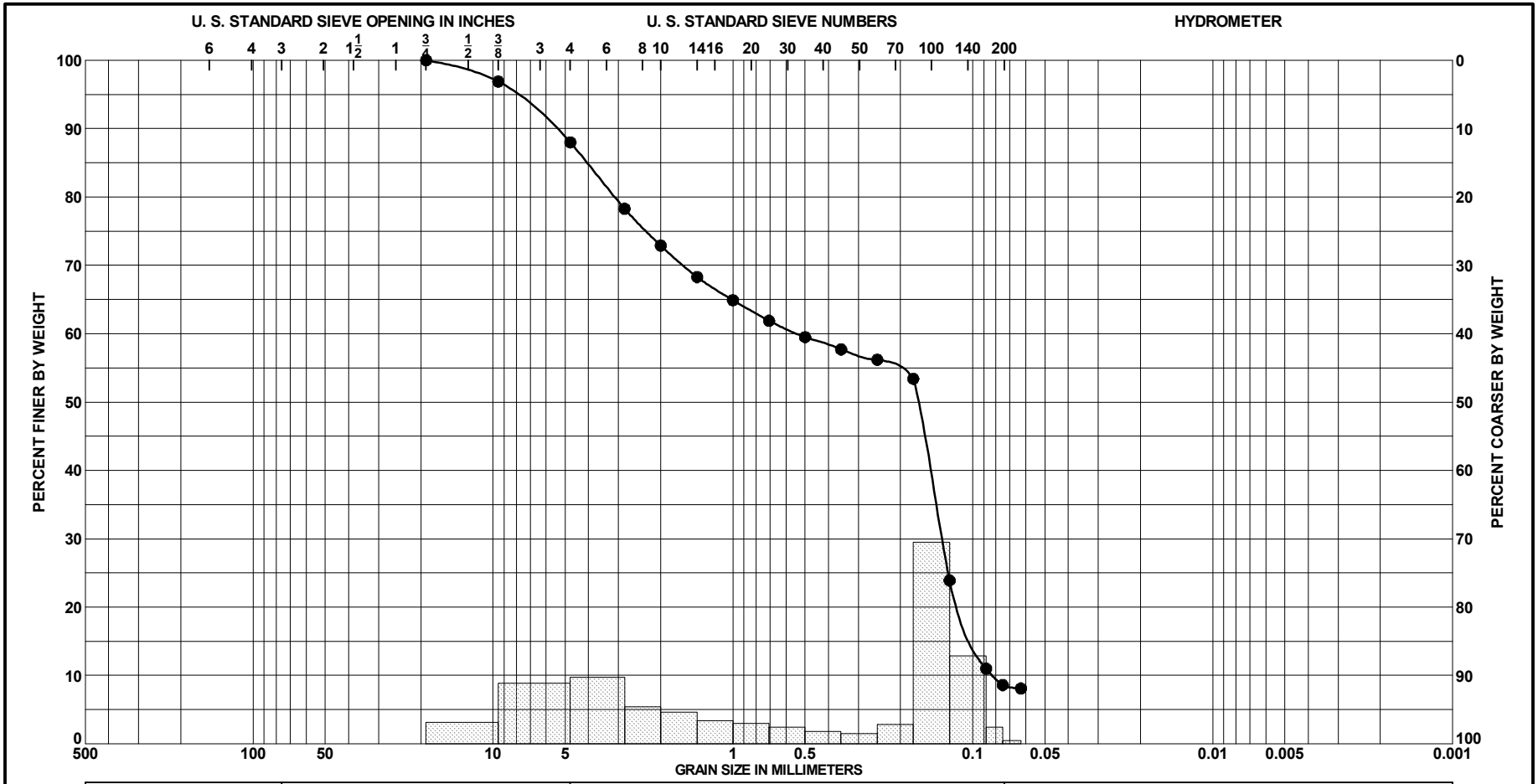


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 6	7.5 to 9.0 Ft.	, gray (SP-SM)	5Y 6/1	10 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-02
BORING ELEV.	-9.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

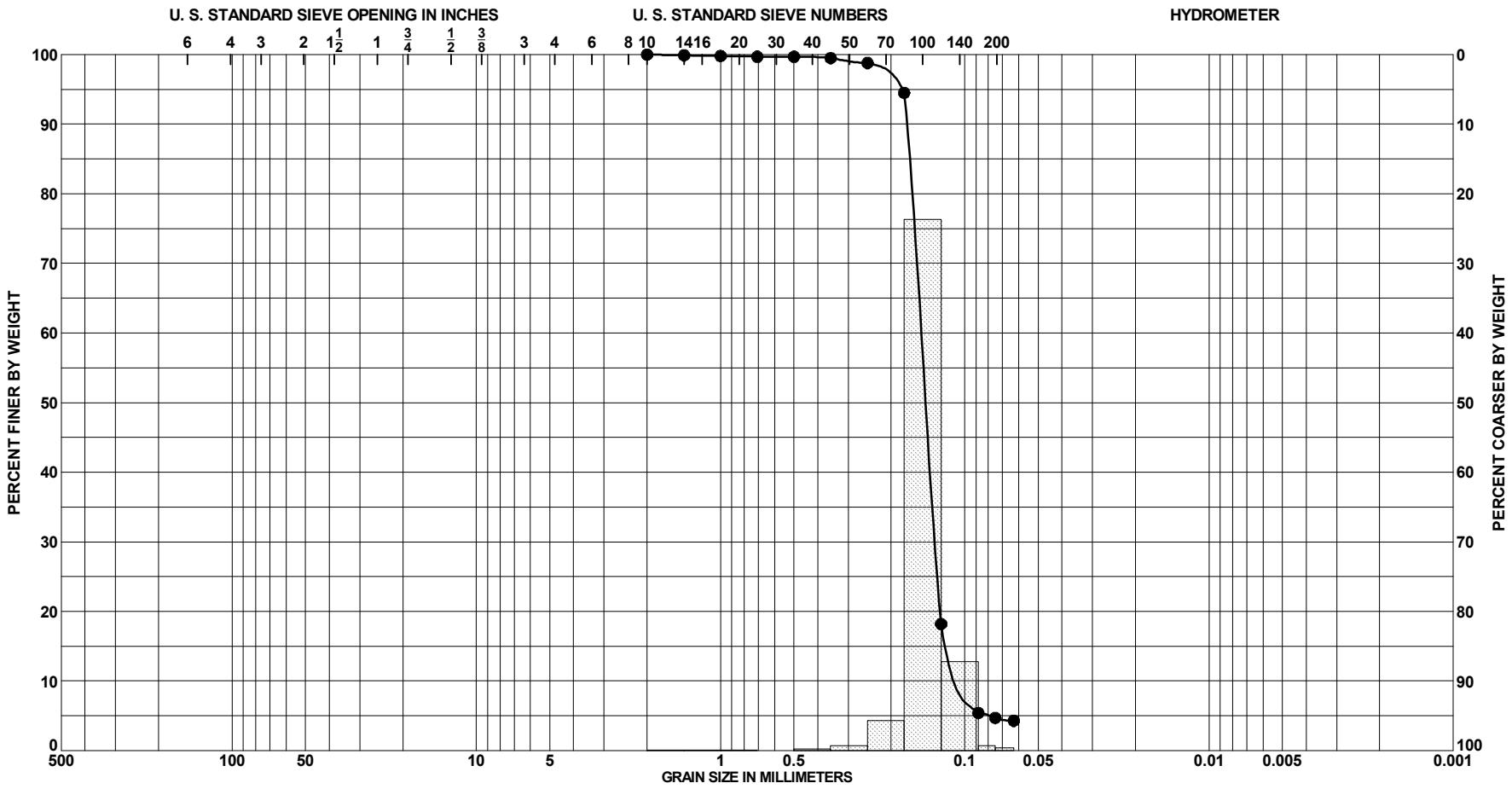


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 9	12.0 to 13.5 Ft.	, light olive gray (SP-SM)	5Y 6/2	20 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-02
BORING ELEV.	-9.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● #1&#3	to 21.0 Ft.	SAND, poorly-graded, dark gray (SP)	2.5Y 4/1	1/1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-03
BORING ELEV.	-7.7 Ft., MLW
DATE	7/25/2006

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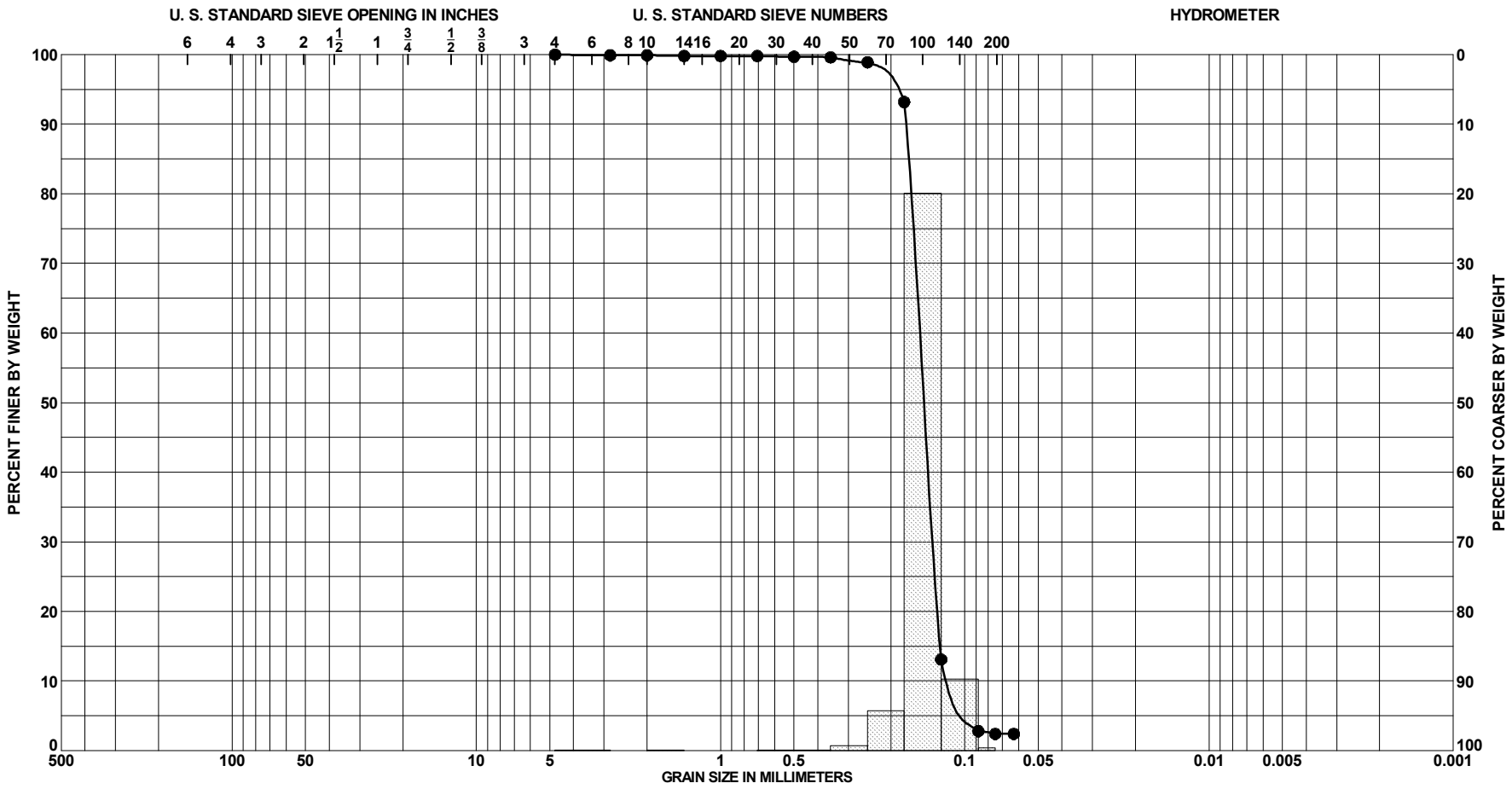
JUN 02



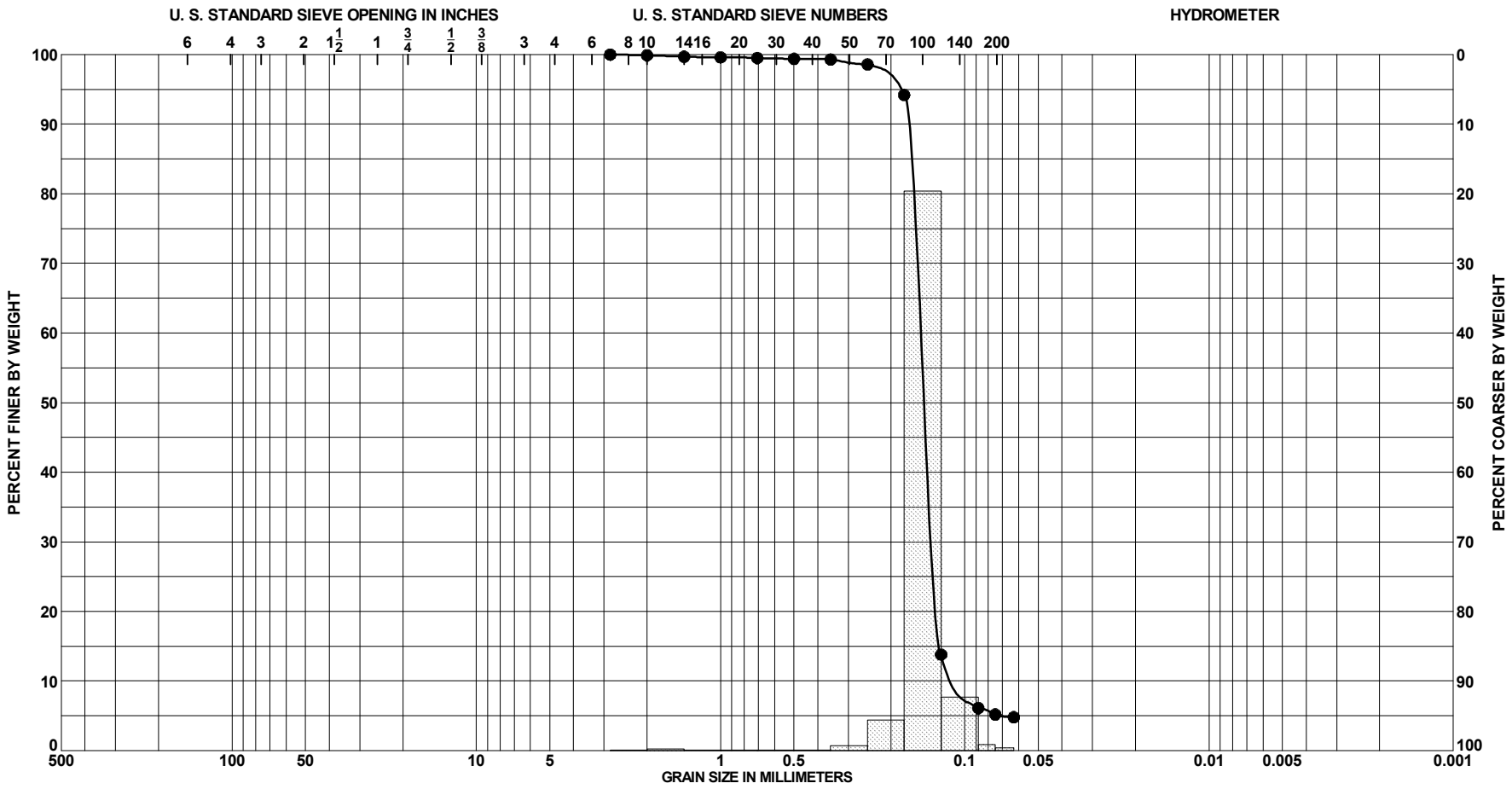
COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	SAND, poorly-graded, dark gray (SP)	2.5Y 4/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-03
BORING ELEV.	-7.7 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02



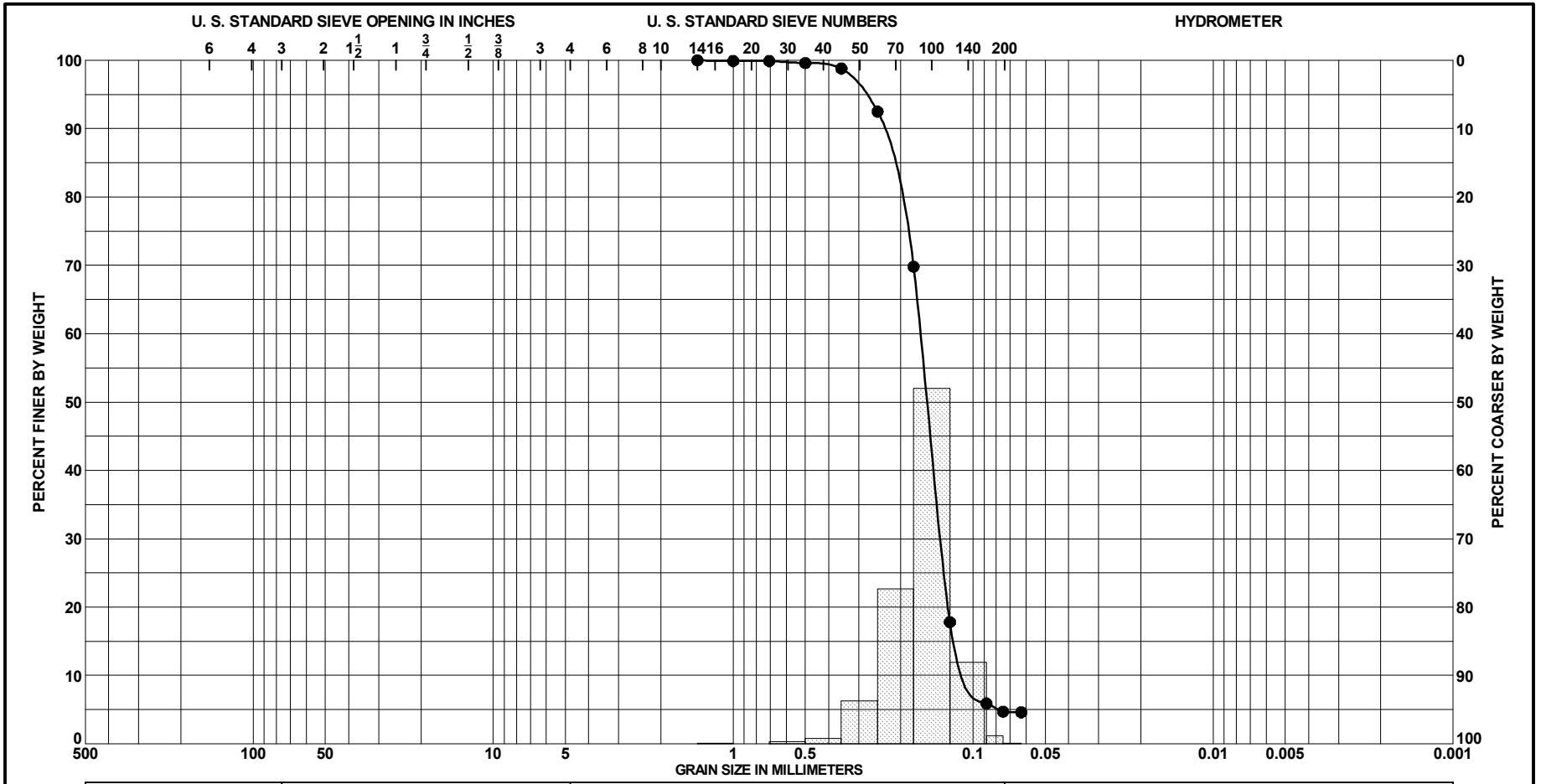
COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	3.0 to 4.5 Ft.	, dark gray (SP-SM)	2.5Y 4/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-03
BORING ELEV.	-7.7 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

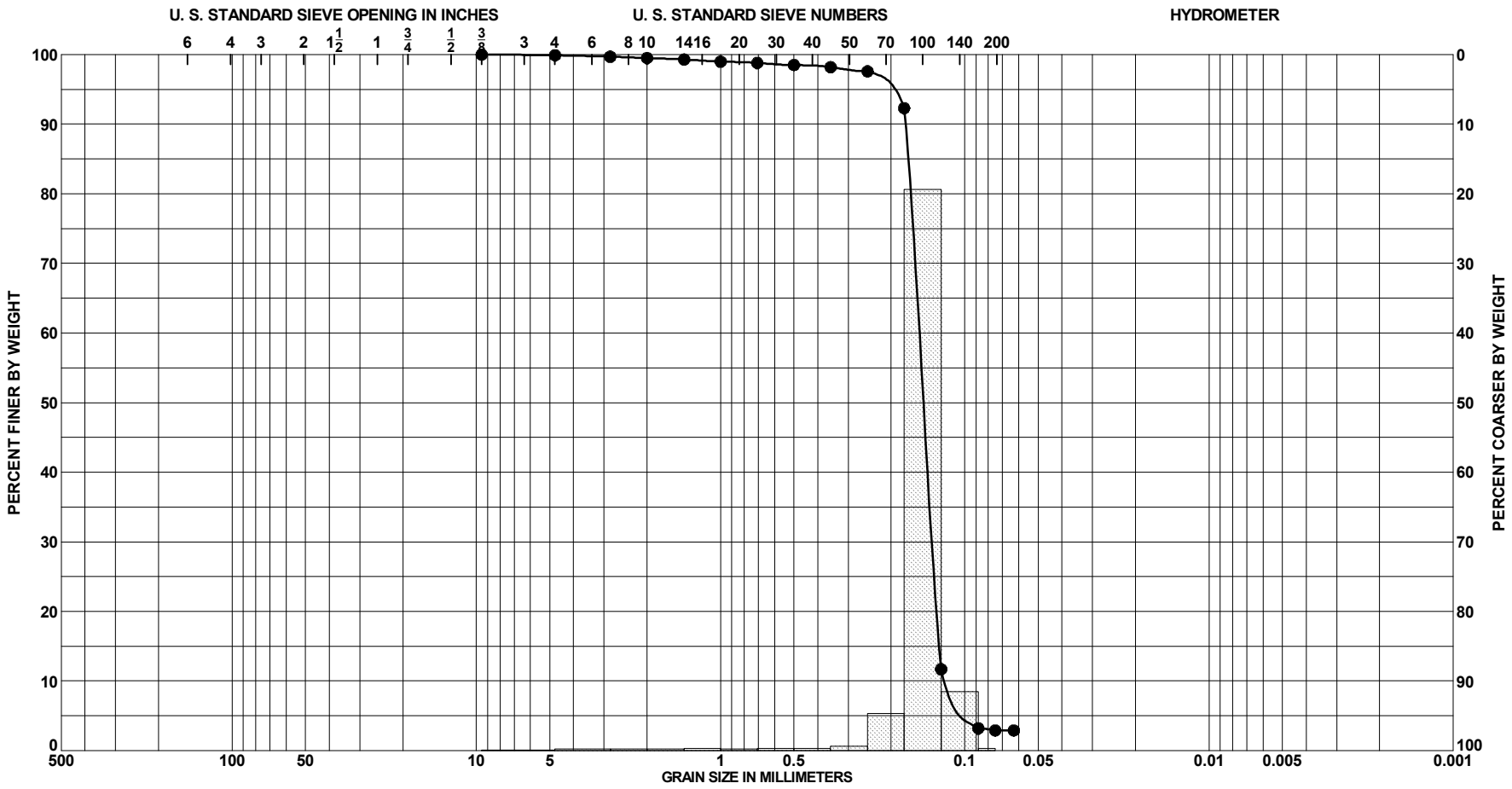


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 7	9.0 to 10.5 Ft.	SAND, poorly-graded, dark gray (SP)	2.5Y 4/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-03
BORING ELEV.	-7.7 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

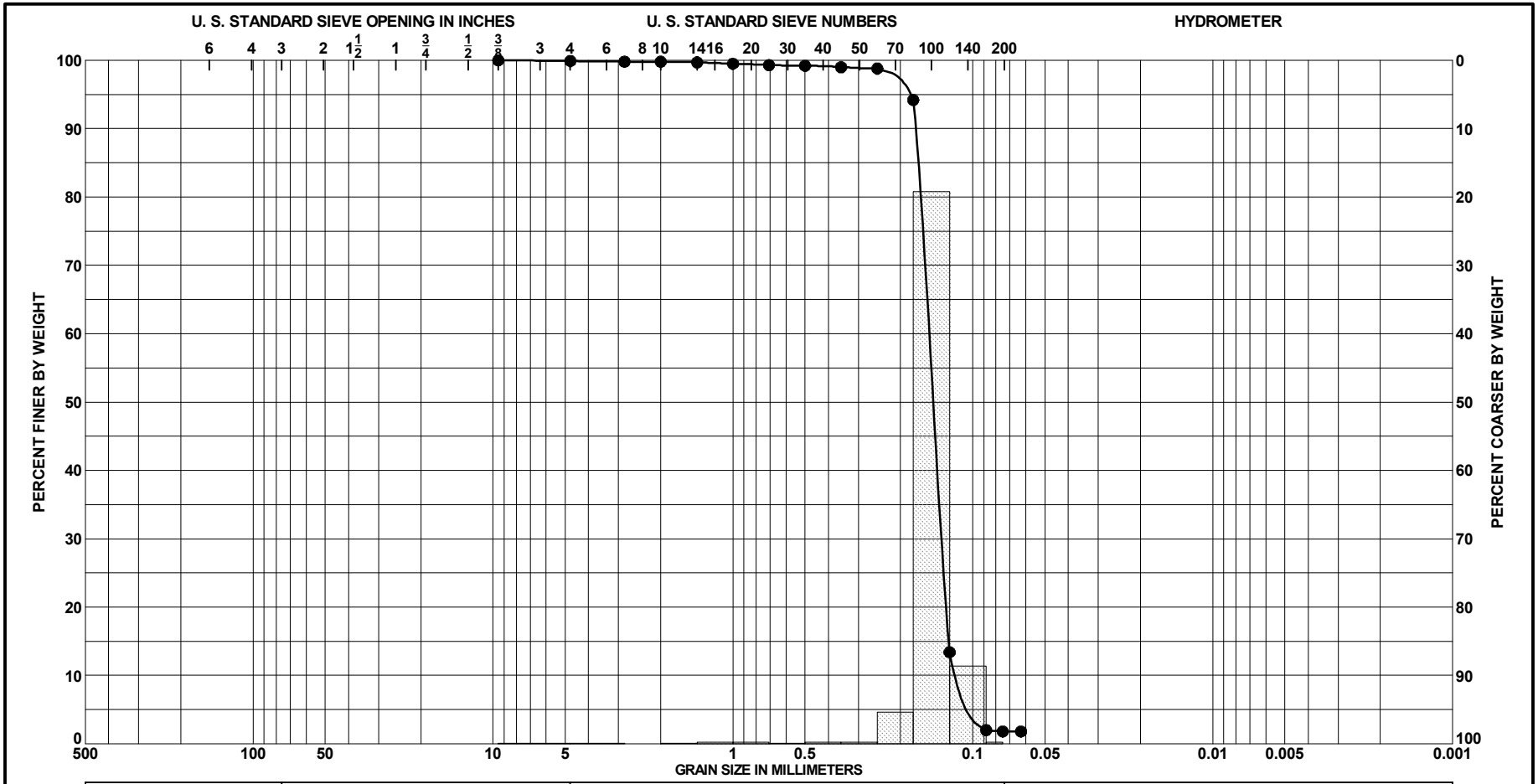


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● #1&#4	to 21.0 Ft.	SAND, poorly-graded, light gray (SP)	2.5Y 7/1	4/1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-04
BORING ELEV.	-5.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

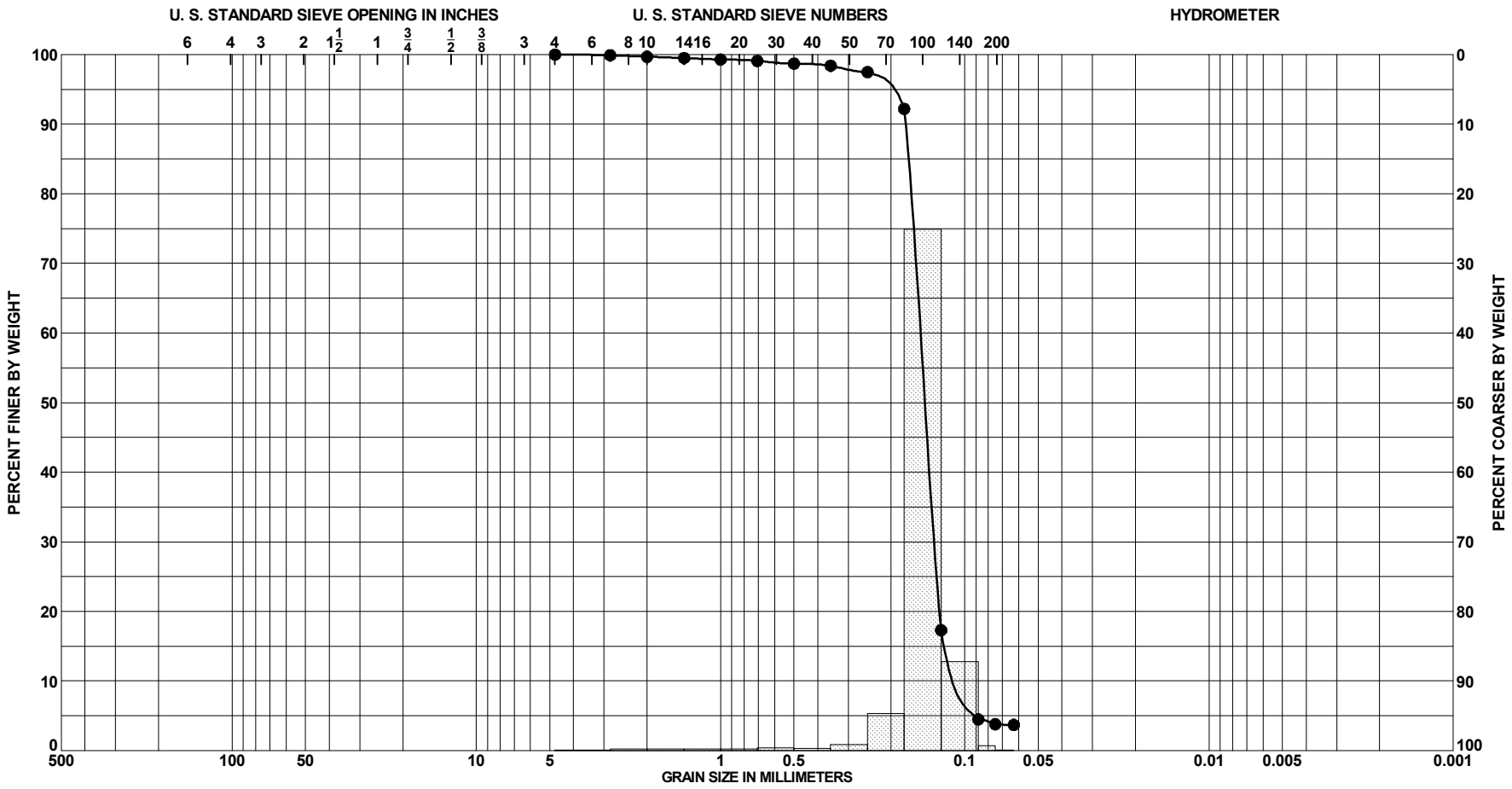


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	SAND, poorly-graded, gray (SP)	2.5Y 6/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-04
BORING ELEV.	-5.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

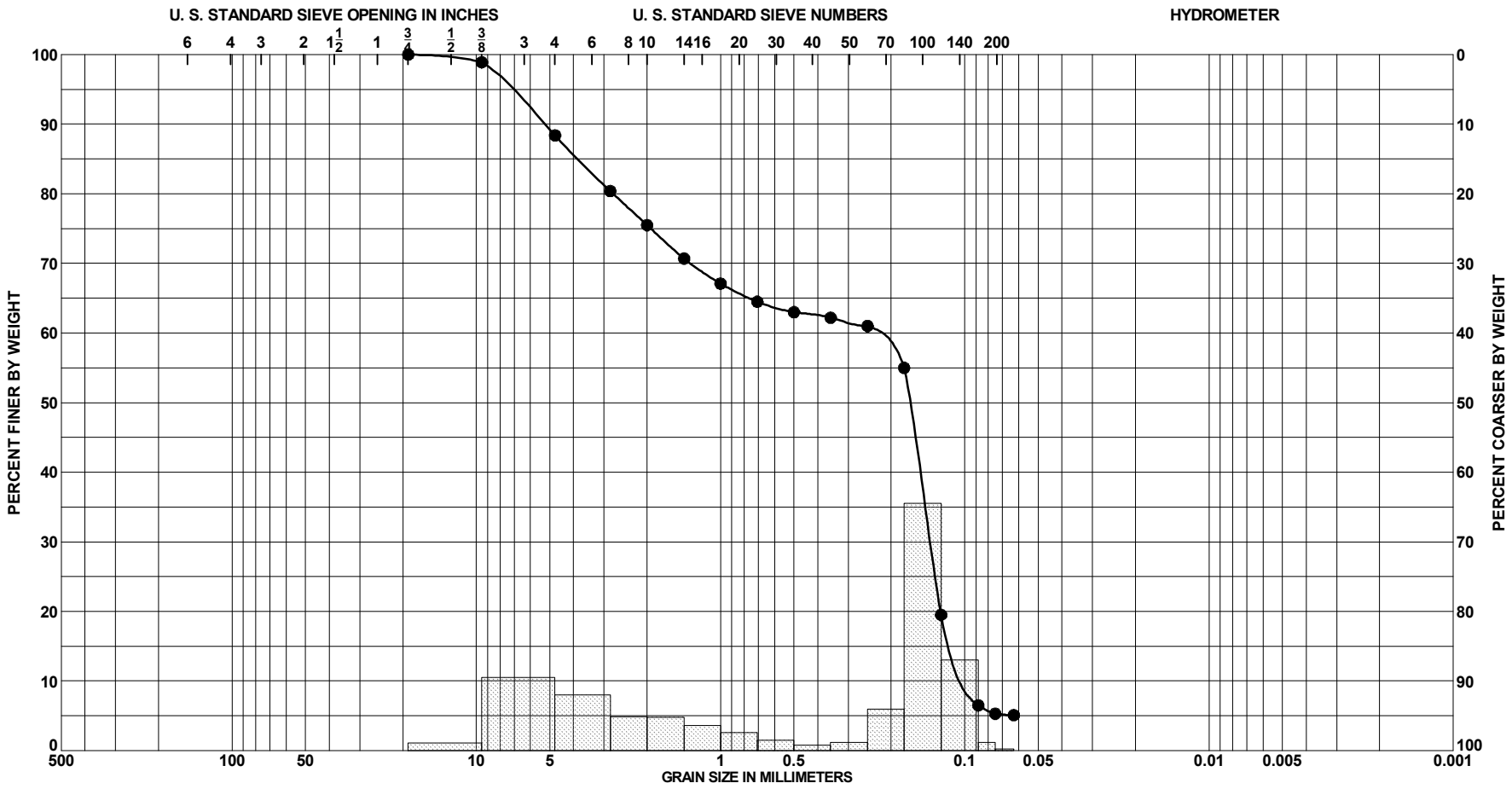


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 4	4.5 to 6.0 Ft.	SAND, poorly-graded, light gray (SP)	2.5Y 7/1	1 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-04
BORING ELEV.	-5.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

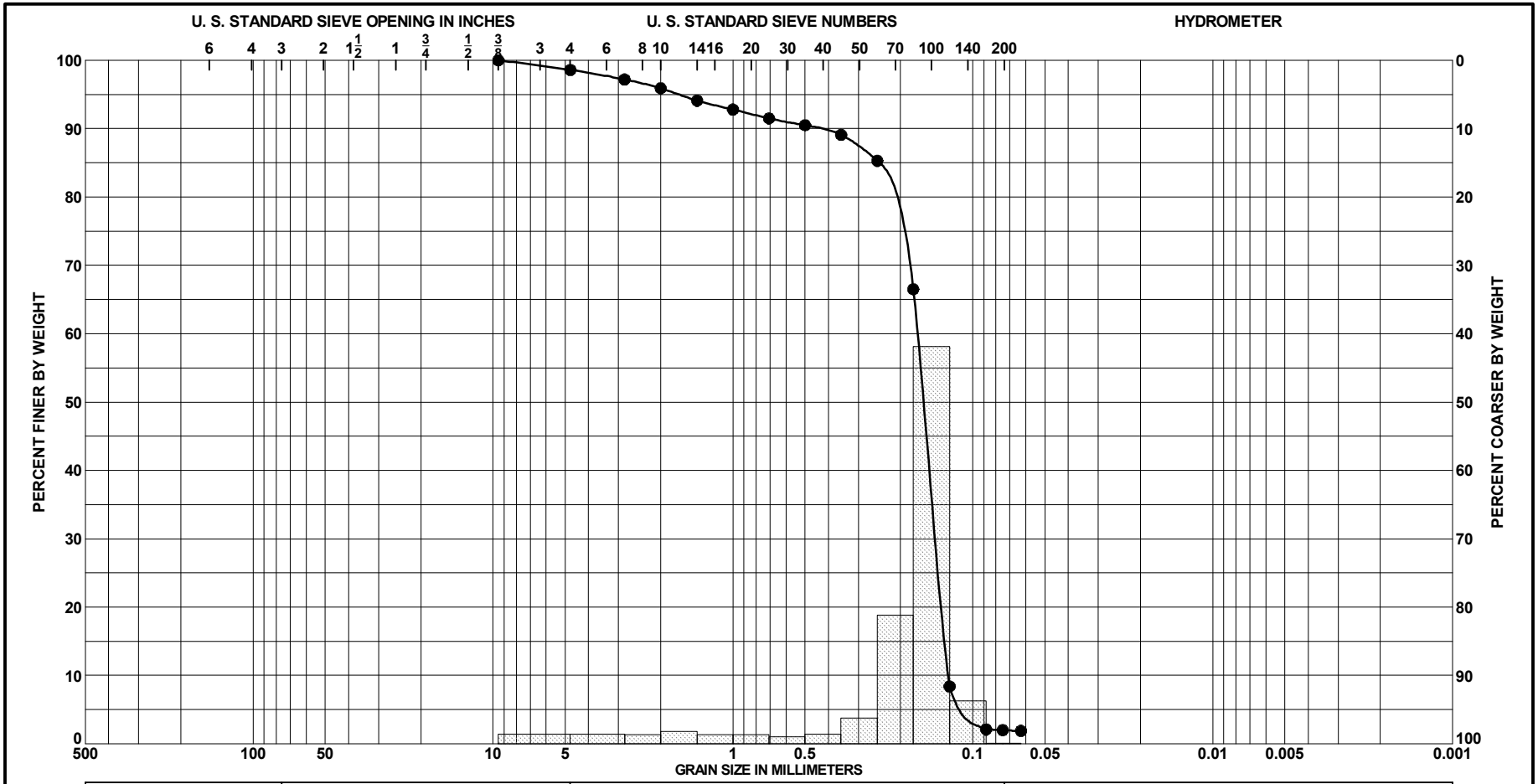


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 10	13.5 to 15.0 Ft.	, gray (SP-SM)	2.5Y 6/1	30 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-04
BORING ELEV.	-5.4 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

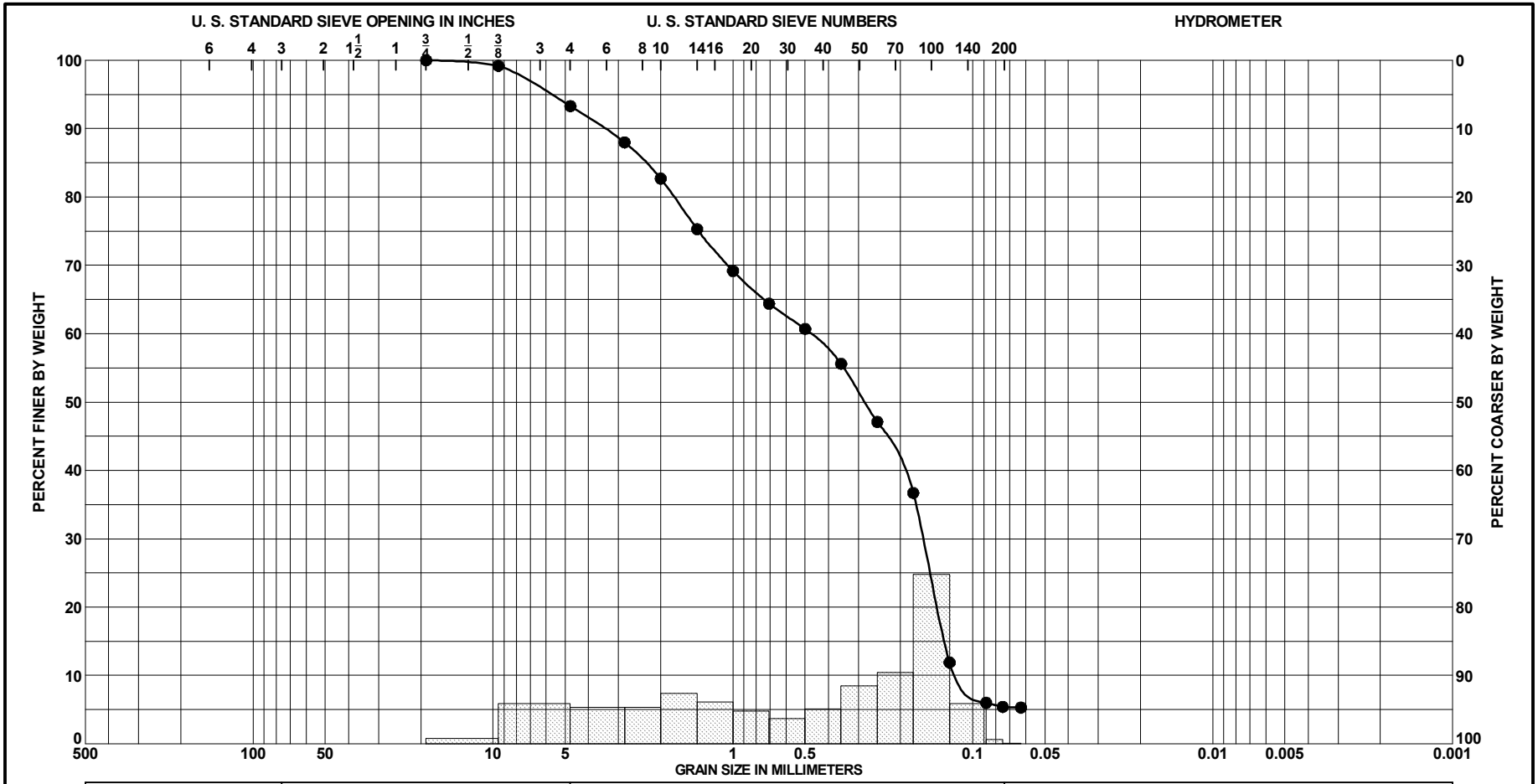


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	SAND, poorly-graded, gray (SP)	2.5Y 5/1	5/5 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-05
BORING ELEV.	-11.6 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

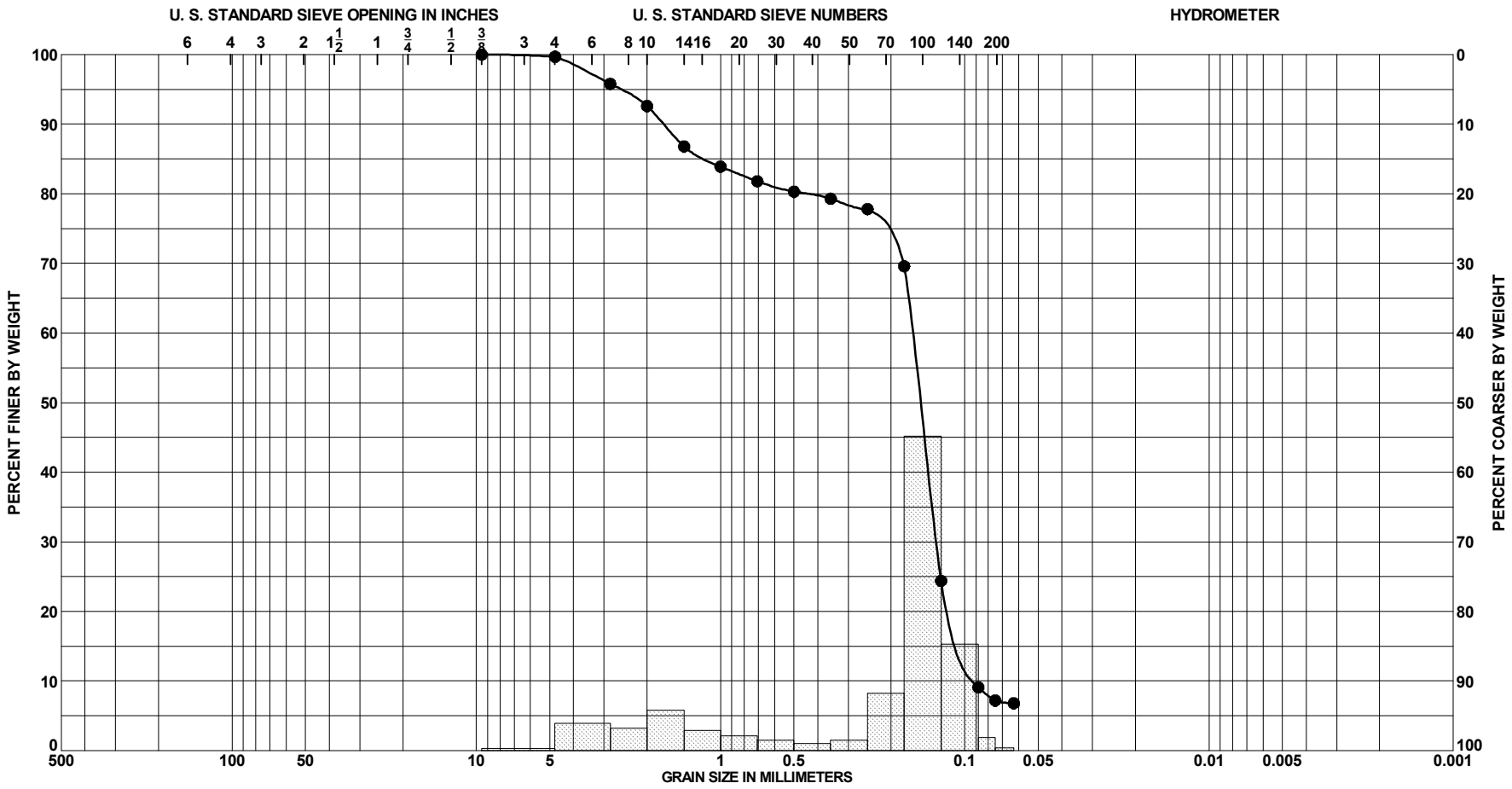


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	3.0 to 4.5 Ft.	, gray (SP-SM)	2.5Y 5/1	25 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-05
BORING ELEV.	-11.6 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

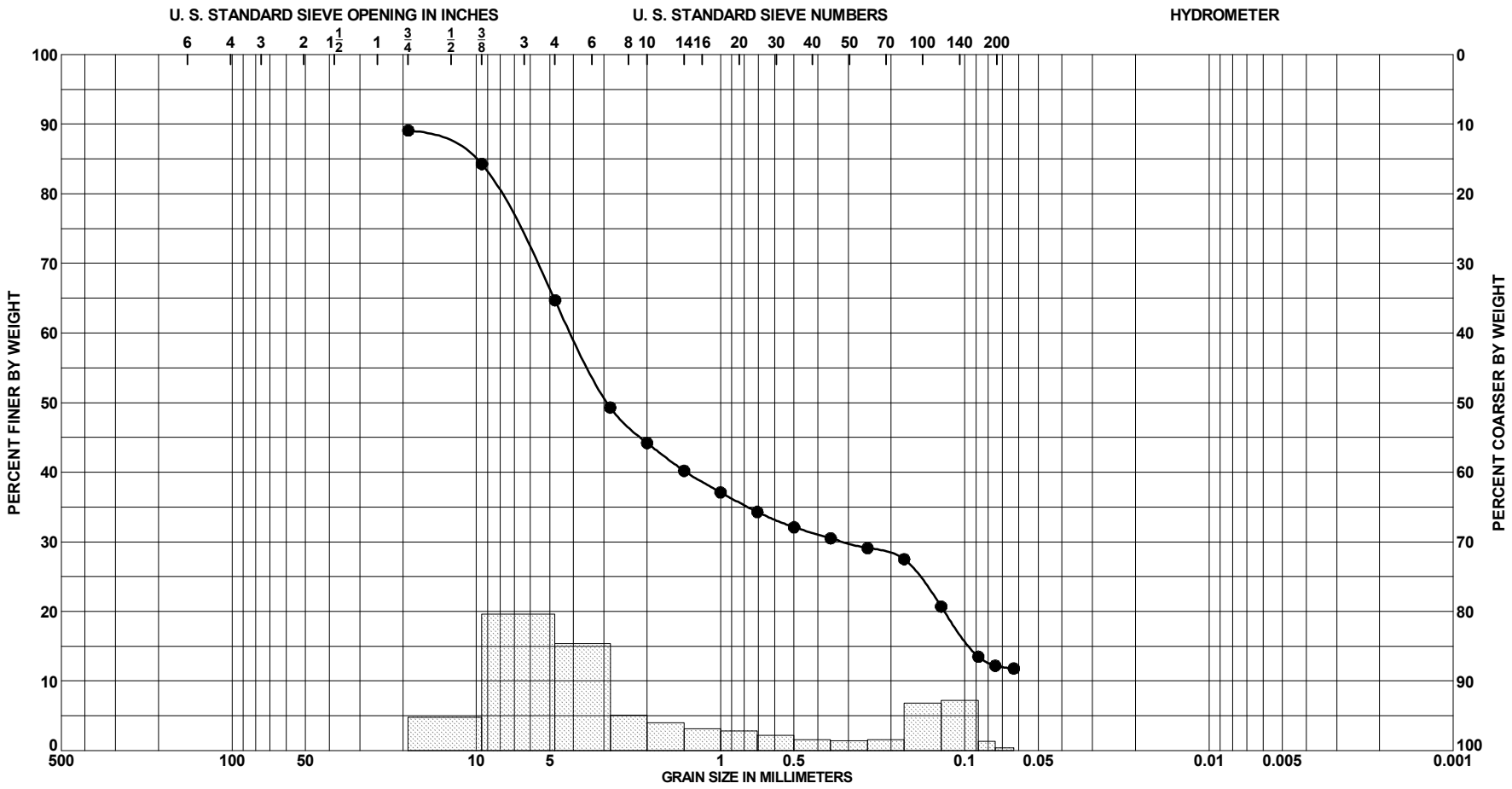


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 7	9.0 to 10.5 Ft.	, light olive gray (SP-SM)	5Y 6/2	15 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-05
BORING ELEV.	-11.6 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 12	16.5 to 18.0 Ft.	, gray (SM)	5Y 5/1	65 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut M-5
BORING NO.	CB-GIWW-M5-06-05
BORING ELEV.	-11.6 Ft., MLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

Boring Designation CB-GIWW-M5-06-01

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT	GIWW CR to AR GIWW Cut M-5	9. SIZE AND TYPE OF BIT	See Remarks
		10. COORDINATE SYSTEM/DATUM	HORIZONTAL: NAD27 — VERTICAL: MLW State Plane, FLW (U.S. Ft.)
2. BORING DESIGNATION	CB-GIWW-M5-06-01	LOCATION COORDINATES	X = 279,558 Y = 1,132,187
11. MANUFACTURER'S DESIGNATION OF DRILL	CET - 2006	☐ AUTO HAMMER ☒ MANUAL HAMMER	
3. DRILLING AGENCY	Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.	2004D30
12. TOTAL SAMPLES	DISTURBED: 14	UNDISTURBED (UD): 0	
4. NAME OF DRILLER	Doug Gardner	13. TOTAL NUMBER CORE BOXES	2
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	
14. ELEVATION GROUND WATER	N/A		
15. DATE BORING	STARTED: 06-26-06	COMPLETED: 06-26-06	
6. THICKNESS OF OVERBURDEN	N/A	16. ELEVATION TOP OF BORING	-7.2 Ft.
7. DEPTH DRILLED INTO ROCK	N/A	17. TOTAL RECOVERY FOR BORING	92 %
8. TOTAL DEPTH OF BORING	21.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR	V. J. Thompson III, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/0.5 FT.	N-VALUE
-7.2	0.0						-7.2		
			SAND, poorly-graded, mostly subangular fine to medium-grained sand-sized quartz, trace angular coarse-grained sand-sized shell up to 1/4", trace silt, 5Y 6/1 gray (SP)	90	1		SPT Sampler	2 3 6	9
							-8.7		
				90	2		SPT Sampler	7 8 10	18
							-10.2		
				95	3		SPT Sampler	9 11 12	23
-11.7	4.5						-11.7		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, trace silt, trace angular fine to medium-grained sand-sized shell up to 1/4", 2.5Y 5/1 gray (SP-SM)	95	4		SPT Sampler	4 7 9	16
-13.2	6.0						-13.2		
			SAND, poorly-graded, mostly subangular fine to medium-grained sand-sized quartz, some angular coarse-grained sand-sized shell up to 1/4", 2.5Y 6/1 gray (SP)	90	5		SPT Sampler	7 12 12	24
-14.7	7.5						-14.7		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, some angular coarse-grained sand-sized shell up to 1/4", few silt, 2.5Y 6/1 gray (SP-SM)	95	6		SPT Sampler	7 12 14	26
							-16.2		
				95	7		SPT Sampler	11 17 24	41
							-17.7		
				90	8		SPT Sampler	9 16 22	38
							-19.2		
				90	9		SPT Sampler	18 22 23	45
							-20.7		
				90	10		SPT Sampler	5 7 7	14
							-22.2		

0 5 10 15

(Continued)

Boring Designation CB-GIWW-M5-06-01

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD27	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 279,558 Y = 1,132,187	-7.2 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
				90	11		SPT Sampler	4 5 4	9
							-23.7		
				95	12		SPT Sampler	5 3 4	7
-25.2	18.0						-25.2		
			SAND, silty, mostly subangular fine to medium-grained sand-sized quartz, some silt, 5Y 6/1 gray (SM)	90	13		SPT Sampler	5 4 2	6
-26.7	19.5						-26.7		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, some angular coarse-grained sand-sized shell up to 1", trace silt, 5Y 6/1 gray (SP-SM)	90	14		SPT Sampler	3 3 3	6
-28.2	21.0						-28.2		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Set 18 Ft. of 4" Steel Casing

4. Munsell Colors Determined When Samples Were Wet After Removal From Spliltspoon Sampler

5. Borings Sampled from 40 Ft. x 11 Ft. Pontoon Barge In GIWW.

6. Elevations Determined From Established Tide Gauge.

7. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
#1&#3	/21.0	SP*
1	0.0/1.5	SP*
3	3.0/4.5	SP*
6	7.5/9.0	SP-SM*
10	13.5/15.0	SP-SM*

*Lab visual classification based on gradation curve

8. Additional Laboratory Testing

#1&#3Percent Carbonate
#1&#3Percent Visual Shell
1 Percent Visual Shell
3 Percent Visual Shell
6 Percent Visual Shell
10 Percent Visual Shell

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-GIWW-M5-06-02

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District		**SHEET** 1 **OF** 2 **SHEETS**
1. PROJECT GIWW CR to AR GIWW Cut M-5	**9. SIZE AND TYPE OF BIT** See Remarks		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD27	**VERTICAL** MLW
2. BORING DESIGNATION CB-GIWW-M5-06-02	**LOCATION COORDINATES** X = 280,218 Y = 1,130,639	**11. MANUFACTURER'S DESIGNATION OF DRILL** CET - 2006	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY Challenge Engineering & Testing, Inc.	**CONTRACTOR FILE NO.** 2004D30	**12. TOTAL SAMPLES**	**DISTURBED** 14 **UNDISTURBED (UD)** 0
4. NAME OF DRILLER Doug Gardner		**13. TOTAL NUMBER CORE BOXES** 1	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	**DEG. FROM VERTICAL** **BEARING**	**14. ELEVATION GROUND WATER** N/A	
		15. DATE BORING	**STARTED** 06-26-06 **COMPLETED** 06-26-06
6. THICKNESS OF OVERBURDEN N/A		**16. ELEVATION TOP OF BORING** -9.4 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		**17. TOTAL RECOVERY FOR BORING** 91 %	
8. TOTAL DEPTH OF BORING 21.0 Ft.		**18. SIGNATURE AND TITLE OF INSPECTOR** V. J. Thompson III, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-9.4	0.0						-9.4		
			SAND, poorly-graded, mostly subangular fine-grained sand-sized quartz, few angular shell up to 1/4", 5Y 6/1 gray (SP)	90	1		SPT Sampler	1 2 5	7
							-10.9		
			At El. -10.9 Ft., 5Y 5/1 gray	95	2		SPT Sampler	5 6 8	14
							-12.4		
			At El. -12.4 Ft., trace angular shell up to 1/4", trace silt, 10Y 3/1 very dark greenish gray	90	3		SPT Sampler	2 4 4	8
-13.9	4.5						-13.9		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, trace angular shell up to 1/4", trace silt, 10Y 3/1 very dark greenish gray (SP-SM)	90	4		SPT Sampler	6 4 3	7
							-15.4		
			At El. -15.4 Ft., 2.5Y 4/1 dark gray	90	5		SPT Sampler	1 1 5	6
							-16.9		
			At El. -16.9 Ft., some angular shell up to 1", 5Y 6/1 gray	95	6		SPT Sampler	4 5 7	12
							-18.4		
			At El. -18.4 Ft., 5Y 6/2 light olive gray	95	7		SPT Sampler	4 4 5	9
							-19.9		
			At El. -19.9 Ft., trace angular shell up to 3/8"	90	8		SPT Sampler	4 4 5	9
							-21.4		
				90	9		SPT Sampler	4 4 4	8
-22.9	13.5						-22.9		
			SAND, poorly-graded, mostly subangular fine to medium-grained sand-sized quartz, some angular shell up to 3/8", 5Y 6/2 light olive gray (SP)	90	10		SPT Sampler	3 2 2	4
-24.4	15.0						-24.4		

(Continued)

Boring Designation CB-GIWW-M5-06-02

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD27	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 280,218 Y = 1,130,639	-9.4 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, few silt, few angular shell up to 3/8", 5Y 6/2 light olive gray (SP-SM)	95	11		SPT Sampler	3 3 3	6
-25.9									
				90	12		SPT Sampler	2 2 1	3
-27.4	18.0								
			SAND, silty, mostly subangular fine to medium-grained sand-sized quartz, some silt, little angular shell up to 1/2", 5Y 6/2 light olive gray (SM)	90	13		SPT Sampler	2 1 2	3
-28.9									
				80	14		SPT Sampler	2 3 2	5
-30.4	21.0								

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Set 19 Ft. of 4" Steel Casing

4. Munsell Colors Determined When Samples Were Wet After Removal From Spliltspoon Sampler

5. Borings Sampled from 40 Ft. x 11 Ft. Pontoon Barge In GIWW.

6. Elevations Determined From Established Tide Gauge.

7. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/1.5	SP*
3	3.0/4.5	SP*
6	7.5/9.0	SP-SM*
9	12.0/13.5	SP-SM*

*Lab visual classification based on gradation curve

8. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
3 Percent Visual Shell
6 Percent Visual Shell
9 Percent Visual Shell

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-GIWW-M5-06-03

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District	**SHEET** 1 **OF** 2 **SHEETS**	
1. PROJECT GIWW CR to AR GIWW Cut M-5	**9. SIZE AND TYPE OF BIT** See Remarks		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD27	**VERTICAL** MLW
2. BORING DESIGNATION CB-GIWW-M5-06-03	**LOCATION COORDINATES** X = 280,591 Y = 1,129,701	**11. MANUFACTURER'S DESIGNATION OF DRILL** CET - 2006	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY Challenge Engineering & Testing, Inc.	**CONTRACTOR FILE NO.** 2004D30	**12. TOTAL SAMPLES**	**DISTURBED** 14 **UNDISTURBED (UD)** 0
4. NAME OF DRILLER Doug Gardner		**13. TOTAL NUMBER CORE BOXES** 1	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	**DEG. FROM VERTICAL**	**BEARING**	**14. ELEVATION GROUND WATER** N/A
		15. DATE BORING	**STARTED** 06-26-06 **COMPLETED** 06-26-06
6. THICKNESS OF OVERBURDEN N/A		**16. ELEVATION TOP OF BORING** -7.7 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		**17. TOTAL RECOVERY FOR BORING** 91 %	
8. TOTAL DEPTH OF BORING 21.0 Ft.		**18. SIGNATURE AND TITLE OF INSPECTOR** V. J. Thompson III, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-7.7	0.0						-7.7		
			SAND, poorly-graded, mostly subangular fine to medium-grained sand-sized quartz, trace angular shell up to 1/4", 2.5Y 4/1 dark gray (SP)	95	1		SPT Sampler	1 2 2	4
							-9.2		
				95	2		SPT Sampler	5 6 5	11
-10.7	3.0						-10.7		
			SAND, poorly-graded with silt, mostly subangular fine-grained sand-sized quartz, few silt, trace angular shell up to 1/4", 2.5Y 4/1 dark gray (SP-SM)	90	3		SPT Sampler	7 9 9	18
-12.2	4.5						-12.2		
			SAND, poorly-graded, mostly subangular fine-grained sand-sized quartz, trace angular shell up to 1/4", 10YR 5/2 grayish brown (SP)	90	4		SPT Sampler	5 3 4	7
							-13.7		
			At El. -13.7 Ft., 10YR 3/2 very dark grayish brown	95	5		SPT Sampler	1 1 2	3
							-15.2		
				90	6		SPT Sampler	2 4 5	9
							-16.7		
			At El. -16.7 Ft., trace silt, 2.5Y 4/1 dark gray	90	7		SPT Sampler	1 5 3	8
							-18.2		
			At El. -18.2 Ft., some angular shell up to 1", 2.5Y 6/3 light yellowish brown	95	8		SPT Sampler	3 3 5	8
							-19.7		
				90	9		SPT Sampler	5 6 7	13
-21.2	13.5						-21.2		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, few silt, trace angular shell up to 1/4", 2.5Y 6/1 gray (SP-SM)	90	10		SPT Sampler	5 5 7	12
							-22.7		

0 5 10 15

(Continued)

Boring Designation CB-GIWW-M5-06-03

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD27	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 280,591 Y = 1,129,701	-7.7 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
				90	11		SPT Sampler	5 3 4	7
							-24.2		
				90	12		SPT Sampler	3 3 2	5
-25.7	18.0						-25.7		
			SAND, silty, mostly subangular fine to medium-grained sand-sized quartz, some silt, few angular shell up to 1/2", trace subrounded fine to coarse gravel-sized limestone up to 1", 10YR 7/2 light gray (SM)	90	13		SPT Sampler	2 4 2	6
			At El. -27.2 Ft., 2.5Y 5/1 gray				-27.2		
				90	14		SPT Sampler	2 2 1	3
-28.7	21.0						-28.7		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Set 18 Ft. of 4" Steel Casing

4. Munsell Colors Determined When Samples Were Wet After Removal From Spliltspoon Sampler

5. Borings Sampled from 40 Ft. x 11 Ft. Pontoon Barge In GIWW.

6. Elevations Determined From Established Tide Gauge.

7. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
#1&#3	/21.0	SP*
1	0.0/1.5	SP*
3	3.0/4.5	SP-SM*
7	9.0/10.5	SP*

*Lab visual classification based on gradation curve

8. Additional Laboratory Testing

#1&#3Percent Carbonate
#1&#3Percent Visual Shell
1 Percent Visual Shell
3 Percent Visual Shell
7 Percent Visual Shell

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-GIWW-M5-06-04

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District	**SHEET** 1 **OF** 2 **SHEETS**	
1. PROJECT GIWW CR to AR GIWW Cut M-5	**9. SIZE AND TYPE OF BIT** See Remarks		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD27	**VERTICAL** MLW
2. BORING DESIGNATION CB-GIWW-M5-06-04	**LOCATION COORDINATES** X = 281,038 Y = 1,128,700	**11. MANUFACTURER'S DESIGNATION OF DRILL** CET - 2006	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY Challenge Engineering & Testing, Inc.	**CONTRACTOR FILE NO.** 2004D30	**12. TOTAL SAMPLES**	**DISTURBED** 14 **UNDISTURBED (UD)** 0
4. NAME OF DRILLER Doug Gardner		**13. TOTAL NUMBER CORE BOXES** 1	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	**DEG. FROM VERTICAL**	**BEARING**	**14. ELEVATION GROUND WATER** N/A
		15. DATE BORING	**STARTED** 06-27-06 **COMPLETED** 06-27-06
6. THICKNESS OF OVERBURDEN N/A		**16. ELEVATION TOP OF BORING** -5.4 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		**17. TOTAL RECOVERY FOR BORING** 87 %	
8. TOTAL DEPTH OF BORING 21.0 Ft.		**18. SIGNATURE AND TITLE OF INSPECTOR** V. J. Thompson III, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-5.4	0.0						-5.4		
			SAND, poorly-graded, mostly subangular fine-grained sand-sized quartz, trace angular shell up to 1/4", 2.5Y 6/1 gray (SP)	90	1		SPT Sampler	1 3 4	7
							-6.9		
				85	2		SPT Sampler	2 7 8	15
							-8.4		
				80	3		SPT Sampler	4 4 2	6
							-9.9		
				80	4		SPT Sampler	4 8 12	20
							-11.4		
			At El. -11.4 Ft., 2.5Y 7/1 light gray	85	5		SPT Sampler	8 12 12	24
							-12.9		
				85	6		SPT Sampler	3 4 5	9
							-14.4		
			At El. -14.4 Ft., trace angular shell up to 1/2", 2.5Y 6/1 gray	85	7		SPT Sampler	4 3 6	9
							-15.9		
				90	8		SPT Sampler	6 5 6	11
							-17.4		
			At El. -17.4 Ft., some angular shell up to 1/2"	90	9		SPT Sampler	7 8 6	14
-18.9	13.5						-18.9		
			SAND, poorly-graded with silt, mostly subangular fine-grained sand-sized quartz, some angular shell up to 3/4", few silt, 2.5Y 6/1 gray (SP-SM)	85	10		SPT Sampler	3 6 5	11
-20.4	15.0						-20.4		

(Continued)

Boring Designation CB-GIWW-M5-06-04

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD27	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 281,038 Y = 1,128,700	-5.4 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
			SAND, poorly-graded, mostly subangular fine-grained sand-sized quartz, some shell up to 3/4", trace silt, 2.5Y 6/1 gray (SP)	90	11		SPT Sampler	5 6 6	12
							-21.9		
				90	12		SPT Sampler	4 6 6	12
-23.4	18.0						-23.4		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, some angular shell up to 3/4", trace silt, trace subrounded limestone up to 3/4", 2.5YR 6/1 reddish gray (SP-SM)	90	13		SPT Sampler	5 4 4	8
							-24.9		
				90	14		SPT Sampler	7 7 5	12
-26.4	21.0						-26.4		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Set 15 Ft. of 4" Steel Casing

4. Munsell Colors Determined When Samples Were Wet After Removal From Spliltspoon Sampler

5. Borings Sampled from 40 Ft. x 11 Ft. Pontoon Barge In GIWW.

6. Elevations Determined From Established Tide Gauge.

7. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
#1&#4	/21.0	SP*
1	0.0/1.5	SP*
4	4.5/6.0	SP*
10	13.5/15.0	SP-SM*

*Lab visual classification based on gradation curve

8. Additional Laboratory Testing

#1&#4Percent Carbonate
#1&#4Percent Visual Shell
1 Percent Visual Shell
4 Percent Visual Shell
10 Percent Visual Shell

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-GIWW-M5-06-05

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: GIWW CR to AR GIWW Cut M-5		9. SIZE AND TYPE OF BIT: See Remarks	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD27 / VERTICAL: MLW
2. BORING DESIGNATION: CB-GIWW-M5-06-05	LOCATION COORDINATES: X = 281,551 Y = 1,127,480	11. MANUFACTURER'S DESIGNATION OF DRILL: CET - 2006	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.: 2004D30	12. TOTAL SAMPLES	DISTURBED: 14 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Doug Gardner		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER: N/A
		15. DATE BORING	STARTED: 06-27-06 / COMPLETED: 06-27-06
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -11.6 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 89 %	
8. TOTAL DEPTH OF BORING: 21.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: V. J. Thompson III, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/0.5 FT.	N-VALUE
-11.6	0.0						-11.6		
			SAND, poorly-graded, mostly subangular fine to medium-grained sand-sized quartz, trace silt, trace angular shell up to 1/2", 2.5Y 5/1 gray (SP)	85	1		SPT Sampler	1 2 2	4
-13.1	1.5						-13.1		
			SAND, poorly-graded with silt, mostly subangular medium-grained sand-sized quartz, some angular shell up to 1/2", trace silt, 2.5Y 5/1 gray (SP-SM)	85	2		SPT Sampler	2 2 1	3
							-14.6		
				80	3		SPT Sampler	12 12 4	16
-16.1	4.5						-16.1		
			SAND, silty, mostly subangular fine to medium-grained sand-sized quartz, some angular shell up to 1/2", little silt, 2.5Y 3/1 very dark gray (SM)	80	4		SPT Sampler	5 6 4	10
-17.6	6.0						-17.6		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, some shell up to 1/2", few silt, 2.5Y 6/1 gray (SP-SM)	90	5		SPT Sampler	4 6 8	14
							-19.1		
				90	6		SPT Sampler	8 7 8	15
							-20.6		
			At El. -20.6 Ft., 5Y 6/2 light olive gray	90	7		SPT Sampler	5 5 5	10
-22.1	10.5						-22.1		
			SAND, poorly-graded, mostly subangular medium-grained sand-sized quartz, few angular shell up to 3/8", 5Y 6/2 light olive gray (SP)	95	8		SPT Sampler	5 5 4	9
-23.6	12.0						-23.6		
			SAND, poorly-graded with silt, mostly subangular medium-grained sand-sized quartz, some angular shell up to 3/4", few silt, 5Y 7/1 light gray (SP-SM)	90	9		SPT Sampler	3 2 3	5
							-25.1		
				90	10		SPT Sampler	5 3 3	6
-26.6	15.0						-26.6		

(Continued)

Boring Designation CB-GIWW-M5-06-05

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD27	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 281,551 Y = 1,127,480	-11.6 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
			SHELL, mostly angular shell up to 3/4", some fine-grained sand-sized sand, few silt, trace limestone up to 1", 5Y 5/1 gray	90	11		SPT Sampler	4 2 2	4
							-28.1		
				90	12		SPT Sampler	3 4 3	7
-29.6	18.0						-29.6		
			CLAY, fat, medium plasticity, firm, trace subrounded fine gravel-sized limestone up to 1/2", trace subangular fine to coarse gravel-sized shell up to 1/2", 5Y 5/2 olive gray (CH)	95	13		SPT Sampler	2 6 4	10
							-31.1		
				90	14		SPT Sampler	5 5 7	12
-32.6	21.0						-32.6		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Set 23 Ft. of 4" Steel Casing

4. Munsell Colors Determined When Samples Were Wet After Removal From Spliltspoon Sampler

5. Borings Sampled from 40 Ft. x 11 Ft. Pontoon Barge In GIWW.

6. Elevations Determined From Established Tide Gauge.

7. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/1.5	SP*
3	3.0/4.5	SP-SM*
7	9.0/10.5	SP-SM*
12	16.5/18.0	SM*

*Lab visual classification based on gradation curve

8. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
3 Percent Visual Shell
7 Percent Visual Shell
12 Percent Visual Shell

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation VB-GIWW08M-M7-1

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: IWW CR to AR CUT M-7		9. SIZE AND TYPE OF BIT: See Remarks	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLW
2. BORING DESIGNATION: VB-GIWW08M-M7-1	LOCATION COORDINATES: X = 429,888 Y = 1,146,193	11. MANUFACTURER'S DESIGNATION OF DRILL: Alpine 271 Vibracore Unit	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.: 2008D22	12. TOTAL SAMPLES	DISTURBED: 3 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Alpine Ocean Seismic, Inc.		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER: Tidal
		15. DATE BORING	STARTED: 07-11-08 / COMPLETED: 07-11-08
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -10.2 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 92 %	
8. TOTAL DEPTH OF BORING: 6.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: V. J. Thompson III, Civil Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-10.2	0.0						-10.2		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, little angular sand to gravel-sized shell up to 1/4", wet, 5Y 6/2 light olive gray (SP)	100			Vibracore -11.2		
				100	1		-11.7 Vibracore		
			At El. -12.2 Ft., some angular sand to gravel-sized shell up to 1"	100			Vibracore -13.2		
				100	2		-13.7 Vibracore		
				100			Vibracore -15.2		
-15.7	5.5			100	3		-15.7 Vibracore		
-16.2	6.0	NR					-16.2		

BORING TERMINATED IN REFUSAL

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Vibracore Borings Were Sampled With An Alpine 271 Pneumatic Powered Unit Using A 3 7/8" Lexan Liner To Termination Depth Specifed.

4. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SP*
2	3.0/3.5	SP*
3	5.0/5.5	SP*

*Lab visual classification based on gradation curve

5. Additional Laboratory Testing

Abbreviations:

(Continued)

Boring Designation VB-GIWW08M-M7-1

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
IWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD83	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 429,888 Y = 1,146,193	-10.2 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 Percent Carbonate 1 Percent Visual Shell 2 Percent Visual Shell 3 Percent Visual Shell						

15
20
25
30
35

SAJ FORM 1836-A
JUN 02

Boring Designation VB-GIWW08M-M7-2

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: IWW CR to AR CUT M-7		9. SIZE AND TYPE OF BIT: See Remarks	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLW
2. BORING DESIGNATION: VB-GIWW08M-M7-2	LOCATION COORDINATES: X = 430,232 Y = 1,145,367	11. MANUFACTURER'S DESIGNATION OF DRILL: Alpine 271 Vibracore Unit	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.: 2008D22	12. TOTAL SAMPLES	DISTURBED: 3 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Alpine Ocean Seismic, Inc.		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER: Tidal
		15. DATE BORING	STARTED: 07-11-08 / COMPLETED: 07-11-08
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -9.2 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 95 %	
8. TOTAL DEPTH OF BORING: 11.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: V. J. Thompson III, Civil Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-9.2	0.0						-9.2		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, few angular coarse-grained sand-sized shell up to 1/8", wet, 5Y 7/2 light gray (SP)	100			Vibracore -10.2		
				100	1		-10.7 Vibracore		
			At El. -10.7 Ft., some angular sand to gravel-sized shell up to 1", 5Y 5/2 olive gray	100			Vibracore -11.7		
				100	2		-12.2 Vibracore		
				100			Vibracore -14.2		
				100	3		-14.7 Vibracore		
			At El. -16.7 Ft., trace angular sand to gravel-sized shell up to 2", oyster shells						
			At El. -17.7 Ft., 5Y 7/2 light gray	90			Vibracore		
-20.2	11.0								
-20.8	11.6	NR					-20.8		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Vibracore Borings Were Sampled With An

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
IWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD83	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,232 Y = 1,145,367	-9.2 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

Alpine 271 Pneumatic Powered Unit Using A 3 7/8" Lexan Liner To Termination Depth Specifed.

4. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SP*
2	2.5/3.0	SP*
3	5.0/5.5	SP*

*Lab visual classification based on gradation curve

5. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
2 Percent Visual Shell
3 Percent Visual Shell

15
20
25
30
35

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District	**SHEET** 1 **OF** 2 **SHEETS**	
1. PROJECT IWW CR to AR CUT M-7	**9. SIZE AND TYPE OF BIT** See Remarks		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD83	**VERTICAL** MLW
2. BORING DESIGNATION VB-GIWW08M-M7-3	**LOCATION COORDINATES** X = 430,439 Y = 1,144,683	**11. MANUFACTURER'S DESIGNATION OF DRILL** Alpine 271 Vibracore Unit	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Challenge Engineering & Testing, Inc.	**CONTRACTOR FILE NO.** 2008D22	**12. TOTAL SAMPLES**	**DISTURBED** 3 / **UNDISTURBED (UD)** 0
4. NAME OF DRILLER Alpine Ocean Seismic, Inc.		**13. TOTAL NUMBER CORE BOXES** 1	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	**DEG. FROM VERTICAL** / **BEARING**	**14. ELEVATION GROUND WATER** Tidal	
		15. DATE BORING	**STARTED** 07-11-08 / **COMPLETED** 07-11-08
6. THICKNESS OF OVERBURDEN N/A		**16. ELEVATION TOP OF BORING** -10.0 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		**17. TOTAL RECOVERY FOR BORING** 96 %	
8. TOTAL DEPTH OF BORING 13.0 Ft.		**18. SIGNATURE AND TITLE OF INSPECTOR** V. J. Thompson III, Civil Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-10.0	0.0						-10.0		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, wet, 5Y 6/2 light olive gray (SP)	100			Vibracore -11.0		
				100	1		-11.5 Vibracore		
			At El. -11.5 Ft., some angular sand to gravel-sized shell up to 1", 5Y 5/2 olive gray	100			-12.0 Vibracore		
				100	2		-12.5 Vibracore		
			At El. -12.5 Ft., 5Y 6/2 light olive gray	100			Vibracore -14.0		
				100	3		-14.5 Vibracore		
			At El. -14.5 Ft., little angular sand to gravel-sized shell up to 1"						
			At El. -15.5 Ft., discontinue shell						
				94			Vibracore		
			At El. -19.0 Ft., some angular sand to gravel-sized shell up to 1"						
-22.5	12.5								
-23.0	13.0	NR					-23.0		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

(Continued)

Boring Designation VB-GIWW08M-M7-3

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
IWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD83	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,439 Y = 1,144,683	-10.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Vibracore Borings Were Sampled With An Alpine 271 Pneumatic Powered Unit Using A 3 7/8" Lexan Liner To Termination Depth Specifed.

4. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SP*
2	2.0/2.5	SP*
3	4.0/4.5	SP*

*Lab visual classification based on gradation curve

5. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
2 Percent Visual Shell
3 Percent Visual Shell

15
20
25
30
35

Boring Designation VB-GIWW08M-M7-4

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: IWW CR to AR CUT M-7		9. SIZE AND TYPE OF BIT: See Remarks	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLW
2. BORING DESIGNATION: VB-GIWW08M-M7-4	LOCATION COORDINATES: X = 430,671 Y = 1,143,916	11. MANUFACTURER'S DESIGNATION OF DRILL: Alpine 271 Vibracore Unit	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.: 2008D22	12. TOTAL SAMPLES	DISTURBED: 3 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Alpine Ocean Seismic, Inc.		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER: Tidal
		15. DATE BORING	STARTED: 07-11-08 / COMPLETED: 07-11-08
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -9.9 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 80 %	
8. TOTAL DEPTH OF BORING: 12.5 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: V. J. Thompson III, Civil Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-9.9	0.0						-9.9		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace subangular sand to gravel-sized shell up to 1/4", wet, 5Y 8/1 white (SP)	100			Vibracore -10.9		
				100	1		-11.4 Vibracore		
			At El. -11.9 Ft., 5Y 5/2 olive gray	100			Vibracore -12.9		
				100	2		-13.4 Vibracore		
			At El. -13.4 Ft., little subangular sand to gravel-sized shell up to 1"	100			Vibracore -14.4		
				100	3		-14.9 Vibracore		
			At El. -17.2 Ft., trace subangular sand to gravel-sized shell up to 1/2", 5Y 7/2 light gray	66			Vibracore		
-19.9	10.0								
-22.4	12.5	NO RECOVERY					-22.4		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification

(Continued)

Boring Designation VB-GIWW08M-M7-4

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
IWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD83	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,671 Y = 1,143,916	-9.9 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

System.

3. Vibracore Borings Were Sampled With An Alpine 271 Pneumatic Powered Unit Using A 3 7/8" Lexan Liner To Termination Depth Specifed.

4. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SP*
2	3.0/3.5	SP*
3	4.5/5.0	SP*

*Lab visual classification based on gradation curve

5. Additional Laboratory Testing

1	Percent Carbonate
1	Percent Visual Shell
2	Percent Visual Shell
3	Percent Visual Shell

15 20 25 30 35

Boring Designation VB-GIWW08M-M7-5

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT	IWW CR to AR CUT M-7	9. SIZE AND TYPE OF BIT	See Remarks
		10. COORDINATE SYSTEM/DATUM	HORIZONTAL: NAD83 / VERTICAL: MLW
			State Plane, FLW (U.S. Ft.)
2. BORING DESIGNATION	VB-GIWW08M-M7-5	LOCATION COORDINATES	X = 430,702 Y = 1,143,474
11. MANUFACTURER'S DESIGNATION OF DRILL	Alpine 271 Vibracore Unit	☐ AUTO HAMMER ☐ MANUAL HAMMER	
3. DRILLING AGENCY	Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.	2008D22
12. TOTAL SAMPLES	DISTURBED: 3	UNDISTURBED (UD): 0	
4. NAME OF DRILLER	Alpine Ocean Seismic, Inc.	13. TOTAL NUMBER CORE BOXES	1
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	
14. ELEVATION GROUND WATER	Tidal		
15. DATE BORING	STARTED: 07-11-08	COMPLETED: 07-11-08	
6. THICKNESS OF OVERBURDEN	N/A	16. ELEVATION TOP OF BORING	-11.7 Ft.
7. DEPTH DRILLED INTO ROCK	N/A	17. TOTAL RECOVERY FOR BORING	91 %
8. TOTAL DEPTH OF BORING	11.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR	V. J. Thompson III, Civil Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-11.7	0.0						-11.7		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, few angular sand to gravel-sized shell up to 1/4", wet, 5Y 8/1 white (SP)	100			Vibracore -12.7		
				100	1		-13.2 Vibracore		
				100			Vibracore -14.7		
				100	2		-15.2 Vibracore		
-15.7	4.0		At El. -15.2 Ft., few angular sand to gravel-sized shell up to 3"						
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, 5Y 6/2 light olive gray (SP-SM)	100			Vibracore -16.7		
				100	3		-17.2 Vibracore		
			At El. -17.7 Ft., few angular sand to gravel-sized shell up to 1"	82			Vibracore		
-21.7	10.0								
-22.6	11.0	NR					-22.6		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Vibracore Borings Were Sampled With An Alpine 271 Pneumatic Powered Unit Using A 3 7/8" Lexan Liner To Termination Depth

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
IWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD83	MLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,702 Y = 1,143,474	-11.7 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

Specifed.

4. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SP*
2	3.0/3.5	SP*
3	5.0/5.5	SP-SM*

*Lab visual classification based on gradation curve

5. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
2 Percent Visual Shell
3 Percent Visual Shell

15
20
25
30
35

APPENDIX OVERVIEW

Introduction: These appendices contain data for the 2007 LBK Pass AMI Sand Search. The data is provided in the form of vibracore logs, vibracore photographs, granularmetric reports, and grain size distribution curves/histograms.

1) 2007 CPE Vibracore Logs

Vibracores collected by Coastal Planning & Engineering in 2007 are presented here. Laboratory and descriptive information for each vibracore is presented on the log sheets. Unified Soils Classification terminology is used in the core layer descriptions and key grain size information (mean grain size, fines content and sorting) for each vibracore sample is presented under the *Remarks* column. Multiple layer intervals are sometimes represented by a single sample. The *Sample Number* column is used to identify the specific sample that represents a specific layer.

2) 2007 CPE Individual Vibracore Granularmetric Reports

This appendix contains individual granularmetric reports for cores collected during the 2007 LBK Pass AMI Sand Search.

3) 2007 CPE Individual Vibracore Grain Size Distribution Curves/Histograms

This appendix contains individual gradation grain size distribution curves/histograms for cores collected during the 2007 LBK Pass AMI Sand Search.

4) 2007 CPE Vibracore Photographs

Photographs of vibracores collected in 2007 are presented here.

5) 2007 Anna Maria Vibracore Location Map

This appendix contains a map of the locations of vibracores collected during the 2007 LBK Pass AMI Sand Search.

APPENDIX 1

2007 CPE VIBRACORE LOGS

Boring Designation AMVC-07-01

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-01 | LOCATION COORDINATES: X = 430,831 Y = 1,143,326

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-22-07 11:25 | COMPLETED 02-22-07 11:27

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 14.8 Ft.

8. TOTAL DEPTH OF BORING 18.8 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-1.1	1.1		SAND, fine grained, little shell hash, trace shell fragments, trace silt, silt distributed in lamina; shell fragments < 0.5", light gray (5Y-7/2), (SW).		1	Sample #1, Depth = 0.6' Mean (mm): 0.33, Phi Sorting: 1.38 Shell Hash: 3%, Fines (230): 1.74% (SW)
-2.0	2.0				2	Sample #2, Depth = 1.5' Mean (mm): 0.17, Phi Sorting: 0.68 Shell Hash: 0%, Fines (230): 2.33% (SP)
-5.0	5.0		SAND, fine grained, trace shell hash, trace silt, silt distributed in lamina; mottled 5Y-6/1 and 5Y-7/2, light gray (5Y-7/2), (SP). SAND, fine grained, little shell hash, trace shell fragments, trace silt, silt distributed in lamina; shell fragments < 0.5", light gray (5Y-7/2), (SW).		1	
-7.2	7.2		SAND, little shell hash, trace silt, silt distributed in lamina; 1.0" wood layer @ 6.9'; 0.5" wood pocket @ 7.1', light gray (5Y-7/2), (SW).		3	Sample #3, Depth = 6.1' Mean (mm): 0.30, Phi Sorting: 1.27 Shell Hash: 2%, Fines (230): 1.88% (SW)
-8.5	8.5		SAND, fine grained, trace shell hash, trace silt, silt distributed in lamina, light gray (5Y-7/2), (SP).		2	
-10.6	10.6		SAND, fine grained, little clay, little silt, (2.0"x1.0") shell fragment @ 10.5'; (1.25"x1.25") whole shell @ 10.3'; (0.75"x0.75") whole shell @ 10.6', gray (5Y-5/1), (SM-SC).			
-14.4	14.4		CLAY, trace shell hash, (0.75"x0.75") whole shells @ 10.9' and 12.4'; (1.25"x1.25") whole shell @ 11.4' and 12.4', dark gray (5Y-4/1), (SC).			
-14.8	14.8		SAND, fine grained, trace shell hash, trace silt, silt distributed in lamina, light gray (5Y-7/2), (SP).			
-18.8	18.8		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-02

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-02 | LOCATION COORDINATES: X = 431,079 Y = 1,142,390

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-20-07 10:04 | COMPLETED 02-20-07 10:05

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 10.1 Ft.

8. TOTAL DEPTH OF BORING 10.6 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-0.9	0.9		SAND, fine grained, little clay, little silt, trace shell hash, clay increases with depth, olive gray (5Y-4/2), (SM-SC).			
-3.7	3.7		CLAY, trace shell fragments, trace shell hash, shell fragments up to (1.0"x1.0"), very dark greenish gray (10Y-3/1), (SC).			
-5.1	5.1		SAND, fine grained, little shell fragments, trace clay, trace shell hash, trace silt, shell fragment layers from 3.7' to 3.9' and 4.8' to 5.1'; (1.75"x1.75") shell fragment @ 5.0', light brownish gray (2.5Y-6/2), (GW).			
-8.1	8.1		SAND, fine grained, little organics, trace clay, trace shell fragments, trace shell hash, trace silt, silt distributed in lamina, shell fragments < 0.5"; some organic lamina from 6.5'-6.8', grayish brown (2.5Y-5/2), (SM).			
-10.6	10.6		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-03

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-03 | LOCATION COORDINATES: X = 433,627 Y = 1,132,302

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

14. ELEVATION GROUND WATER

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

15. DATE BORING | STARTED 02-20-07 11:17 | COMPLETED 02-20-07 11:20

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 16.5 Ft.

8. TOTAL DEPTH OF BORING 19.1 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
			SAND, fine grained, trace shell hash, trace silt, silt distributed in lamina; little shell hash from 10.9' to 11.4' and 13.3' to 13.5'; 1.0" clay pocket @ 1.6'; (1.0"x0.25") wood @ 7.5'; (0.75"x0.75") shell fragment @ 12.8', white (5Y-8/1), (SP).		1	Sample #1, Depth = 4.0' Mean (mm): 0.16, Phi Sorting: 0.32 Shell Hash: 0%, Fines (230): 1.14% (SP)
					2	Sample #2, Depth = 8.0' Mean (mm): 0.15, Phi Sorting: 0.33 Shell Hash: 0%, Fines (230): 1.21% (SP)
					3	Sample #3, Depth = 12.0' Mean (mm): 0.20, Phi Sorting: 0.64 Shell Hash: 1%, Fines (230): 1.35% (SP)
-13.5	13.5					
			SAND, fine grained, some clay, little shell hash, little silt, trace shell fragments, shell fragments < 0.5"; (1.25"x0.75") whole shell @ 13.5' and 15.7', olive gray (5Y-5/2), (SM-SC).			
-16.5	16.5					
			No Recovery.			
-19.1	19.1					
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation AMVC-07-04

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-04 | LOCATION COORDINATES: X = 433,879 Y = 1,133,137

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

14. ELEVATION GROUND WATER

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

15. DATE BORING | STARTED 02-20-07 12:31 | COMPLETED 02-20-07 12:37

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 8.55 Ft.

8. TOTAL DEPTH OF BORING 10.2 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
			SAND, fine grained, trace organics, trace shell hash, trace silt, 1.0" some shell hash layer @ 5.3'; (4.5"x0.5") wood @ 0.5'; silt distributed in lamina; little rock fragments up to (1.25"x1.0") from 7.3' to 7.6'; trace shell fragments up to (1.25"x1.25") from 7.3' to 7.6'; (1.0"x1.0") whole shell @ 7.8', white (5Y-8/1), (SP).		1	Sample #1, Depth = 3.0' Mean (mm): 0.17, Phi Sorting: 0.41 Shell Hash: 0%, Fines (230): 1.17% (SP)
					2	Sample #2, Depth = 6.0' Mean (mm): 0.16, Phi Sorting: 0.35 Shell Hash: 0%, Fines (230): 1.09% (SP)
-8.6	8.6					
			No Recovery.			
-10.2	10.2					
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-05

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-05 | LOCATION COORDINATES: X = 437,029 Y = 1,128,780

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-20-07 13:44 | COMPLETED 02-20-07 13:45

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 15 Ft.

8. TOTAL DEPTH OF BORING 19.0 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-2.3	2.3		SAND, fine grained, trace organics, trace shell hash, trace silt, organics < 1%; (0.75"x0.5") bone fragment @ 0.8'; mottled 2.5Y-7/2 and 5Y-7/1, light gray (5Y-7/1), (SP).		1	Sample #1, Depth = 1.1' Mean (mm): 0.15, Phi Sorting: 0.39 Shell Hash: 0%, Fines (230): 1.39% (SP)
-3.4	3.4		Sandy SHELL FRAGMENTS, trace silt, shell fragments up to (1.0"x1.0"); 0.5" clay pocket @ 2.7', light gray (2.5Y-7/1), (GP-GM).		2	Sample #2, Depth = 2.9' Mean (mm): 0.59, Phi Sorting: 2.34 Shell Hash: 24%, Fines (230): 2.63% (SW)
-3.8	3.8		SAND, fine grained, trace shell hash, trace silt, light olive gray (5Y-6/2), (SP).		3	Sample #3, Depth = 3.6' Mean (mm): 0.13, Phi Sorting: 0.32 Shell Hash: 0%, Fines (230): 3.41% (SP)
-11.0	11.0		SAND, fine grained, trace shell hash, trace silt, (0.75"x0.75") shell fragments @ 3.9' and 4.5'; (1.5"x1.0") shell fragment @ 6.9'; 2.5Y-7/2 grading to 5Y-8/1; silt distributed in lamina, white (5Y-8/1), (SP).		4	Sample #4, Depth = 7.5' Mean (mm): 0.13, Phi Sorting: 0.30 Shell Hash: 0%, Fines (230): 1.59% (SP)
-12.1	12.1		SAND, little clay, little silt, trace shell hash, (3) (1.0"x0.75") shell fragments @ 11.5', olive gray (5Y-4/2), (SP-SM).			
-12.9	12.9		SAND, fine grained, some silt, little shell fragments, trace shell hash, olive gray (5Y-4/2), (SM).			
-15.0	15.0		Shelly SAND, trace silt, shell fragments up to (1.5"x0.75"), gray (2.5Y-5/1), (GW).			
-19.0	19.0		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation AMVC-07-06

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-06 | LOCATION COORDINATES: X = 436,754 Y = 1,128,828

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-20-07 14:18 | COMPLETED 02-20-07

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 15.7 Ft.

8. TOTAL DEPTH OF BORING 18.8 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
			SAND, fine grained, trace organics, trace shell hash, trace silt, (2) (1.0"x1.0") shell fragments @ 0.1' and 3.4'; (2.0"x1.0") shell fragment @ 3.4'; mottled 2.5Y-7/2 and 5Y-7/1; silt distributed in lamina; organics < 1%, light gray (5Y-7/1), (SP).		1	Sample #1, Depth = 1.8' Mean (mm): 0.15, Phi Sorting: 0.40 Shell Hash: 0%, Fines (230): 1.29% (SP)
-3.6	3.6					
-4.0	4.0		SAND, fine grained, trace silt, (1.5"x1.0") shell fragment @ 3.7', light brownish gray (2.5Y-6/2), (SP).		2	Sample #2, Depth = 3.8' Mean (mm): 0.15, Phi Sorting: 0.37 Shell Hash: 0%, Fines (230): 2.99% (SP)
			SAND, fine grained, trace silt, (1.0"x0.75") whole shells @ 6.7' and 6.9'; 1.0" pocket mottled with little clay @ 6.9'; silt distributed in lamina, light gray (2.5Y-7/2), (SP).		3	Sample #3, Depth = 6.0' Mean (mm): 0.15, Phi Sorting: 0.45 Shell Hash: 0%, Fines (230): 1.99% (SP)
-7.8	7.8					
-8.4	8.4		SAND, fine grained, little clay, little silt, olive gray (5Y-5/2), (SM-SC).			
-8.9	8.9					
-9.5	9.5		SAND, fine grained, little silt, trace clay, trace shell hash, light olive gray (5Y-6/2), (SM).			
			SAND, fine grained, little shell fragments, little silt, trace shell hash, shell fragments up to (1.25"x0.75"), light olive gray (5Y-6/2), (SW-SM).			
			SAND, fine grained, little clay, little shell fragments, trace shell hash, trace silt, (1.0"x1.0") shell fragments @ 9.7', 10.7', 12.0', 12.2', 12.5' and 13.5'; (2.5"x1.5") shell fragment @ 10.8'; (1.75"x1.0") shell fragment @ 13.5', (3.0"x2.0") shell fragment @ 14.5', clay content decreases with depth, light brownish gray (2.5Y-6/2), (SM-SC).			
-15.7	15.7					
			No Recovery.			
-18.8	18.8					
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-07

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-07 | LOCATION COORDINATES: X = 433,503 Y = 1,131,479

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-20-07 15:03 | COMPLETED 02-20-07 15:08

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 14.7 Ft.

8. TOTAL DEPTH OF BORING 17.2 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-1.4	1.4		SAND, fine grained, little shell fragments, little shell hash, trace silt, shell fragments < 0.5", (1.0"x0.5") shell fragments @ 1.9' and 1.2', (1.25"x1.0") shell fragments @ 1.1' and 1.2', white (5Y-8/1), (SW).		1	Sample #1, Depth = 0.7' Mean (mm): 0.40, Phi Sorting: 1.78 Shell Hash: 11%, Fines (230): 1.35% (SW)
-3.5	3.5		SAND, fine grained, little shell fragments, little shell hash, trace silt, shell fragments up to (1.5"x1.0"), light gray (5Y-7/2), (SW).		2	Sample #2, Depth = 2.5' Mean (mm): 0.75, Phi Sorting: 2.03 Shell Hash: 22%, Fines (230): 1.08% (SW)
-4.2	4.2				3	Sample #3, Depth = 3.8' Mean (mm): 0.25, Phi Sorting: 1.38
-4.7	4.7		SAND, fine grained, trace shell fragments, trace shell hash, trace silt, little shell hash from 4.0' to 4.1'; shell fragments < 0.5"; (1.25"x1.0") shell fragment @ 3.9', white (5Y-8/1), (SW).		2	Shell Hash: 0%, Fines (230): 1.39% (SW)
-5.1	5.1				1	
-7.5	7.5		SAND, fine grained, little shell fragments, little shell hash, trace silt, shell fragments up to (1.25"x1.0"), light gray (5Y-7/2), (SW).		4	Sample #4, Depth = 6.3' Mean (mm): 0.14, Phi Sorting: 0.93 Shell Hash: 2%, Fines (230): 6.76% (SW-SM)
-12.2	12.2		SAND, fine grained, little shell hash, trace shell fragments, trace silt, shell fragments < 0.5", white (5Y-8/1), (SW). SAND, fine grained, trace clay, trace shell hash, trace silt, silt distributed in lamina; clay distributed in lamina; (1.25"x0.5") whole shell @ 7.3', olive gray (5Y-5/2), (SW-SM). SAND, fine grained, little clay, little shell fragments, little silt, trace shell hash, shell fragments up to (2.5"x1.5"), gray (5Y-5/1), (SM-SC).			
-14.7	14.7		CLAY, trace sand, trace shell fragments, trace shell hash, shell fragments < 0.5"; (2) (1.5"x1.0") shell fragments @ 12.6'; (3.0"x2.0") shell fragment @ 12.8', dark gray (5Y-4/1), (SC).			
-17.2	17.2		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-08

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-08 | LOCATION COORDINATES: X = 433,653 Y = 1,130,845

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-20-07 16:43 | COMPLETED 02-20-07 16:45

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 8.5 Ft.

8. TOTAL DEPTH OF BORING 16.9 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-1.3	1.3		SHELL HASH, some shell fragments, little sand, trace silt, shell fragments up to (1.75"x1.25"); (1.5"x0.75") rock @ 0.7', light gray (5Y-7/1), (SW).		1	Sample #1, Depth = 0.7' Mean (mm): 1.52, Phi Sorting: 2.07 Shell Hash: 33%, Fines (230): 2.06% (SW)
-1.8	1.8				2	Sample #2, Depth = 1.5'
-2.5	2.5		SAND, fine grained, little shell hash, trace silt, shell fragments up to (1.25"x1.0"), white (5Y-8/1), (SW).		1	Mean (mm): 0.48, Phi Sorting: 1.61 Shell Hash: 9%, Fines (230): 1.35% (SW)
-3.0	3.0				2	
-4.5	4.5		SHELL HASH, some shell fragments, little sand, trace silt, shell fragements up to (2.25"x1.5"), light gray (5Y-7/1), (SW).		1	
-6.3	6.3		SAND, fine grained, little shell fragments, little shell hash, trace silt, shell fragments up to (1.5"x0.75"), white (5Y-8/1), (SW).		3	Sample #3, Depth = 5.4' Mean (mm): 0.75, Phi Sorting: 1.70 Shell Hash: 14%, Fines (230): 2.44% (SW)
-7.5	7.5		SHELL HASH, some shell fragments, little sand, trace silt, shell fragments up to (1.25"x1.25"), light gray (5Y-7/1), (SW).		4	Sample #4, Depth = 6.9' Mean (mm): 0.44, Phi Sorting: 1.03 Shell Hash: 0%, Fines (230): 1.20% (SW)
-8.5	8.5		SHELL HASH, some sand, little shell fragments, trace silt, shell fragments up to (1.0"x1.0"), light gray (5Y-7/1), (SW).			
			SAND, fine grained, some shell hash, trace shell fragments, trace silt, shell fragments < 0.5"; (1.0"x0.5") shell fragment @ 7.5', white (5Y-8/1), (SW).			
			SAND, fine grained, trace shell fragments, trace shell hash, trace silt, silt distributed in lamina; shell fragments < 0.5", white (5Y-8/1), (SP).			
-16.9	16.9		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-16

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-16 | LOCATION COORDINATES: X = 433,544 Y = 1,130,795

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-21-07 16:21 | COMPLETED 02-21-07 16:24

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 9.3 Ft.

8. TOTAL DEPTH OF BORING 18.0 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
			SHELL FRAGMENTS, some shell hash, trace sand, trace silt, shell fragments up to (2.5"x1.5"), light gray (2.5Y-7/1), (GW).			
-8.7	8.7					
-9.3	9.3		SAND, fine grained, some shell hash, trace silt, white (5Y-8/1), (SP).			
			No Recovery.			
-18.0	18.0					
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-17

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-17
LOCATION COORDINATES: X = 430,589 Y = 1,144,145

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-22-07 08:58 | COMPLETED 02-22-07 09:00

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 11.7 Ft.

8. TOTAL DEPTH OF BORING 18.8 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-1.6	1.6		SAND, fine grained, trace shell hash, trace silt, silt distributed in lamina; 0.5" clay pocket @ 0.5' and 1.5', light gray (5Y-7/2), (SP).		1	Sample #1, Depth = 0.9' Mean (mm): 0.16, Phi Sorting: 0.45 Shell Hash: 0%, Fines (230): 1.39% (SP)
-4.6	4.6		Sandy CLAY, little shell fragments, trace shell hash, shell fragments up to (1.0"x1.0"), olive gray (5Y-4/2), (SC).			
-11.7	11.7		SAND, fine grained, little silt, trace clay, trace organics, trace shell hash, silt distributed in lamina; clay distributed in lamina, light gray (5Y-7/2), (SP).			
-18.8	18.8		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-18

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-18 | LOCATION COORDINATES: X = 430,955 Y = 1,144,486

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-22-07 09:42 | COMPLETED 02-22-07 09:42

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 16.5 Ft.

8. TOTAL DEPTH OF BORING 18.8 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-1.4	1.4		SAND, fine grained, trace shell fragments, trace shell hash, trace silt, silt distributed in lamina; 0.5" clay pocket @ 0.7', 0.9' and 1.1'; shell fragments < 0.5", light gray (5Y-7/2), (SP).		1	Sample #1, Depth = 0.7' Mean (mm): 0.20, Phi Sorting: 0.66 Shell Hash: 0%, Fines (230): 1.66% (SP)
-2.6	2.6		SAND, fine grained, little shell hash, trace shell fragments, trace silt, silt distributed in lamina; shell fragments < 0.5"; (1.0"x0.75") shell fragments @ 1.5', 1.7' and 2.0', light gray (5Y-7/2), (SW).		2	Sample #2, Depth = 2.0' Mean (mm): 0.35, Phi Sorting: 1.45 Shell Hash: 3%, Fines (230): 1.75% (SW)
-4.3	4.3				3	Sample #3, Depth = 3.4' Mean (mm): 1.04, Phi Sorting: 1.66 Shell Hash: 16%, Fines (230): 2.68% (SW)
-5.6	5.6		SHELL HASH, little shell fragments, trace sand, trace silt, shell fragments up to (1.0"x0.75"); 0.5" clay pocket @ 4.2', light olive gray (5Y-6/2), (SW).		2	
			SAND, fine grained, little shell hash, trace shell fragments, trace silt, silt distributed in lamina; shell fragments < 0.5", light gray (5Y-7/2), (SW).			
			Clayey SAND, fine grained, trace shell fragments, trace shell hash, trace silt, silt distributed in lamina; shell fragments < 0.5"; (1.0"x1.0") whole shells @ 6.2', 6.5' and 12.5'; (1.0"x0.75") shell fragments @ 7.7' and 11.4'; (1.75"x1.0") shell fragment @ 9.2'; some shell fragments up to (2.5"x1.25") from 14.6' to 15.1'), olive gray (5Y-4/2), (SC).			
-16.5	16.5					
-18.8	18.8		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-19

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-19 | LOCATION COORDINATES: X = 431,156 Y = 1,144,258

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

14. ELEVATION GROUND WATER

15. DATE BORING | STARTED 02-22-07 10:20 | COMPLETED 02-22-07 10:21

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 16.8 Ft.

8. TOTAL DEPTH OF BORING 18.8 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
-1.9	1.9		SAND, fine grained, trace shell fragments, trace shell hash, trace silt, silt distributed in lamina; shell fragments < 0.5"; mottled 5Y-6/1 and 5Y-7/2, light gray (5Y-7/2), (SW).		1	Sample #1, Depth = 1.0' Mean (mm): 0.23, Phi Sorting: 1.00 Shell Hash: 2%, Fines (230): 1.86% (SW)
-4.6	4.6		SHELL FRAGMENTS, some shell hash, little sand, trace silt, 0.25" organic pocket @ 2.8' shell fragments up to (1.0"x1.0"), light gray (2.5Y-7/2), (GW).		2	Sample #2, Depth = 3.3' Mean (mm): 0.59, Phi Sorting: 1.89 Shell Hash: 14%, Fines (230): 2.76% (SW)
-5.2	5.2		SAND, fine grained, trace shell fragments, trace shell hash, trace silt, silt distributed in lamin;, shell fragments < 0.5", light gray (5Y-7/2), (SW).		1	
-5.7	5.7				2	
-7.0	7.0		SHELL FRAGMENTS, some shell hash, little sand, trace silt, light gray (2.5Y-7/2), (GW).		3	Sample #3, Depth = 6.4' Mean (mm): 0.17, Phi Sorting: 0.36 Shell Hash: 0%, Fines (230): 2.27% (SP)
			SAND, fine grained, trace clay, trace shell hash, trace silt, trace wood, silt distributed in lamina; (1.0"x0.25") wood @ 6.3', light olive gray (5Y-6/2), (SP).			
-13.1	13.1		SAND, fine grained, some clay, little silt, trace shell hash, 1.0" clay pocket @ 7.1'; (1.25"x1.0") shell fragments @ 7.7' (3) and 8.8'; (2.0"x2.0") shell fragments @ 8.0', 8.8', 10.8' and 12.6'; (1.0"x1.0") shell fragments @ 10.7' (2), 11.2' (2), 11.9' and 12.9', dark gray (5Y-4/1), (SM-SC).			
-15.8	15.8		SAND, fine grained, little clay, little silt, trace organics, trace shell hash, silt distributed in lamina, olive gray (5Y-4/2), (SM-SC).			
-18.8	18.8		No Recovery.			
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation AMVC-07-20

DRILLING LOG

DIVISION

INSTALLATION

SHEET 1 OF 1 SHEETS

1. PROJECT
Anna Maria 2007 Sand Search
Anna Maria, Manatee County, FL

9. SIZE AND TYPE OF BIT 3.0 In.

10. COORDINATE SYSTEM/DATUM: Florida State Plane West | HORIZONTAL: NAD 1983 | VERTICAL:

2. BORING DESIGNATION: AMVC-07-20 | LOCATION COORDINATES: X = 430,935 Y = 1,143,913

11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER

3. DRILLING AGENCY | CONTRACTOR FILE NO.

12. TOTAL SAMPLES | DISTURBED | UNDISTURBED (UD)

4. NAME OF DRILLER
Gregg Brooks

13. TOTAL NUMBER CORE BOXES

14. ELEVATION GROUND WATER

5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL | BEARING

15. DATE BORING | STARTED 02-20-07 09:26 | COMPLETED 02-20-07 09:27

6. THICKNESS OF OVERBURDEN 0.0 Ft.

16. ELEVATION TOP OF BORING 0.0 Ft.

7. DEPTH DRILLED INTO ROCK 0.0 Ft.

17. TOTAL RECOVERY FOR BORING 14.8 Ft.

8. TOTAL DEPTH OF BORING 18.8 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR
JF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
0.0	0.0					
			SAND, fine grained, trace shell fragments, trace shell hash, trace silt, silt distributed in lamina; shell fragments < 0.5"; little shell fragments from 2.6' to 2.8'; (1.0"x1.0") shell fragment @ 3.9', white (5Y-8/1), (SP).		1	Sample #1, Depth = 2.0' Mean (mm): 0.21, Phi Sorting: 0.82 Shell Hash: 1%, Fines (230): 1.15% (SP)
-4.1	4.1					
			SAND, fine grained, some clay, trace shell fragments, trace silt, silt distributed in lamina; shell fragments < 0.5"; little shell fragments from 5.1' to 5.4'; (1.0"x1.0") shell fragments @ 4.8' (2), 5.2' (2) and 5.3' (3), light olive gray (5Y-6/2), (SW).		2	Sample #2, Depth = 5.4' Mean (mm): 0.21, Phi Sorting: 1.10 Shell Hash: 3%, Fines (230): 2.30% (SW)
-6.2	6.2					
-7.0	7.0				3	Sample #3, Depth = 6.6' Mean (mm): 0.81, Phi Sorting: 2.05 Shell Hash: 16%, Fines (230): 2.83% (SW)
			SHELL HASH, some sand, fine grained, some shell fragments, trace clay, trace silt, shell fragments up to (1.0"x1.0"), olive gray (5Y-5/2), (SW).			
			Clayey SAND, trace shell fragments, trace shell hash, trace silt, silt distributed in lamina; shell fragments < 0.5"; (1.75"x1.5") shell fragments @ 8.1' and 11.4', olive gray (5Y-4/2), (SC).			
-12.1	12.1					
			SAND, fine grained, little clay, trace shell hash, trace silt, silt distributed in lamina, light yellowish brown (2.5Y-6/3), (SC).			
-14.0	14.0					
			No Recovery.			
-18.8	18.8					
			End of Boring			

0 5 10 15 20 25

FLORIDA DEP ROSS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

APPENDIX 2

2007 CPE INDIVIDUAL VIBRACORE GRANULARMETRIC REPORTS

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-01 #1

Analysis Date: 03-08-07

Analyzed By: AU

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,831	1,143,326	Florida State Plane West	-0.6

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
78.74	77.43	0.01	0.05	#200 - 1.75 #230 - 1.74			3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.26	0.33	0.26	0.33
4	-2.25	4.76	0.29	0.37	0.55	0.70
5	-2.00	4.00	0.53	0.67	1.08	1.37
7	-1.50	2.83	1.58	2.01	2.66	3.38
10	-1.00	2.00	3.41	4.33	6.07	7.71
14	-0.50	1.41	3.94	5.00	10.01	12.71
18	0.00	1.00	2.99	3.80	13.00	16.51
25	0.50	0.71	3.35	4.25	16.35	20.76
35	1.00	0.50	3.62	4.60	19.97	25.36
45	1.50	0.35	3.71	4.71	23.68	30.07
60	2.00	0.25	7.22	9.17	30.90	39.24
80	2.50	0.18	22.17	28.16	53.07	67.40
120	3.00	0.13	22.35	28.38	75.42	95.78
170	3.50	0.09	1.90	2.41	77.32	98.19
200	3.75	0.07	0.05	0.06	77.37	98.25
230	4.00	0.06	0.01	0.01	77.38	98.26

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.99	2.79	2.63	2.19	0.96	-0.07	-1.31

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.62	0.33	1.38	-1.2	3.31

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-01 #2

Analysis Date: 03-08-07

Analyzed By: A U

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,831	1,143,326	Florida State Plane West	-1.5

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/2 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
78.62	76.92	0.01	0.17	#200 - 2.42 #230 - 2.33			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.13	0.17	0.13	0.17
5	-2.00	4.00	0.01	0.01	0.14	0.18
7	-1.50	2.83	0.09	0.11	0.23	0.29
10	-1.00	2.00	0.27	0.34	0.50	0.63
14	-0.50	1.41	0.48	0.61	0.98	1.24
18	0.00	1.00	0.46	0.59	1.44	1.83
25	0.50	0.71	0.63	0.80	2.07	2.63
35	1.00	0.50	0.80	1.02	2.87	3.65
45	1.50	0.35	1.05	1.34	3.92	4.99
60	2.00	0.25	2.65	3.37	6.57	8.36
80	2.50	0.18	17.89	22.76	24.46	31.12
120	3.00	0.13	43.52	55.35	67.98	86.47
170	3.50	0.09	8.45	10.75	76.43	97.22
200	3.75	0.07	0.28	0.36	76.71	97.58
230	4.00	0.06	0.07	0.09	76.78	97.67

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.40	2.98	2.90	2.67	2.37	2.17	1.50

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.53	0.17	0.68	-3.22	17.46

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-01 #3

Analysis Date: 03-08-07

Analyzed By: AU

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,831	1,143,326	Florida State Plane West	-6.1

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
74.80	73.48	0.02	0.08	#200 - 1.96 #230 - 1.88			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.04	0.05	0.04	0.05
5	-2.00	4.00	0.20	0.27	0.24	0.32
7	-1.50	2.83	0.88	1.18	1.12	1.50
10	-1.00	2.00	2.34	3.13	3.46	4.63
14	-0.50	1.41	3.59	4.80	7.05	9.43
18	0.00	1.00	3.41	4.56	10.46	13.99
25	0.50	0.71	3.69	4.93	14.15	18.92
35	1.00	0.50	3.68	4.92	17.83	23.84
45	1.50	0.35	3.42	4.57	21.25	28.41
60	2.00	0.25	5.80	7.75	27.05	36.16
80	2.50	0.18	20.52	27.43	47.57	63.59
120	3.00	0.13	24.00	32.09	71.57	95.68
170	3.50	0.09	1.70	2.27	73.27	97.95
200	3.75	0.07	0.07	0.09	73.34	98.04
230	4.00	0.06	0.06	0.08	73.40	98.12

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.99	2.82	2.68	2.25	1.13	0.20	-0.96

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.74	0.30	1.27	-1.2	3.3

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-03 #1

Analysis Date: 03-08-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,627	1,132,302	Florida State Plane West	-4.0

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
81.94	81.03	0.01	0.00	#200 - 1.18 #230 - 1.14			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.01	0.01	0.01	0.01
14	-0.50	1.41	0.02	0.02	0.03	0.03
18	0.00	1.00	0.01	0.01	0.04	0.04
25	0.50	0.71	0.02	0.02	0.06	0.06
35	1.00	0.50	0.02	0.02	0.08	0.08
45	1.50	0.35	0.06	0.07	0.14	0.15
60	2.00	0.25	0.28	0.34	0.42	0.49
80	2.50	0.18	21.77	26.57	22.19	27.06
120	3.00	0.13	50.00	61.02	72.19	88.08
170	3.50	0.09	8.56	10.45	80.75	98.53
200	3.75	0.07	0.24	0.29	80.99	98.82
230	4.00	0.06	0.03	0.04	81.02	98.86

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.33	2.97	2.89	2.69	2.46	2.29	2.08

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.66	0.16	0.32	-0.74	10.64

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-03 #2

Analysis Date: 03-08-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,627	1,132,302	Florida State Plane West	-8.0

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
77.64	76.70	0.01	0.00	#200 - 1.25 #230 - 1.21			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.01	0.01	0.01	0.01
14	-0.50	1.41	0.02	0.03	0.03	0.04
18	0.00	1.00	0.02	0.03	0.05	0.07
25	0.50	0.71	0.02	0.03	0.07	0.10
35	1.00	0.50	0.06	0.08	0.13	0.18
45	1.50	0.35	0.10	0.13	0.23	0.31
60	2.00	0.25	0.49	0.63	0.72	0.94
80	2.50	0.18	16.59	21.37	17.31	22.31
120	3.00	0.13	49.74	64.06	67.05	86.37
170	3.50	0.09	9.37	12.07	76.42	98.44
200	3.75	0.07	0.24	0.31	76.66	98.75
230	4.00	0.06	0.03	0.04	76.69	98.79

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.36	2.98	2.91	2.72	2.52	2.35	2.09

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.69	0.15	0.33	-1.12	12.65

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-03 #3

Analysis Date: 03-08-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,627	1,132,302	Florida State Plane West	-12.0

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
83.49	82.37	0.01	0.00	#200 - 1.36 #230 - 1.35			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.29	0.35	0.29	0.35
5	-2.00	4.00	0.00	0.00	0.29	0.35
7	-1.50	2.83	0.14	0.17	0.43	0.52
10	-1.00	2.00	0.24	0.29	0.67	0.81
14	-0.50	1.41	0.33	0.40	1.00	1.21
18	0.00	1.00	0.34	0.41	1.34	1.62
25	0.50	0.71	0.49	0.59	1.83	2.21
35	1.00	0.50	0.78	0.93	2.61	3.14
45	1.50	0.35	1.94	2.32	4.55	5.46
60	2.00	0.25	7.39	8.85	11.94	14.31
80	2.50	0.18	40.60	48.63	52.54	62.94
120	3.00	0.13	27.28	32.67	79.82	95.61
170	3.50	0.09	2.48	2.97	82.30	98.58
200	3.75	0.07	0.05	0.06	82.35	98.64
230	4.00	0.06	0.01	0.01	82.36	98.65

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.99	2.82	2.68	2.37	2.11	2.02	1.40

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.3	0.20	0.64	-3.33	20.58

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-04 #1

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,879	1,133,137	Florida State Plane West	-3.0

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
88.45	87.44	0.01	0.00	#200 - 1.19 #230 - 1.17			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.01	0.01	0.01	0.01
10	-1.00	2.00	0.03	0.03	0.04	0.04
14	-0.50	1.41	0.07	0.08	0.11	0.12
18	0.00	1.00	0.11	0.12	0.22	0.24
25	0.50	0.71	0.21	0.24	0.43	0.48
35	1.00	0.50	0.24	0.27	0.67	0.75
45	1.50	0.35	0.38	0.43	1.05	1.18
60	2.00	0.25	2.01	2.27	3.06	3.45
80	2.50	0.18	29.39	33.23	32.45	36.68
120	3.00	0.13	46.98	53.11	79.43	89.79
170	3.50	0.09	7.65	8.65	87.08	98.44
200	3.75	0.07	0.33	0.37	87.41	98.81
230	4.00	0.06	0.02	0.02	87.43	98.83

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.30	2.95	2.86	2.63	2.32	2.19	2.02

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.58	0.17	0.41	-1.97	15.85

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-04 #2

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,879	1,133,137	Florida State Plane West	-6.0

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
91.20	90.21	0.00	0.00	#200 - 1.10 #230 - 1.09			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.00	0.00	0.00	0.00
14	-0.50	1.41	0.05	0.05	0.05	0.05
18	0.00	1.00	0.05	0.05	0.10	0.10
25	0.50	0.71	0.10	0.11	0.20	0.21
35	1.00	0.50	0.18	0.20	0.38	0.41
45	1.50	0.35	0.24	0.26	0.62	0.67
60	2.00	0.25	1.10	1.21	1.72	1.88
80	2.50	0.18	26.54	29.10	28.26	30.98
120	3.00	0.13	53.93	59.13	82.19	90.11
170	3.50	0.09	7.83	8.59	90.02	98.70
200	3.75	0.07	0.18	0.20	90.20	98.90
230	4.00	0.06	0.01	0.01	90.21	98.91

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.28	2.95	2.87	2.66	2.40	2.24	2.05

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.62	0.16	0.35	-1.52	13.18

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-05 #1

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,029	1,128,780	Florida State Plane West	-1.1

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-7/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
84.19	83.03	0.01	0.00	#200 - 1.41 #230 - 1.39			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.04	0.05	0.04	0.05
10	-1.00	2.00	0.11	0.13	0.15	0.18
14	-0.50	1.41	0.13	0.15	0.28	0.33
18	0.00	1.00	0.07	0.08	0.35	0.41
25	0.50	0.71	0.08	0.10	0.43	0.51
35	1.00	0.50	0.08	0.10	0.51	0.61
45	1.50	0.35	0.08	0.10	0.59	0.71
60	2.00	0.25	0.23	0.27	0.82	0.98
80	2.50	0.18	11.49	13.65	12.31	14.63
120	3.00	0.13	56.56	67.18	68.87	81.81
170	3.50	0.09	14.07	16.71	82.94	98.52
200	3.75	0.07	0.06	0.07	83.00	98.59
230	4.00	0.06	0.02	0.02	83.02	98.61

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	3.07	2.95	2.76	2.58	2.51	2.15

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.74	0.15	0.39	-4.11	40.43

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-05 #2

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,029	1,128,780	Florida State Plane West	-2.9

USCS:	Munsell:	Comments:
SW	Wet - 2.5Y-7/1 Dry - 2.5Y-7/1 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
83.51	81.39	0.04	0.05	#200 - 2.77 #230 - 2.63			24

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	2.65	3.17	2.65	3.17
5/16"	-3.00	8.00	1.38	1.65	4.03	4.82
3.5	-2.50	5.66	3.63	4.35	7.66	9.17
4	-2.25	4.76	2.04	2.44	9.70	11.61
5	-2.00	4.00	3.52	4.22	13.22	15.83
7	-1.50	2.83	6.69	8.01	19.91	23.84
10	-1.00	2.00	6.87	8.23	26.78	32.07
14	-0.50	1.41	5.07	6.07	31.85	38.14
18	0.00	1.00	2.89	3.46	34.74	41.60
25	0.50	0.71	2.41	2.89	37.15	44.49
35	1.00	0.50	1.40	1.68	38.55	46.17
45	1.50	0.35	0.83	0.99	39.38	47.16
60	2.00	0.25	0.82	0.98	40.20	48.14
80	2.50	0.18	2.83	3.39	43.03	51.53
120	3.00	0.13	25.36	30.37	68.39	81.90
170	3.50	0.09	12.10	14.49	80.49	96.39
200	3.75	0.07	0.70	0.84	81.19	97.23
230	4.00	0.06	0.12	0.14	81.31	97.37

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.45	3.07	2.89	2.27	-1.43	-1.99	-2.98

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	0.75	0.59	2.34	-0.37	1.55

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-05 #3

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,029	1,128,780	Florida State Plane West	-3.6

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/2 Dry - 5Y-6/2 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
78.07	75.51	0.07	0.04	#200 - 3.70 #230 - 3.41			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.02	0.03	0.02	0.03
10	-1.00	2.00	0.01	0.01	0.03	0.04
14	-0.50	1.41	0.02	0.03	0.05	0.07
18	0.00	1.00	0.02	0.03	0.07	0.10
25	0.50	0.71	0.06	0.08	0.13	0.18
35	1.00	0.50	0.03	0.04	0.16	0.22
45	1.50	0.35	0.07	0.09	0.23	0.31
60	2.00	0.25	0.15	0.19	0.38	0.50
80	2.50	0.18	1.65	2.11	2.03	2.61
120	3.00	0.13	48.81	62.52	50.84	65.13
170	3.50	0.09	22.37	28.65	73.21	93.78
200	3.75	0.07	1.97	2.52	75.18	96.30
230	4.00	0.06	0.23	0.29	75.41	96.59

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.62	3.33	3.17	2.88	2.68	2.61	2.52

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.9	0.13	0.32	-2.02	29.33

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-05 #4

Analysis Date: 03-08-07

Analyzed By: AU

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,029	1,128,780	Florida State Plane West	-7.5

USCS:	Munsell:	Comments:
SP	Wet - 2.5Y-7/2 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
75.64	74.51	0.03	0.08	#200 - 1.70 #230 - 1.59			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.00	0.00	0.00	0.00
14	-0.50	1.41	0.02	0.03	0.02	0.03
18	0.00	1.00	0.02	0.03	0.04	0.06
25	0.50	0.71	0.02	0.03	0.06	0.09
35	1.00	0.50	0.02	0.03	0.08	0.12
45	1.50	0.35	0.02	0.03	0.10	0.15
60	2.00	0.25	0.09	0.12	0.19	0.27
80	2.50	0.18	2.13	2.82	2.32	3.09
120	3.00	0.13	40.38	53.38	42.70	56.47
170	3.50	0.09	30.91	40.86	73.61	97.33
200	3.75	0.07	0.73	0.97	74.34	98.30
230	4.00	0.06	0.08	0.11	74.42	98.41

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.47	3.34	3.23	2.94	2.71	2.62	2.52

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.95	0.13	0.3	-1.2	14.3

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-06 #1

Analysis Date: 03-08-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
436,754	1,128,828	Florida State Plane West	-1.8

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/1 Dry - 5Y-7/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
72.70	71.76	0.00	0.00	#200 - 1.33 #230 - 1.29			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.06	0.08	0.06	0.08
10	-1.00	2.00	0.07	0.10	0.13	0.18
14	-0.50	1.41	0.09	0.12	0.22	0.30
18	0.00	1.00	0.12	0.17	0.34	0.47
25	0.50	0.71	0.08	0.11	0.42	0.58
35	1.00	0.50	0.07	0.10	0.49	0.68
45	1.50	0.35	0.09	0.12	0.58	0.80
60	2.00	0.25	0.24	0.33	0.82	1.13
80	2.50	0.18	8.67	11.93	9.49	13.06
120	3.00	0.13	48.74	67.04	58.23	80.10
170	3.50	0.09	13.26	18.24	71.49	98.34
200	3.75	0.07	0.24	0.33	71.73	98.67
230	4.00	0.06	0.03	0.04	71.76	98.71

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	3.11	2.96	2.78	2.59	2.52	2.16

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.76	0.15	0.4	-4.14	39.96

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-06 #2

Analysis Date: 03-08-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
436,754	1,128,828	Florida State Plane West	-3.8

USCS:	Munsell:	Comments:
SP	Wet - 2.5Y-6/2 Dry - 2.5Y-6/1 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
78.80	76.45	0.01	0.00	#200 - 3.14 #230 - 2.99			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.03	0.04	0.03	0.04
14	-0.50	1.41	0.04	0.05	0.07	0.09
18	0.00	1.00	0.06	0.08	0.13	0.17
25	0.50	0.71	0.08	0.10	0.21	0.27
35	1.00	0.50	0.06	0.08	0.27	0.35
45	1.50	0.35	0.10	0.13	0.37	0.48
60	2.00	0.25	0.25	0.32	0.62	0.80
80	2.50	0.18	17.78	22.56	18.40	23.36
120	3.00	0.13	46.55	59.07	64.95	82.43
170	3.50	0.09	10.75	13.64	75.70	96.07
200	3.75	0.07	0.62	0.79	76.32	96.86
230	4.00	0.06	0.12	0.15	76.44	97.01

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.46	3.06	2.94	2.73	2.51	2.34	2.09

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.7	0.15	0.37	-1.66	17.56

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-06 #3

Analysis Date: 03-08-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
436,754	1,128,828	Florida State Plane West	-6.0

USCS:	Munsell:	Comments:
SP	Wet - 2.5Y-7/2 Dry - 2.5Y-7/1 Washed - 2.5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
79.86	78.27	0.01	0.00	#200 - 2.08 #230 - 1.99			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.21	0.26	0.21	0.26
5	-2.00	4.00	0.12	0.15	0.33	0.41
7	-1.50	2.83	0.02	0.03	0.35	0.44
10	-1.00	2.00	0.02	0.03	0.37	0.47
14	-0.50	1.41	0.04	0.05	0.41	0.52
18	0.00	1.00	0.08	0.10	0.49	0.62
25	0.50	0.71	0.04	0.05	0.53	0.67
35	1.00	0.50	0.06	0.08	0.59	0.75
45	1.50	0.35	0.06	0.08	0.65	0.83
60	2.00	0.25	0.15	0.19	0.80	1.02
80	2.50	0.18	4.54	5.68	5.34	6.70
120	3.00	0.13	58.81	73.64	64.15	80.34
170	3.50	0.09	13.40	16.78	77.55	97.12
200	3.75	0.07	0.64	0.80	78.19	97.92
230	4.00	0.06	0.07	0.09	78.26	98.01

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	3.11	2.96	2.79	2.62	2.56	2.35

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.78	0.15	0.45	-6.93	75.52

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-07 #1

Analysis Date: 03-06-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,503	1,131,479	Florida State Plane West	-0.7

USCS:	Munsell:	Comments:
SW	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
88.60	87.43	0.02	0.00	#200 - 1.41 #230 - 1.35			11

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	2.77	3.13	2.77	3.13
3.5	-2.50	5.66	2.19	2.47	4.96	5.60
4	-2.25	4.76	0.77	0.87	5.73	6.47
5	-2.00	4.00	0.50	0.56	6.23	7.03
7	-1.50	2.83	3.75	4.23	9.98	11.26
10	-1.00	2.00	3.52	3.97	13.50	15.23
14	-0.50	1.41	3.47	3.92	16.97	19.15
18	0.00	1.00	2.89	3.26	19.86	22.41
25	0.50	0.71	2.93	3.31	22.79	25.72
35	1.00	0.50	2.99	3.37	25.78	29.09
45	1.50	0.35	3.71	4.19	29.49	33.28
60	2.00	0.25	9.71	10.96	39.20	44.24
80	2.50	0.18	23.42	26.43	62.62	70.67
120	3.00	0.13	19.59	22.11	82.21	92.78
170	3.50	0.09	4.84	5.46	87.05	98.24
200	3.75	0.07	0.31	0.35	87.36	98.59
230	4.00	0.06	0.05	0.06	87.41	98.65

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.20	2.80	2.60	2.11	0.39	-0.90	-2.62

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.33	0.40	1.78	-1.16	3.16

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-07 #2

Analysis Date: 03-06-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,503	1,131,479	Florida State Plane West	-2.5

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-7/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
92.77	91.79	0.01	0.00	#200 - 1.11 #230 - 1.08			22

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	1.83	1.97	1.83	1.97
5/16"	-3.00	8.00	2.71	2.92	4.54	4.89
3.5	-2.50	5.66	4.75	5.12	9.29	10.01
4	-2.25	4.76	2.17	2.34	11.46	12.35
5	-2.00	4.00	3.57	3.85	15.03	16.20
7	-1.50	2.83	6.59	7.10	21.62	23.30
10	-1.00	2.00	6.35	6.84	27.97	30.14
14	-0.50	1.41	6.35	6.84	34.32	36.98
18	0.00	1.00	4.58	4.94	38.90	41.92
25	0.50	0.71	4.00	4.31	42.90	46.23
35	1.00	0.50	3.80	4.10	46.70	50.33
45	1.50	0.35	4.23	4.56	50.93	54.89
60	2.00	0.25	9.05	9.76	59.98	64.65
80	2.50	0.18	17.43	18.79	77.41	83.44
120	3.00	0.13	11.74	12.65	89.15	96.09
170	3.50	0.09	2.42	2.61	91.57	98.70
200	3.75	0.07	0.18	0.19	91.75	98.89
230	4.00	0.06	0.03	0.03	91.78	98.92

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.52	2.28	0.96	-1.38	-2.01	-2.99

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.42	0.75	2.03	-0.37	1.77

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-07 #3

Analysis Date: 03-06-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,503	1,131,479	Florida State Plane West	-3.8

USCS:	Munsell:	Comments:
SW	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
90.04	88.80	0.01	0.01	#200 - 1.45 #230 - 1.39			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.99	1.10	0.99	1.10
5/16"	-3.00	8.00	0.70	0.78	1.69	1.88
3.5	-2.50	5.66	0.94	1.04	2.63	2.92
4	-2.25	4.76	0.47	0.52	3.10	3.44
5	-2.00	4.00	0.17	0.19	3.27	3.63
7	-1.50	2.83	1.51	1.68	4.78	5.31
10	-1.00	2.00	1.39	1.54	6.17	6.85
14	-0.50	1.41	1.25	1.39	7.42	8.24
18	0.00	1.00	0.95	1.06	8.37	9.30
25	0.50	0.71	1.04	1.16	9.41	10.46
35	1.00	0.50	1.18	1.31	10.59	11.77
45	1.50	0.35	1.76	1.95	12.35	13.72
60	2.00	0.25	5.77	6.41	18.12	20.13
80	2.50	0.18	37.00	41.09	55.12	61.22
120	3.00	0.13	27.23	30.24	82.35	91.46
170	3.50	0.09	6.02	6.69	88.37	98.15
200	3.75	0.07	0.36	0.40	88.73	98.55
230	4.00	0.06	0.05	0.06	88.78	98.61

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.26	2.88	2.73	2.36	2.06	1.68	-1.59

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.99	0.25	1.38	-2.49	8.89

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-07 #4

Analysis Date: 03-07-07

Analyzed By: AU

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,503	1,131,479	Florida State Plane West	-6.3

USCS:	Munsell:	Comments:
SW-SM	Wet - 5Y-5/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
90.21	84.66	0.46	0.10	#200 - 7.27 #230 - 6.76			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.51	0.57	0.51	0.57
4	-2.25	4.76	0.30	0.33	0.81	0.90
5	-2.00	4.00	0.25	0.28	1.06	1.18
7	-1.50	2.83	0.45	0.50	1.51	1.68
10	-1.00	2.00	0.37	0.41	1.88	2.09
14	-0.50	1.41	0.45	0.50	2.33	2.59
18	0.00	1.00	0.30	0.33	2.63	2.92
25	0.50	0.71	0.47	0.52	3.10	3.44
35	1.00	0.50	0.40	0.44	3.50	3.88
45	1.50	0.35	0.45	0.50	3.95	4.38
60	2.00	0.25	0.87	0.96	4.82	5.34
80	2.50	0.18	5.61	6.22	10.43	11.56
120	3.00	0.13	34.83	38.61	45.26	50.17
170	3.50	0.09	35.08	38.89	80.34	89.06
200	3.75	0.07	3.31	3.67	83.65	92.73
230	4.00	0.06	0.46	0.51	84.11	93.24

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.43	3.32	3.00	2.67	2.56	1.82

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.79	0.14	0.93	-3.9	20.34

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-08 #1

Analysis Date: 03-09-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,653	1,130,845	Florida State Plane West	-0.7

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/1 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
97.24	95.37	0.02	0.10	#200 - 2.12 #230 - 2.06			33

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	5.65	5.81	5.65	5.81
5/16"	-3.00	8.00	8.26	8.49	13.91	14.30
3.5	-2.50	5.66	10.13	10.42	24.04	24.72
4	-2.25	4.76	4.21	4.33	28.25	29.05
5	-2.00	4.00	3.05	3.14	31.30	32.19
7	-1.50	2.83	6.85	7.04	38.15	39.23
10	-1.00	2.00	7.04	7.24	45.19	46.47
14	-0.50	1.41	6.85	7.04	52.04	53.51
18	0.00	1.00	5.08	5.22	57.12	58.73
25	0.50	0.71	5.51	5.67	62.63	64.40
35	1.00	0.50	4.69	4.82	67.32	69.22
45	1.50	0.35	4.84	4.98	72.16	74.20
60	2.00	0.25	8.01	8.24	80.17	82.44
80	2.50	0.18	10.13	10.42	90.30	92.86
120	3.00	0.13	4.00	4.11	94.30	96.97
170	3.50	0.09	0.73	0.75	95.03	97.72
200	3.75	0.07	0.16	0.16	95.19	97.88
230	4.00	0.06	0.06	0.06	95.25	97.94

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.76	2.07	1.55	-0.75	-2.48	-2.92	-3.60

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	-0.6	1.52	2.07	0.14	1.69

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-08 #2

Analysis Date: 03-09-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,653	1,130,845	Florida State Plane West	-1.5

USCS:	Munsell:	Comments:
SW	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
94.86	93.68	0.00	0.09	#200 - 1.36 #230 - 1.35			9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	1.22	1.29	1.22	1.29
3.5	-2.50	5.66	1.10	1.16	2.32	2.45
4	-2.25	4.76	1.56	1.64	3.88	4.09
5	-2.00	4.00	1.31	1.38	5.19	5.47
7	-1.50	2.83	3.97	4.19	9.16	9.66
10	-1.00	2.00	4.52	4.76	13.68	14.42
14	-0.50	1.41	5.91	6.23	19.59	20.65
18	0.00	1.00	4.49	4.73	24.08	25.38
25	0.50	0.71	6.11	6.44	30.19	31.82
35	1.00	0.50	6.08	6.41	36.27	38.23
45	1.50	0.35	6.69	7.05	42.96	45.28
60	2.00	0.25	12.36	13.03	55.32	58.31
80	2.50	0.18	22.69	23.92	78.01	82.23
120	3.00	0.13	13.94	14.70	91.95	96.93
170	3.50	0.09	1.56	1.64	93.51	98.57
200	3.75	0.07	0.07	0.07	93.58	98.64
230	4.00	0.06	0.01	0.01	93.59	98.65

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.56	2.35	1.68	-0.04	-0.87	-2.09

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.06	0.48	1.61	-0.84	2.62

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-08 #3

Analysis Date: 03-09-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,653	1,130,845	Florida State Plane West	-5.4

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/1 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
95.13	92.96	0.02	0.14	#200 - 2.48 #230 - 2.44			14

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	1.81	1.90	1.81	1.90
5/16"	-3.00	8.00	1.96	2.06	3.77	3.96
3.5	-2.50	5.66	2.07	2.18	5.84	6.14
4	-2.25	4.76	1.44	1.51	7.28	7.65
5	-2.00	4.00	1.39	1.46	8.67	9.11
7	-1.50	2.83	4.52	4.75	13.19	13.86
10	-1.00	2.00	6.40	6.73	19.59	20.59
14	-0.50	1.41	9.38	9.86	28.97	30.45
18	0.00	1.00	6.13	6.44	35.10	36.89
25	0.50	0.71	9.56	10.05	44.66	46.94
35	1.00	0.50	9.59	10.08	54.25	57.02
45	1.50	0.35	8.93	9.39	63.18	66.41
60	2.00	0.25	9.79	10.29	72.97	76.70
80	2.50	0.18	10.26	10.79	83.23	87.49
120	3.00	0.13	7.97	8.38	91.20	95.87
170	3.50	0.09	1.50	1.58	92.70	97.45
200	3.75	0.07	0.07	0.07	92.77	97.52
230	4.00	0.06	0.04	0.04	92.81	97.56

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	2.34	1.92	0.65	-0.78	-1.34	-2.76

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	0.41	0.75	1.7	-0.45	2.45

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-08 #4

Analysis Date: 03-09-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,653	1,130,845	Florida State Plane West	-6.9

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/1 Dry - 5Y-7/1 Washed - 5Y-7/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
97.08	95.96	0.04	0.00	#200 - 1.20 #230 - 1.20			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.44	0.45	0.44	0.45
4	-2.25	4.76	0.31	0.32	0.75	0.77
5	-2.00	4.00	0.37	0.38	1.12	1.15
7	-1.50	2.83	1.00	1.03	2.12	2.18
10	-1.00	2.00	1.35	1.39	3.47	3.57
14	-0.50	1.41	2.98	3.07	6.45	6.64
18	0.00	1.00	4.57	4.71	11.02	11.35
25	0.50	0.71	9.30	9.58	20.32	20.93
35	1.00	0.50	13.59	14.00	33.91	34.93
45	1.50	0.35	21.05	21.68	54.96	56.61
60	2.00	0.25	22.59	23.27	77.55	79.88
80	2.50	0.18	11.53	11.88	89.08	91.76
120	3.00	0.13	6.02	6.20	95.10	97.96
170	3.50	0.09	0.78	0.80	95.88	98.76
200	3.75	0.07	0.04	0.04	95.92	98.80
230	4.00	0.06	0.00	0.00	95.92	98.80

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.76	2.17	1.90	1.35	0.65	0.24	-0.77

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.19	0.44	1.03	-0.91	4.3

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-17 #1

Analysis Date: 03-09-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,589	1,144,145	Florida State Plane West	-0.9

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
95.29	94.00	0.02	0.00	#200 - 1.44 #230 - 1.39			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.02	0.02	0.02	0.02
10	-1.00	2.00	0.06	0.06	0.08	0.08
14	-0.50	1.41	0.10	0.10	0.18	0.18
18	0.00	1.00	0.14	0.15	0.32	0.33
25	0.50	0.71	0.29	0.30	0.61	0.63
35	1.00	0.50	0.49	0.51	1.10	1.14
45	1.50	0.35	0.81	0.85	1.91	1.99
60	2.00	0.25	1.92	2.01	3.83	4.00
80	2.50	0.18	25.63	26.90	29.46	30.90
120	3.00	0.13	54.33	57.02	83.79	87.92
170	3.50	0.09	9.44	9.91	93.23	97.83
200	3.75	0.07	0.70	0.73	93.93	98.56
230	4.00	0.06	0.05	0.05	93.98	98.61

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.36	2.97	2.89	2.67	2.39	2.22	2.02

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.61	0.16	0.45	-2.37	16.98

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/10/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-18 #1

Analysis Date: 03-08-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,955	1,144,486	Florida State Plane West	-0.7

USCS:	Munsell:	Comments:
SP	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
90.41	88.94	0.03	0.00	#200 - 1.69 #230 - 1.66			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.03	0.03	0.03	0.03
7	-1.50	2.83	0.12	0.13	0.15	0.16
10	-1.00	2.00	0.16	0.18	0.31	0.34
14	-0.50	1.41	0.41	0.45	0.72	0.79
18	0.00	1.00	0.54	0.60	1.26	1.39
25	0.50	0.71	1.25	1.38	2.51	2.77
35	1.00	0.50	1.96	2.17	4.47	4.94
45	1.50	0.35	3.08	3.41	7.55	8.35
60	2.00	0.25	6.46	7.15	14.01	15.50
80	2.50	0.18	33.85	37.44	47.86	52.94
120	3.00	0.13	36.62	40.50	84.48	93.44
170	3.50	0.09	4.24	4.69	88.72	98.13
200	3.75	0.07	0.16	0.18	88.88	98.31
230	4.00	0.06	0.03	0.03	88.91	98.34

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.17	2.88	2.77	2.46	2.13	2.01	1.01

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.33	0.20	0.66	-2.24	10.52

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-18 #2

Analysis Date: 03-08-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,955	1,144,486	Florida State Plane West	-2.0

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
94.52	93.02	0.03	0.14	#200 - 1.79 #230 - 1.75			3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.24	0.25	0.24	0.25
4	-2.25	4.76	0.40	0.42	0.64	0.67
5	-2.00	4.00	0.69	0.73	1.33	1.40
7	-1.50	2.83	1.95	2.06	3.28	3.46
10	-1.00	2.00	4.30	4.55	7.58	8.01
14	-0.50	1.41	6.66	7.05	14.24	15.06
18	0.00	1.00	4.41	4.67	18.65	19.73
25	0.50	0.71	5.04	5.33	23.69	25.06
35	1.00	0.50	4.42	4.68	28.11	29.74
45	1.50	0.35	4.93	5.22	33.04	34.96
60	2.00	0.25	7.72	8.17	40.76	43.13
80	2.50	0.18	23.04	24.38	63.80	67.51
120	3.00	0.13	25.35	26.82	89.15	94.33
170	3.50	0.09	3.45	3.65	92.60	97.98
200	3.75	0.07	0.22	0.23	92.82	98.21
230	4.00	0.06	0.04	0.04	92.86	98.25

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.09	2.81	2.64	2.14	0.49	-0.40	-1.33

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.51	0.35	1.45	-0.94	2.66

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-18 #3

Analysis Date: 03-08-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,955	1,144,486	Florida State Plane West	-3.4

USCS:	Munsell:	Comments:
SW	Wet - 5Y-6/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
93.42	91.08	0.03	0.12	#200 - 2.73 #230 - 2.68			16

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	1.00	1.07	1.00	1.07
3.5	-2.50	5.66	2.17	2.32	3.17	3.39
4	-2.25	4.76	1.00	1.07	4.17	4.46
5	-2.00	4.00	2.01	2.15	6.18	6.61
7	-1.50	2.83	9.68	10.36	15.86	16.97
10	-1.00	2.00	16.07	17.20	31.93	34.17
14	-0.50	1.41	15.22	16.29	47.15	50.46
18	0.00	1.00	7.96	8.52	55.11	58.98
25	0.50	0.71	7.24	7.75	62.35	66.73
35	1.00	0.50	4.09	4.38	66.44	71.11
45	1.50	0.35	2.98	3.19	69.42	74.30
60	2.00	0.25	3.02	3.23	72.44	77.53
80	2.50	0.18	7.44	7.96	79.88	85.49
120	3.00	0.13	9.13	9.77	89.01	95.26
170	3.50	0.09	1.73	1.85	90.74	97.11
200	3.75	0.07	0.15	0.16	90.89	97.27
230	4.00	0.06	0.05	0.05	90.94	97.32

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.99	2.41	1.61	-0.51	-1.27	-1.55	-2.19

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	-0.05	1.04	1.66	0.48	2.13

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-19 #1

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
431,156	1,144,258	Florida State Plane West	-1.0

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
83.92	82.42	0.01	0.06	#200 - 1.90 #230 - 1.86			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.23	0.27	0.23	0.27
4	-2.25	4.76	0.04	0.05	0.27	0.32
5	-2.00	4.00	0.33	0.39	0.60	0.71
7	-1.50	2.83	0.69	0.82	1.29	1.53
10	-1.00	2.00	1.05	1.25	2.34	2.78
14	-0.50	1.41	1.39	1.66	3.73	4.44
18	0.00	1.00	1.27	1.51	5.00	5.95
25	0.50	0.71	1.44	1.72	6.44	7.67
35	1.00	0.50	1.73	2.06	8.17	9.73
45	1.50	0.35	2.83	3.37	11.00	13.10
60	2.00	0.25	6.03	7.19	17.03	20.29
80	2.50	0.18	29.32	34.94	46.35	55.23
120	3.00	0.13	32.34	38.54	78.69	93.77
170	3.50	0.09	3.47	4.13	82.16	97.90
200	3.75	0.07	0.17	0.20	82.33	98.10
230	4.00	0.06	0.03	0.04	82.36	98.14

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.15	2.87	2.76	2.43	2.07	1.70	-0.31

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.15	0.23	1	-2.37	8.97

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-19 #2

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
431,156	1,144,258	Florida State Plane West	-3.3

USCS:	Munsell:	Comments:
SW	Wet - 5Y-7/2 Dry - 5Y-7/2 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
86.43	84.12	0.03	0.06	#200 - 2.88 #230 - 2.76			14

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.71	0.82	0.71	0.82
3.5	-2.50	5.66	1.40	1.62	2.11	2.44
4	-2.25	4.76	1.58	1.83	3.69	4.27
5	-2.00	4.00	1.48	1.71	5.17	5.98
7	-1.50	2.83	6.97	8.06	12.14	14.04
10	-1.00	2.00	9.27	10.73	21.41	24.77
14	-0.50	1.41	8.83	10.22	30.24	34.99
18	0.00	1.00	5.10	5.90	35.34	40.89
25	0.50	0.71	3.44	3.98	38.78	44.87
35	1.00	0.50	2.10	2.43	40.88	47.30
45	1.50	0.35	2.10	2.43	42.98	49.73
60	2.00	0.25	3.44	3.98	46.42	53.71
80	2.50	0.18	15.34	17.75	61.76	71.46
120	3.00	0.13	18.82	21.77	80.58	93.23
170	3.50	0.09	3.10	3.59	83.68	96.82
200	3.75	0.07	0.26	0.30	83.94	97.12
230	4.00	0.06	0.10	0.12	84.04	97.24

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.25	2.79	2.58	1.53	-0.99	-1.41	-2.14

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	0.76	0.59	1.89	-0.27	1.55

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-19 #3

Analysis Date: 03-07-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
431,156	1,144,258	Florida State Plane West	-6.4

USCS:	Munsell:	Comments:
SP	Wet - 5Y-6/2 Dry - 5Y-6/2 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
84.01	82.12	0.01	0.00	#200 - 2.31 #230 - 2.27			0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.06	0.07	0.06	0.07
10	-1.00	2.00	0.01	0.01	0.07	0.08
14	-0.50	1.41	0.05	0.06	0.12	0.14
18	0.00	1.00	0.07	0.08	0.19	0.22
25	0.50	0.71	0.06	0.07	0.25	0.29
35	1.00	0.50	0.07	0.08	0.32	0.37
45	1.50	0.35	0.10	0.12	0.42	0.49
60	2.00	0.25	0.49	0.58	0.91	1.07
80	2.50	0.18	34.78	41.40	35.69	42.47
120	3.00	0.13	42.00	49.99	77.69	92.46
170	3.50	0.09	4.14	4.93	81.83	97.39
200	3.75	0.07	0.25	0.30	82.08	97.69
230	4.00	0.06	0.03	0.04	82.11	97.73

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.26	2.92	2.83	2.58	2.29	2.18	2.05

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.55	0.17	0.36	-2.37	27.56

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-20 #1

Analysis Date: 03-08-07

Analyzed By: JF

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,935	1,143,913	Florida State Plane West	-2.0

USCS:	Munsell:	Comments:
SP	Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
88.49	87.50	0.01	0.03	#200 - 1.17 #230 - 1.15			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.13	0.15	0.13	0.15
5	-2.00	4.00	0.06	0.07	0.19	0.22
7	-1.50	2.83	0.33	0.37	0.52	0.59
10	-1.00	2.00	0.75	0.85	1.27	1.44
14	-0.50	1.41	1.30	1.47	2.57	2.91
18	0.00	1.00	1.14	1.29	3.71	4.20
25	0.50	0.71	1.13	1.28	4.84	5.48
35	1.00	0.50	1.04	1.18	5.88	6.66
45	1.50	0.35	1.26	1.42	7.14	8.08
60	2.00	0.25	3.10	3.50	10.24	11.58
80	2.50	0.18	39.79	44.97	50.03	56.55
120	3.00	0.13	33.44	37.79	83.47	94.34
170	3.50	0.09	3.83	4.33	87.30	98.67
200	3.75	0.07	0.14	0.16	87.44	98.83
230	4.00	0.06	0.02	0.02	87.46	98.85

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.08	2.86	2.74	2.43	2.15	2.05	0.31

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.28	0.21	0.82	-2.82	12.13

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-20 #2

Analysis Date: 03-08-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,935	1,143,913	Florida State Plane West	-5.4

USCS:	Munsell:	Comments:
SW	Wet - 5Y-6/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
89.50	87.64	0.08	0.13	#200 - 2.37 #230 - 2.30			3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.10	0.11	0.10	0.11
4	-2.25	4.76	0.64	0.72	0.74	0.83
5	-2.00	4.00	0.93	1.04	1.67	1.87
7	-1.50	2.83	1.20	1.34	2.87	3.21
10	-1.00	2.00	1.41	1.58	4.28	4.79
14	-0.50	1.41	1.37	1.53	5.65	6.32
18	0.00	1.00	0.53	0.59	6.18	6.91
25	0.50	0.71	0.54	0.60	6.72	7.51
35	1.00	0.50	0.45	0.50	7.17	8.01
45	1.50	0.35	0.59	0.66	7.76	8.67
60	2.00	0.25	1.77	1.98	9.53	10.65
80	2.50	0.18	29.08	32.49	38.61	43.14
120	3.00	0.13	44.27	49.46	82.88	92.60
170	3.50	0.09	4.25	4.75	87.13	97.35
200	3.75	0.07	0.25	0.28	87.38	97.63
230	4.00	0.06	0.06	0.07	87.44	97.70

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.25	2.91	2.82	2.57	2.22	2.08	-0.93

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.26	0.21	1.1	-2.86	10.69

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

Granularmetric Report

Depths and elevations based on measured values

Project Name: Anna Maria 2007 Sand Search

Sample Name: AMVC-07-20 #3

Analysis Date: 03-08-07

Analyzed By: MC

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,935	1,143,913	Florida State Plane West	-6.6

USCS:	Munsell:	Comments:
SW	Wet - 5Y-5/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
91.31	89.08	0.14	0.22	#200 - 2.88 #230 - 2.83			16

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	2.99	3.27	2.99	3.27
5/16"	-3.00	8.00	2.12	2.32	5.11	5.59
3.5	-2.50	5.66	3.68	4.03	8.79	9.62
4	-2.25	4.76	1.47	1.61	10.26	11.23
5	-2.00	4.00	2.07	2.27	12.33	13.50
7	-1.50	2.83	6.56	7.18	18.89	20.68
10	-1.00	2.00	8.76	9.59	27.65	30.27
14	-0.50	1.41	9.68	10.60	37.33	40.87
18	0.00	1.00	5.43	5.95	42.76	46.82
25	0.50	0.71	4.93	5.40	47.69	52.22
35	1.00	0.50	3.34	3.66	51.03	55.88
45	1.50	0.35	3.13	3.43	54.16	59.31
60	2.00	0.25	4.51	4.94	58.67	64.25
80	2.50	0.18	10.87	11.90	69.54	76.15
120	3.00	0.13	16.48	18.05	86.02	94.20
170	3.50	0.09	2.45	2.68	88.47	96.88
200	3.75	0.07	0.22	0.24	88.69	97.12
230	4.00	0.06	0.05	0.05	88.74	97.17

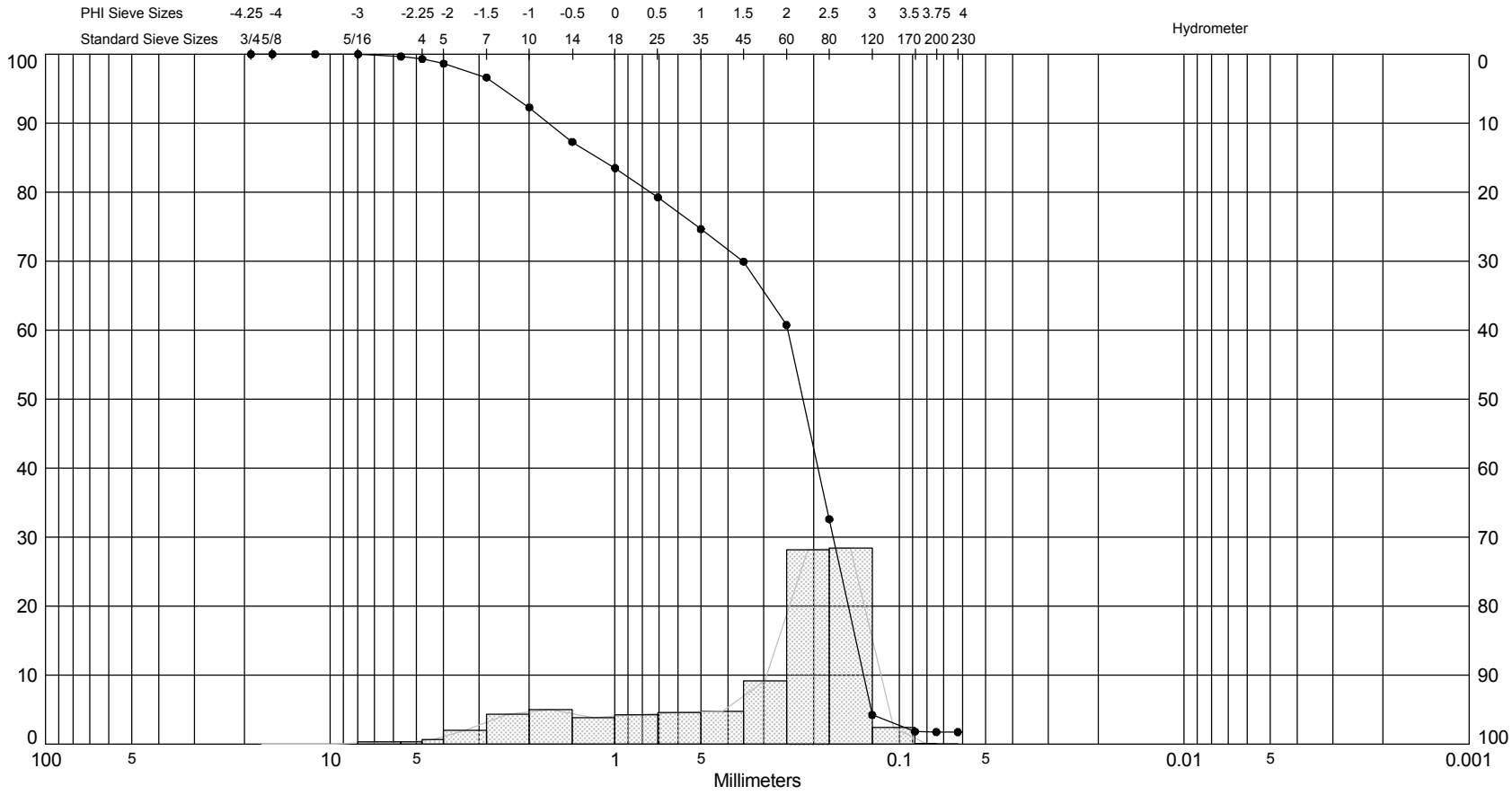
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.15	2.72	2.45	0.29	-1.27	-1.83	-3.13

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.31	0.81	2.05	-0.2	1.79

GRANULARMETRIC REPORT ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07

APPENDIX 3

2007 CPE INDIVIDUAL VIBRACORE GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-01 #1	—●—	-0.6	SW	#200 - 1.75 #230 - 1.74			2.19	1.62	-1.2	3.31	1.38

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	AU
Easting (X, ft):	430,831
Northing (Y, ft):	1,143,326
Horizontal System:	NAD 1983
Vertical System:	

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FL 33431
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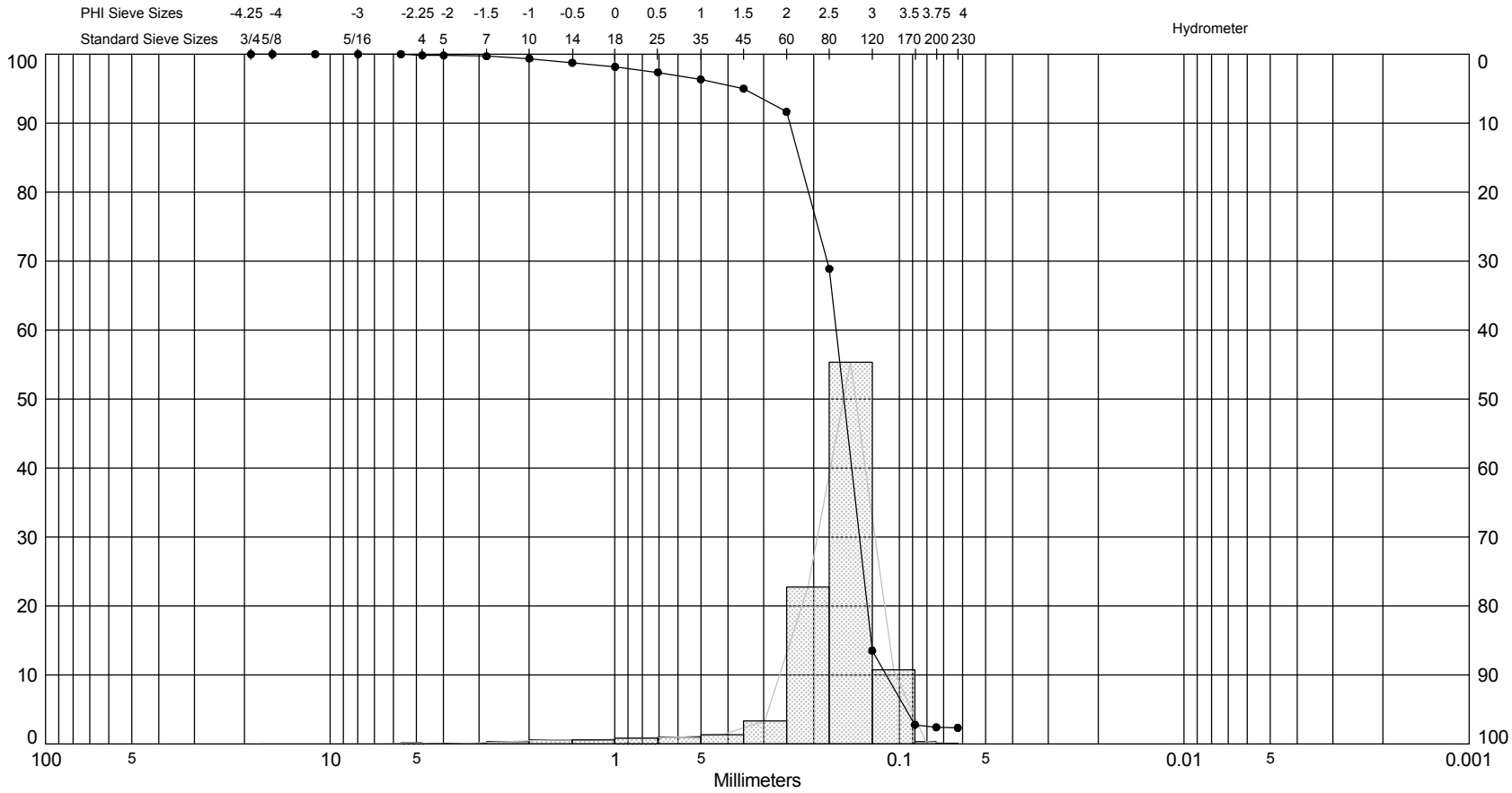
fax (561) 391-9116

SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-01 #2	—●—	-1.5	SP	#200 - 2.42 #230 - 2.33			2.67	2.53	-3.22	17.46	0.68

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	A U
Easting (X, ft):	430,831
Northing (Y, ft):	1,143,326
Horizontal System:	NAD 1983
Vertical System:	

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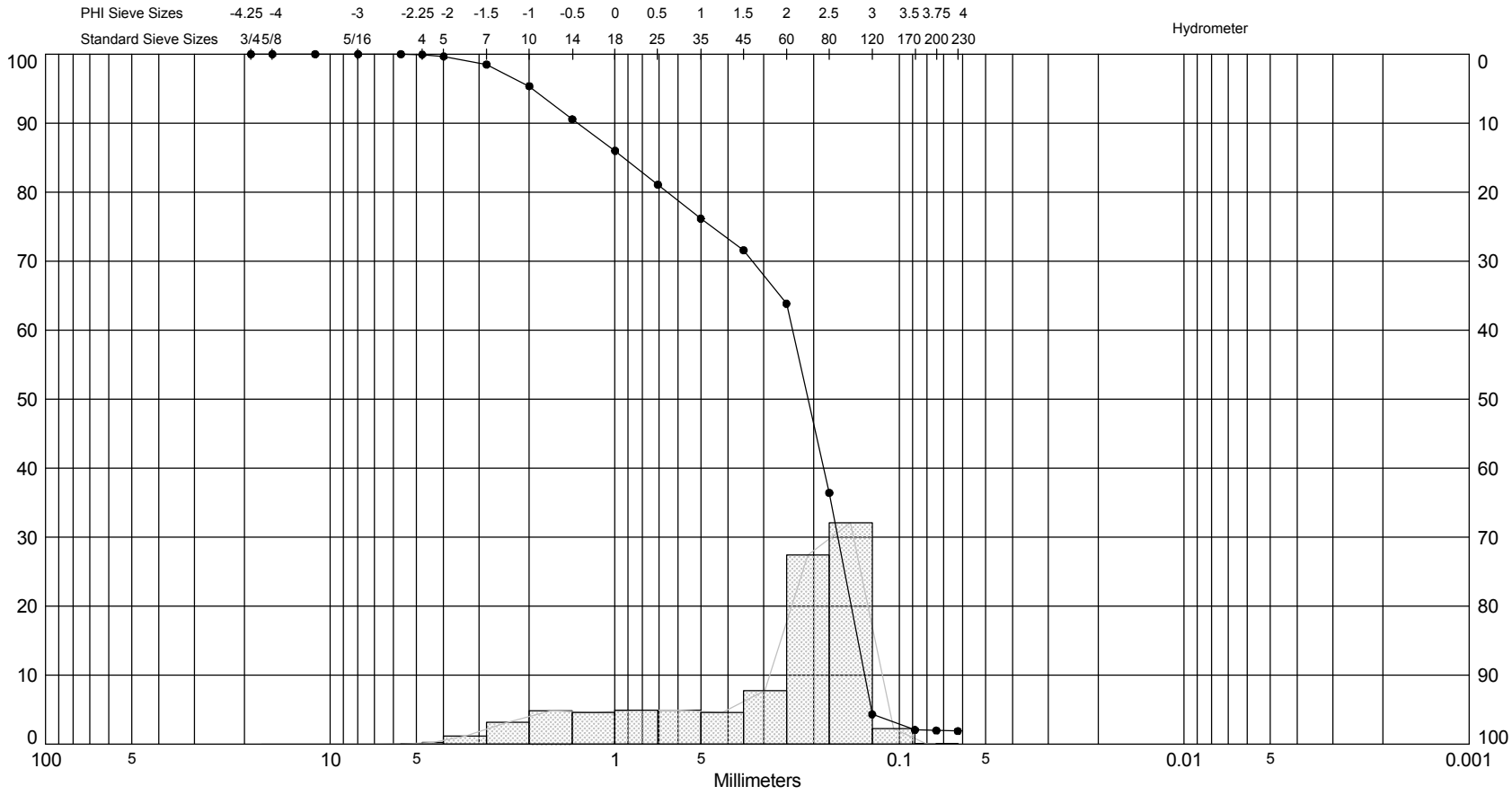

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-01 #3	—●—	-6.1	SW	#200 - 1.96 #230 - 1.88			2.25	1.74	-1.2	3.3	1.27

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	AU
Easting (X, ft):	430,831
Northing (Y, ft):	1,143,326
Horizontal System:	NAD 1983
Vertical System:	

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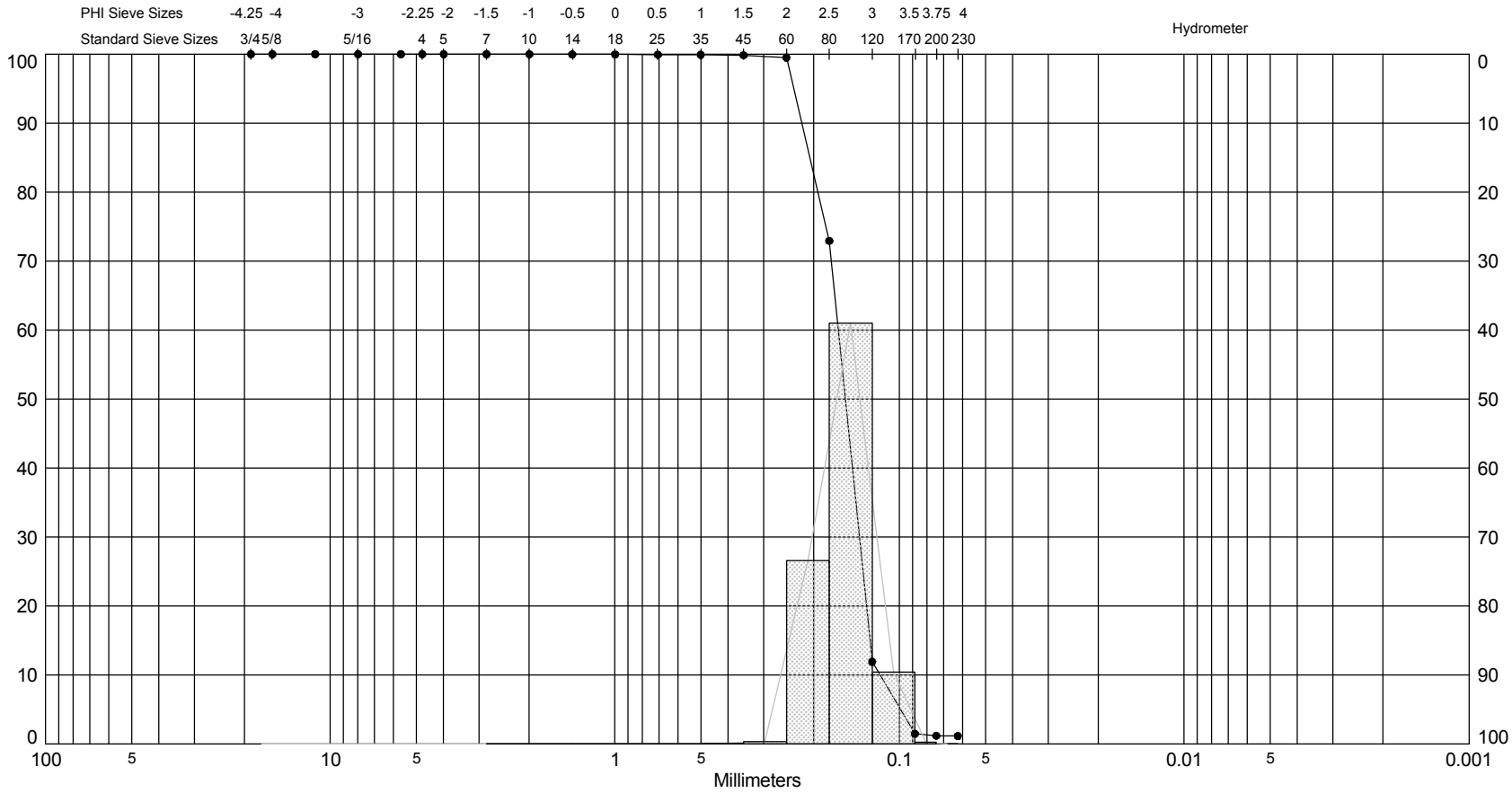

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-03 #1	—●—	-4.0	SP	#200 - 1.18 #230 - 1.14			2.69	2.66	-0.74	10.64	0.32

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	JF
Easting (X, ft):	433,627
Northing (Y, ft):	1,132,302
Horizontal System:	NAD 1983
Vertical System:	

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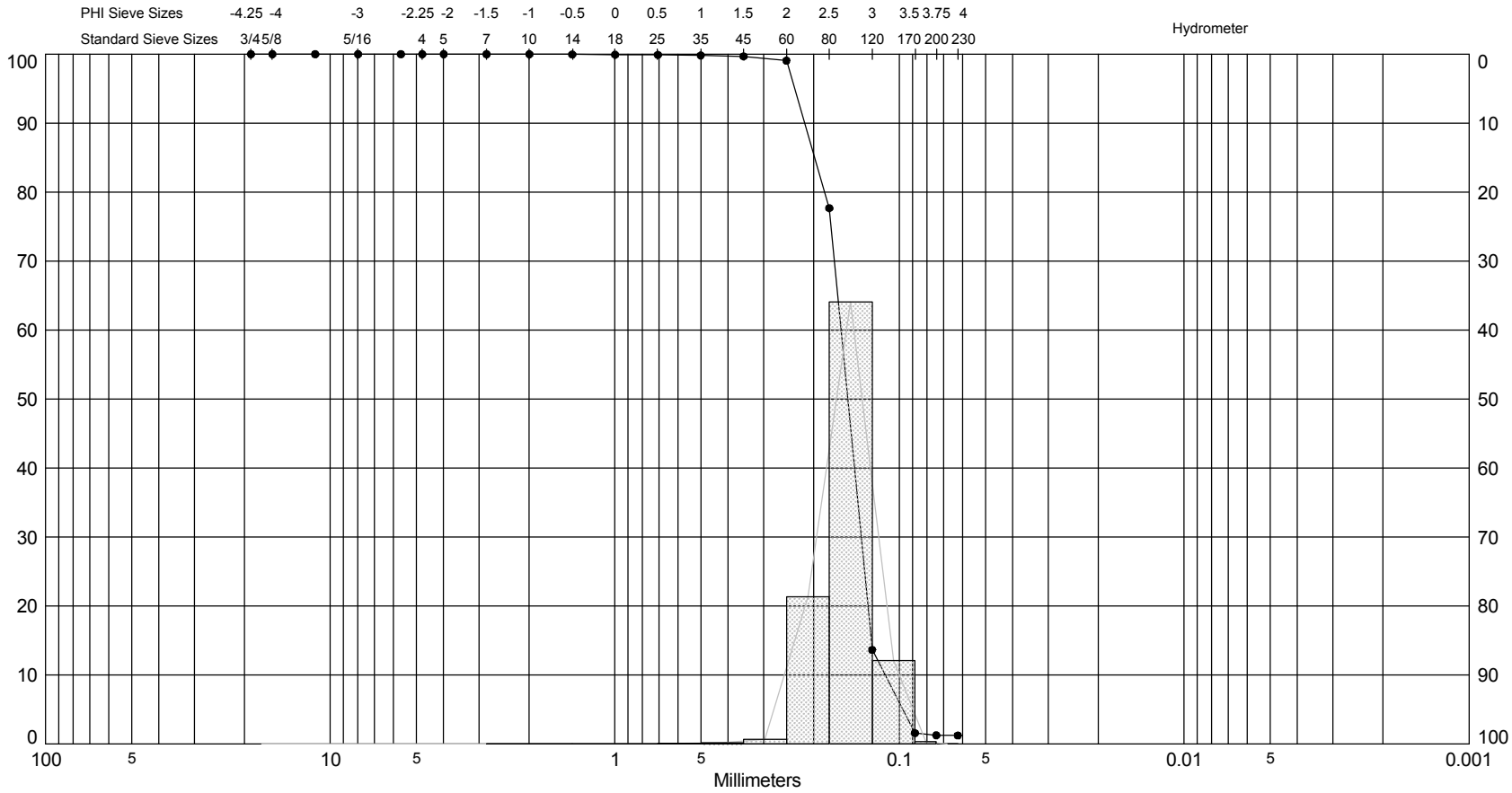

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-03 #2	—●—	-8.0	SP	#200 - 1.25 #230 - 1.21			2.72	2.69	-1.12	12.65	0.33

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	JF
Easting (X, ft):	433,627
Northing (Y, ft):	1,132,302
Horizontal System:	NAD 1983
Vertical System:	

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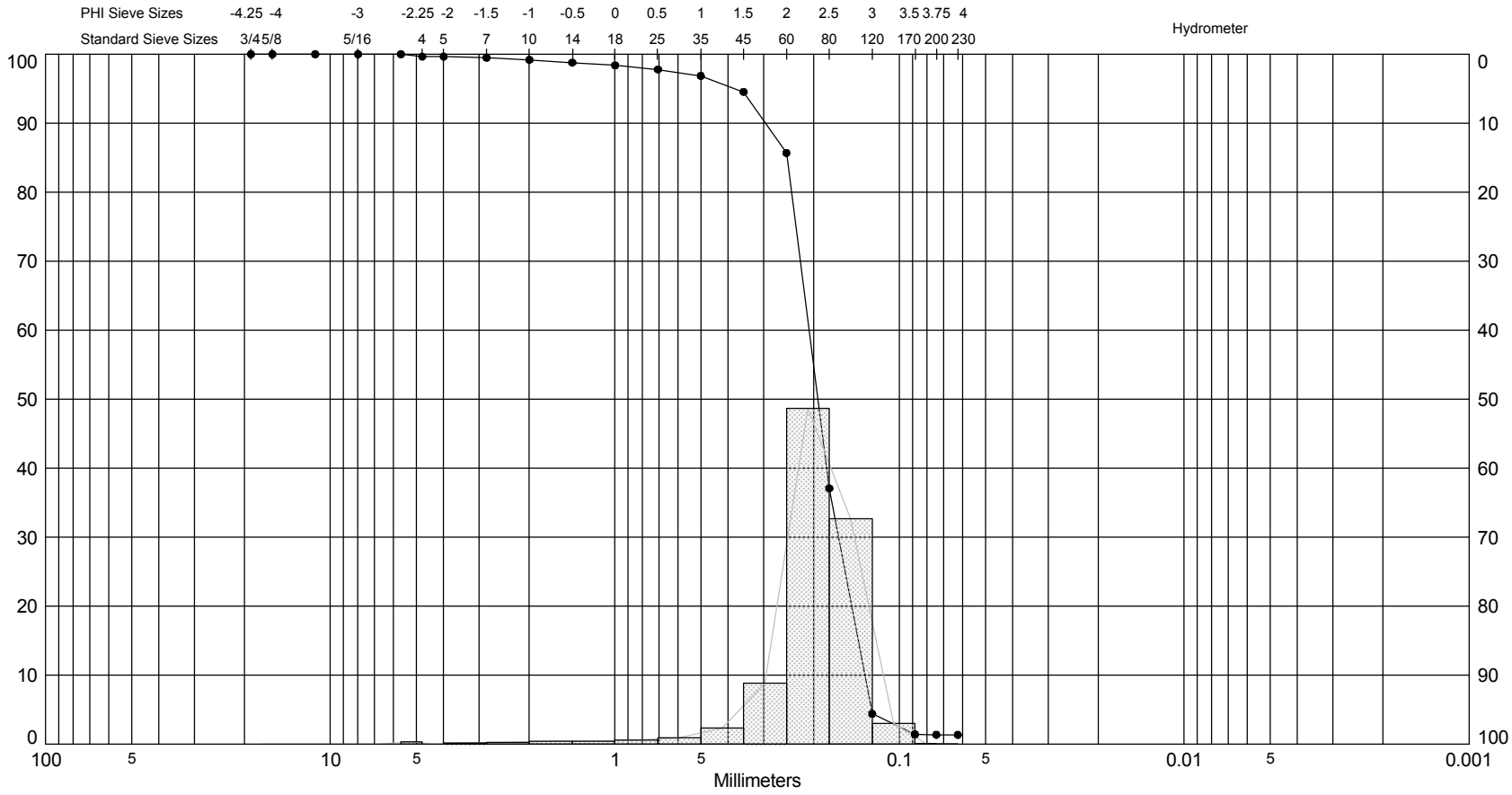
SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-03 #3	—●—	-12.0	SP	#200 - 1.36 #230 - 1.35			2.37	2.3	-3.33	20.58	0.64

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	JF
Easting (X, ft):	433,627
Northing (Y, ft):	1,132,302
Horizontal System:	NAD 1983
Vertical System:	

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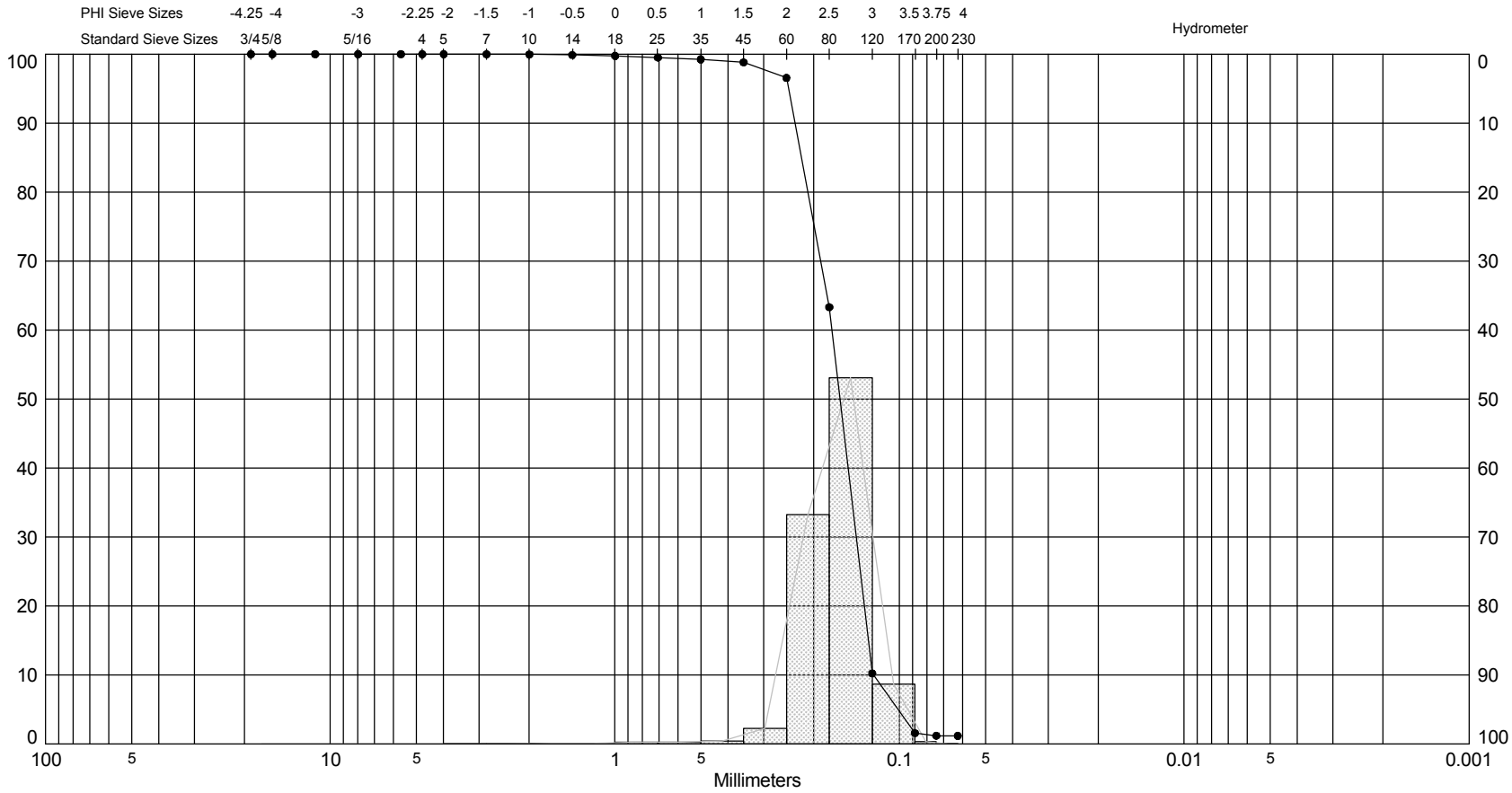

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-04 #1	—●—	-3.0	SP	#200 - 1.19 #230 - 1.17			2.63	2.58	-1.97	15.85	0.41

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	433,879
Northing (Y, ft):	1,133,137
Horizontal System:	NAD 1983
Vertical System:	

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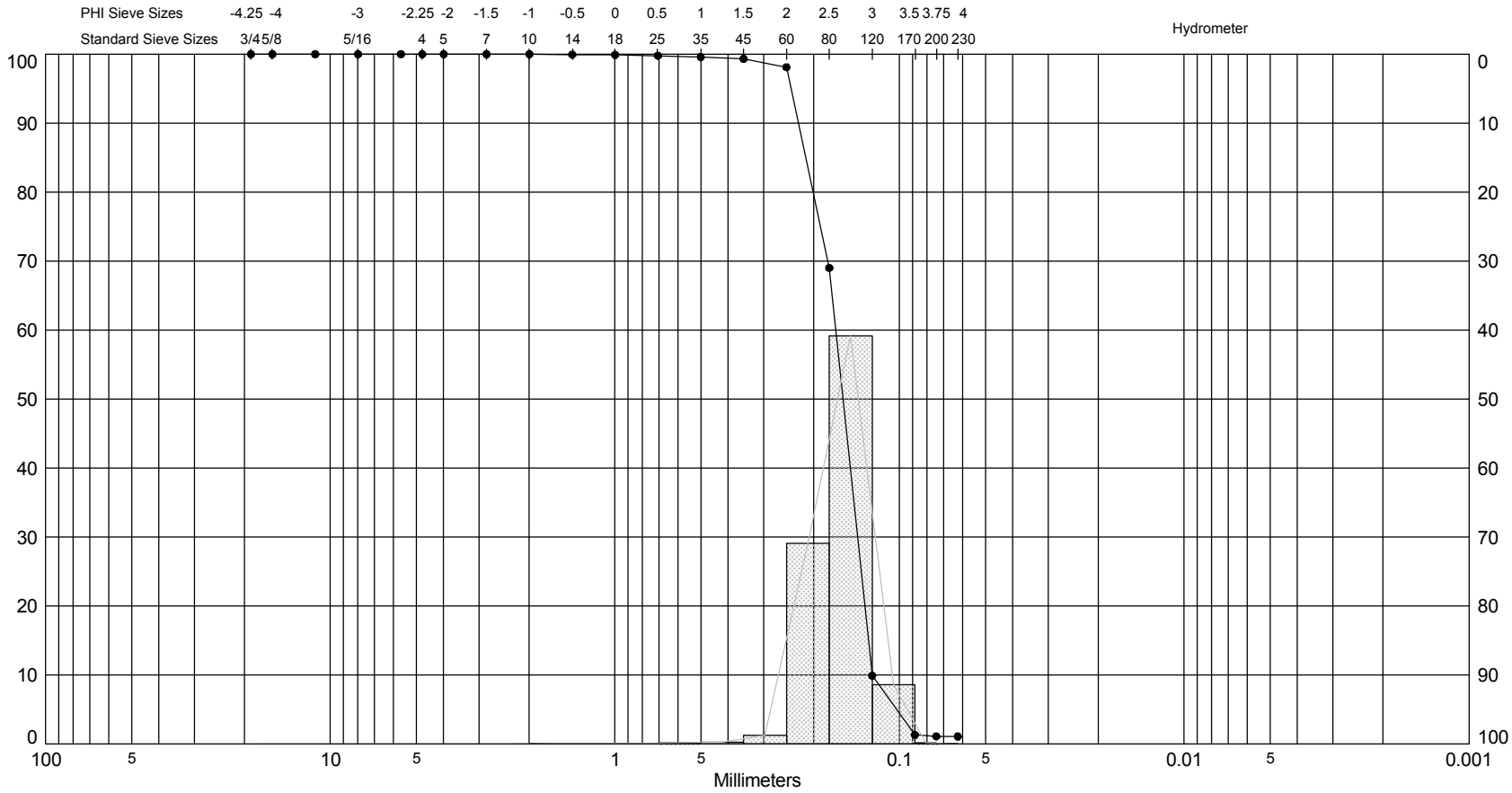
SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-04 #2	—●—	-6.0	SP	#200 - 1.10 #230 - 1.09			2.66	2.62	-1.52	13.18	0.35

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	433,879
Northing (Y, ft):	1,133,137
Horizontal System:	NAD 1983
Vertical System:	

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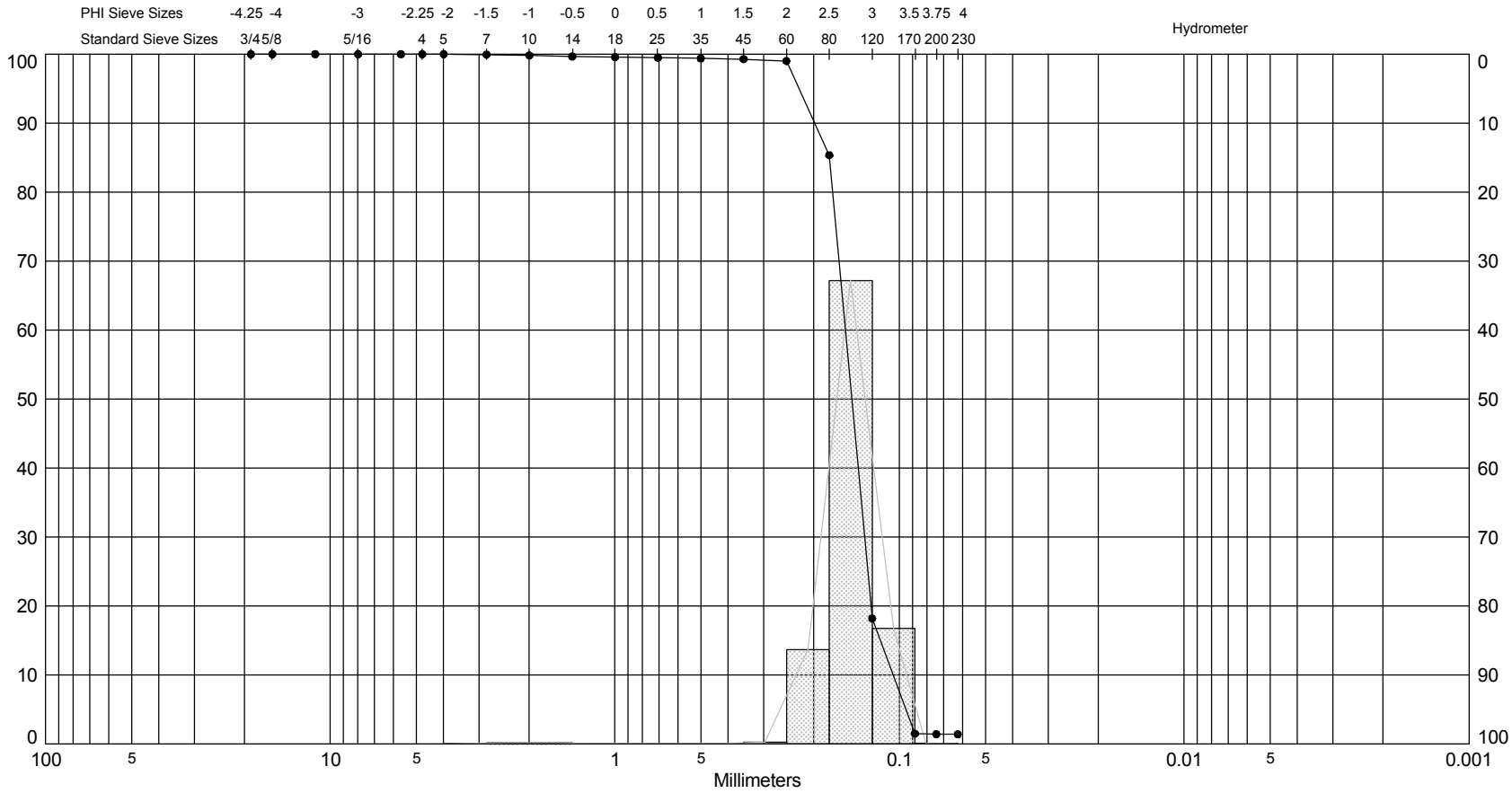
SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-05 #1	—●—	-1.1	SP	#200 - 1.41 #230 - 1.39			2.76	2.74	-4.11	40.43	0.39

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	437,029
Northing (Y, ft):	1,128,780
Horizontal System:	NAD 1983
Vertical System:	

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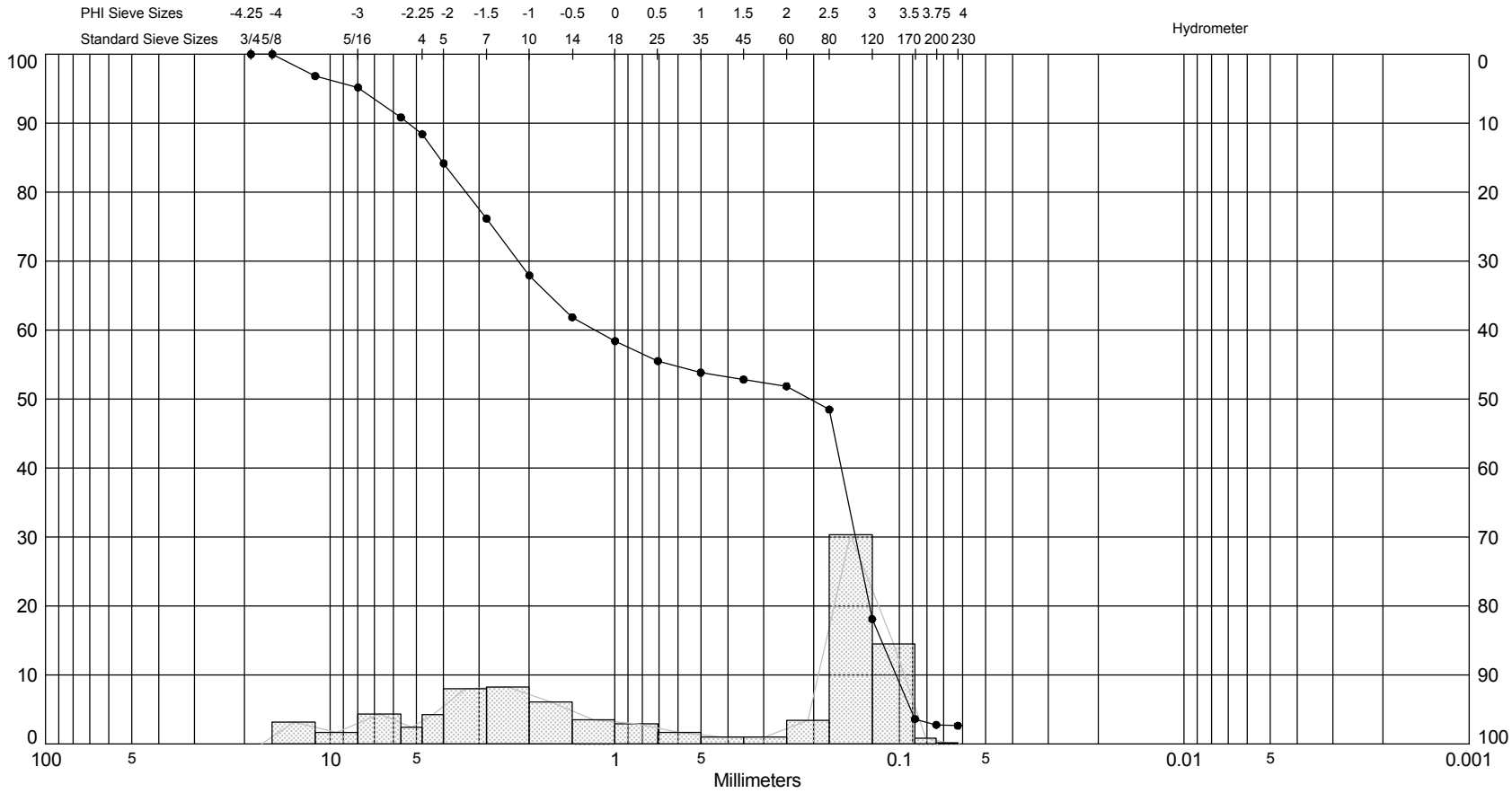

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-05 #2	—●—	-2.9	SW	#200 - 2.77 #230 - 2.63			2.27	0.75	-0.37	1.55	2.34

Comments:

Depths and elevations based on measured values

Coastal Planning & Engineering
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FL 33431
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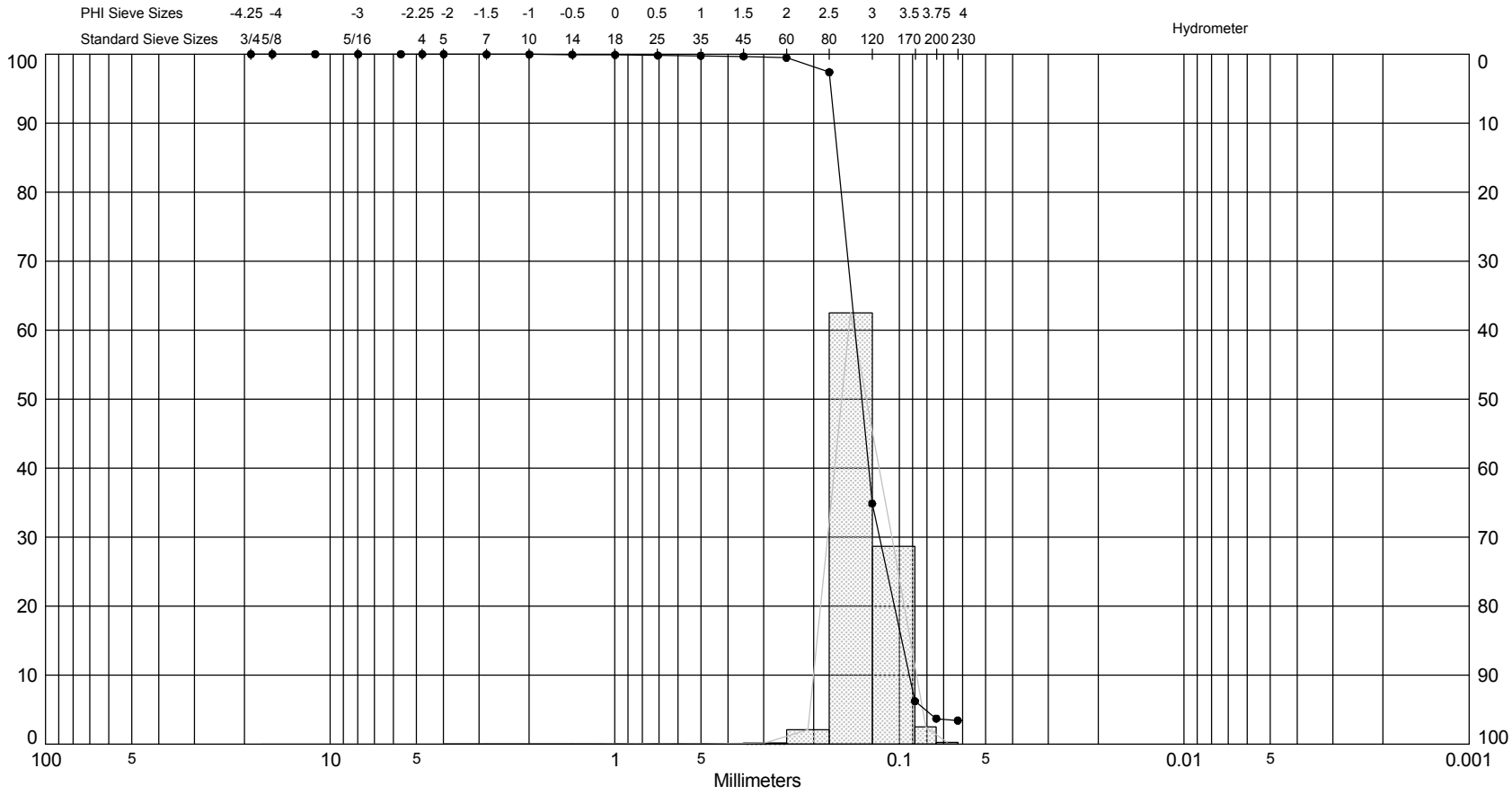
Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	437,029
Northing (Y, ft):	1,128,780
Horizontal System:	NAD 1983
Vertical System:	

SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-05 #3	—●—	-3.6	SP	#200 - 3.70 #230 - 3.41			2.88	2.9	-2.02	29.33	0.32

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	437,029
Northing (Y, ft):	1,128,780
Horizontal System:	NAD 1983
Vertical System:	

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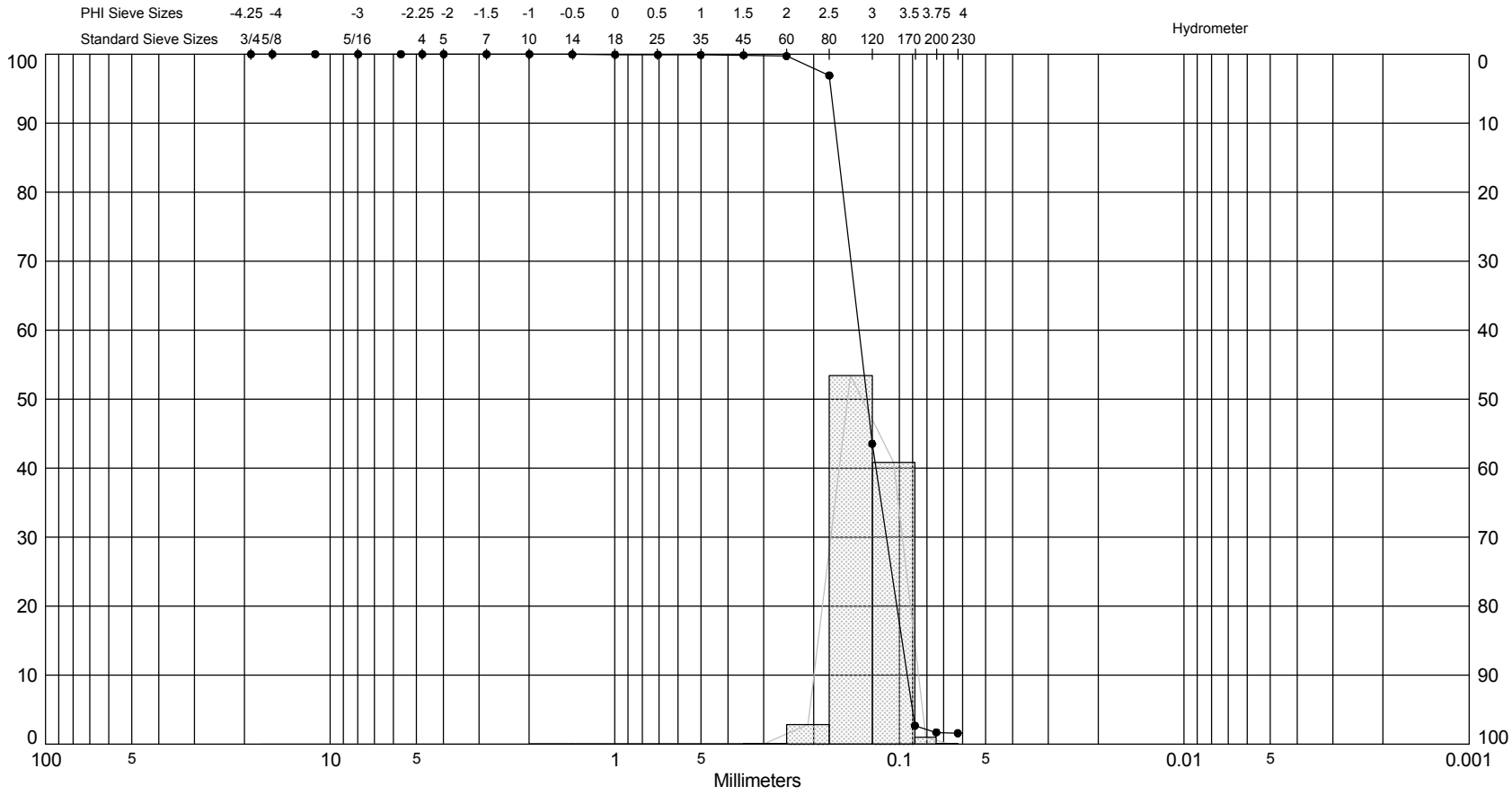

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-05 #4	—●—	-7.5	SP	#200 - 1.70 #230 - 1.59			2.94	2.95	-1.2	14.3	0.3

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	AU
Easting (X, ft):	437,029
Northing (Y, ft):	1,128,780
Horizontal System:	NAD 1983
Vertical System:	

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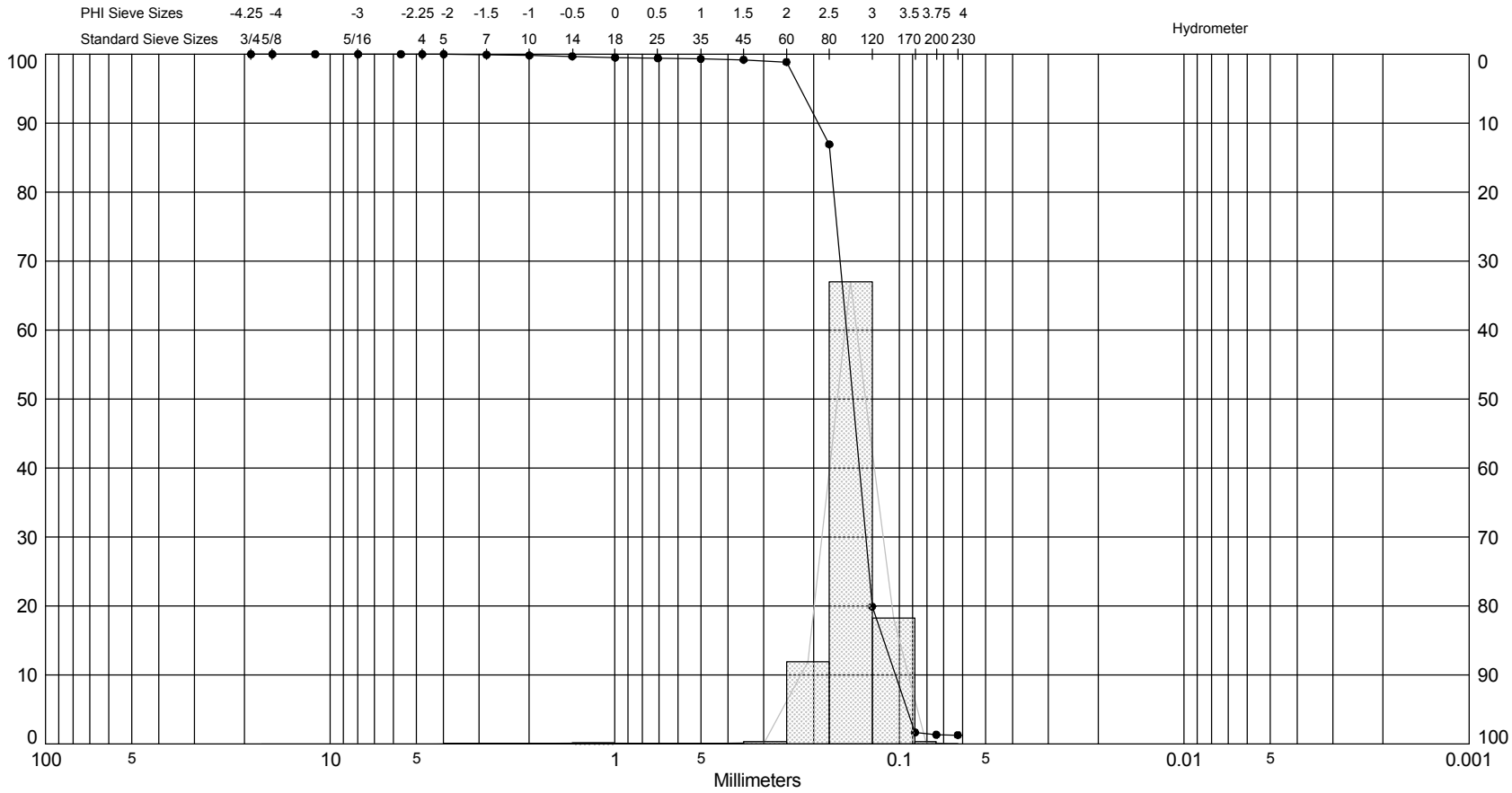

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-06 #1	—●—	-1.8	SP	#200 - 1.33 #230 - 1.29			2.78	2.76	-4.14	39.96	0.4

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	JF
Easting (X, ft):	436,754
Northing (Y, ft):	1,128,828
Horizontal System:	NAD 1983
Vertical System:	

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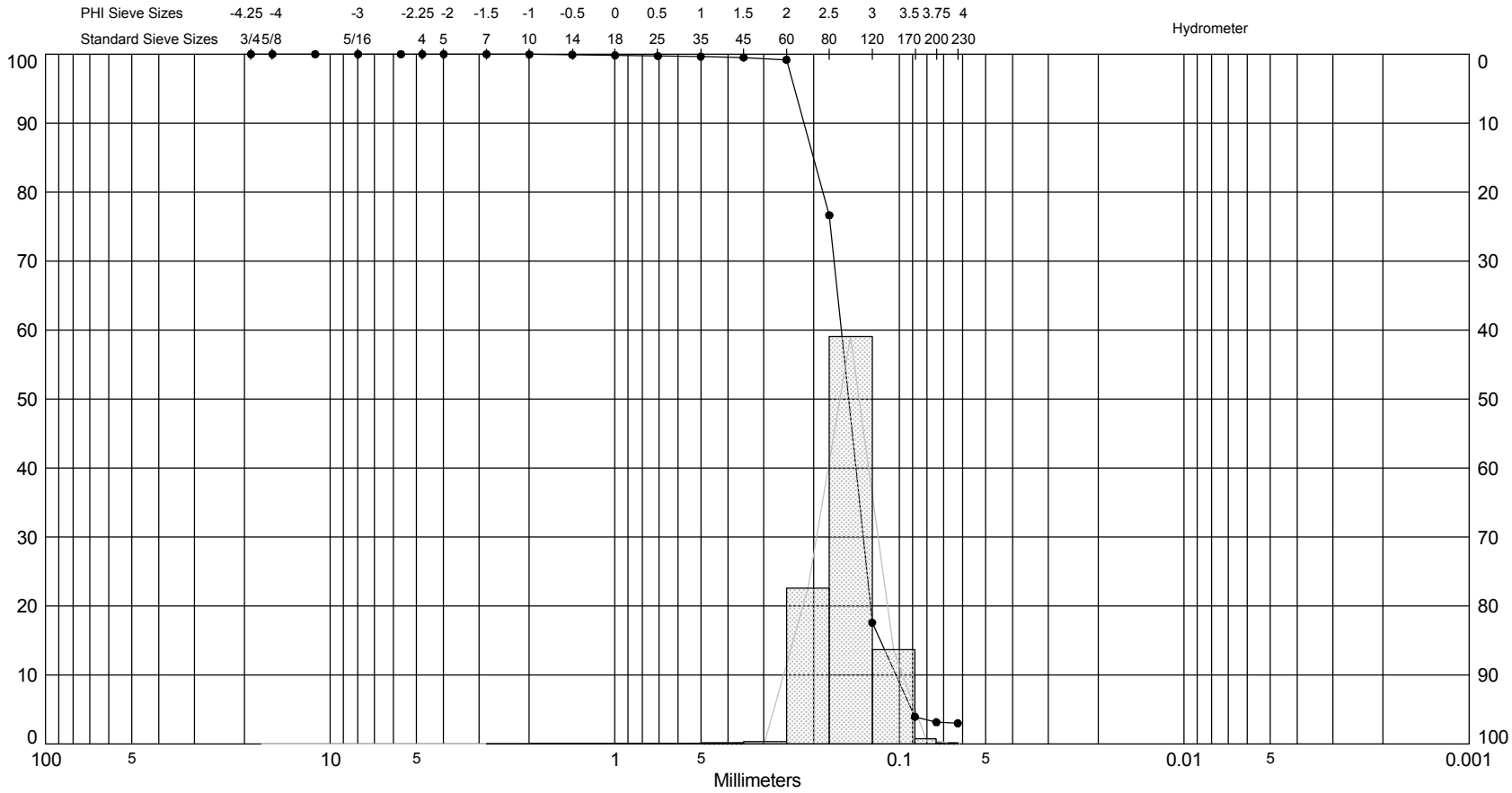
SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-06 #2	—●—	-3.8	SP	#200 - 3.14 #230 - 2.99			2.73	2.7	-1.66	17.56	0.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	JF
Easting (X, ft):	436,754
Northing (Y, ft):	1,128,828
Horizontal System:	NAD 1983
Vertical System:	

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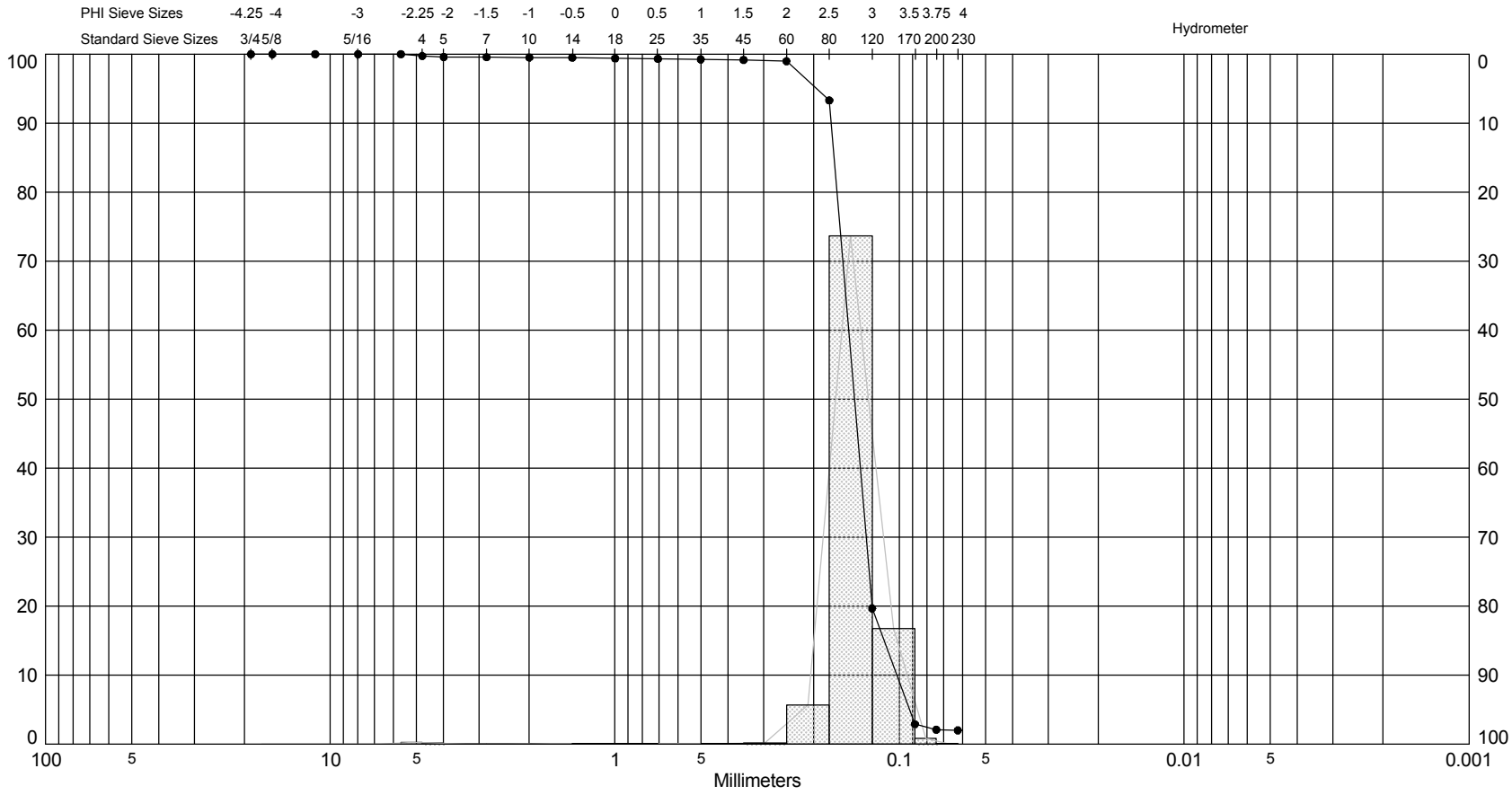
SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-06 #3	—●—	-6.0	SP	#200 - 2.08 #230 - 1.99			2.79	2.78	-6.93	75.52	0.45

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	JF
Easting (X, ft):	436,754
Northing (Y, ft):	1,128,828
Horizontal System:	NAD 1983
Vertical System:	

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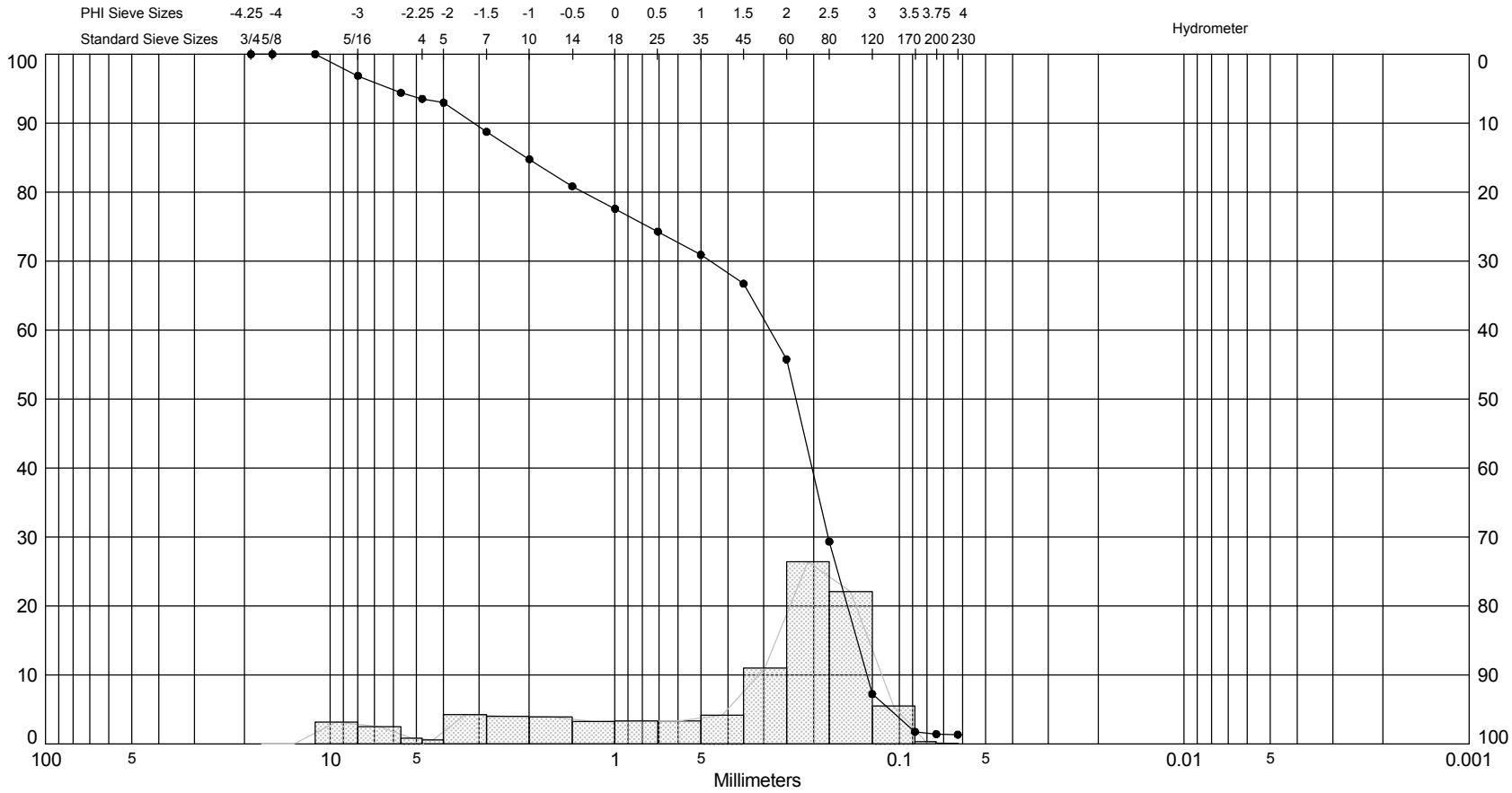

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-07 #1	—●—	-0.7	SW	#200 - 1.41 #230 - 1.35			2.11	1.33	-1.16	3.16	1.78

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-06-07
Analyzed By:	JF
Easting (X, ft):	433,503
Northing (Y, ft):	1,131,479
Horizontal System:	NAD 1983
Vertical System:	

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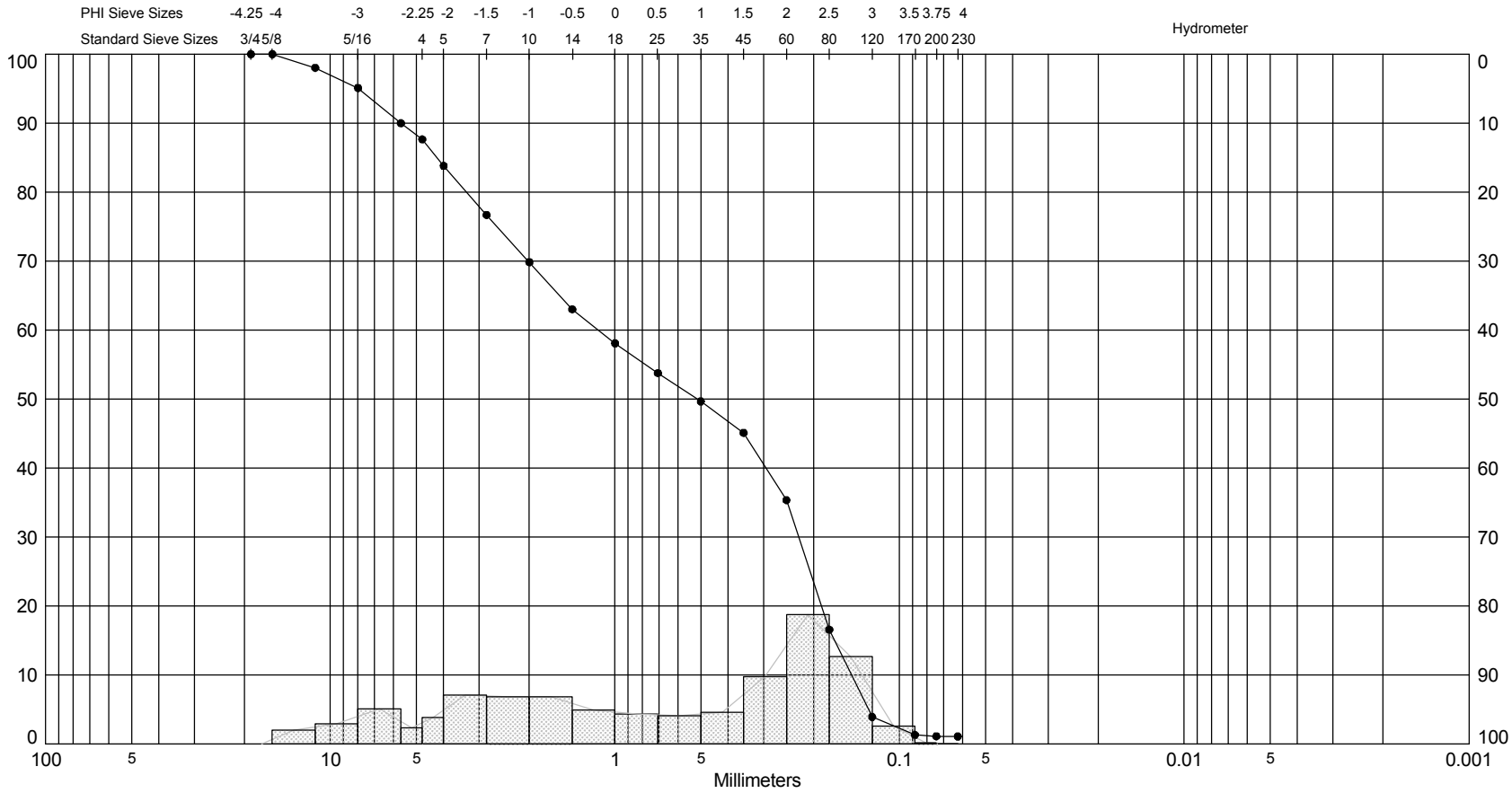

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-07 #2	—●—	-2.5	SW	#200 - 1.11 #230 - 1.08			0.96	0.42	-0.37	1.77	2.03

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-06-07
Analyzed By:	JF
Easting (X, ft):	433,503
Northing (Y, ft):	1,131,479
Horizontal System:	NAD 1983
Vertical System:	

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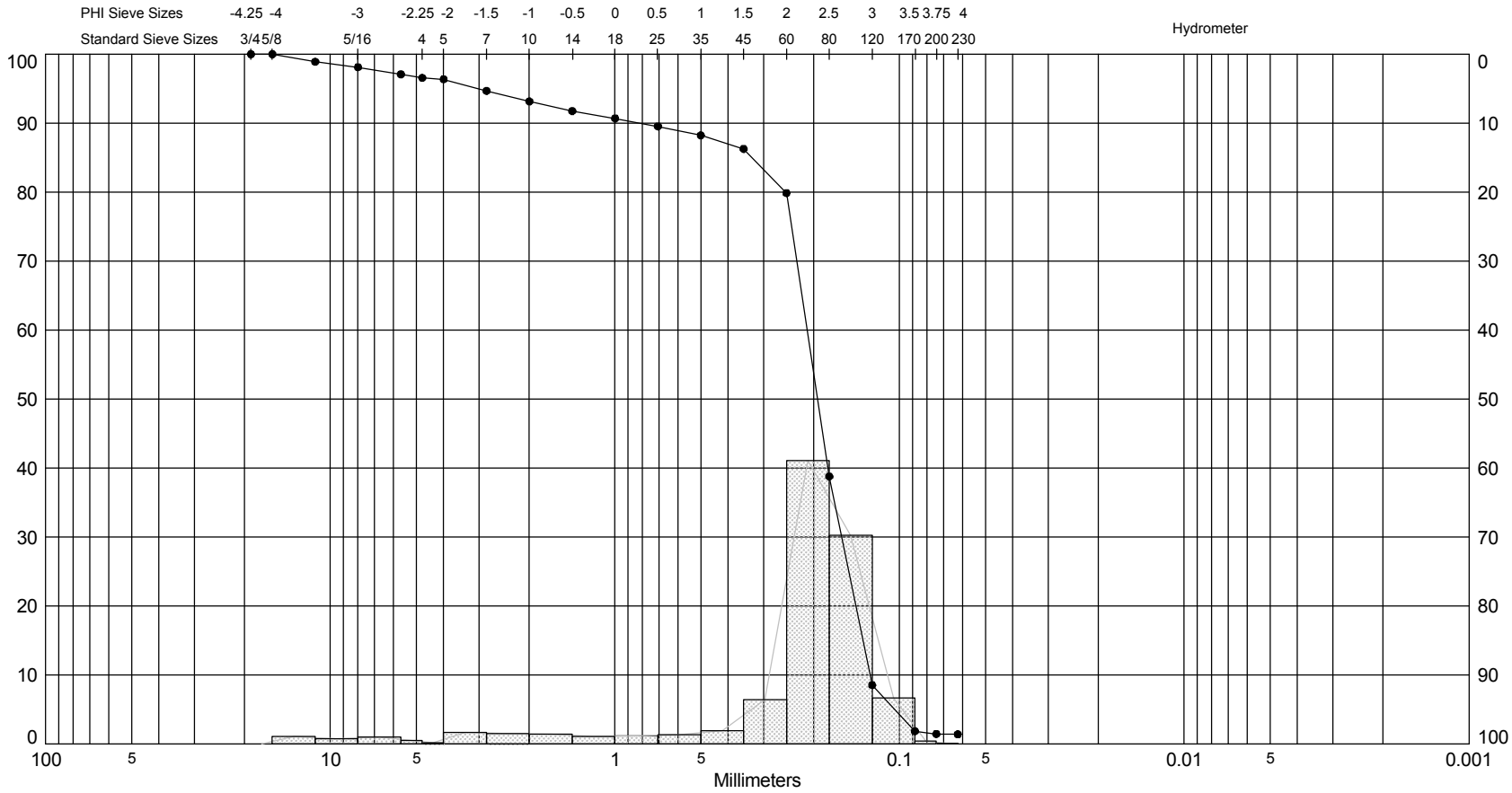

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-07 #3	—●—	-3.8	SW	#200 - 1.45 #230 - 1.39			2.36	1.99	-2.49	8.89	1.38

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-06-07
Analyzed By:	JF
Easting (X, ft):	433,503
Northing (Y, ft):	1,131,479
Horizontal System:	NAD 1983
Vertical System:	

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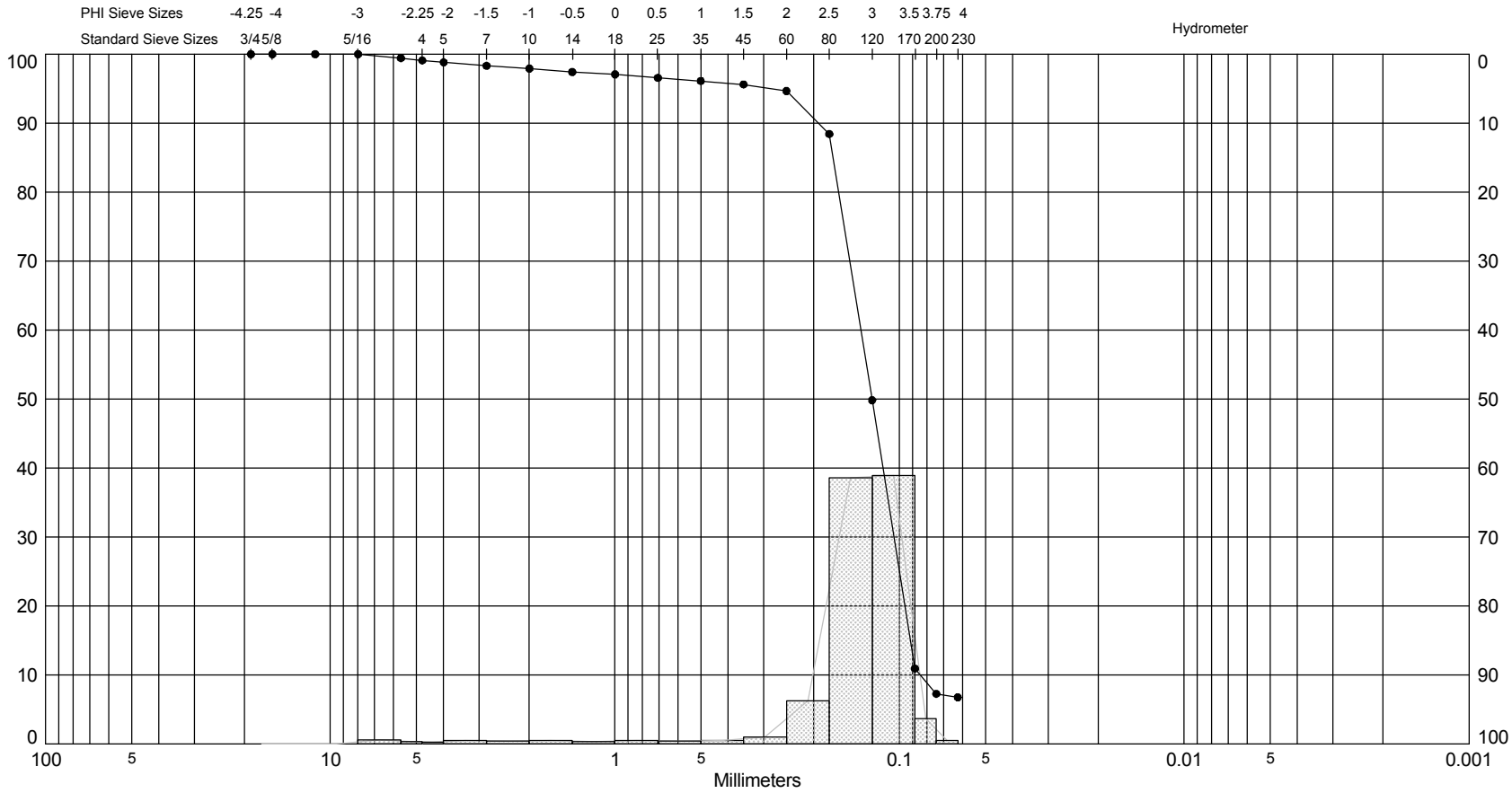

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-07 #4	—●—	-6.3	SW-SM	#200 - 7.27 #230 - 6.76			3	2.79	-3.9	20.34	0.93

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	AU
Easting (X, ft):	433,503
Northing (Y, ft):	1,131,479
Horizontal System:	NAD 1983
Vertical System:	

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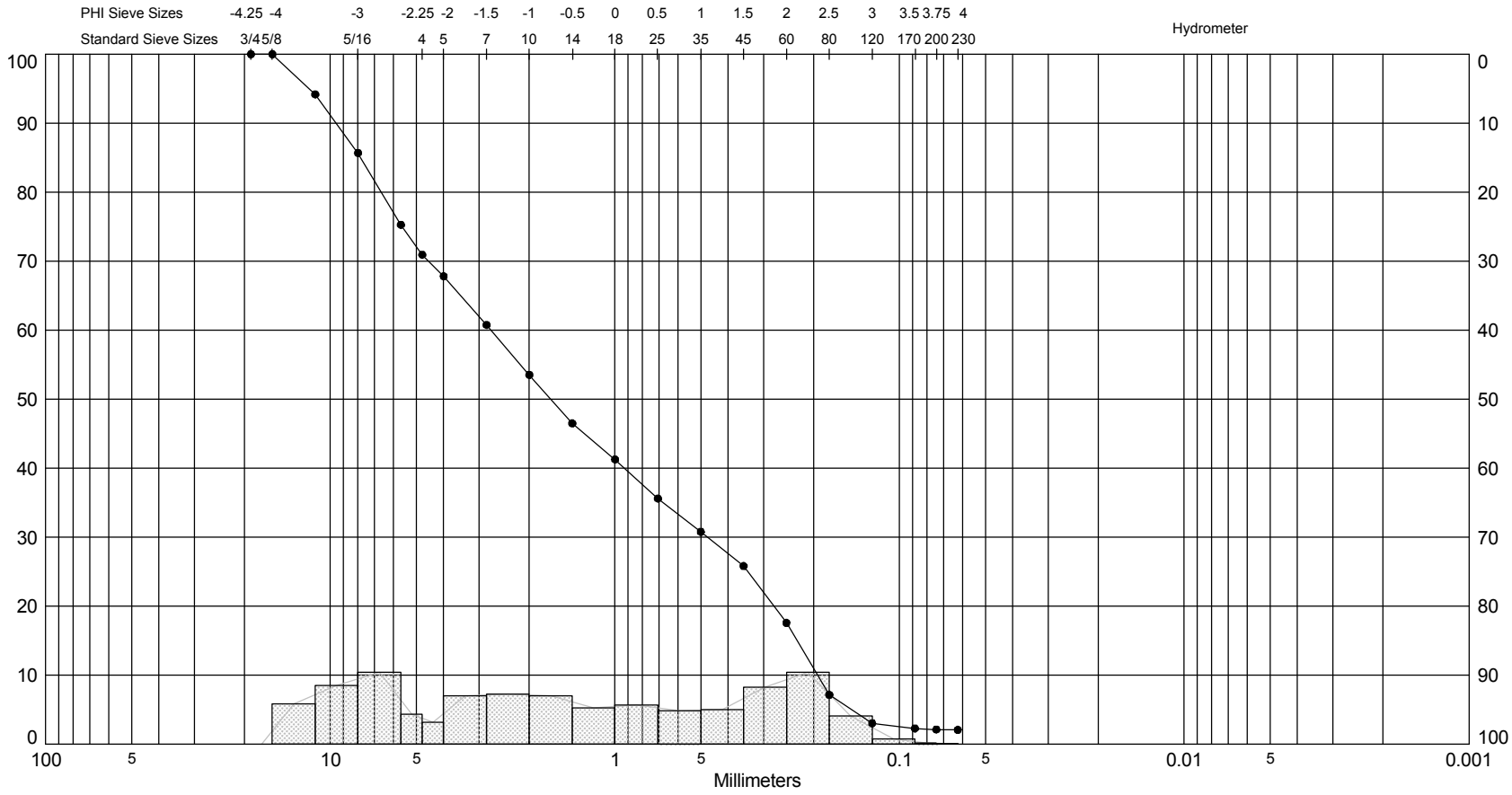

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-08 #1	—●—	-0.7	SW	#200 - 2.12 #230 - 2.06				-0.6	0.14	1.69	2.07

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-09-07
Analyzed By:	MC
Easting (X, ft):	433,653
Northing (Y, ft):	1,130,845
Horizontal System:	NAD 1983
Vertical System:	

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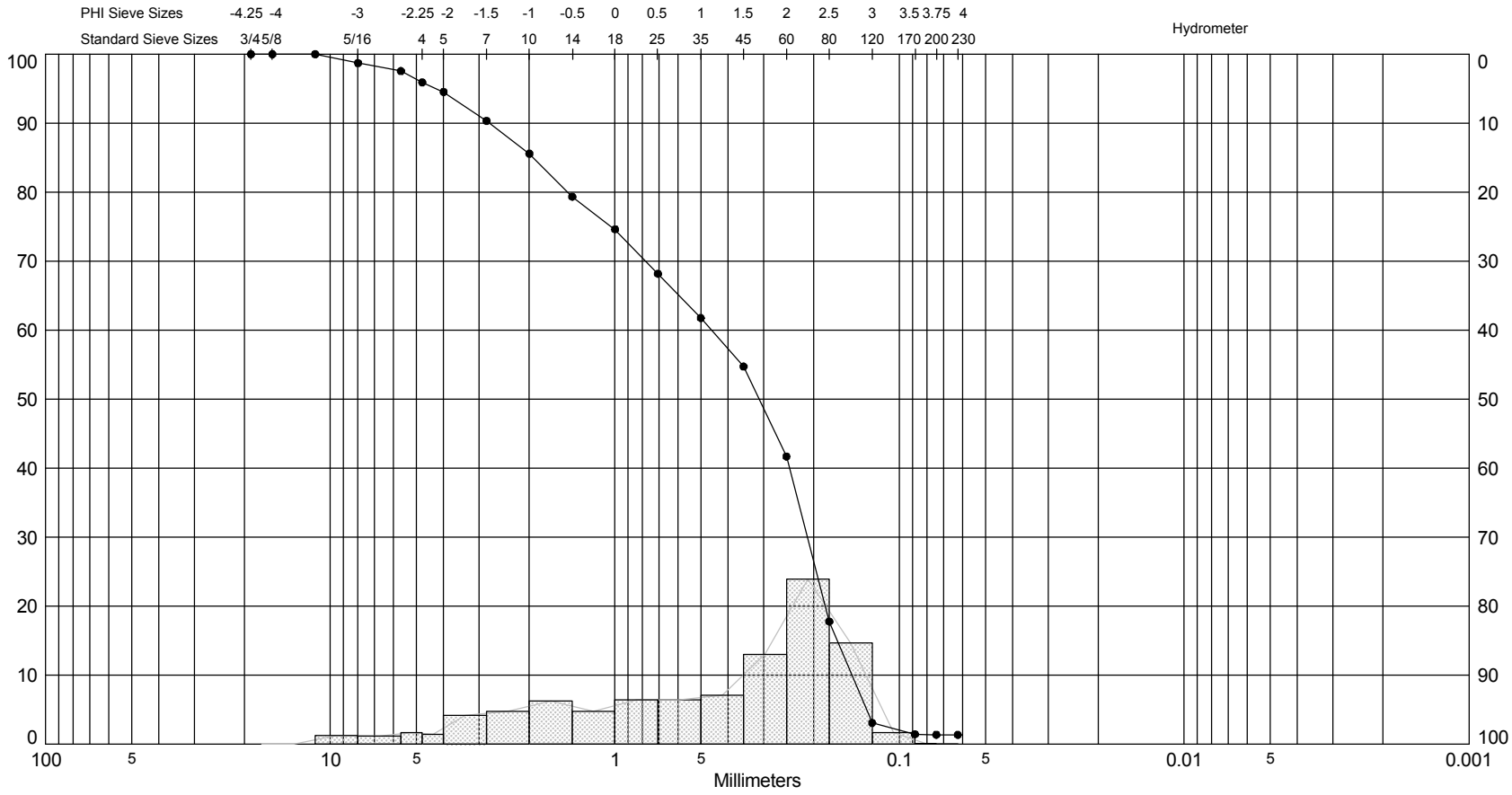

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-08 #2	—●—	-1.5	SW	#200 - 1.36 #230 - 1.35			1.68	1.06	-0.84	2.62	1.61

Comments:

Depths and elevations based on measured values

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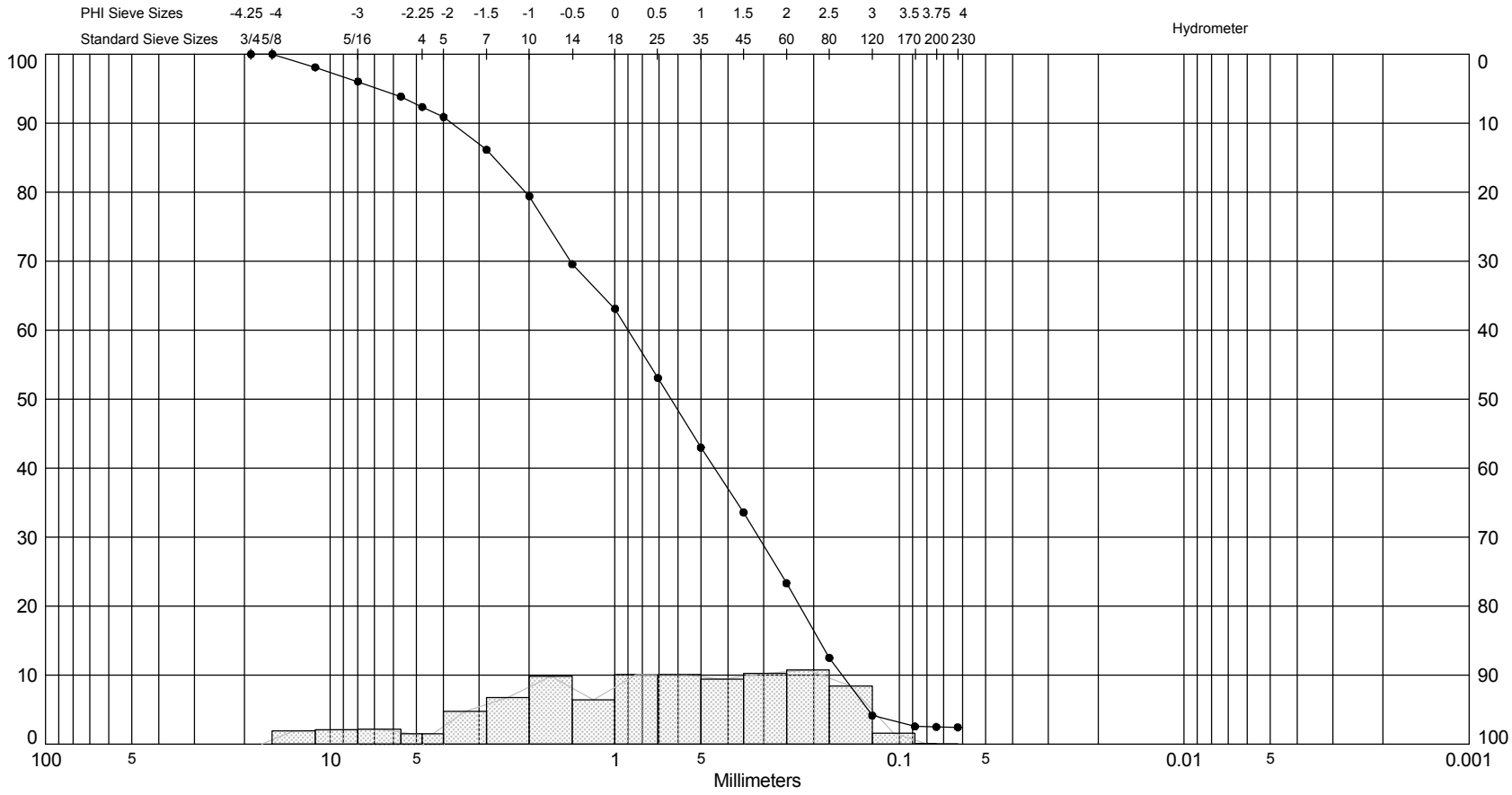
Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-09-07
Analyzed By:	MC
Easting (X, ft):	433,653
Northing (Y, ft):	1,130,845
Horizontal System:	NAD 1983
Vertical System:	

SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-08 #3	—●—	-5.4	SW	#200 - 2.48 #230 - 2.44			0.65	0.41	-0.45	2.45	1.7

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-09-07
Analyzed By:	MC
Easting (X, ft):	433,653
Northing (Y, ft):	1,130,845
Horizontal System:	NAD 1983
Vertical System:	

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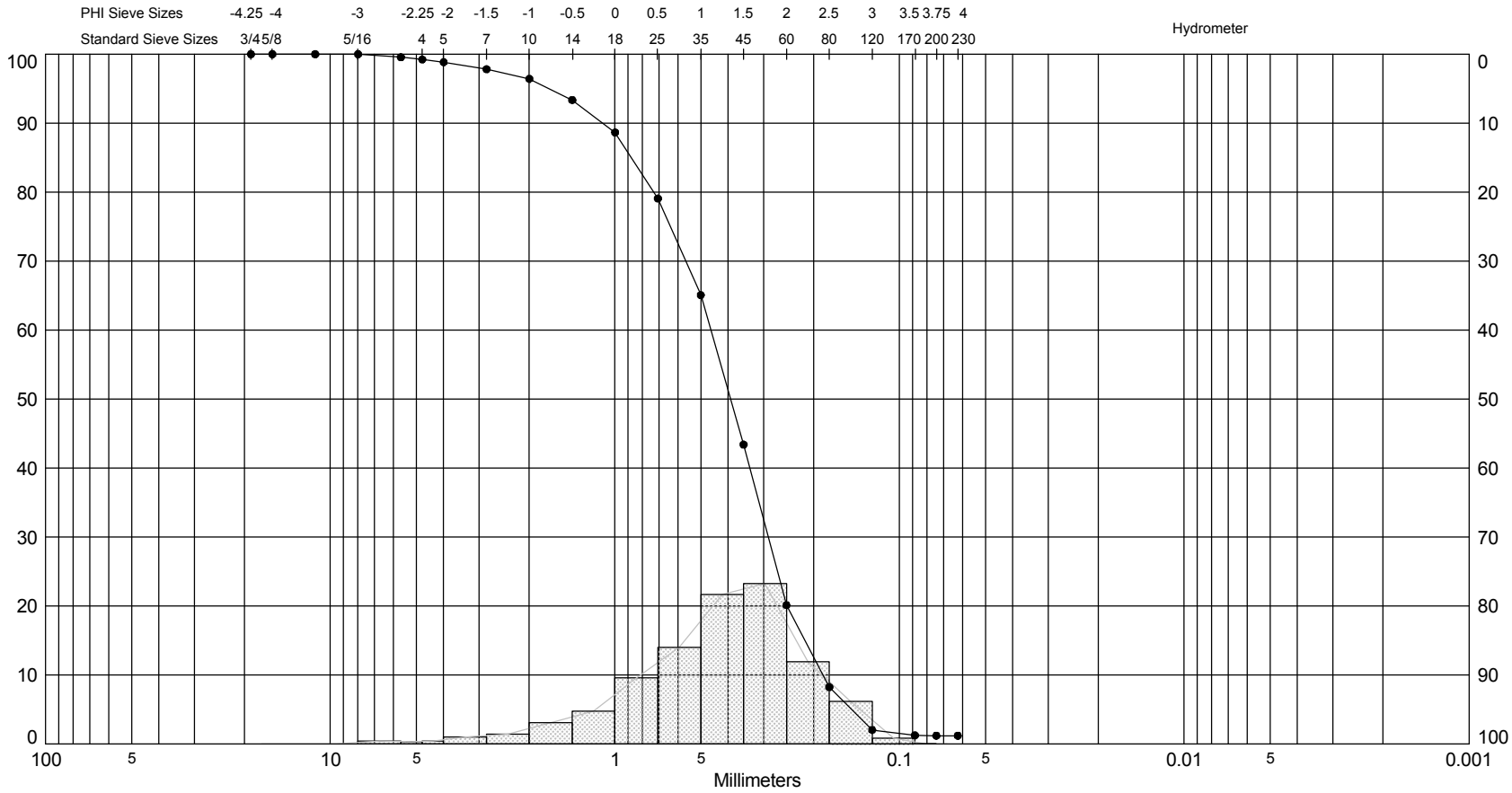

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-08 #4	—●—	-6.9	SW	#200 - 1.20 #230 - 1.20			1.35	1.19	-0.91	4.3	1.03

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-09-07
Analyzed By:	MC
Easting (X, ft):	433,653
Northing (Y, ft):	1,130,845
Horizontal System:	NAD 1983
Vertical System:	

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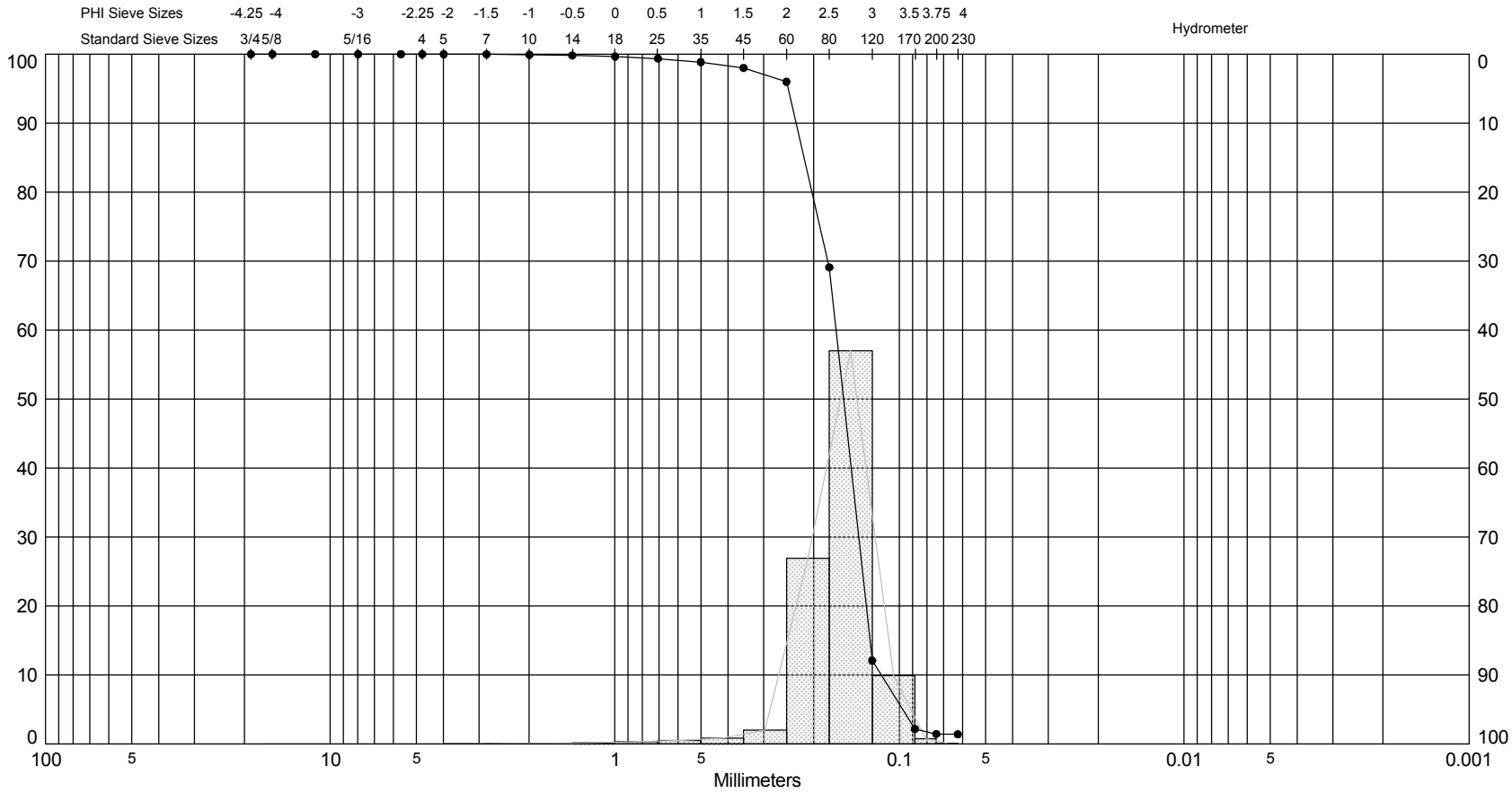

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-17 #1	—●—	-0.9	SP	#200 - 1.44 #230 - 1.39			2.67	2.61	-2.37	16.98	0.45

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-09-07
Analyzed By:	MC
Easting (X, ft):	430,589
Northing (Y, ft):	1,144,145
Horizontal System:	NAD 1983
Vertical System:	

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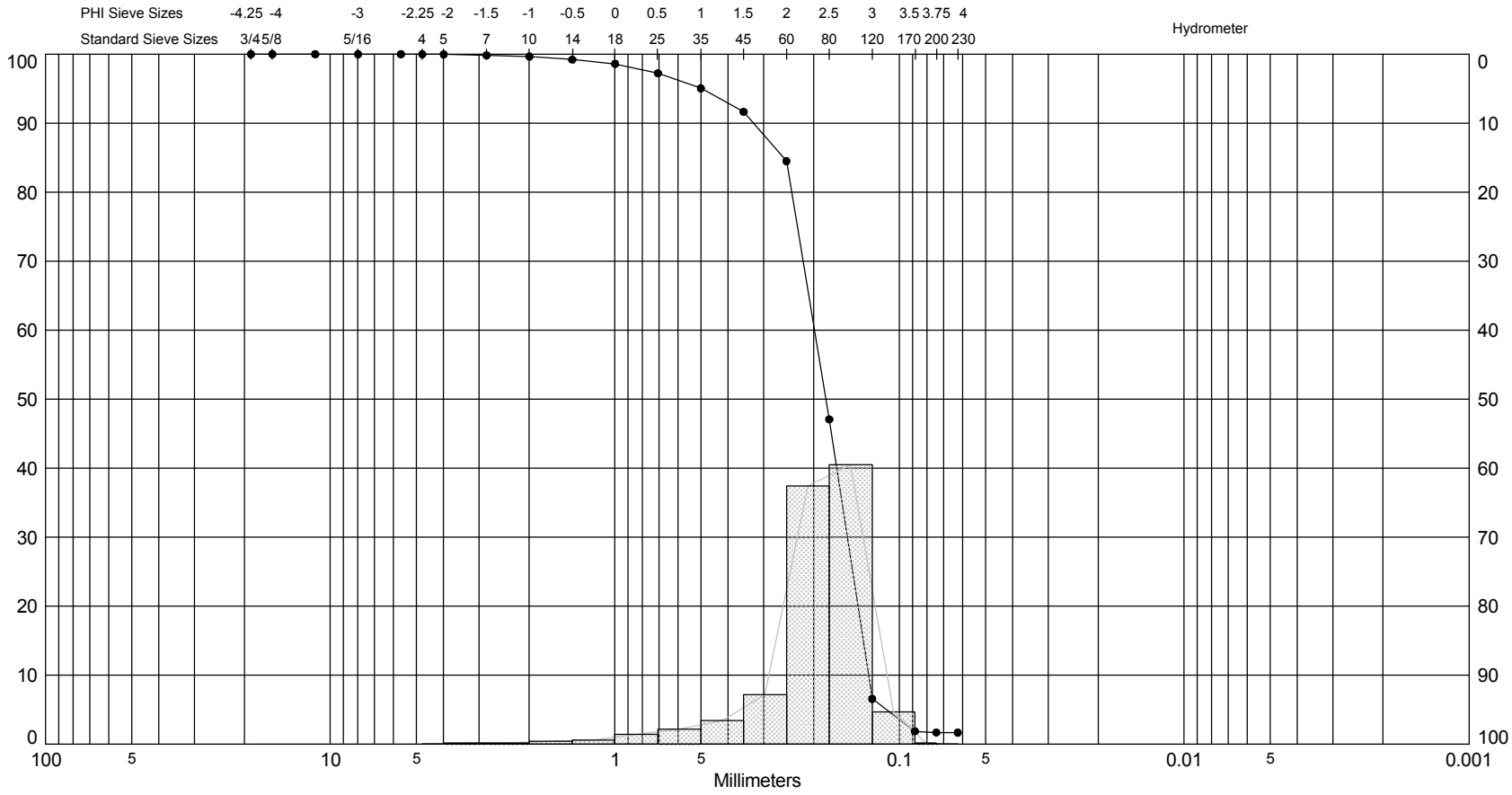

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-18 #1	—●—	-0.7	SP	#200 - 1.69 #230 - 1.66			2.46	2.33	-2.24	10.52	0.66

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	MC
Easting (X, ft):	430,955
Northing (Y, ft):	1,144,486
Horizontal System:	NAD 1983
Vertical System:	

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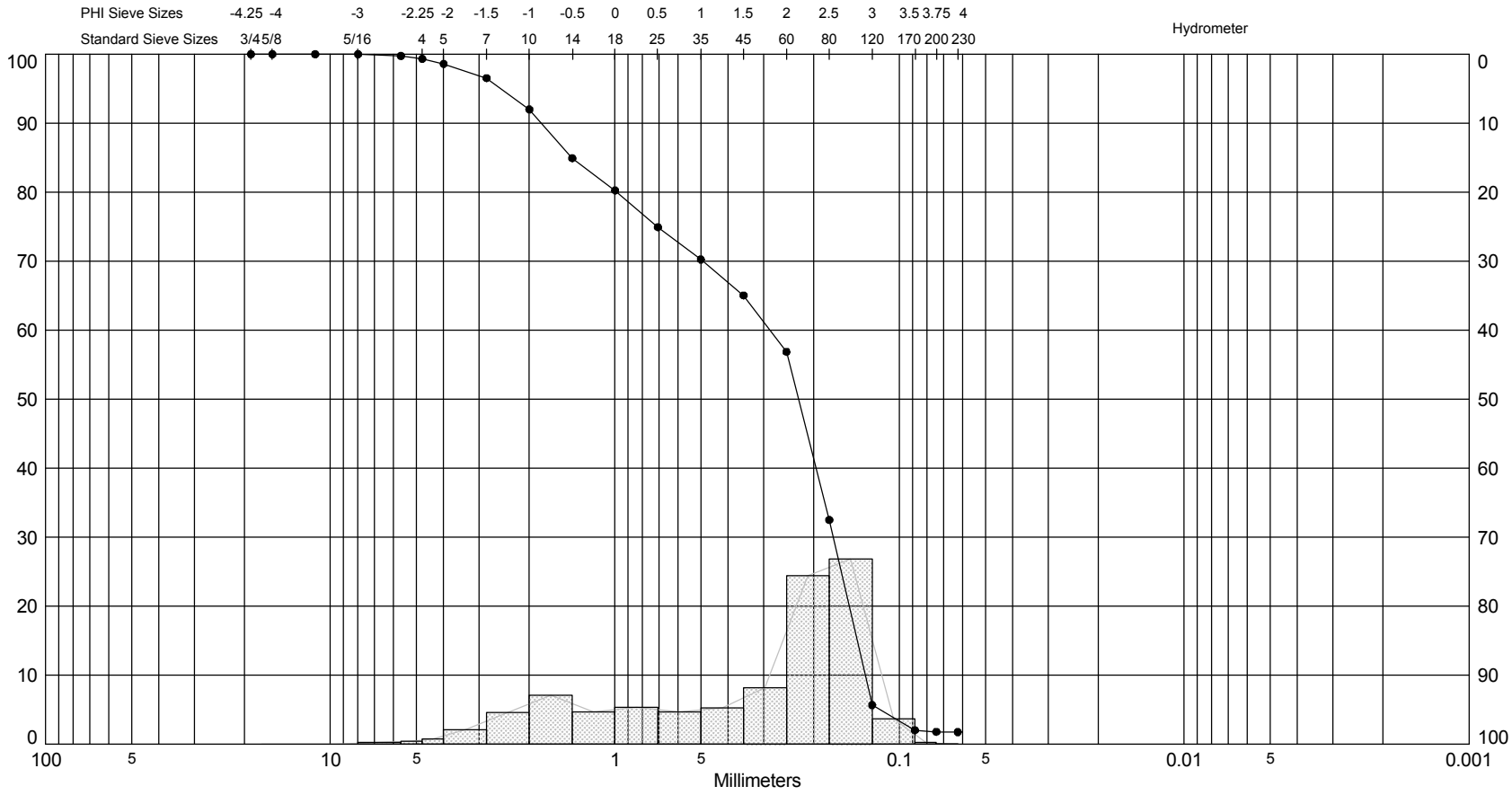

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-18 #2	—●—	-2.0	SW	#200 - 1.79 #230 - 1.75			2.14	1.51	-0.94	2.66	1.45

Comments:

Depths and elevations based on measured values

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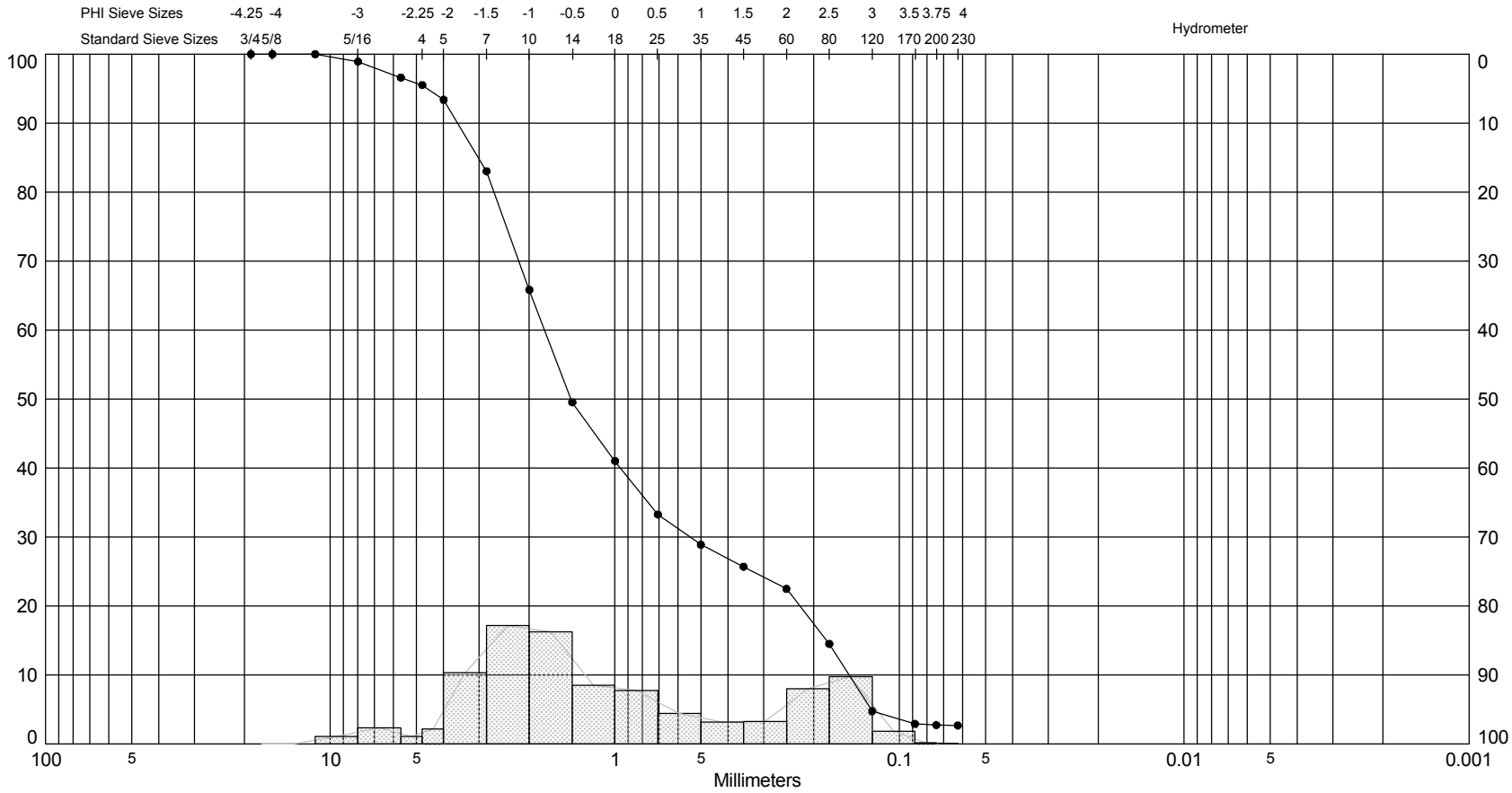
Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	MC
Easting (X, ft):	430,955
Northing (Y, ft):	1,144,486
Horizontal System:	NAD 1983
Vertical System:	

SIEVE ANALYSIS ANNA MARIA 2007 VIBRACORES.GPJ FL DEP ROSS.GDT 5/9/07



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-18 #3	—●—	-3.4	SW	#200 - 2.73 #230 - 2.68				-0.05	0.48	2.13	1.66

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	MC
Easting (X, ft):	430,955
Northing (Y, ft):	1,144,486
Horizontal System:	NAD 1983
Vertical System:	

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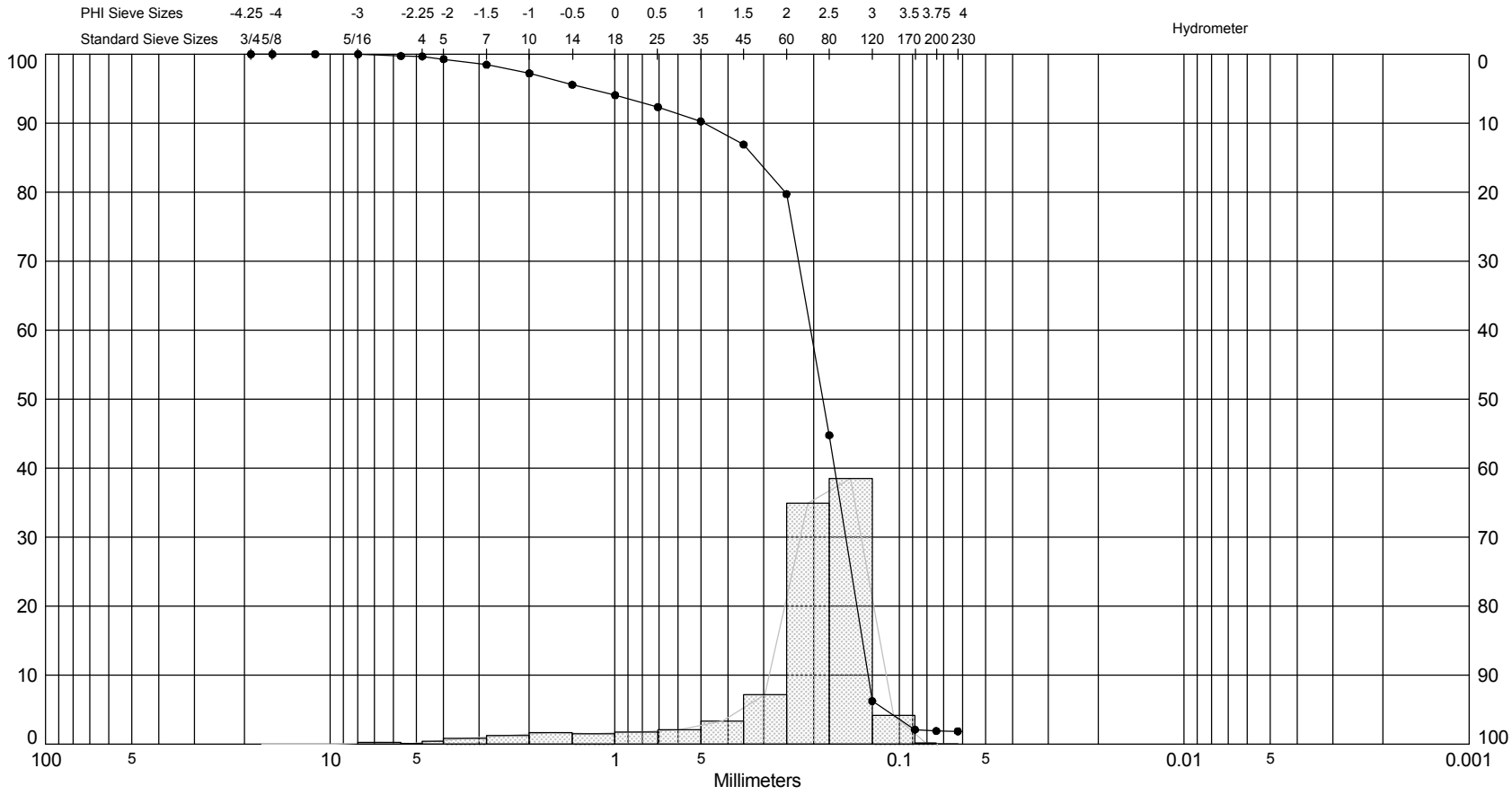

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-19 #1	—●—	-1.0	SW	#200 - 1.90 #230 - 1.86			2.43	2.15	-2.37	8.97	1

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	431,156
Northing (Y, ft):	1,144,258
Horizontal System:	NAD 1983
Vertical System:	

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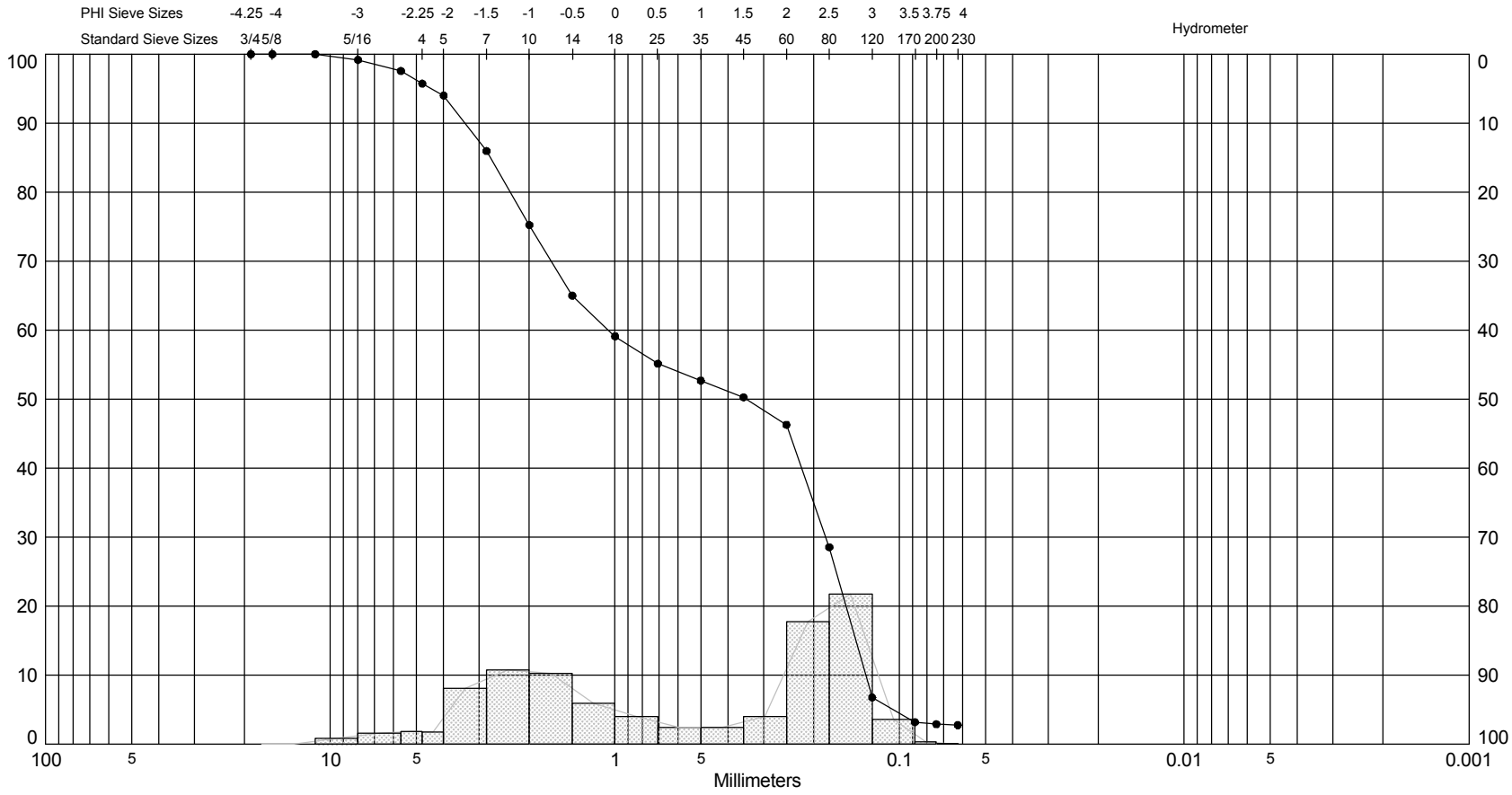

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-19 #2	—●—	-3.3	SW	#200 - 2.88 #230 - 2.76			1.53	0.76	-0.27	1.55	1.89

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	431,156
Northing (Y, ft):	1,144,258
Horizontal System:	NAD 1983
Vertical System:	

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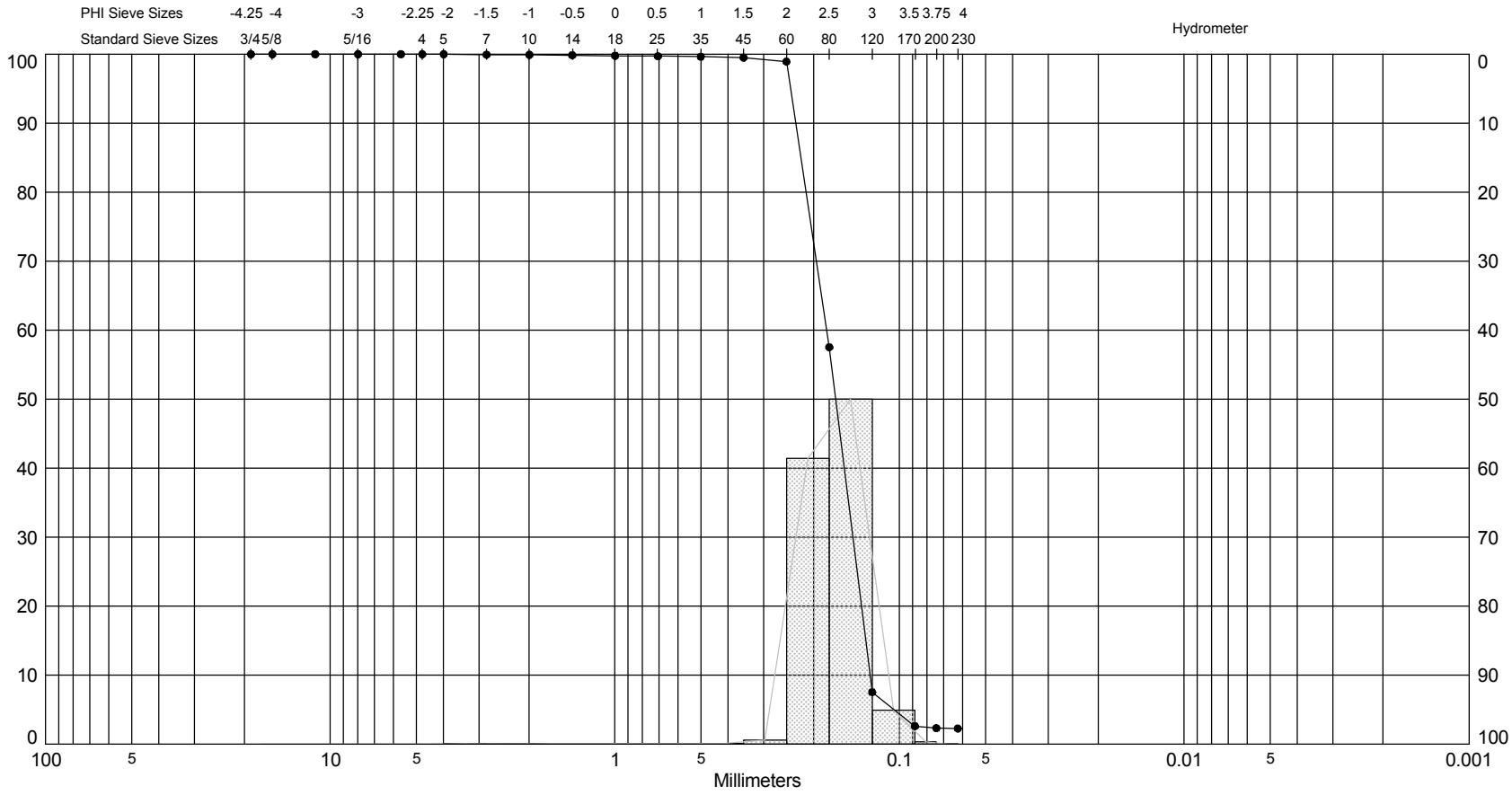

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-19 #3	—●—	-6.4	SP	#200 - 2.31 #230 - 2.27			2.58	2.55	-2.37	27.56	0.36

Comments:

Depths and elevations based on measured values

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Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-07-07
Analyzed By:	JF
Easting (X, ft):	431,156
Northing (Y, ft):	1,144,258
Horizontal System:	NAD 1983
Vertical System:	

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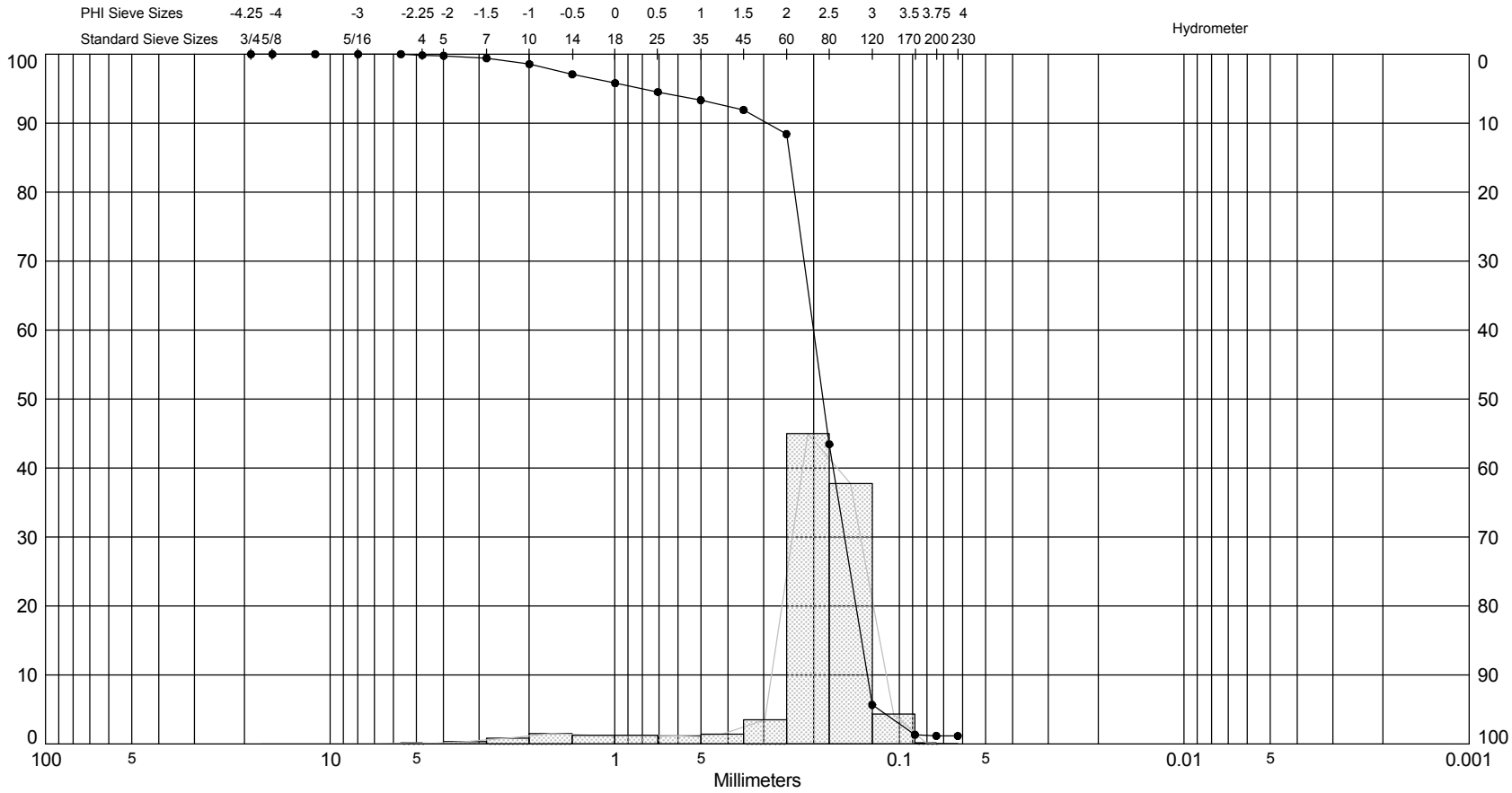

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-20 #1	—●—	-2.0	SP	#200 - 1.17 #230 - 1.15			2.43	2.28	-2.82	12.13	0.82

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	JF
Easting (X, ft):	430,935
Northing (Y, ft):	1,143,913
Horizontal System:	NAD 1983
Vertical System:	

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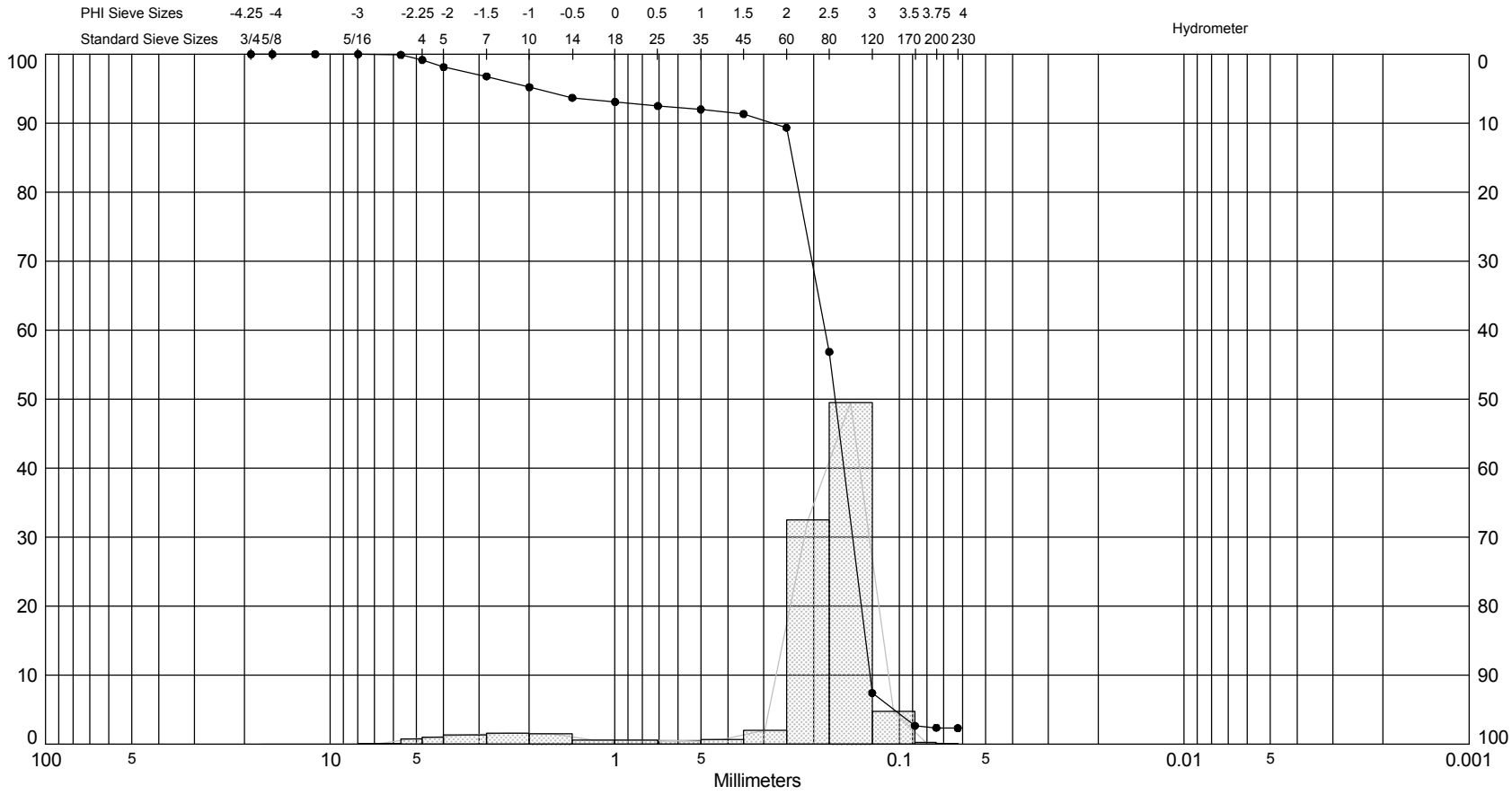

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-20 #2	—●—	-5.4	SW	#200 - 2.37 #230 - 2.30			2.57	2.26	-2.86	10.69	1.1

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	MC
Easting (X, ft):	430,935
Northing (Y, ft):	1,143,913
Horizontal System:	NAD 1983
Vertical System:	

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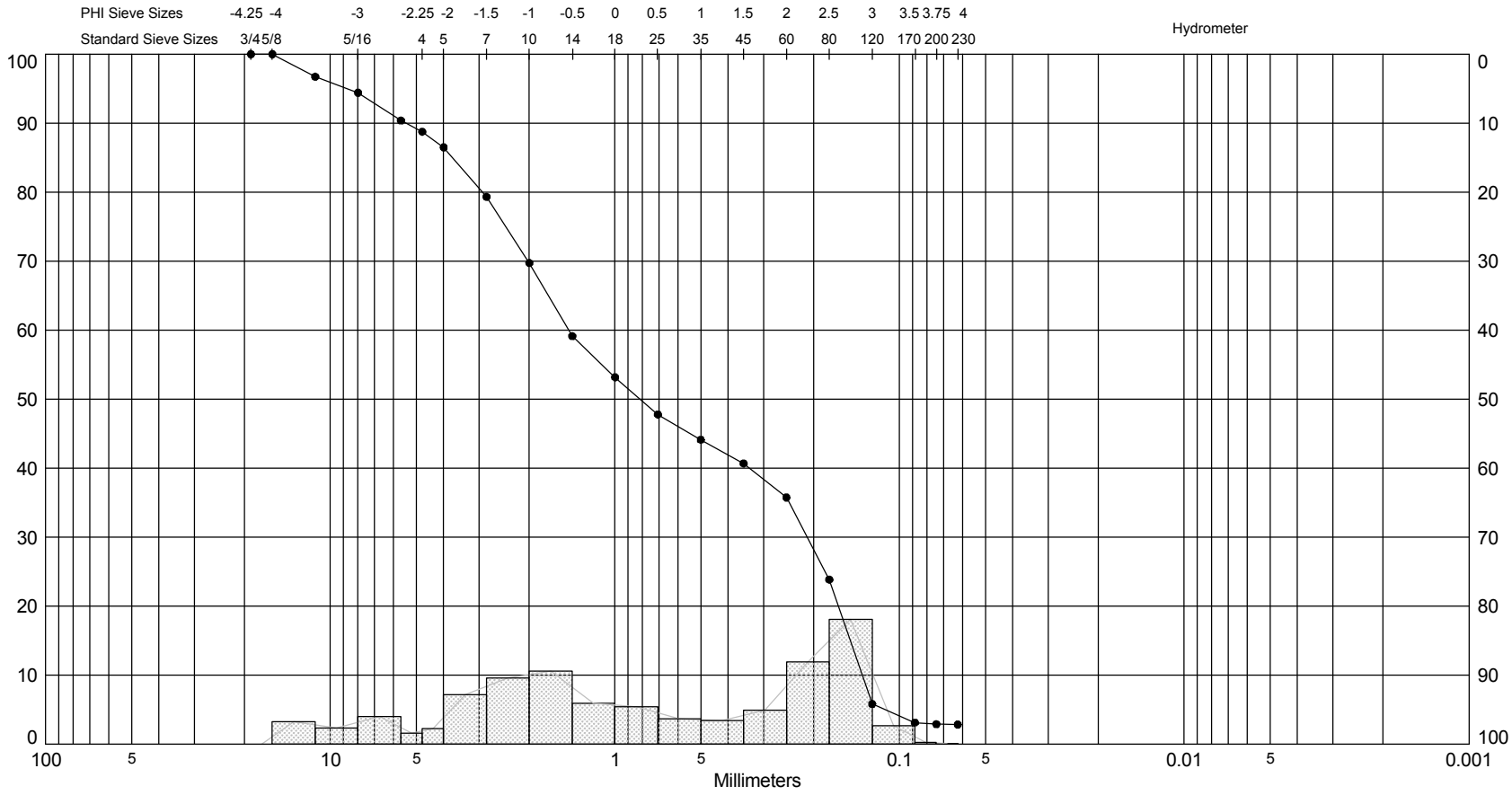

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
AMVC-07-20 #3	—●—	-6.6	SW	#200 - 2.88 #230 - 2.83			0.29	0.31	-0.2	1.79	2.05

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Anna Maria 2007 Sand Search
Analysis Date:	03-08-07
Analyzed By:	MC
Easting (X, ft):	430,935
Northing (Y, ft):	1,143,913
Horizontal System:	NAD 1983
Vertical System:	

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APPENDIX 4

2007 CPE VIBRACORE PHOTOGRAPHS


CPE
ANNA MARIA
AMVC-07-01
0.0 - 2.0


CPE
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AMVC-07-01
2.0 - 4.0


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6.0 - 8.0


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8.0 - 10.0


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ANNA MARIA
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10.0 - 12.0


CPE®
ANNA MARIA
AMVC-07-01
12.0 - 14.0


CPE®
ANNA MARIA
AMVC-07-01
14.0 - 14.8


CPE®
ANNA MARIA
AMVC-07-02
0.0 - 2.0


CPE®
ANNA MARIA
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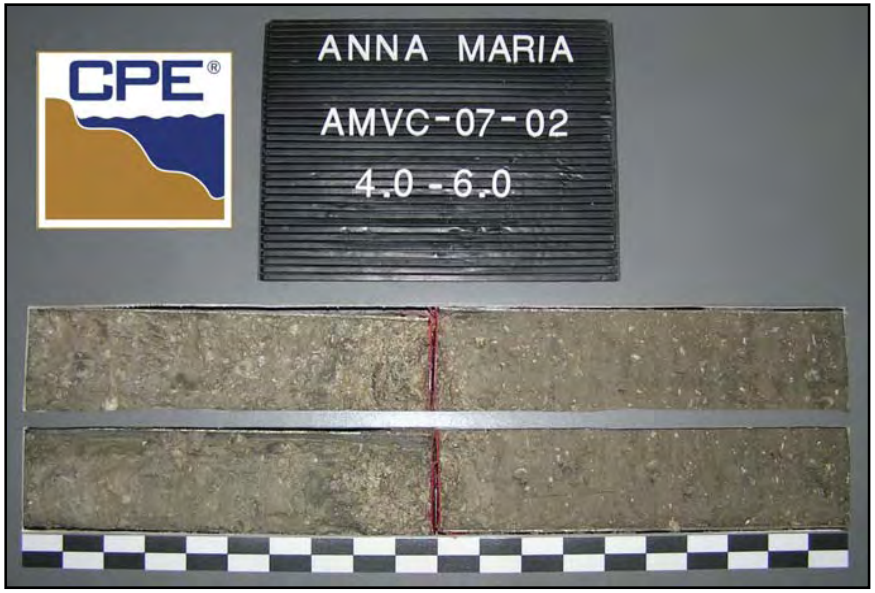
2.0 - 4.0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AMVC-07-02
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AMVC-07-03
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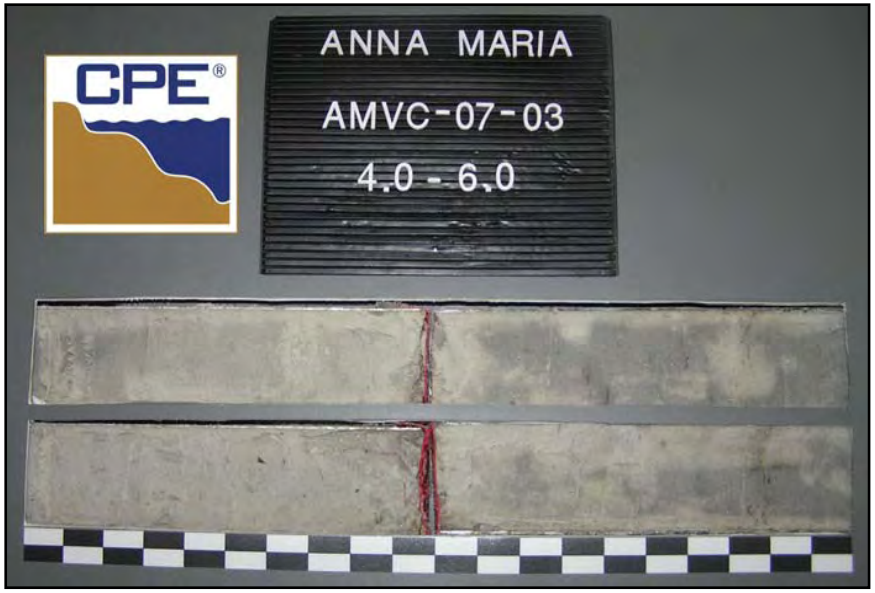
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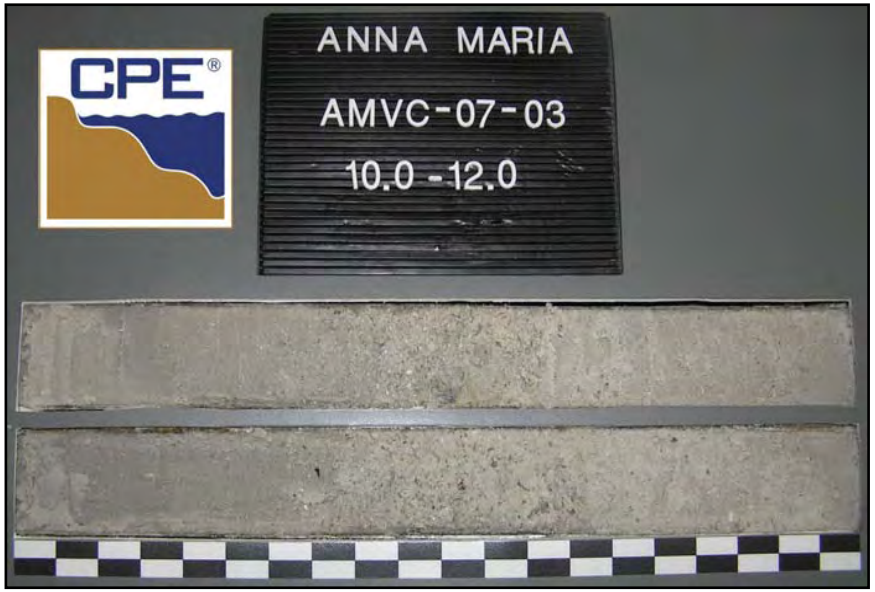
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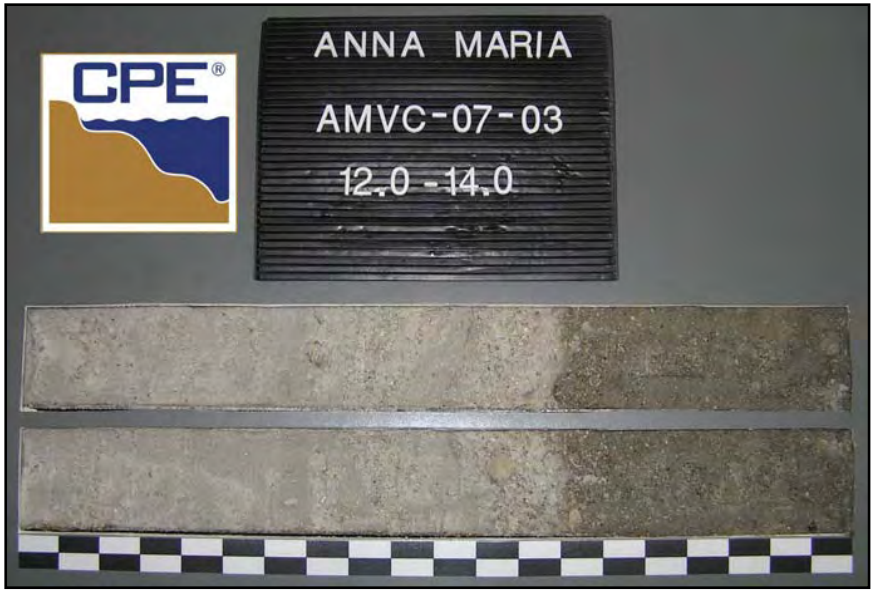
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AMVC-07-03
16.0 - 16.5


CPE
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AMVC-07-04
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AMVC-07-04
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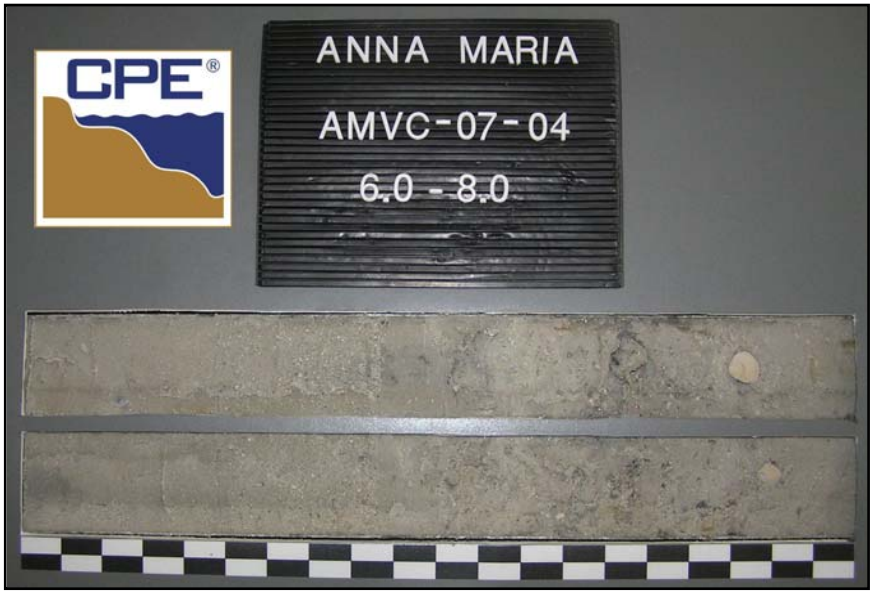
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8.0 - 8.6


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AMVC-07-05
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CPE®
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AMVC-07-05
2.0 - 4.0


CPE®
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AMVC-07-05
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AMVC-07-05
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CPE®
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AMVC-07-05
8.0 -10.0


CPE®
ANNA MARIA
AMVC-07-05
10.0 -12.0


CPE®
ANNA MARIA
AMVC-07-05
12.0 -14.0


CPE®
ANNA MARIA
AMVC-07-05
14.0 -15.0


CPE®
ANNA MARIA
AMVC-07-06
0.0 - 2.0


CPE®
ANNA MARIA
AMVC-07-06
2.0 - 4.0


CPE®
ANNA MARIA
AMVC-07-06
4.0 - 6.0


CPE®
ANNA MARIA
AMVC-07-06
6.0 - 8.0


CPE®
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AMVC-07-06
8.0 -10.0


CPE®
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AMVC-07-06
10.0 -12.0


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ANNA MARIA
AMVC-07-06
12.0 -14.0


CPE®
ANNA MARIA
AMVC-07-06
14.0 -15.7


CPE®
ANNA MARIA
AMVC-07-07
0.0 - 2.0


CPE®
ANNA MARIA
AMVC-07-07
2.0 - 4.0


CPE®
ANNA MARIA
AMVC-07-07
4.0 - 6.0


CPE®
ANNA MARIA
AMVC-07-07
6.0 - 8.0


CPE®
ANNA MARIA
AMVC-07-07
8.0 -10.0


CPE®
ANNA MARIA
AMVC-07-07
10.0 -12.0


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AMVC-07-07
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CPE®
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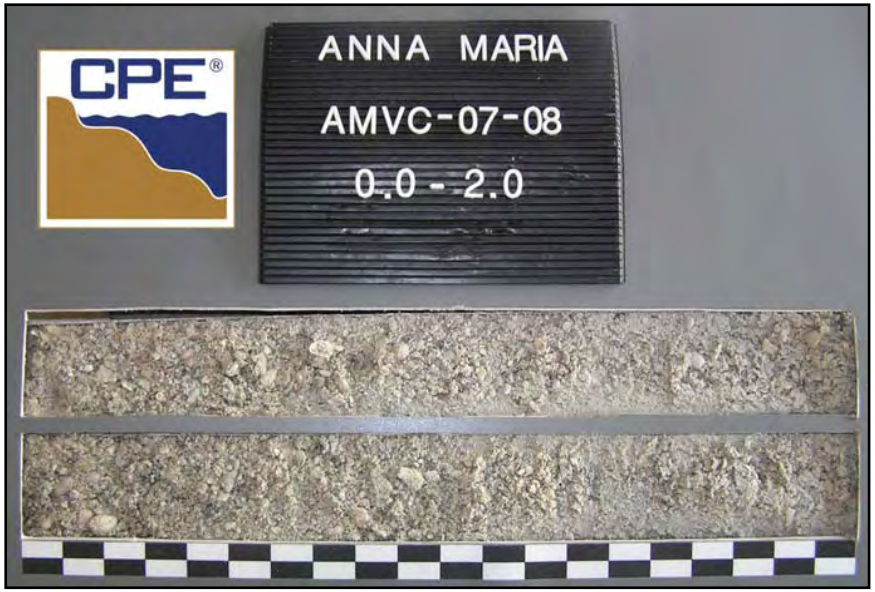
AMVC-07-07
14.0 -14.7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AMVC-07-08
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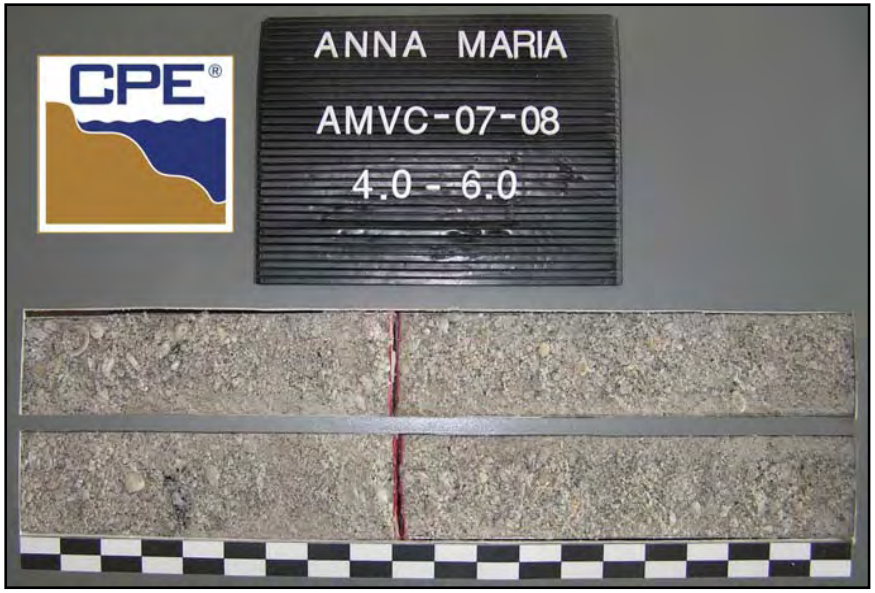
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AMVC-07-08
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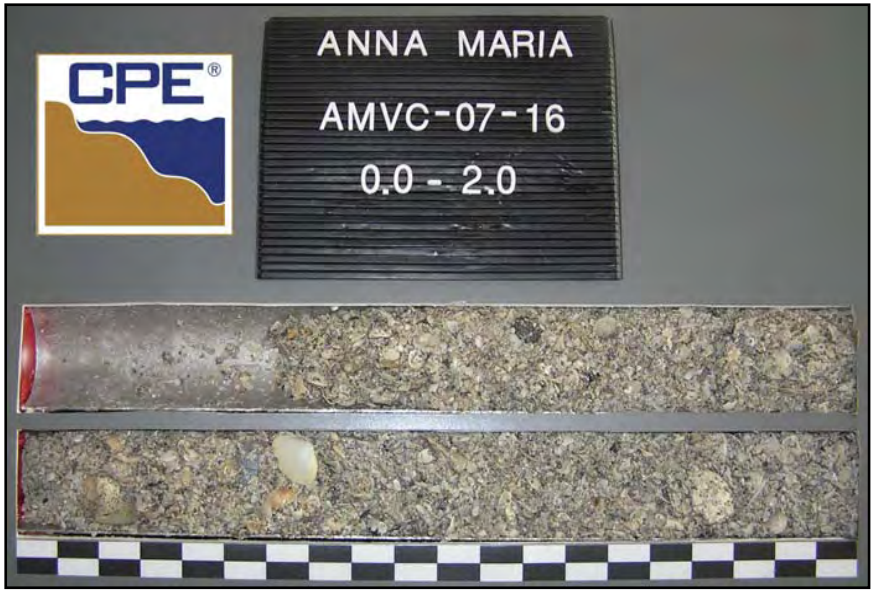
AMVC-07-08
6.0 - 8.0


CPE®
ANNA MARIA
AMVC-07-08
8.0 - 8.5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ANNA MARIA
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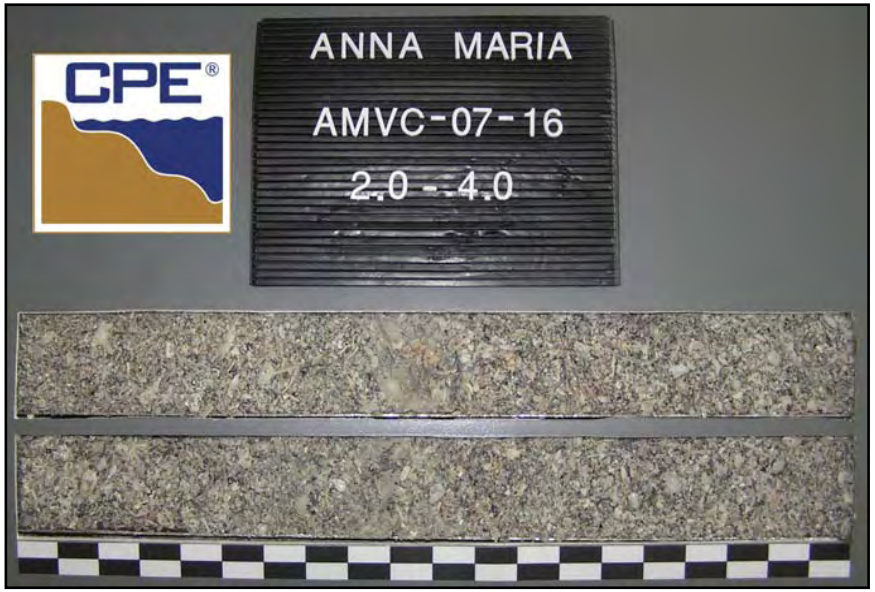
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AMVC-07-16
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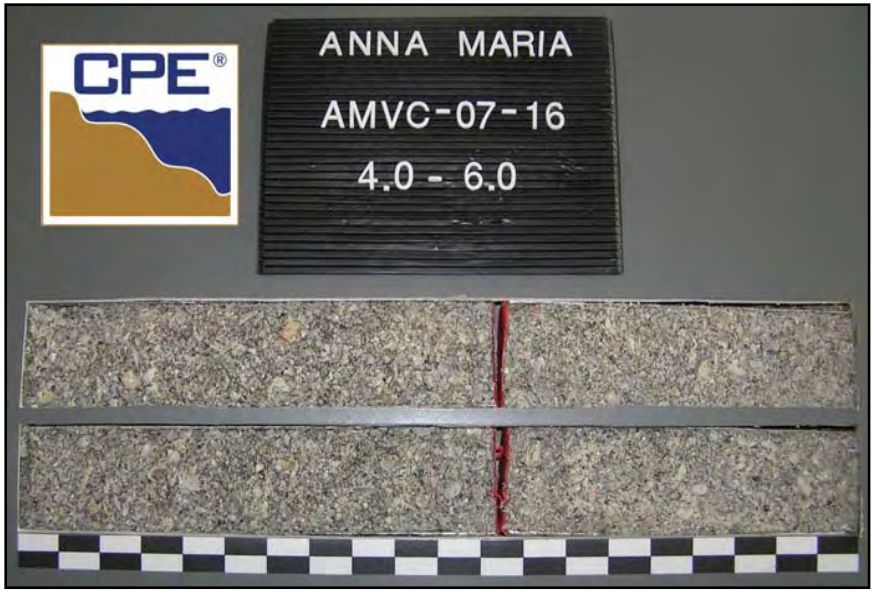
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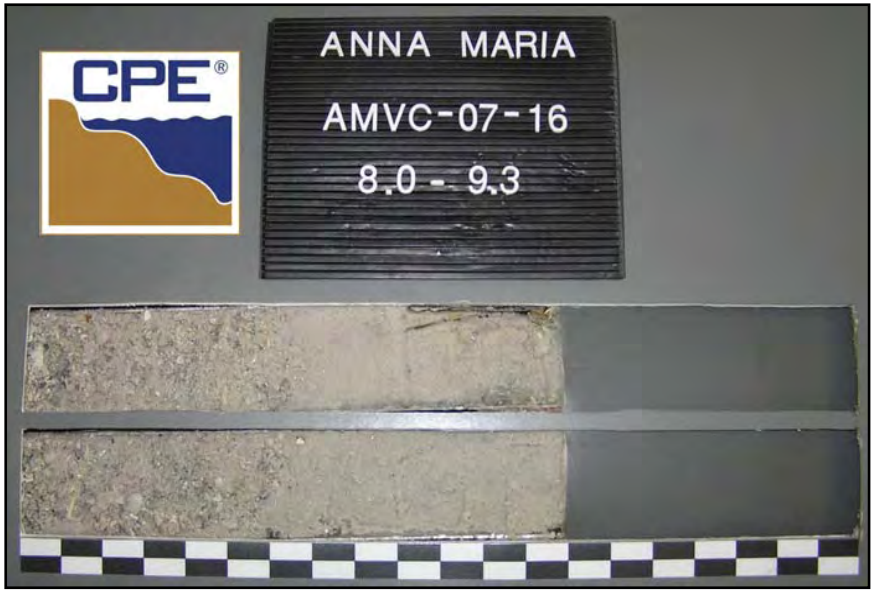
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AMVC-07-17
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AMVC-07-17
4.0 - 6.0


CPE®
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AMVC-07-17
6.0 - 8.0


CPE®
ANNA MARIA
AMVC-07-17
8.0 - 10.0


CPE®
ANNA MARIA
AMVC-07-17
10.0 - 11.7


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AMVC-07-18
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CPE®
ANNA MARIA
AMVC-07-18
2.0 - 4.0


CPE®
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AMVC-07-18
4.0 - 6.0


CPE®
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AMVC-07-18
6.0 - 8.0


CPE®
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AMVC-07-18
8.0 - 10.0


CPE®
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AMVC-07-18
10.0 - 12.0


CPE®
ANNA MARIA
AMVC-07-18
12.0 - 14.0


CPE®
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AMVC-07-18
14.0 - 16.0


CPE®
ANNA MARIA
AMVC-07-18
16.0 - 16.5


CPE
ANNA MARIA
AMVC-07-19
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ANNA MARIA
AMVC-07-19
2.0 - 4.0


CPE
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AMVC-07-19
4.0 - 6.0


CPE
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AMVC-07-19
6.0 - 8.0


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AMVC-07-19
8.0 - 10.0


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AMVC-07-19
10.0 - 12.0


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ANNA MARIA
AMVC-07-19
12.0 - 14.0


CPE
ANNA MARIA
AMVC-07-19
14.0 - 15.8


CPE®
ANNA MARIA
AMVC-07-20
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AMVC-07-20
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CPE®
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AMVC-07-20
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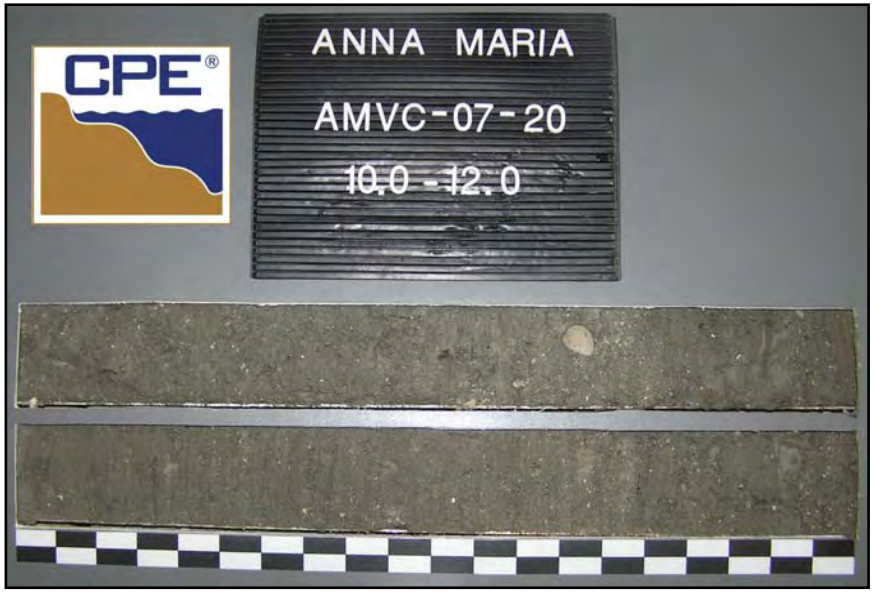
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ANNA MARIA
AMVC-07-20
10.0 - 12.0


CPE®
ANNA MARIA
AMVC-07-20
12.0 - 14.0

APPENDIX 5

2007 ANNA MARIA VIBRACORE LOCATION MAP

427500 430000 432500 435000 437500

1145000 1142500 1140000 1137500 1135000 1132500 1130000 1127500

-2 -4 -6 -8 -10 -12 -14 -16 -18 -20 -22 -24 -26 -28 -30 -32

Legend

- CPE Cores
- Planned Lines
- Study Areas
- Navigation Channel

0 600 1,200 Feet

AMVC-07-18 AMVC-07-19 AMVC-07-17 AMVC-07-20 AMVC-07-01 AMVC-07-02

AMVC-07-04A AMVC-07-04 AMVC-07-03 AMVC-07-07 AMVC-07-15A AMVC-07-15 AMVC-07-16 AMVC-07-08B AMVC-07-08 AMVC-07-13 AMVC-07-14 AMVC-07-12 AMVC-07-11 AMVC-07-10 AMVC-07-09 AMVC-07-06 AMVC-07-05

DRAFT

427500 430000 432500 435000 437500

1145000 1142500 1140000 1137500 1135000 1132500 1130000 1127500

AMVC-07-18
AMVC-07-19
AMVC-07-17
AMVC-07-20
AMVC-07-01
AMVC-07-02
AMVC-07-04A
AMVC-07-04
AMVC-07-03
AMVC-07-07
AMVC-07-15A
AMVC-07-15
AMVC-07-16
AMVC-07-08B
AMVC-07-08
AMVC-07-13
AMVC-07-14
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AMVC-07-11
AMVC-07-10
AMVC-07-09
AMVC-07-06
AMVC-07-05

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-30
-32

Legend

- CPE Cores
- Planned Lines
- Study Areas
- Navigation Channel

0 600 1,200
Feet

DRAFT

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM12-10-1 @ 2 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,825	1,158,205	State Plane, FLW (U.S. Ft.)	-7.4 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 1.77 #230 - 1.76		2.90	3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.07	0.07
#10	-1.00	2.00	0.01	0.08
#14	-0.50	1.40	0.14	0.21
#18	0.00	1.00	0.26	0.48
#170	0.25	0.90	0.31	0.79
#25	0.50	0.71	0.31	1.10
#35	1.00	0.50	1.23	2.33
#45	1.50	0.36	5.09	7.42
#60	2.00	0.25	54.26	61.68
#80	2.50	0.18	33.61	95.29
#120	3.00	0.13	2.89	98.18
#200	3.75	0.08	0.05	98.23
#230	4.00	0.06	0.01	98.24

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fine-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.50	2.33	2.20	1.89	1.66	1.58	1.26

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.89	0.27	1.89	0.27	0.41	-1.71	13.18

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM12-10-1 @ 2.001 ft

Analysis Date: 12/15/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,825	1,158,205	State Plane, FLW (U.S. Ft.)	-7.4 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 0.03 #230 - 0.02			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.02	0.02
#35	1.00	0.50	0.05	0.07
#45	1.50	0.36	1.02	1.10
#60	2.00	0.25	4.25	5.35
#80	2.50	0.18	39.47	44.82
#120	3.00	0.13	50.14	94.96
#170	3.50	0.09	4.90	99.86
#200	3.75	0.08	0.11	99.97
#230	4.00	0.06	0.01	99.98

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.00	2.89	2.80	2.55	2.25	2.13	1.96

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.52	0.17	2.55	0.17	0.36	-0.57	4.4

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM12-10-1 @ 4 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,825	1,158,205	State Plane, FLW (U.S. Ft.)	-9.4 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 7/1	#200 - 8.22 #230 - 8.21			11

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.37	1.37
#3.5	-2.50	5.60	1.48	2.85
#4	-2.25	4.75	0.52	3.37
#5	-2.00	4.00	0.38	3.75
#7	-1.50	2.80	1.16	4.90
#10	-1.00	2.00	0.64	5.54
#14	-0.50	1.40	0.88	6.42
#18	0.00	1.00	1.06	7.48
#170	0.25	0.90	1.09	8.58
#25	0.50	0.71	0.98	9.56
#35	1.00	0.50	1.53	11.09
#45	1.50	0.36	1.85	12.94
#60	2.00	0.25	35.61	48.55
#80	2.50	0.18	40.12	88.68
#120	3.00	0.13	2.87	91.54
#200	3.75	0.08	0.24	91.78
#230	4.00	0.06	0.01	91.79

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, few silt, trace fine gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.44	2.33	2.02	1.67	1.54	-1.42

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.64	0.32	2.02	0.25	1.22	-2.86	11.03

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM13-10-1 @ 0.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,178	1,161,031	State Plane, FLW (U.S. Ft.)	-9.9 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 1.96 #230 - 1.96			22

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	1.09	1.09
#4	-2.25	4.75	0.24	1.33
#5	-2.00	4.00	0.79	2.12
#7	-1.50	2.80	1.91	4.03
#10	-1.00	2.00	3.03	7.06
#14	-0.50	1.40	3.76	10.82
#18	0.00	1.00	3.55	14.38
#170	0.25	0.90	2.80	17.18
#25	0.50	0.71	2.55	19.73
#35	1.00	0.50	2.47	22.20
#45	1.50	0.36	7.66	29.86
#60	2.00	0.25	45.10	74.96
#80	2.50	0.18	21.65	96.61
#120	3.00	0.13	1.39	98.00
#200	3.75	0.08	0.04	98.04
#230	4.00	0.06	0.01	98.04

SAND, poorly-graded,mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, trace silt, trace fine gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.46	2.21	2.00	1.72	1.18	0.15	-1.34

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.31	0.40	1.72	0.30	1.16	-1.67	5.1

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM14-10-1 @ 2 ft

Analysis Date: 12/14/2010

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
428,548	1,162,955	State Plane, FLW (U.S. Ft.)	-7.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.99 #230 - 1.98			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.01	0.01
#7	-1.50	2.80	0.05	0.06
#10	-1.00	2.00	0.09	0.15
#14	-0.50	1.40	0.07	0.22
#18	0.00	1.00	0.13	0.36
#170	0.25	0.90	0.16	0.52
#25	0.50	0.71	0.25	0.77
#35	1.00	0.50	0.36	1.12
#45	1.50	0.36	2.51	3.64
#60	2.00	0.25	46.42	50.06
#80	2.50	0.18	44.39	94.45
#120	3.00	0.13	3.50	97.96
#200	3.75	0.08	0.05	98.01
#230	4.00	0.06	0.01	98.02

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.58	2.38	2.28	2.00	1.73	1.63	1.51

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.98	0.25	2.00	0.25	0.38	-2.08	18.52

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM14-10-1 @ 4 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
428,548	1,162,955	State Plane, FLW (U.S. Ft.)	-9.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.69 #230 - 1.61			18

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	1.61	1.61
#4	-2.25	4.75	0.67	2.28
#5	-2.00	4.00	0.96	3.24
#7	-1.50	2.80	1.92	5.16
#10	-1.00	2.00	2.55	7.71
#14	-0.50	1.40	2.87	10.59
#18	0.00	1.00	2.37	12.95
#170	0.25	0.90	1.72	14.67
#25	0.50	0.71	1.46	16.13
#35	1.00	0.50	1.41	17.54
#45	1.50	0.36	3.64	21.18
#60	2.00	0.25	24.24	45.42
#80	2.50	0.18	46.50	91.92
#120	3.00	0.13	6.00	97.91
#200	3.75	0.08	0.40	98.31
#230	4.00	0.06	0.08	98.39

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, trace fine gravel-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.76	2.41	2.32	2.05	1.58	0.48	-1.54

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.57	0.34	2.05	0.24	1.27	-1.91	5.82

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM4-10-1 @ 1.5 ft

Analysis Date:

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
443,579	1,122,896	State Plane, FLW (U.S. Ft.)	-8.7 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 4/1	#200 - 7.19 #230 - 6.75			14

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.90	0.90
#4	-2.25	4.75	0.00	0.90
#5	-2.00	4.00	0.45	1.35
#7	-1.50	2.80	0.56	1.91
#10	-1.00	2.00	0.99	2.90
#14	-0.50	1.40	1.26	4.16
#18	0.00	1.00	1.81	5.97
#170	0.25	0.90	2.09	8.06
#25	0.50	0.71	2.34	10.40
#35	1.00	0.50	2.91	13.31
#45	1.50	0.36	3.26	16.56
#60	2.00	0.25	6.90	23.46
#80	2.50	0.18	20.56	44.01
#120	3.00	0.13	41.44	85.46
#200	3.75	0.08	7.35	92.81
#230	4.00	0.06	0.44	93.25

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.98	2.87	2.57	2.04	1.41	-0.27

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.13	0.23	2.57	0.17	1.16	-2	7.28

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM4-10-2 @ 1.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
444,243	1,122,322	State Plane, FLW (U.S. Ft.)	-8.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 1.24 #230 - 1.21			3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.04	0.04
#4	-2.25	4.75	0.00	0.04
#5	-2.00	4.00	0.03	0.08
#7	-1.50	2.80	0.01	0.09
#10	-1.00	2.00	0.12	0.21
#14	-0.50	1.40	0.18	0.39
#18	0.00	1.00	0.26	0.65
#170	0.25	0.90	0.29	0.94
#25	0.50	0.71	0.28	1.22
#35	1.00	0.50	0.47	1.69
#45	1.50	0.36	1.48	3.17
#60	2.00	0.25	12.22	15.39
#80	2.50	0.18	72.92	88.31
#120	3.00	0.13	10.23	98.54
#200	3.75	0.08	0.21	98.76
#230	4.00	0.06	0.03	98.79

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.83	2.47	2.41	2.24	2.07	2.00	1.57

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.19	0.22	2.24	0.21	0.42	-3.92	32.56

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM4-10-2 @ 3.5 ft

Analysis Date: 12/14/2010

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
444,243	1,122,322	State Plane, FLW (U.S. Ft.)	-10.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 4/1	#200 - 4.59 #230 - 2.81			40

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	7.56	7.56
#3.5	-2.50	5.60	7.92	15.47
#4	-2.25	4.75	2.55	18.02
#5	-2.00	4.00	3.16	21.18
#7	-1.50	2.80	5.51	26.69
#10	-1.00	2.00	3.31	30.00
#14	-0.50	1.40	2.92	32.92
#18	0.00	1.00	1.97	34.89
#170	0.25	0.90	1.48	36.37
#25	0.50	0.71	1.04	37.42
#35	1.00	0.50	0.82	38.24
#45	1.50	0.36	1.54	39.78
#60	2.00	0.25	6.27	46.04
#80	2.50	0.18	35.31	81.35
#120	3.00	0.13	12.70	94.05
#200	3.75	0.08	1.36	95.41
#230	4.00	0.06	1.78	97.19

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, little fine gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.52	2.60	2.41	2.06	-1.65	-2.45	-3.59

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.61	0.66	2.06	0.24	2.33	-0.67	1.86

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM4-10-3 @ 1.5 ft

Analysis Date: 12/14/2010

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
444,898	1,121,796	State Plane, FLW (U.S. Ft.)	-8.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 5/1	#200 - 11.17 #230 - 11.11			24

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.04	1.04
#3.5	-2.50	5.60	3.69	4.73
#4	-2.25	4.75	1.43	6.16
#5	-2.00	4.00	1.63	7.79
#7	-1.50	2.80	3.74	11.53
#10	-1.00	2.00	3.31	14.84
#14	-0.50	1.40	3.28	18.13
#18	0.00	1.00	2.22	20.35
#170	0.25	0.90	1.16	21.51
#25	0.50	0.71	1.00	22.52
#35	1.00	0.50	1.37	23.89
#45	1.50	0.36	2.18	26.07
#60	2.00	0.25	14.91	40.98
#80	2.50	0.18	40.48	81.45
#120	3.00	0.13	7.15	88.61
#200	3.75	0.08	0.22	88.83
#230	4.00	0.06	0.07	88.89

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, few fine gravel-sized shell up to 1/2", few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.68	2.42	2.11	1.26	-0.82	-2.45

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.20	0.44	2.11	0.23	1.72	-1.33	3.41

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-1 @ 2 ft

Analysis Date: 12/14/2010

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,588	1,128,226	State Plane, FLW (U.S. Ft.)	-9.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 3.63 #230 - 3.60			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.01	0.01
#10	-1.00	2.00	0.01	0.02
#14	-0.50	1.40	0.09	0.10
#18	0.00	1.00	0.16	0.26
#170	0.25	0.90	0.19	0.45
#25	0.50	0.71	0.19	0.64
#35	1.00	0.50	0.21	0.85
#45	1.50	0.36	1.12	1.97
#60	2.00	0.25	18.91	20.88
#80	2.50	0.18	62.94	83.82
#120	3.00	0.13	12.20	96.01
#200	3.75	0.08	0.36	96.37
#230	4.00	0.06	0.03	96.40

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.51	2.43	2.23	2.03	1.87	1.58

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.19	0.22	2.23	0.21	0.37	-1.73	14.18

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-2 @ 1.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,120	1,129,250	State Plane, FLW (U.S. Ft.)	-8.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 3.94 #230 - 3.92			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#10	-1.00	2.00	0.00	0.00
#14	-0.50	1.40	0.07	0.07
#18	0.00	1.00	0.18	0.24
#170	0.25	0.90	0.17	0.41
#25	0.50	0.71	0.04	0.45
#35	1.00	0.50	0.45	0.90
#45	1.50	0.36	0.77	1.67
#60	2.00	0.25	34.02	35.69
#80	2.50	0.18	57.47	93.16
#120	3.00	0.13	2.82	95.98
#200	3.75	0.08	0.08	96.06
#230	4.00	0.06	0.02	96.08

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell,

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.83	2.42	2.34	2.12	1.84	1.71	1.55

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.06	0.24	2.12	0.23	0.33	-1.75	13.42

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-2 @ 4 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,120	1,129,250	State Plane, FLW (U.S. Ft.)	-11.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 1.73 #230 - 1.68			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.17	0.17
#7	-1.50	2.80	0.03	0.20
#10	-1.00	2.00	0.01	0.21
#14	-0.50	1.40	0.03	0.24
#18	0.00	1.00	0.06	0.31
#170	0.25	0.90	0.03	0.34
#25	0.50	0.71	0.09	0.43
#35	1.00	0.50	0.10	0.52
#45	1.50	0.36	0.32	0.84
#60	2.00	0.25	9.66	10.50
#80	2.50	0.18	78.47	88.97
#120	3.00	0.13	9.09	98.06
#200	3.75	0.08	0.20	98.27
#230	4.00	0.06	0.05	98.32

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.83	2.47	2.41	2.25	2.09	2.04	1.72

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.23	0.21	2.25	0.21	0.33	-5.47	69.95

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-3 @ 2 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
436,263	1,131,344	State Plane, FLW (U.S. Ft.)	-10.9 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 1.59 #230 - 1.57		2.10	3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.07	0.07
#4	-2.25	4.75	0.00	0.07
#5	-2.00	4.00	0.00	0.07
#7	-1.50	2.80	0.06	0.12
#10	-1.00	2.00	0.07	0.19
#14	-0.50	1.40	0.02	0.21
#18	0.00	1.00	0.10	0.31
#170	0.25	0.90	0.11	0.42
#25	0.50	0.71	0.20	0.62
#35	1.00	0.50	0.35	0.97
#45	1.50	0.36	0.58	1.55
#60	2.00	0.25	7.56	9.11
#80	2.50	0.18	77.91	87.02
#120	3.00	0.13	11.08	98.10
#200	3.75	0.08	0.31	98.41
#230	4.00	0.06	0.02	98.43

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.86	2.48	2.42	2.26	2.10	2.04	1.73

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.24	0.21	2.26	0.21	0.35	-4.91	57.95

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-3 @ 2.001 ft

Analysis Date: 12/15/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
436,263	1,131,344	State Plane, FLW (U.S. Ft.)	-10.9 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 0.05 #230 - 0.03			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.03	0.03
#35	1.00	0.50	0.09	0.13
#45	1.50	0.36	0.54	0.67
#60	2.00	0.25	0.68	1.34
#80	2.50	0.18	6.42	7.76
#120	3.00	0.13	82.63	90.39
#170	3.50	0.09	9.35	99.74
#200	3.75	0.08	0.22	99.95
#230	4.00	0.06	0.01	99.97

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.25	2.96	2.91	2.76	2.60	2.55	2.28

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.75	0.15	2.76	0.15	0.26	-1.9	16.87

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-4 @ 0.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
436,082	1,131,882	State Plane, FLW (U.S. Ft.)	-7.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 4/1	#200 - 7.74 #230 - 7.60			31

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.96	1.96
#3.5	-2.50	5.60	4.04	5.99
#4	-2.25	4.75	0.73	6.72
#5	-2.00	4.00	0.97	7.69
#7	-1.50	2.80	2.40	10.09
#10	-1.00	2.00	2.69	12.78
#14	-0.50	1.40	7.23	20.01
#18	0.00	1.00	4.60	24.61
#170	0.25	0.90	2.72	27.33
#25	0.50	0.71	2.42	29.75
#35	1.00	0.50	2.56	32.30
#45	1.50	0.36	4.78	37.09
#60	2.00	0.25	13.83	50.92
#80	2.50	0.18	34.61	85.54
#120	3.00	0.13	6.12	91.66
#200	3.75	0.08	0.60	92.26
#230	4.00	0.06	0.14	92.40

SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, few silt, few fine gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.48	2.35	1.97	0.04	-0.78	-2.68

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.01	0.50	1.97	0.26	1.72	-1.13	3.22

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-4 @ 3 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
436,082	1,131,882	State Plane, FLW (U.S. Ft.)	-10.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 4.11 #230 - 3.99			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.48	1.48
#3.5	-2.50	5.60	0.78	2.26
#4	-2.25	4.75	0.32	2.59
#5	-2.00	4.00	0.54	3.12
#7	-1.50	2.80	0.64	3.76
#10	-1.00	2.00	0.65	4.41
#14	-0.50	1.40	0.69	5.10
#18	0.00	1.00	0.83	5.93
#170	0.25	0.90	0.81	6.74
#25	0.50	0.71	0.62	7.36
#35	1.00	0.50	0.92	8.29
#45	1.50	0.36	1.34	9.63
#60	2.00	0.25	29.35	38.97
#80	2.50	0.18	50.66	89.64
#120	3.00	0.13	5.76	95.39
#200	3.75	0.08	0.49	95.89
#230	4.00	0.06	0.12	96.01

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt, trace
fine gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.44	2.36	2.11	1.76	1.61	-0.57

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.81	0.29	2.11	0.23	1.12	-3.33	14.74

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-5 @ 2.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,298	1,128,600	State Plane, FLW (U.S. Ft.)	-6.4 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 6/1	#200 - 5.79 #230 - 5.76			1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.03	0.03
#10	-1.00	2.00	0.03	0.06
#14	-0.50	1.40	0.07	0.12
#18	0.00	1.00	0.08	0.21
#170	0.25	0.90	0.10	0.31
#25	0.50	0.71	0.12	0.43
#35	1.00	0.50	0.23	0.65
#45	1.50	0.36	1.21	1.86
#60	2.00	0.25	22.25	24.11
#80	2.50	0.18	59.59	83.70
#120	3.00	0.13	10.20	93.90
#200	3.75	0.08	0.32	94.21
#230	4.00	0.06	0.03	94.24

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.51	2.43	2.22	2.01	1.82	1.57

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.16	0.22	2.22	0.21	0.36	-1.68	15.86

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM5-10-5 @ 5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,298	1,128,600	State Plane, FLW (U.S. Ft.)	-8.9 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 5/1	#200 - 2.35 #230 - 2.31			31

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	5.24	5.24
#3.5	-2.50	5.60	6.86	12.11
#4	-2.25	4.75	1.71	13.82
#5	-2.00	4.00	1.44	15.25
#7	-1.50	2.80	2.81	18.07
#10	-1.00	2.00	2.85	20.92
#14	-0.50	1.40	3.29	24.20
#18	0.00	1.00	2.51	26.72
#170	0.25	0.90	1.60	28.31
#25	0.50	0.71	0.70	29.01
#35	1.00	0.50	1.41	30.42
#45	1.50	0.36	1.27	31.69
#60	2.00	0.25	7.68	39.37
#80	2.50	0.18	50.34	89.71
#120	3.00	0.13	7.62	97.33
#200	3.75	0.08	0.33	97.65
#230	4.00	0.06	0.04	97.69

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, little fine
gravel-sized shell up to 1/2", trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.85	2.44	2.35	2.11	-0.34	-1.87	-3.30

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.96	0.51	2.11	0.23	2.06	-1.16	2.79

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM7-10-1 @ 2 ft

Analysis Date: 12/14/2010

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,766	1,143,388	State Plane, FLW (U.S. Ft.)	-7.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 2.10 #230 - 2.08		14.80	18

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.04	0.04
#5	-2.00	4.00	0.04	0.08
#7	-1.50	2.80	0.36	0.44
#10	-1.00	2.00	0.70	1.14
#14	-0.50	1.40	1.36	2.51
#18	0.00	1.00	1.61	4.12
#170	0.25	0.90	1.87	5.98
#25	0.50	0.71	2.48	8.46
#35	1.00	0.50	2.91	11.37
#45	1.50	0.36	8.22	19.59
#60	2.00	0.25	49.42	69.02
#80	2.50	0.18	25.41	94.42
#120	3.00	0.13	3.36	97.78
#200	3.75	0.08	0.12	97.90
#230	4.00	0.06	0.02	97.92

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.59	2.29	2.12	1.81	1.55	1.28	0.12

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.67	0.31	1.81	0.29	0.72	-1.98	8.18

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM7-10-1 @ 2.001 ft

Analysis Date: 12/15/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,766	1,143,388	State Plane, FLW (U.S. Ft.)	-7.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 0.03 #230 - 0.01			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#14	-0.50	1.40	0.00	0.00
#18	0.00	1.00	0.05	0.05
#25	0.50	0.71	0.31	0.36
#35	1.00	0.50	0.44	0.80
#45	1.50	0.36	1.11	1.91
#60	2.00	0.25	7.03	8.94
#80	2.50	0.18	48.97	57.92
#120	3.00	0.13	36.89	94.81
#170	3.50	0.09	4.92	99.72
#200	3.75	0.08	0.25	99.97
#230	4.00	0.06	0.01	99.99

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.02	2.85	2.73	2.42	2.16	2.07	1.72

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.43	0.19	2.42	0.19	0.41	-0.87	6.97

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM7-10-1 @ 4 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,766	1,143,388	State Plane, FLW (U.S. Ft.)	-9.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 3.95 #230 - 3.91			3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.03	0.03
#7	-1.50	2.80	0.02	0.05
#10	-1.00	2.00	0.13	0.18
#14	-0.50	1.40	0.14	0.31
#18	0.00	1.00	0.24	0.55
#170	0.25	0.90	0.26	0.81
#25	0.50	0.71	0.37	1.18
#35	1.00	0.50	0.97	2.15
#45	1.50	0.36	5.58	7.73
#60	2.00	0.25	53.34	61.07
#80	2.50	0.18	31.78	92.85
#120	3.00	0.13	3.13	95.98
#200	3.75	0.08	0.07	96.05
#230	4.00	0.06	0.04	96.09

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.84	2.36	2.22	1.90	1.66	1.58	1.26

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.89	0.27	1.90	0.27	0.42	-1.85	15.04

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM7-10-2 @ 0.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,587	1,144,165	State Plane, FLW (U.S. Ft.)	-9.9 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 2.86 #230 - 2.83			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.14	0.14
#10	-1.00	2.00	0.03	0.17
#14	-0.50	1.40	0.04	0.21
#18	0.00	1.00	0.12	0.33
#170	0.25	0.90	0.19	0.51
#25	0.50	0.71	0.21	0.72
#35	1.00	0.50	0.60	1.32
#45	1.50	0.36	2.58	3.90
#60	2.00	0.25	44.37	48.27
#80	2.50	0.18	44.64	92.92
#120	3.00	0.13	4.15	97.07
#200	3.75	0.08	0.06	97.14
#230	4.00	0.06	0.03	97.17

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.75	2.40	2.30	2.02	1.74	1.64	1.51

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.99	0.25	2.02	0.25	0.39	-2.11	19.17

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWM7-10-3 @ 0.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,161	1,145,657	State Plane, FLW (U.S. Ft.)	-10.2 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 4.54 #230 - 4.51			5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.22	0.22
#4	-2.25	4.75	0.05	0.27
#5	-2.00	4.00	0.05	0.33
#7	-1.50	2.80	0.06	0.39
#10	-1.00	2.00	0.15	0.54
#14	-0.50	1.40	0.15	0.68
#18	0.00	1.00	0.31	0.99
#170	0.25	0.90	0.57	1.56
#25	0.50	0.71	0.92	2.48
#35	1.00	0.50	2.02	4.50
#45	1.50	0.36	8.82	13.32
#60	2.00	0.25	50.98	64.30
#80	2.50	0.18	28.70	93.00
#120	3.00	0.13	2.40	95.40
#200	3.75	0.08	0.05	95.46
#230	4.00	0.06	0.04	95.49

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few fine to medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	2.34	2.19	1.86	1.61	1.53	1.03

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.80	0.29	1.86	0.28	0.54	-3.08	22.94

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWSC2-10-1 @ 1.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
438,080	1,200,802	State Plane, FLW (U.S. Ft.)	-9.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 2.07 #230 - 2.04			5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.13	0.13
#4	-2.25	4.75	0.00	0.13
#5	-2.00	4.00	0.00	0.13
#7	-1.50	2.80	0.03	0.17
#10	-1.00	2.00	0.16	0.32
#14	-0.50	1.40	0.29	0.62
#18	0.00	1.00	0.67	1.29
#170	0.25	0.90	0.97	2.27
#25	0.50	0.71	1.02	3.29
#35	1.00	0.50	1.16	4.45
#45	1.50	0.36	2.24	6.69
#60	2.00	0.25	15.34	22.03
#80	2.50	0.18	66.95	88.98
#120	3.00	0.13	8.50	97.48
#200	3.75	0.08	0.45	97.93
#230	4.00	0.06	0.03	97.96

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.85	2.46	2.40	2.21	2.02	1.80	1.12

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.10	0.23	2.21	0.22	0.55	-3.23	19.65

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWSC2-10-2 @ 2 ft

Analysis Date: 12/14/2010

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,876	1,201,399	State Plane, FLW (U.S. Ft.)	-7.4 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.16 #230 - 0.96		15.10	18

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.21	0.21
#7	-1.50	2.80	0.42	0.63
#10	-1.00	2.00	0.89	1.52
#14	-0.50	1.40	2.23	3.75
#18	0.00	1.00	2.70	6.45
#170	0.25	0.90	2.87	9.32
#25	0.50	0.71	3.06	12.37
#35	1.00	0.50	5.81	18.18
#45	1.50	0.36	31.81	49.99
#60	2.00	0.25	42.28	92.28
#80	2.50	0.18	6.14	98.42
#120	3.00	0.13	0.33	98.75
#200	3.75	0.08	0.08	98.84
#230	4.00	0.06	0.20	99.04

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.22	1.90	1.80	1.50	1.11	0.81	-0.27

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.32	0.40	1.50	0.35	0.73	-1.59	6.72

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWSC2-10-2 @ 2.001 ft

Analysis Date: 12/15/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,876	1,201,399	State Plane, FLW (U.S. Ft.)	-7.4 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 0.04 #230 - 0.01			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.11	0.11
#35	1.00	0.50	0.67	0.78
#45	1.50	0.36	4.32	5.10
#60	2.00	0.25	29.17	34.27
#80	2.50	0.18	53.73	88.01
#120	3.00	0.13	11.29	99.30
#170	3.50	0.09	0.60	99.90
#200	3.75	0.08	0.06	99.96
#230	4.00	0.06	0.03	99.99

SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.81	2.46	2.38	2.15	1.84	1.69	1.49

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.11	0.23	2.15	0.23	0.39	-0.38	4.29

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWSC2-10-2 @ 4 ft

Analysis Date: 12/14/2010

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
437,876	1,201,399	State Plane, FLW (U.S. Ft.)	-9.4 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.65 #230 - 1.64			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.01	0.01
#5	-2.00	4.00	0.00	0.01
#7	-1.50	2.80	0.02	0.03
#10	-1.00	2.00	0.01	0.04
#14	-0.50	1.40	0.06	0.10
#18	0.00	1.00	0.15	0.25
#170	0.25	0.90	0.22	0.47
#25	0.50	0.71	0.24	0.72
#35	1.00	0.50	0.70	1.41
#45	1.50	0.36	4.99	6.40
#60	2.00	0.25	78.97	85.37
#80	2.50	0.18	11.99	97.36
#120	3.00	0.13	0.95	98.32
#200	3.75	0.08	0.03	98.35
#230	4.00	0.06	0.01	98.36

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.40	1.99	1.93	1.78	1.62	1.56	1.36

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.78	0.29	1.78	0.29	0.29	-1.87	22.78

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWSC3-10-1 @ 0.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
434,901	1,221,024	State Plane, FLW (U.S. Ft.)	-9.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 1.35 #230 - 1.32			36

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	1.10	1.10
#4	-2.25	4.75	0.86	1.96
#5	-2.00	4.00	1.12	3.07
#7	-1.50	2.80	3.72	6.79
#10	-1.00	2.00	4.39	11.18
#14	-0.50	1.40	5.87	17.05
#18	0.00	1.00	5.27	22.32
#170	0.25	0.90	4.77	27.09
#25	0.50	0.71	4.87	31.96
#35	1.00	0.50	6.18	38.14
#45	1.50	0.36	12.39	50.53
#60	2.00	0.25	28.54	79.07
#80	2.50	0.18	17.31	96.38
#120	3.00	0.13	1.98	98.36
#200	3.75	0.08	0.29	98.65
#230	4.00	0.06	0.03	98.68

SAND, poorly-graded, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, trace fine
gravel-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.46	2.14	1.93	1.48	0.14	-0.59	-1.74

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.94	0.52	1.48	0.36	1.32	-0.94	2.99

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWSC3-10-2 @ 1 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
435,302	1,209,817	State Plane, FLW (U.S. Ft.)	-7.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 0.27 #230 - 0.26			4

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.10	0.10
#10	-1.00	2.00	0.12	0.22
#14	-0.50	1.40	0.17	0.38
#18	0.00	1.00	0.28	0.66
#170	0.25	0.90	0.35	1.02
#25	0.50	0.71	0.36	1.38
#35	1.00	0.50	1.85	3.23
#45	1.50	0.36	7.99	11.21
#60	2.00	0.25	76.91	88.12
#80	2.50	0.18	10.58	98.70
#120	3.00	0.13	0.99	99.69
#200	3.75	0.08	0.04	99.73
#230	4.00	0.06	0.02	99.74

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.32	1.97	1.91	1.75	1.59	1.53	1.11

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.73	0.30	1.75	0.30	0.37	-2.78	22.72

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-GIWWSC3-10-2 @ 3 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
435,302	1,209,817	State Plane, FLW (U.S. Ft.)	-9.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 5/1	#200 - 5.69 #230 - 5.64			4

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.10	0.10
#5	-2.00	4.00	0.00	0.10
#7	-1.50	2.80	0.04	0.14
#10	-1.00	2.00	0.11	0.25
#14	-0.50	1.40	0.34	0.59
#18	0.00	1.00	0.45	1.04
#170	0.25	0.90	0.47	1.51
#25	0.50	0.71	0.58	2.09
#35	1.00	0.50	1.00	3.09
#45	1.50	0.36	5.70	8.79
#60	2.00	0.25	41.25	50.03
#80	2.50	0.18	37.84	87.87
#120	3.00	0.13	6.11	93.98
#200	3.75	0.08	0.33	94.31
#230	4.00	0.06	0.05	94.36

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace medium to coarse-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.45	2.33	2.00	1.70	1.59	1.17

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.94	0.26	2.00	0.25	0.52	-2.13	14.53

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-1 @ 2.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,879	1,133,136	State Plane, FLW (U.S. Ft.)	-10.2 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.87 #230 - 1.87			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.01	0.01
#10	-1.00	2.00	0.04	0.05
#14	-0.50	1.40	0.08	0.13
#18	0.00	1.00	0.14	0.27
#170	0.25	0.90	0.12	0.40
#25	0.50	0.71	0.20	0.60
#35	1.00	0.50	0.47	1.07
#45	1.50	0.36	2.52	3.59
#60	2.00	0.25	58.50	62.09
#80	2.50	0.18	33.26	95.35
#120	3.00	0.13	2.78	98.13
#200	3.75	0.08	0.01	98.13
#230	4.00	0.06	0.00	98.13

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.49	2.33	2.19	1.90	1.68	1.61	1.51

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.92	0.26	1.90	0.27	0.35	-1.31	13.79

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-1 @ 5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,879	1,133,136	State Plane, FLW (U.S. Ft.)	-12.7 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.69 #230 - 1.66			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.77	0.77
#3.5	-2.50	5.60	0.27	1.04
#4	-2.25	4.75	0.35	1.39
#5	-2.00	4.00	0.21	1.60
#7	-1.50	2.80	0.40	2.01
#10	-1.00	2.00	0.61	2.61
#14	-0.50	1.40	1.17	3.78
#18	0.00	1.00	1.14	4.92
#170	0.25	0.90	1.10	6.02
#25	0.50	0.71	1.04	7.06
#35	1.00	0.50	1.01	8.07
#45	1.50	0.36	2.03	10.10
#60	2.00	0.25	22.01	32.11
#80	2.50	0.18	57.86	89.97
#120	3.00	0.13	8.05	98.02
#200	3.75	0.08	0.29	98.31
#230	4.00	0.06	0.03	98.34

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace fine gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.81	2.45	2.37	2.15	1.84	1.63	0.02

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.91	0.27	2.15	0.23	0.94	-3.48	17.31

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-10 @ 3 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,832	1,129,266	State Plane, FLW (U.S. Ft.)	-8.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 0.70 #230 - 0.68			58

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	3.25	3.25
#3.5	-2.50	5.60	4.58	7.82
#4	-2.25	4.75	2.58	10.40
#5	-2.00	4.00	3.43	13.83
#7	-1.50	2.80	6.14	19.97
#10	-1.00	2.00	7.39	27.36
#14	-0.50	1.40	9.53	36.88
#18	0.00	1.00	8.44	45.32
#170	0.25	0.90	6.59	51.91
#25	0.50	0.71	5.68	57.59
#35	1.00	0.50	4.70	62.28
#45	1.50	0.36	6.61	68.89
#60	2.00	0.25	17.11	86.00
#80	2.50	0.18	12.36	98.37
#120	3.00	0.13	0.51	98.88
#200	3.75	0.08	0.42	99.30
#230	4.00	0.06	0.02	99.32

SAND, poorly-graded, mostly medium to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, few fine
gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.36	1.94	1.68	0.18	-1.16	-1.82	-2.96

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.07	0.95	0.18	0.88	1.7	-0.38	2.19

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-10 @ 6 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,832	1,129,266	State Plane, FLW (U.S. Ft.)	-11.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 0.26 #230 - 0.19		16.90	18

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.44	0.44
#5	-2.00	4.00	0.52	0.96
#7	-1.50	2.80	1.38	2.34
#10	-1.00	2.00	1.32	3.66
#14	-0.50	1.40	1.79	5.45
#18	0.00	1.00	1.79	7.24
#170	0.25	0.90	1.82	9.06
#25	0.50	0.71	2.14	11.20
#35	1.00	0.50	2.32	13.51
#45	1.50	0.36	4.59	18.11
#60	2.00	0.25	37.54	55.64
#80	2.50	0.18	39.06	94.70
#120	3.00	0.13	4.82	99.52
#200	3.75	0.08	0.23	99.74
#230	4.00	0.06	0.07	99.81

SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.36	2.25	1.92	1.59	1.27	-0.62

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.69	0.31	1.92	0.26	0.95	-2.18	7.93

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-10 @ 6.001 ft

Analysis Date: 12/15/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,832	1,129,266	State Plane, FLW (U.S. Ft.)	-11.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 0.08 #230 - 0.04			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#14	-0.50	1.40	0.00	0.00
#18	0.00	1.00	0.49	0.49
#25	0.50	0.71	0.85	1.34
#35	1.00	0.50	0.73	2.07
#45	1.50	0.36	0.96	3.04
#60	2.00	0.25	3.21	6.25
#80	2.50	0.18	34.09	40.34
#120	3.00	0.13	53.22	93.56
#170	3.50	0.09	5.94	99.50
#200	3.75	0.08	0.42	99.92
#230	4.00	0.06	0.04	99.96

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.12	2.91	2.83	2.59	2.28	2.14	1.81

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.52	0.17	2.59	0.17	0.48	-2.24	12.27

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-10 @ 9 ft

Analysis Date:

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,832	1,129,266	State Plane, FLW (U.S. Ft.)	-14.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 8/1	#200 - 1.65 #230 - 1.61			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.45	0.45
#4	-2.25	4.75	0.10	0.55
#5	-2.00	4.00	0.13	0.68
#7	-1.50	2.80	0.23	0.91
#10	-1.00	2.00	0.32	1.24
#14	-0.50	1.40	0.52	1.76
#18	0.00	1.00	0.55	2.31
#25	0.50	0.71	0.66	2.97
#35	1.00	0.50	1.03	4.00
#45	1.50	0.36	1.54	5.54
#60	2.00	0.25	4.63	10.17
#80	2.50	0.18	42.02	52.20
#120	3.00	0.13	41.53	93.73
#170	3.50	0.09	4.47	98.20
#200	3.75	0.08	0.15	98.35
#230	4.00	0.06	0.03	98.39

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.14	2.88	2.77	2.47	2.18	2.07	1.32

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.35	0.20	2.47	0.18	0.65	-3.21	18.91

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-11 @ 2 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,361	1,128,843	State Plane, FLW (U.S. Ft.)	-10.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.98 #230 - 1.96			9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.27	0.27
#4	-2.25	4.75	0.13	0.40
#5	-2.00	4.00	0.25	0.65
#7	-1.50	2.80	0.59	1.24
#10	-1.00	2.00	0.61	1.84
#14	-0.50	1.40	0.77	2.62
#18	0.00	1.00	0.98	3.60
#170	0.25	0.90	1.07	4.66
#25	0.50	0.71	0.75	5.41
#35	1.00	0.50	2.37	7.78
#45	1.50	0.36	2.99	10.77
#60	2.00	0.25	37.48	48.25
#80	2.50	0.18	46.97	95.22
#120	3.00	0.13	2.75	97.97
#200	3.75	0.08	0.05	98.02
#230	4.00	0.06	0.02	98.04

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.50	2.38	2.28	2.02	1.69	1.57	0.36

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.84	0.28	2.02	0.25	0.74	-3.15	15.43

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-11 @ 5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
429,361	1,128,843	State Plane, FLW (U.S. Ft.)	-13.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 8/1	#200 - 0.81 #230 - 0.79			54

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	9.12	9.12
3/8"	-3.25	9.50	0.00	9.12
#3.5	-2.50	5.60	1.04	10.16
#4	-2.25	4.75	1.47	11.63
#5	-2.00	4.00	1.71	13.34
#7	-1.50	2.80	4.41	17.76
#10	-1.00	2.00	4.36	22.12
#14	-0.50	1.40	5.78	27.90
#18	0.00	1.00	6.40	34.30
#170	0.25	0.90	6.32	40.61
#25	0.50	0.71	5.76	46.37
#35	1.00	0.50	7.53	53.90
#45	1.50	0.36	8.46	62.36
#60	2.00	0.25	24.59	86.95
#80	2.50	0.18	11.17	98.12
#120	3.00	0.13	1.05	99.17
#200	3.75	0.08	0.02	99.19
#230	4.00	0.06	0.02	99.21

SAND, poorly-graded, some medium to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, few fine to coarse gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.36	1.94	1.76	0.74	-0.75	-1.70	

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.18	0.88	0.74	0.60	1.38	0.39	1.97

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-2 @ 2.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,714	1,132,503	State Plane, FLW (U.S. Ft.)	-9.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.05 #230 - 0.98		2.50	2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#7	-1.50	2.80	0.00	0.00
#10	-1.00	2.00	0.03	0.03
#14	-0.50	1.40	0.02	0.05
#18	0.00	1.00	0.10	0.15
#170	0.25	0.90	0.11	0.25
#25	0.50	0.71	0.18	0.43
#35	1.00	0.50	0.57	1.00
#45	1.50	0.36	3.27	4.27
#60	2.00	0.25	43.69	47.96
#80	2.50	0.18	44.77	92.73
#120	3.00	0.13	5.39	98.11
#200	3.75	0.08	0.84	98.95
#230	4.00	0.06	0.07	99.02

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.71	2.40	2.30	2.02	1.74	1.63	1.51

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.02	0.25	2.02	0.25	0.39	-0.39	8

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-2 @ 2.501 ft

Analysis Date: 12/15/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,714	1,132,503	State Plane, FLW (U.S. Ft.)	-9.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 0.14 #230 - 0.01			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#14	-0.50	1.40	0.00	0.00
#18	0.00	1.00	0.11	0.11
#25	0.50	0.71	0.13	0.24
#35	1.00	0.50	0.35	0.60
#45	1.50	0.36	0.44	1.03
#60	2.00	0.25	1.62	2.65
#80	2.50	0.18	30.21	32.86
#120	3.00	0.13	59.08	91.95
#170	3.50	0.09	7.01	98.96
#200	3.75	0.08	0.90	99.86
#230	4.00	0.06	0.13	99.99

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.22	2.93	2.86	2.65	2.37	2.22	2.04

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.61	0.16	2.65	0.16	0.37	-1.31	10.81

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-2 @ 5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,714	1,132,503	State Plane, FLW (U.S. Ft.)	-12.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 1.04 #230 - 1.03			3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.08	0.08
#7	-1.50	2.80	0.00	0.08
#10	-1.00	2.00	0.01	0.09
#14	-0.50	1.40	0.09	0.18
#18	0.00	1.00	0.12	0.30
#170	0.25	0.90	0.11	0.41
#25	0.50	0.71	0.15	0.56
#35	1.00	0.50	0.55	1.11
#45	1.50	0.36	2.54	3.65
#60	2.00	0.25	50.53	54.18
#80	2.50	0.18	41.92	96.10
#120	3.00	0.13	2.84	98.94
#200	3.75	0.08	0.02	98.96
#230	4.00	0.06	0.01	98.97

SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.49	2.36	2.25	1.96	1.71	1.62	1.51

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.96	0.26	1.96	0.26	0.36	-2.12	21.46

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-3 @ 1.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
433,501	1,131,462	State Plane, FLW (U.S. Ft.)	-11.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 8/1	#200 - 3.08 #230 - 3.06			56

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	7.22	7.22
#3.5	-2.50	5.60	8.48	15.71
#4	-2.25	4.75	2.44	18.14
#5	-2.00	4.00	6.09	24.23
#7	-1.50	2.80	7.41	31.64
#10	-1.00	2.00	5.92	37.57
#14	-0.50	1.40	6.38	43.94
#18	0.00	1.00	4.78	48.73
#170	0.25	0.90	3.52	52.25
#25	0.50	0.71	2.76	55.00
#35	1.00	0.50	4.32	59.32
#45	1.50	0.36	6.92	66.24
#60	2.00	0.25	16.43	82.67
#80	2.50	0.18	12.25	94.92
#120	3.00	0.13	1.96	96.88
#200	3.75	0.08	0.04	96.92
#230	4.00	0.06	0.02	96.94

SAND, poorly-graded, some medium to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, little fine to coarse gravel-sized shell up to 1", trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.05	1.77	0.09	-1.95	-2.47	-3.56

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	-0.22	1.16	0.09	0.94	1.99	-0.24	1.71

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-6 @ 1.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,534	1,129,086	State Plane, FLW (U.S. Ft.)	-12.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 0.50 #230 - 0.48			83

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	12.66	12.66
#3.5	-2.50	5.60	10.55	23.21
#4	-2.25	4.75	4.31	27.52
#5	-2.00	4.00	5.57	33.09
#7	-1.50	2.80	9.53	42.62
#10	-1.00	2.00	8.59	51.20
#14	-0.50	1.40	10.03	61.23
#18	0.00	1.00	8.01	69.24
#170	0.25	0.90	6.53	75.76
#25	0.50	0.71	5.97	81.73
#35	1.00	0.50	5.32	87.05
#45	1.50	0.36	4.29	91.34
#60	2.00	0.25	3.60	94.94
#80	2.50	0.18	3.83	98.78
#120	3.00	0.13	0.62	99.39
#200	3.75	0.08	0.11	99.50
#230	4.00	0.06	0.01	99.52

SAND, poorly-graded, mostly medium to coarse-grained sand-sized shell, some fine gravel-sized shell, few fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.01	0.71	0.22	-1.07	-2.40	-3.01	-3.86

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	-1.08	2.11			1.72	0.14	2.17

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-7 @ 2 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
432,297	1,131,001	State Plane, FLW (U.S. Ft.)	-10.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 0.85 #230 - 0.83			76

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	5.11	5.11
#3.5	-2.50	5.60	9.31	14.42
#4	-2.25	4.75	3.86	18.27
#5	-2.00	4.00	4.53	22.80
#7	-1.50	2.80	8.75	31.55
#10	-1.00	2.00	7.88	39.43
#14	-0.50	1.40	9.61	49.05
#18	0.00	1.00	9.63	58.68
#170	0.25	0.90	8.82	67.50
#25	0.50	0.71	5.98	73.48
#35	1.00	0.50	9.45	82.92
#45	1.50	0.36	5.34	88.26
#60	2.00	0.25	5.56	93.82
#80	2.50	0.18	4.39	98.21
#120	3.00	0.13	0.91	99.12
#200	3.75	0.08	0.04	99.15
#230	4.00	0.06	0.02	99.17

SAND, poorly-graded, mostly medium to coarse-grained sand-sized shell, little fine gravel-sized shell up to 3/4", few fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.13	1.10	0.58	-0.45	-1.87	-2.40	-3.27

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	-0.61	1.53			1.62	-0.09	2.21

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-7 @ 4 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
432,297	1,131,001	State Plane, FLW (U.S. Ft.)	-12.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 1.03 #230 - 1.02		74.70	73

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	11.12	11.12
#3.5	-2.50	5.60	3.51	14.63
#4	-2.25	4.75	2.06	16.69
#5	-2.00	4.00	3.19	19.87
#7	-1.50	2.80	7.32	27.20
#10	-1.00	2.00	7.07	34.27
#14	-0.50	1.40	9.83	44.10
#18	0.00	1.00	9.67	53.77
#170	0.25	0.90	8.67	62.44
#25	0.50	0.71	7.43	69.87
#35	1.00	0.50	8.10	77.96
#45	1.50	0.36	6.66	84.62
#60	2.00	0.25	6.91	91.53
#80	2.50	0.18	5.42	96.95
#120	3.00	0.13	1.94	98.88
#200	3.75	0.08	0.08	98.97
#230	4.00	0.06	0.01	98.98

SAND, poorly-graded, mostly medium to coarse-grained sand-sized shell, little fine gravel-sized shell up to 3/4", little fine-grained sand-sized quartz, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.32	1.45	0.82	-0.19	-1.65	-2.33	-3.80

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	-0.47	1.39			1.77	-0.32	2.33

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-7 @ 4.001 ft

Analysis Date: 12/15/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
432,297	1,131,001	State Plane, FLW (U.S. Ft.)	-12.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 6/1	#200 - 0.08 #230 - 0.04			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.16	0.16
#35	1.00	0.50	2.06	2.22
#45	1.50	0.36	19.36	21.58
#60	2.00	0.25	21.99	43.57
#80	2.50	0.18	26.39	69.97
#120	3.00	0.13	21.26	91.23
#170	3.50	0.09	7.92	99.15
#200	3.75	0.08	0.77	99.92
#230	4.00	0.06	0.04	99.96

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.24	2.83	2.62	2.12	1.58	1.36	1.07

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.11	0.23	2.12	0.23	0.66	0.03	2.24

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-8 @ 3 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
431,441	1,130,530	State Plane, FLW (U.S. Ft.)	-8.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 0.78 #230 - 0.77			43

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.09	1.09
#3.5	-2.50	5.60	6.13	7.22
#4	-2.25	4.75	1.73	8.94
#5	-2.00	4.00	2.61	11.55
#7	-1.50	2.80	5.09	16.64
#10	-1.00	2.00	4.23	20.86
#14	-0.50	1.40	5.57	26.43
#18	0.00	1.00	5.14	31.58
#170	0.25	0.90	4.74	36.32
#25	0.50	0.71	5.02	41.34
#35	1.00	0.50	4.97	46.30
#45	1.50	0.36	8.37	54.67
#60	2.00	0.25	22.42	77.10
#80	2.50	0.18	20.32	97.42
#120	3.00	0.13	1.73	99.15
#200	3.75	0.08	0.08	99.22
#230	4.00	0.06	0.01	99.23

SAND, poorly-graded, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, few fine
gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.44	2.17	1.95	1.22	-0.63	-1.56	-2.77

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.56	0.68	1.22	0.43	1.69	-0.78	2.41

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-8 @ 6 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
431,441	1,130,530	State Plane, FLW (U.S. Ft.)	-11.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 7/1	#200 - 15.91 #230 - 15.88			38

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	6.51	6.51
3/8"	-3.25	9.50	5.79	12.30
#3.5	-2.50	5.60	4.65	16.95
#4	-2.25	4.75	1.03	17.97
#5	-2.00	4.00	1.03	19.00
#7	-1.50	2.80	2.74	21.75
#10	-1.00	2.00	2.53	24.27
#14	-0.50	1.40	2.37	26.64
#18	0.00	1.00	2.16	28.80
#170	0.25	0.90	1.87	30.67
#25	0.50	0.71	1.90	32.57
#35	1.00	0.50	3.46	36.03
#45	1.50	0.36	6.47	42.50
#60	2.00	0.25	23.30	65.80
#80	2.50	0.18	17.46	83.26
#120	3.00	0.13	0.78	84.05
#200	3.75	0.08	0.04	84.09
#230	4.00	0.06	0.03	84.12

SAND, silty, some fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, little silt, few fine gravel-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.97	2.26	1.66	-0.85	-2.65	

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.16	0.90	1.66	0.32	1.92	-0.42	2.09

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-9 @ 3.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,686	1,129,853	State Plane, FLW (U.S. Ft.)	-8.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 0.03 #230 - 0.02			10

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.65	0.65
#4	-2.25	4.75	0.43	1.08
#5	-2.00	4.00	0.32	1.40
#7	-1.50	2.80	0.45	1.85
#10	-1.00	2.00	0.51	2.36
#14	-0.50	1.40	0.77	3.13
#18	0.00	1.00	0.76	3.88
#170	0.25	0.90	0.88	4.77
#25	0.50	0.71	1.23	6.00
#35	1.00	0.50	2.28	8.28
#45	1.50	0.36	11.68	19.96
#60	2.00	0.25	62.03	81.99
#80	2.50	0.18	13.60	95.59
#120	3.00	0.13	0.50	96.09
#200	3.75	0.08	3.88	99.97
#230	4.00	0.06	0.01	99.98

SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.48	2.07	1.94	1.74	1.54	1.33	0.30

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.65	0.32	1.74	0.30	0.82	-2.47	14.01

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

Granularmetric Report

Project Name: Vibracore Borings GIWW/Vicinity of

Sample Name: VB-LBP10-9 @ 6.5 ft

Analysis Date: 12/14/2010

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
430,686	1,129,853	State Plane, FLW (U.S. Ft.)	-11.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 2.13 #230 - 2.11			11

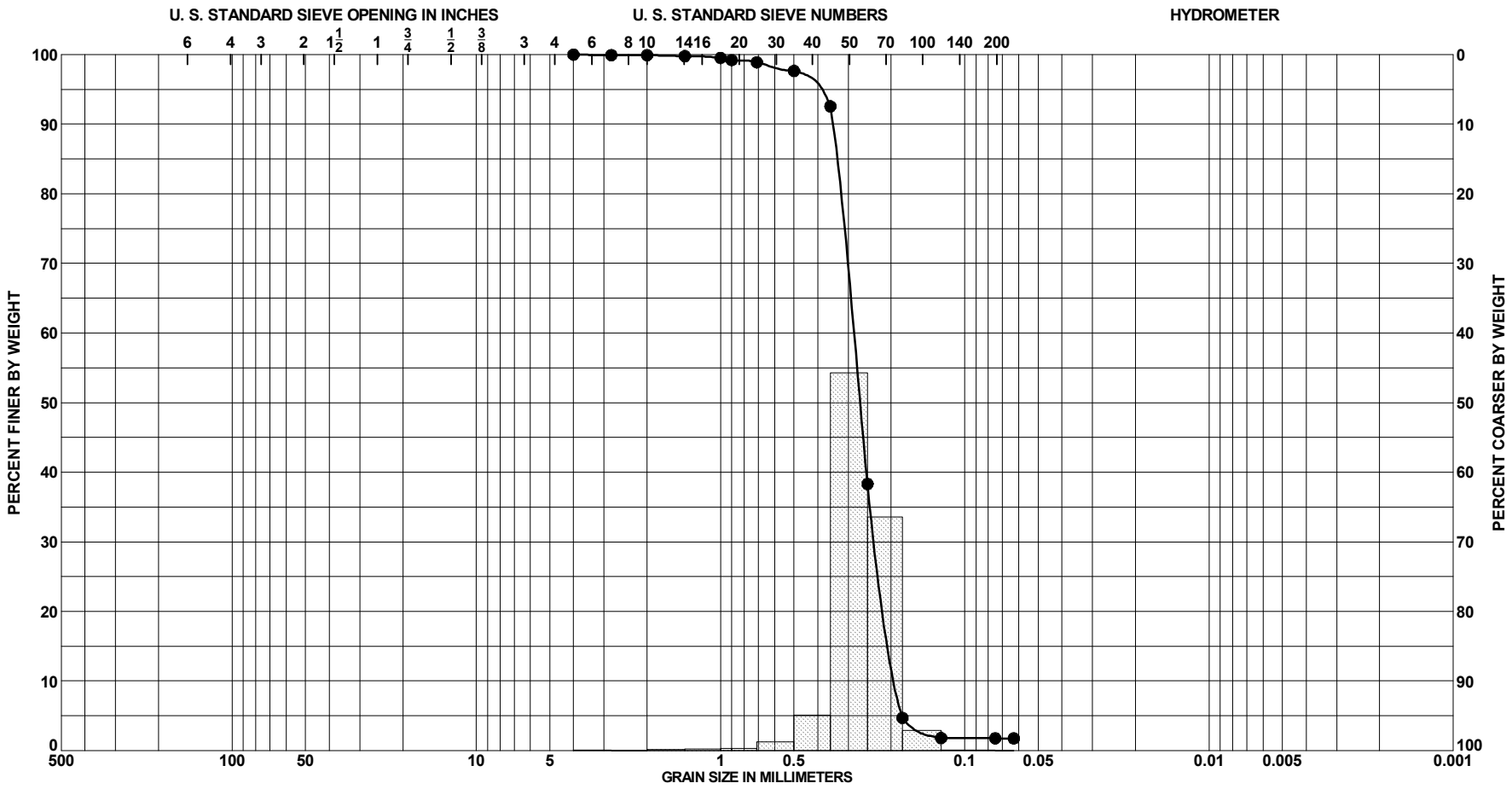
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.49	0.49
#4	-2.25	4.75	0.29	0.78
#5	-2.00	4.00	0.45	1.23
#7	-1.50	2.80	0.94	2.17
#10	-1.00	2.00	1.05	3.22
#14	-0.50	1.40	1.47	4.69
#18	0.00	1.00	1.39	6.08
#170	0.25	0.90	1.34	7.42
#25	0.50	0.71	1.21	8.63
#35	1.00	0.50	2.56	11.19
#45	1.50	0.36	5.57	16.77
#60	2.00	0.25	49.79	66.56
#80	2.50	0.18	29.21	95.77
#120	3.00	0.13	2.08	97.84
#200	3.75	0.08	0.03	97.87
#230	4.00	0.06	0.02	97.89

SAND, poorly-graded, mostly fine-grained
sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.49	2.30	2.14	1.83	1.58	1.43	-0.39

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.64	0.32	1.83	0.28	0.88	-2.67	11.07

GRANULARMETRIC REPORT % GIWW_MANATEE_LONGBOAT PASS_VC2010-NEWTEMP.GPJ CESAJ3.GDT 9/9/16

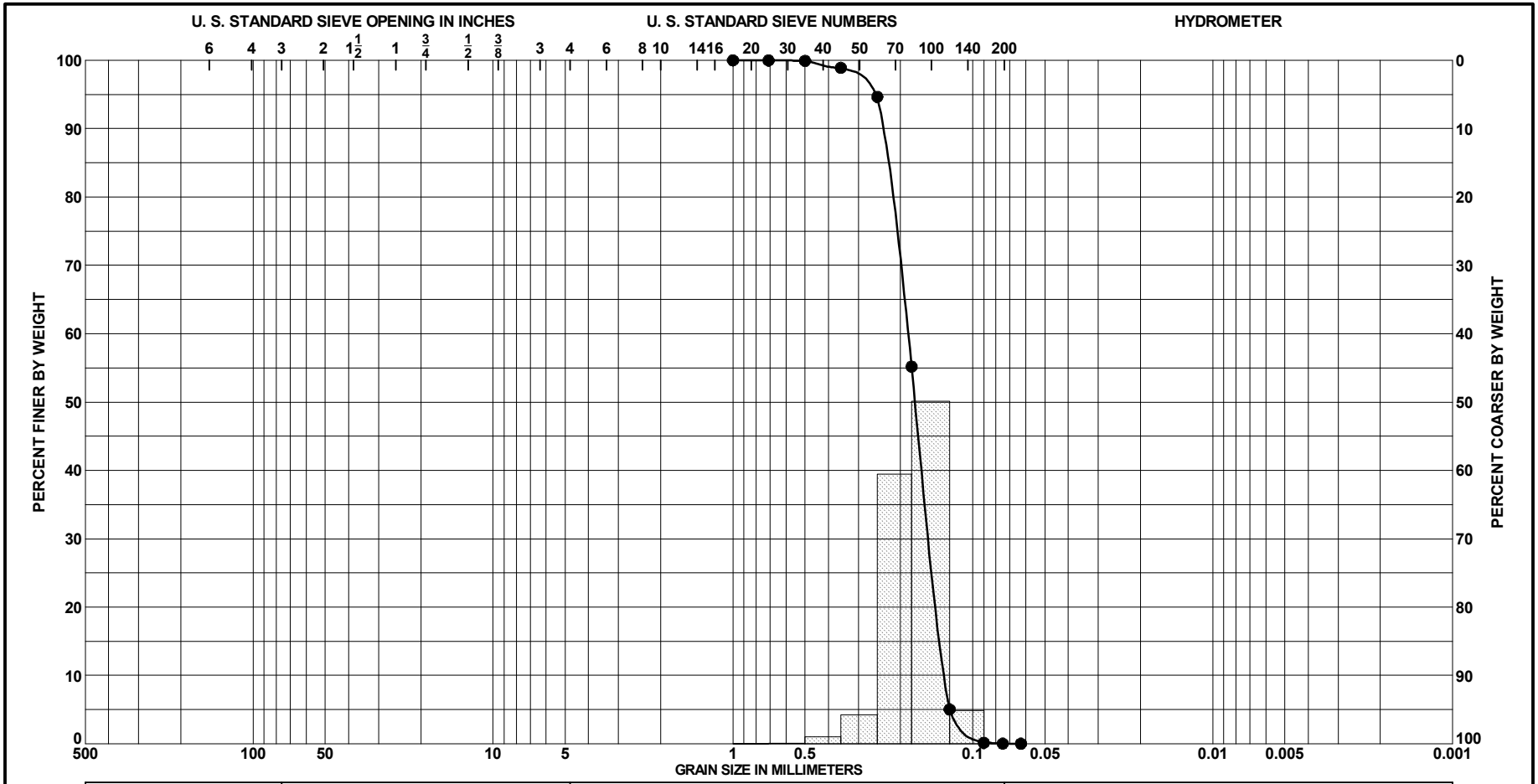


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1	3/3 (est)						
		fine-grained sand-sized quartz, trace								
		fine-grained sand-sized shell, trace								
		silt, light gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM12-10-1
BORING ELEV.	-5.4 Ft., MLLW
DATE	12/14/2010

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, light gray (SP)	10YR 7/1							

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM12-10-1
BORING ELEV.	-5.4 Ft., MLLW
DATE	12/15/2010

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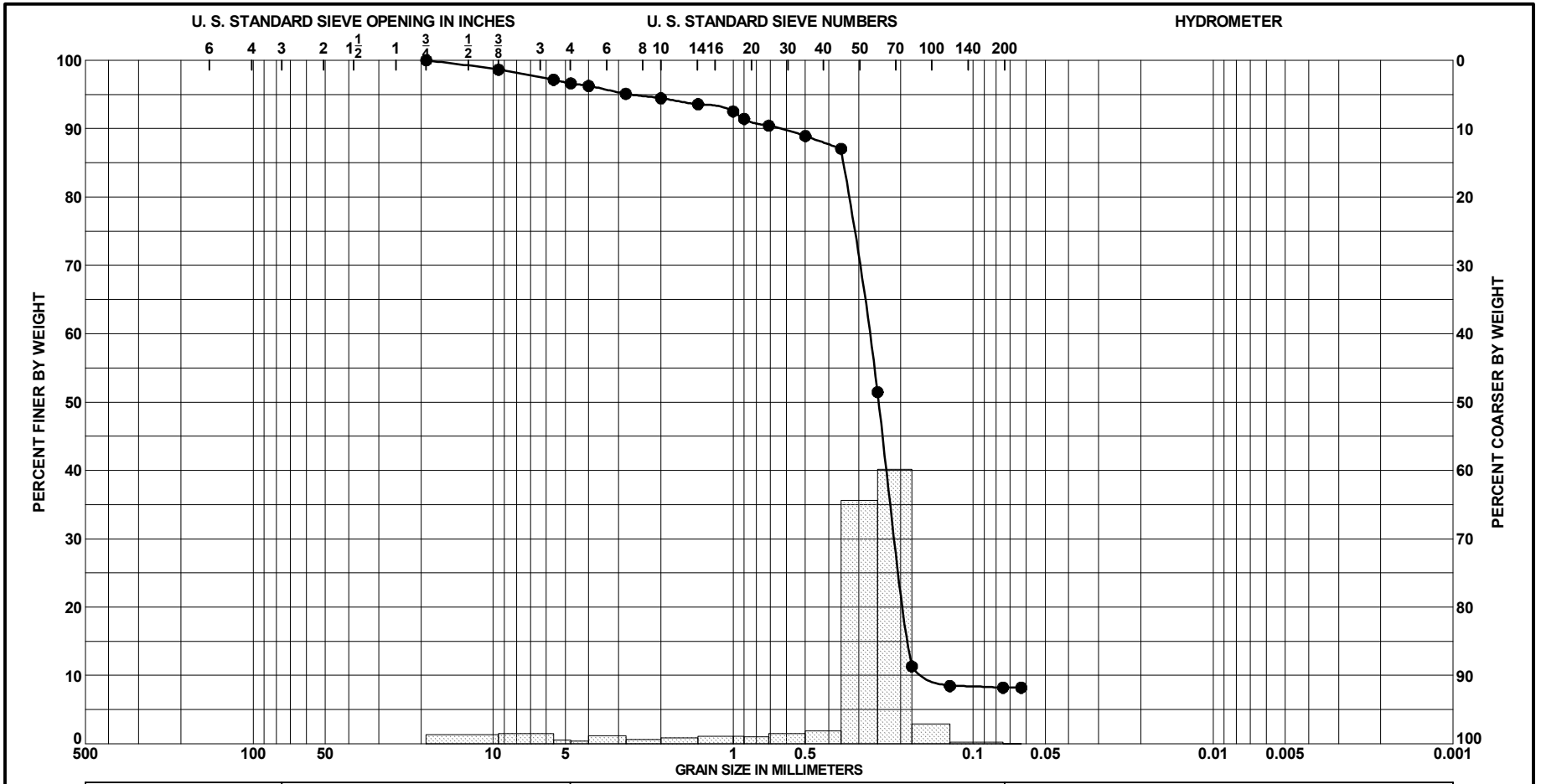
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	4.0 to 4.5 Ft.	SAND, poorly-graded with silt, mostly	10YR 7/1	11 (est)						
		fine-grained sand-sized quartz, few								
		medium to coarse-grained sand-sized								
		shell, few silt, trace fine gravel-sized								
		shell, light gray (SP-SM)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM12-10-1
BORING ELEV.	-5.4 Ft., MLLW
DATE	12/14/2010

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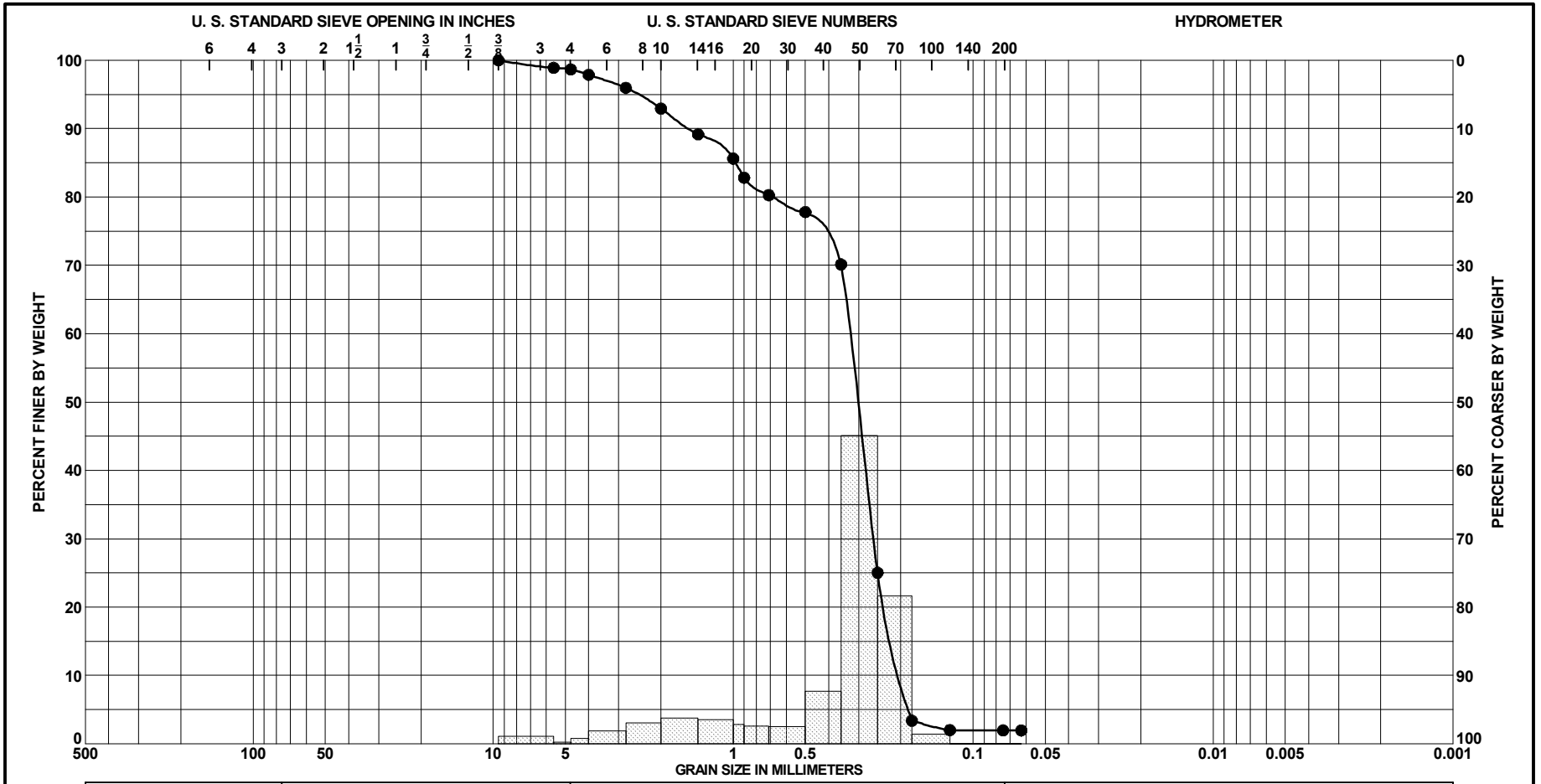
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, poorly-graded,mostly	10YR 6/1	22 (est)						
		fine-grained sand-sized quartz, little								
		medium to coarse-grained sand-sized								
		shell, trace silt, trace fine gravel-sized								
		shell, gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM13-10-1
BORING ELEV.	-9.4 Ft., MLLW
DATE	12/14/2010

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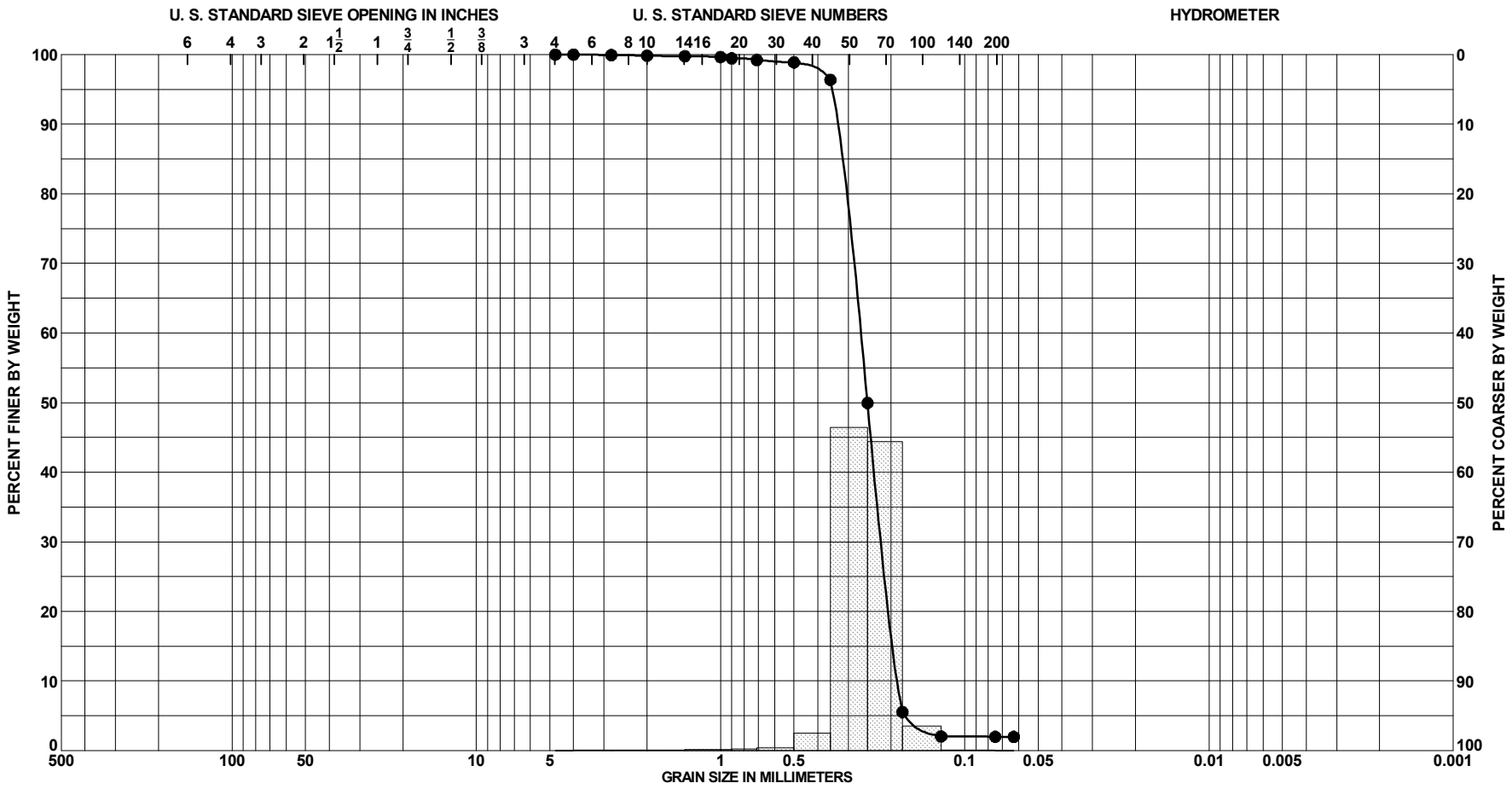
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly	10YR 8/1	2 (est)						
		fine-grained sand-sized quartz, trace								
		silt, trace fine to medium-grained								
		sand-sized shell, white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM14-10-1
BORING ELEV.	-5.1 Ft., MLLW
DATE	12/14/2010

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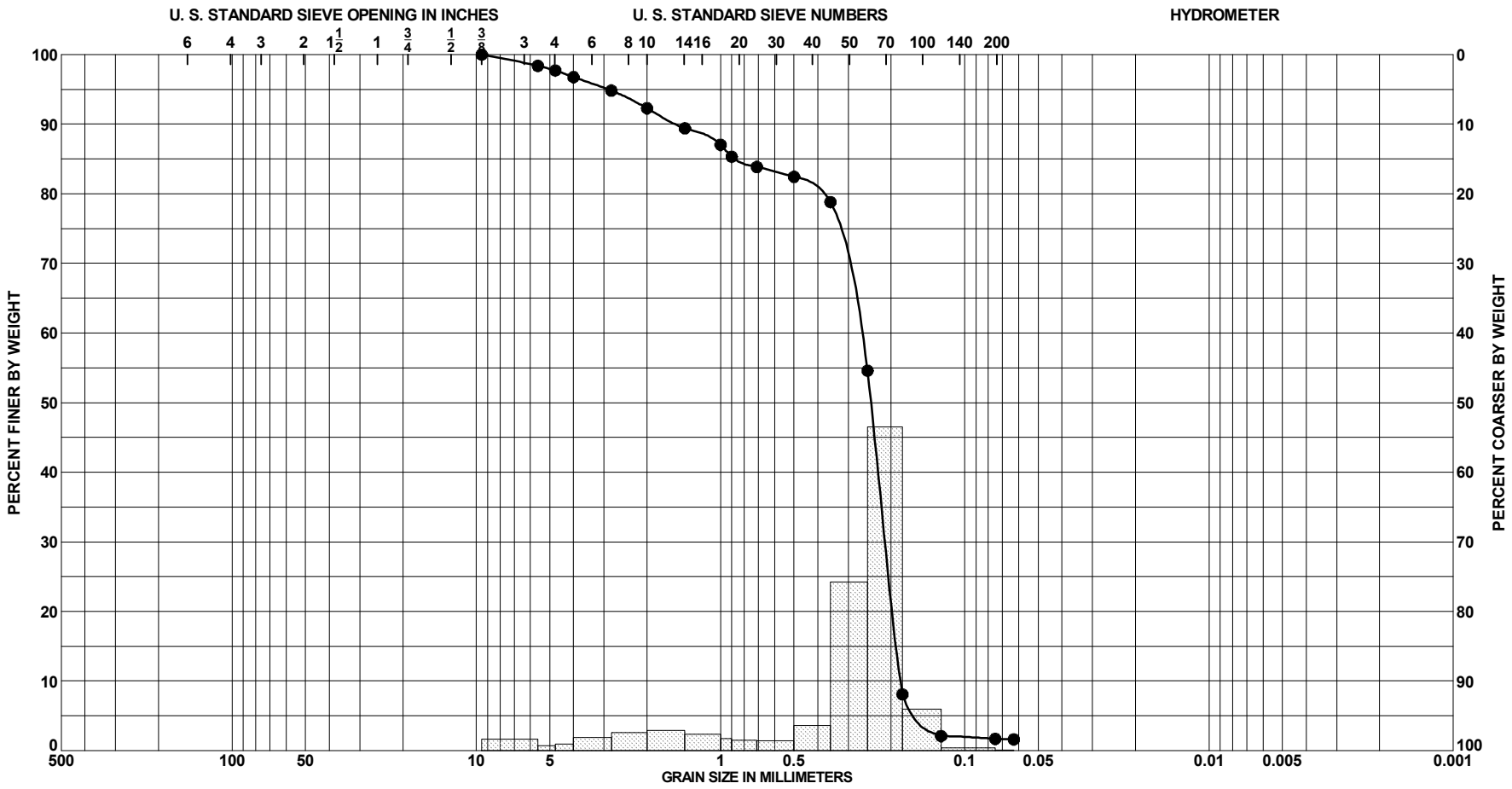
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	4.0 to 4.5 Ft.	SAND, poorly-graded, mostly	10YR 8/1	18 (est)						
		fine-grained sand-sized quartz, little								
		medium to coarse-grained sand-sized								
		shell, trace fine gravel-sized shell,								
		trace silt, white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM14-10-1
BORING ELEV.	-5.1 Ft., MLLW
DATE	12/14/2010

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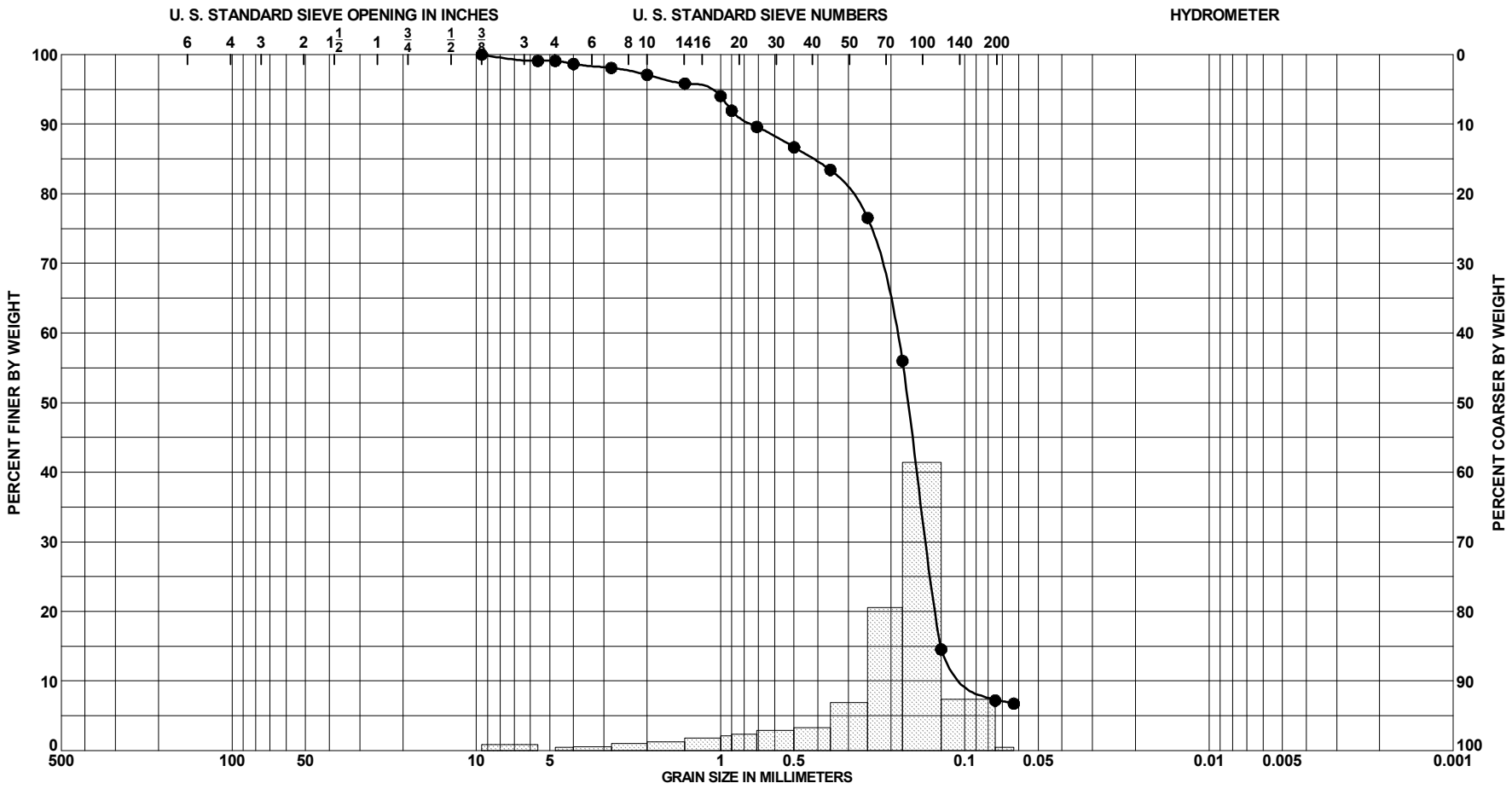
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.5 to 2.0 Ft.	SAND, poorly-graded with silt, mostly	10YR 4/1	14 (est)						
		fine-grained sand-sized quartz, little								
		fine to coarse-grained sand-sized								
		shell, few silt, dark gray (SP-SM)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM4-10-1
BORING ELEV.	-7.2 Ft., MLLW
DATE	

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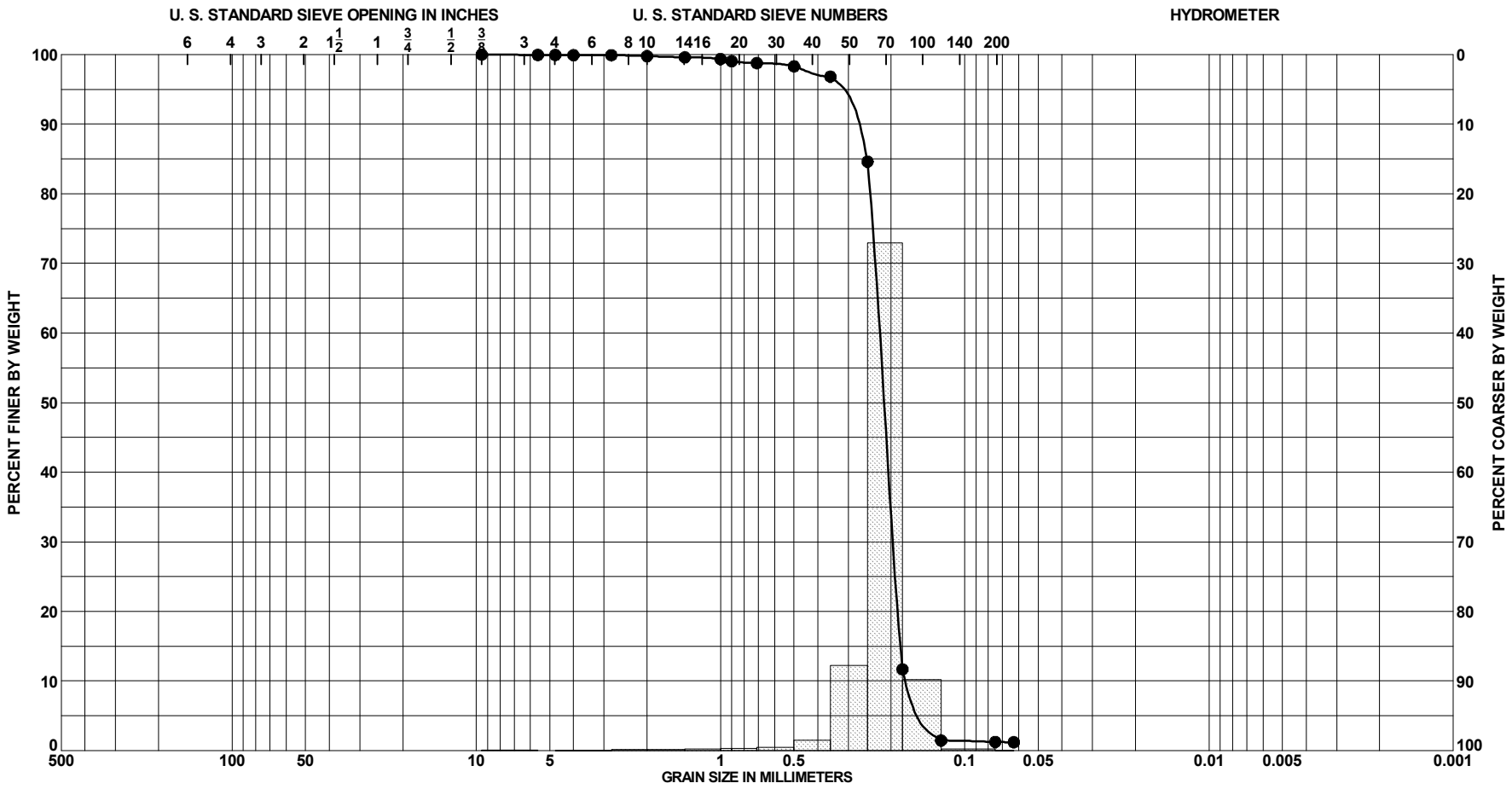

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.5 to 2.0 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt, light gray (SP)	10YR 7/1	3 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM4-10-2
BORING ELEV.	-7.0 Ft., MLLW
DATE	12/14/2010

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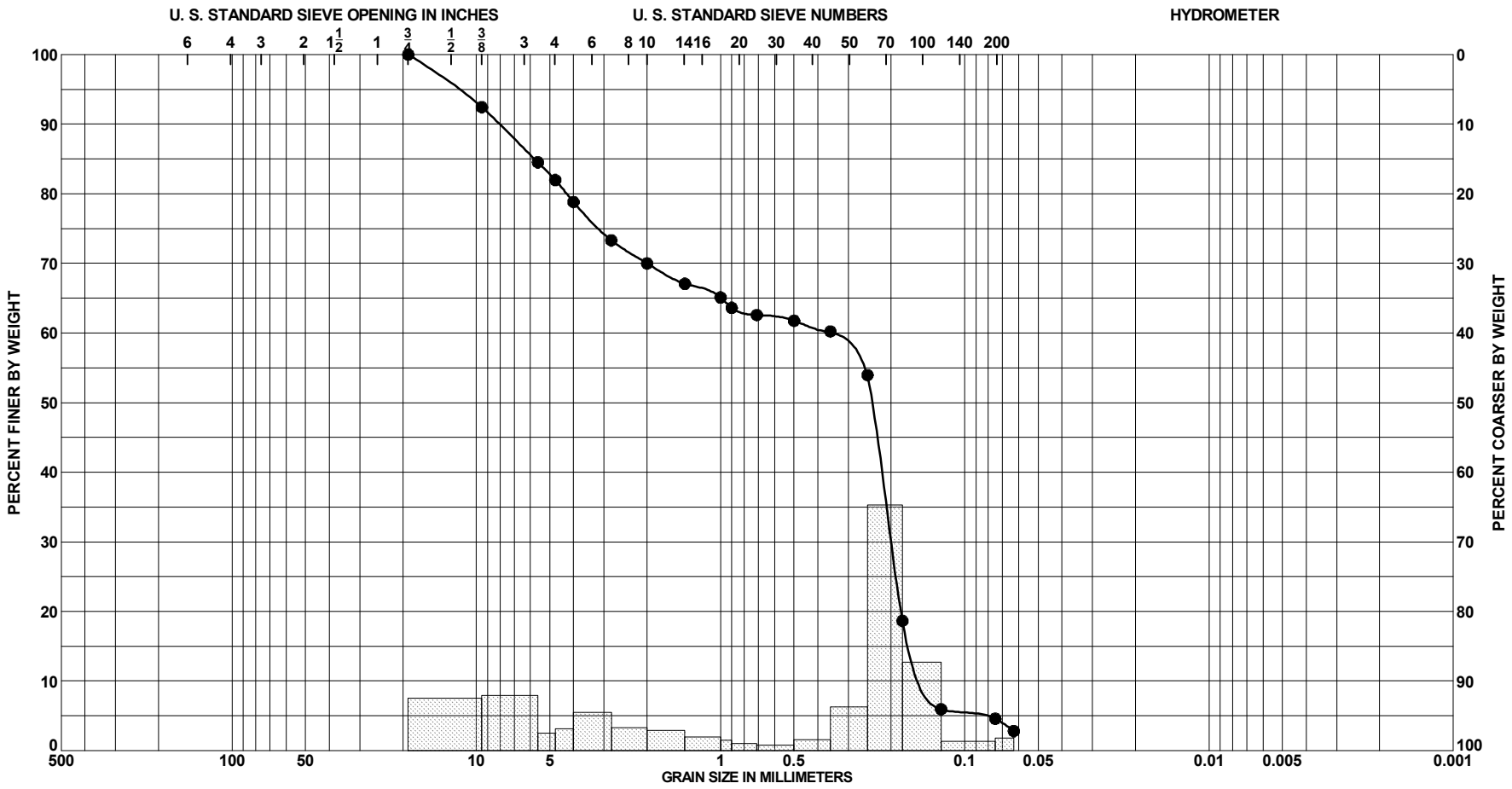
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	3.5 to 4.0 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, little fine gravel-sized shell, dark gray (SP)	10YR 4/1	40 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM4-10-2
BORING ELEV.	-7.0 Ft., MLLW
DATE	12/14/2010

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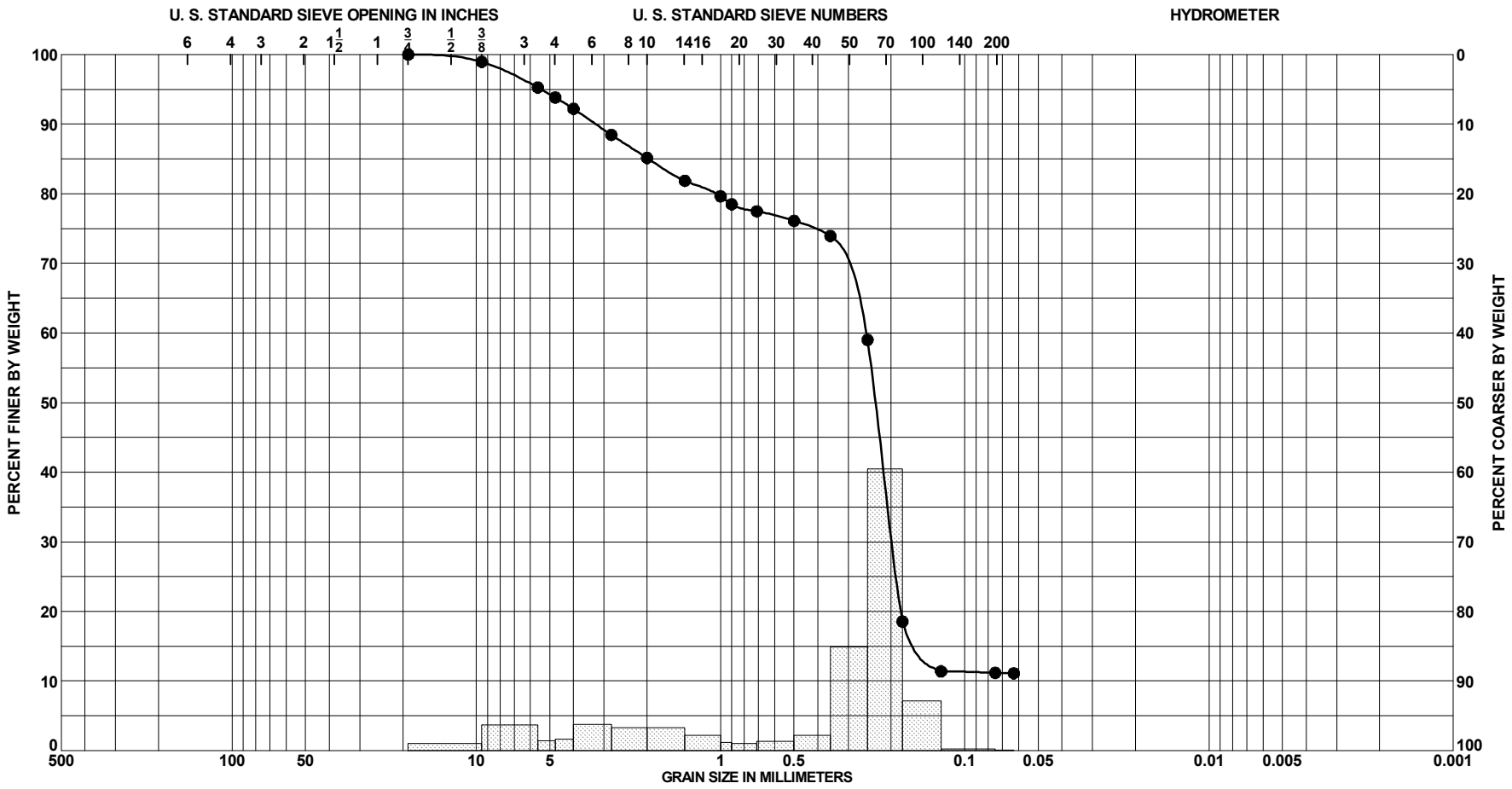

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded with silt, mostly	10YR 5/1	24 (est)						
		fine-grained sand-sized quartz, little								
		medium to coarse-grained sand-sized								
		shell, few fine gravel-sized shell up to								
		1/2", few silt, gray (SP-SM)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM4-10-3
BORING ELEV.	-7.3 Ft., MLLW
DATE	12/14/2010

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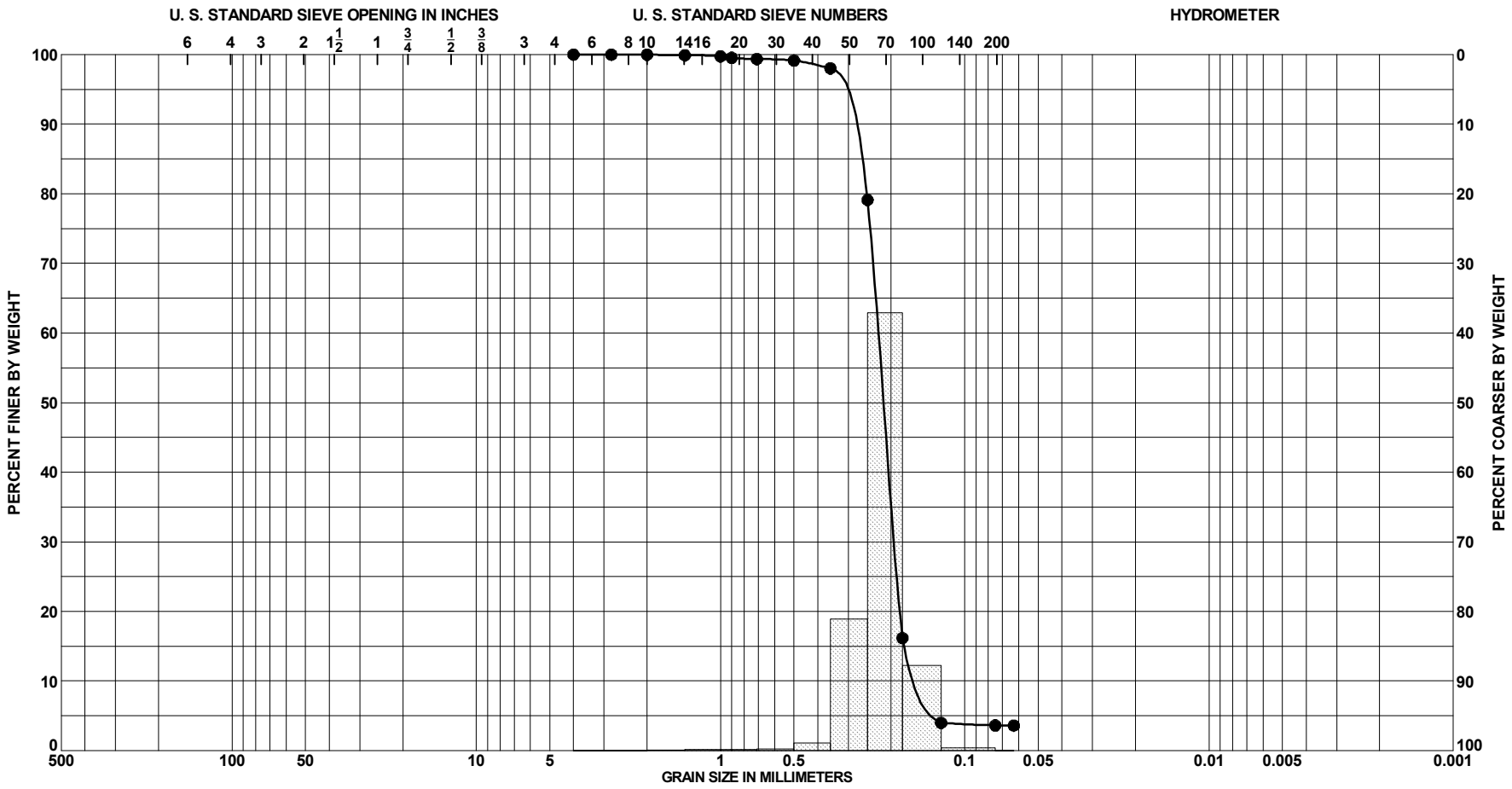
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1	2 (est)						
		fine-grained sand-sized quartz, trace								
		silt, trace fine-grained sand-sized								
		shell, light gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-1
BORING ELEV.	-7.8 Ft., MLLW
DATE	12/14/2010

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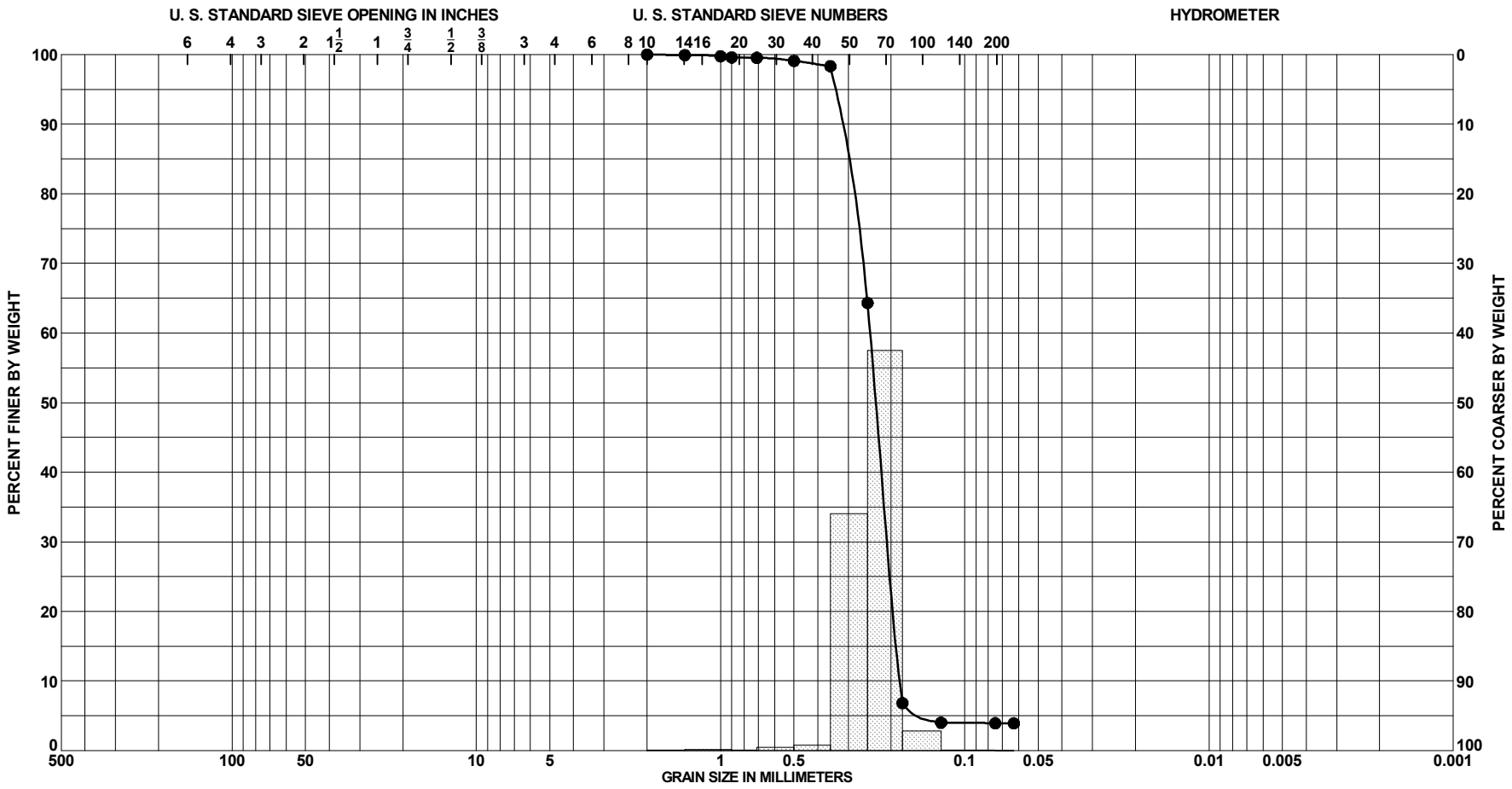
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.5 to 2.0 Ft.	SAND, poorly-graded, mostly	10YR 7/1	2 (est)						
		fine-grained sand-sized quartz, trace								
		silt, trace fine-grained sand-sized								
		shell,, light gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-2
BORING ELEV.	-7.1 Ft., MLLW
DATE	12/14/2010

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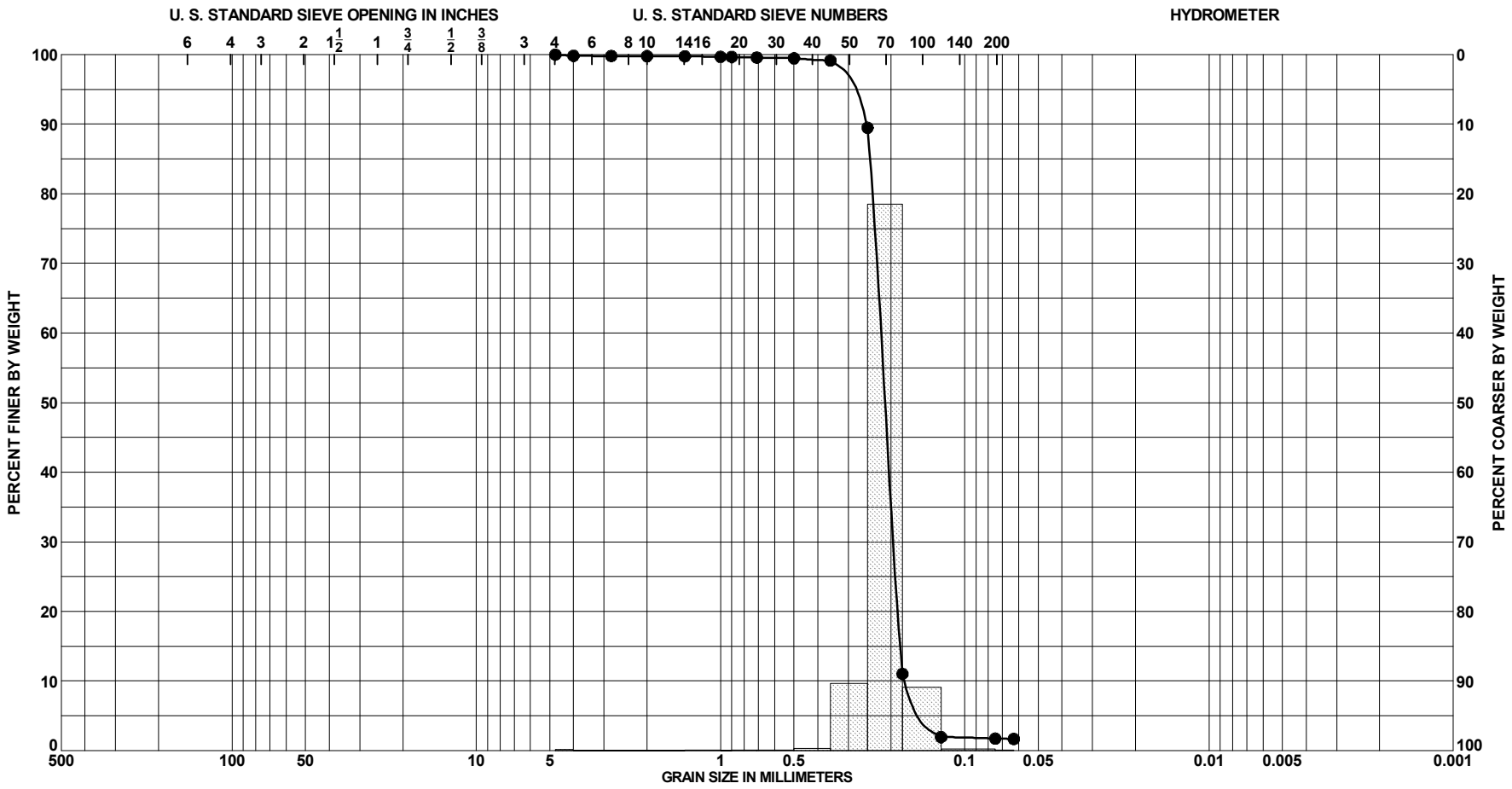
JUN 02



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	4.0 to 4.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1	2 (est)						
		fine-grained sand-sized quartz, trace								
		silt, trace fine-grained sand-sized								
		shell, light gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-2
BORING ELEV.	-7.1 Ft., MLLW
DATE	12/14/2010

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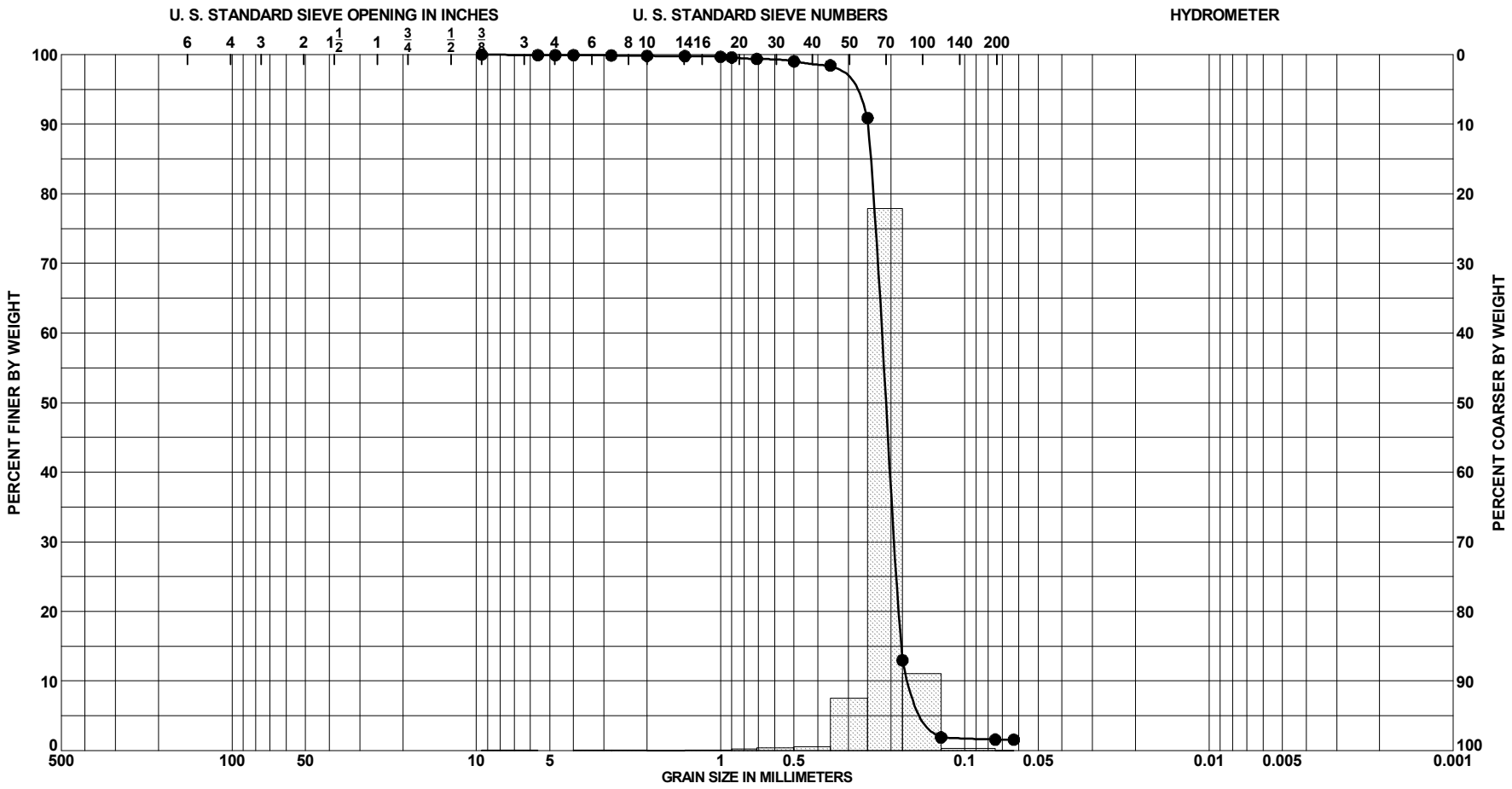
JUN 02

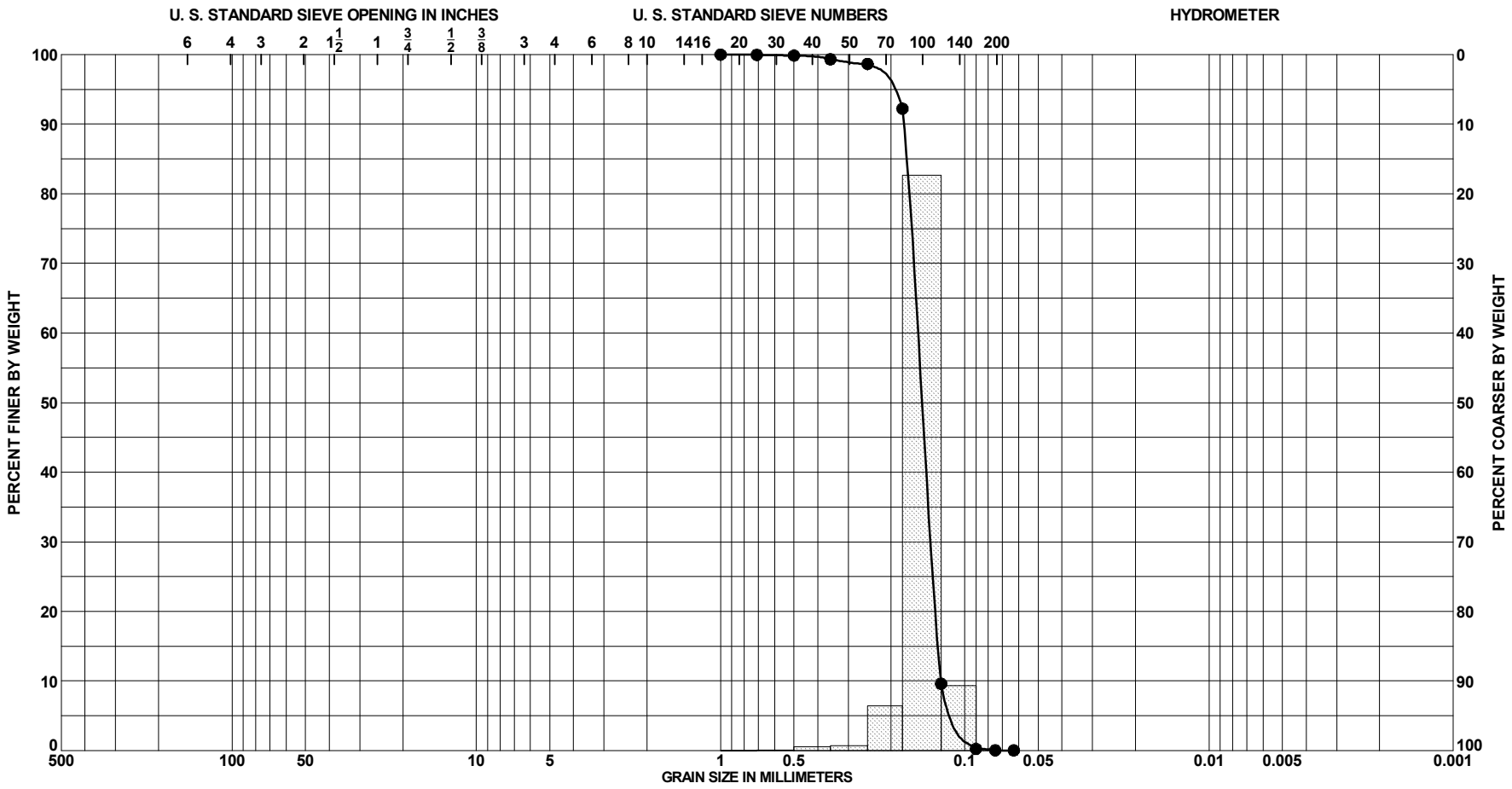


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell, light gray (SP)	10YR 7/1	2/3 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-3
BORING ELEV.	-8.9 Ft., MLLW
DATE	12/14/2010

SAJ FORM 2087
JUN 02



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, light gray (SP)	10YR 7/1							

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-3
BORING ELEV.	-8.9 Ft., MLLW
DATE	12/15/2010

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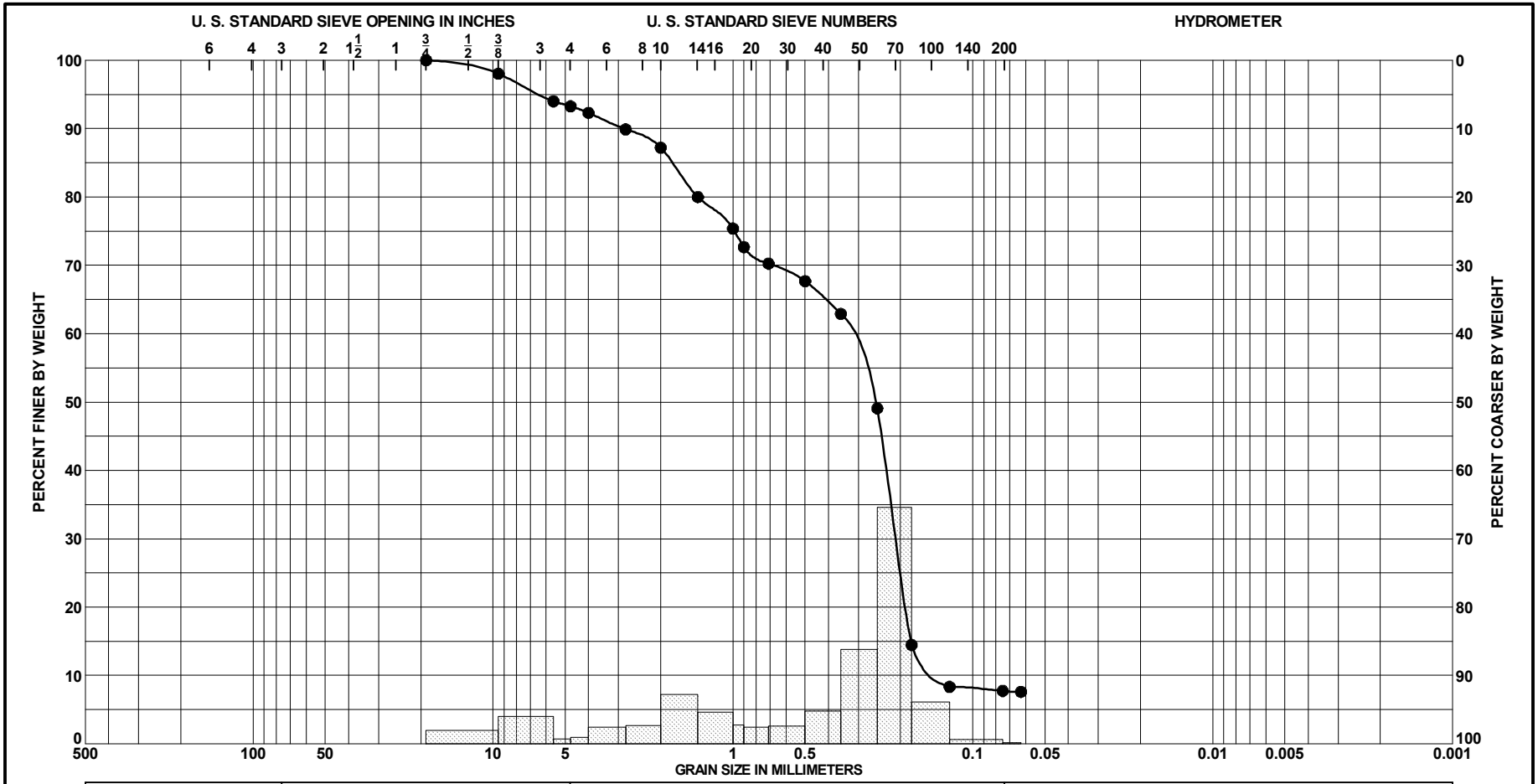
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, poorly-graded with silt, mostly	10YR 4/1	31 (est)						
		fine to medium-grained sand-sized								
		quartz, some medium to								
		coarse-grained sand-sized shell, few								
		silt, few fine gravel-sized shell, dark								
		gray								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-4
BORING ELEV.	-7.1 Ft., MLLW
DATE	12/14/2010

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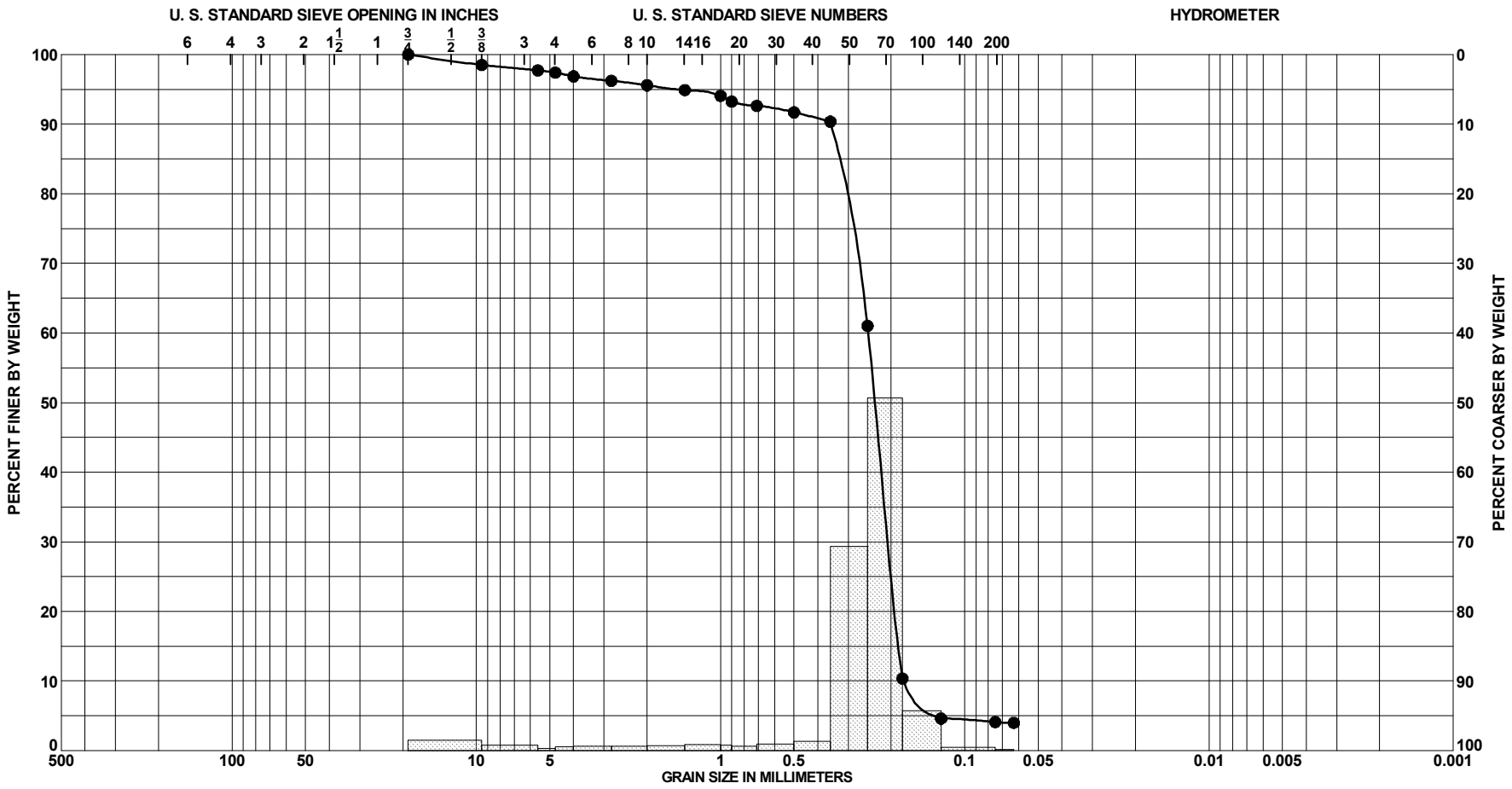
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	3.0 to 3.5 Ft.	SAND, poorly-graded, mostly	10YR 6/1	10 (est)						
		fine-grained sand-sized quartz, few								
		medium to coarse-grained sand-sized								
		shell, trace silt, trace								
		fine gravel-sized shell, gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-4
BORING ELEV.	-7.1 Ft., MLLW
DATE	12/14/2010

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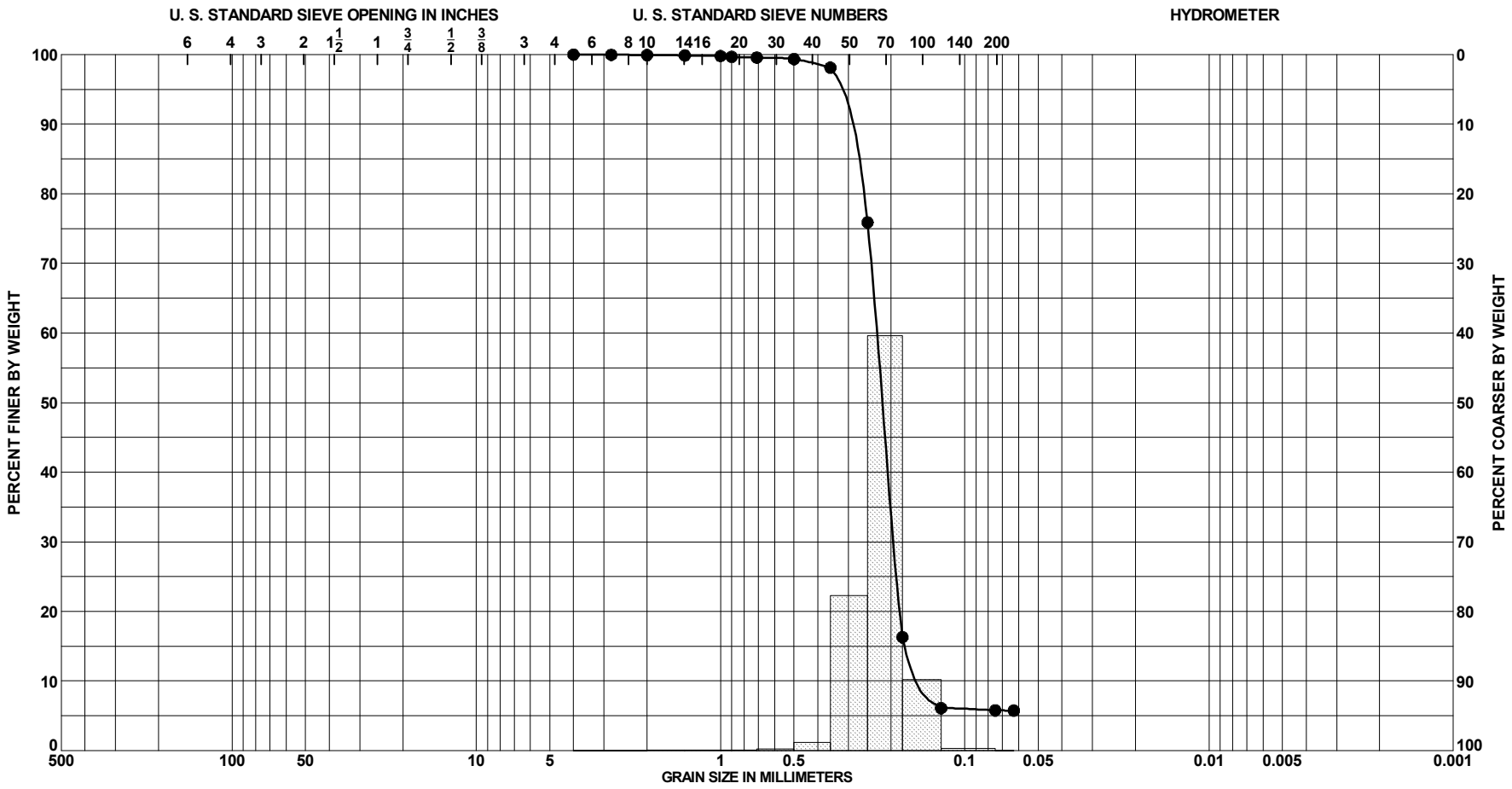
JUN 02

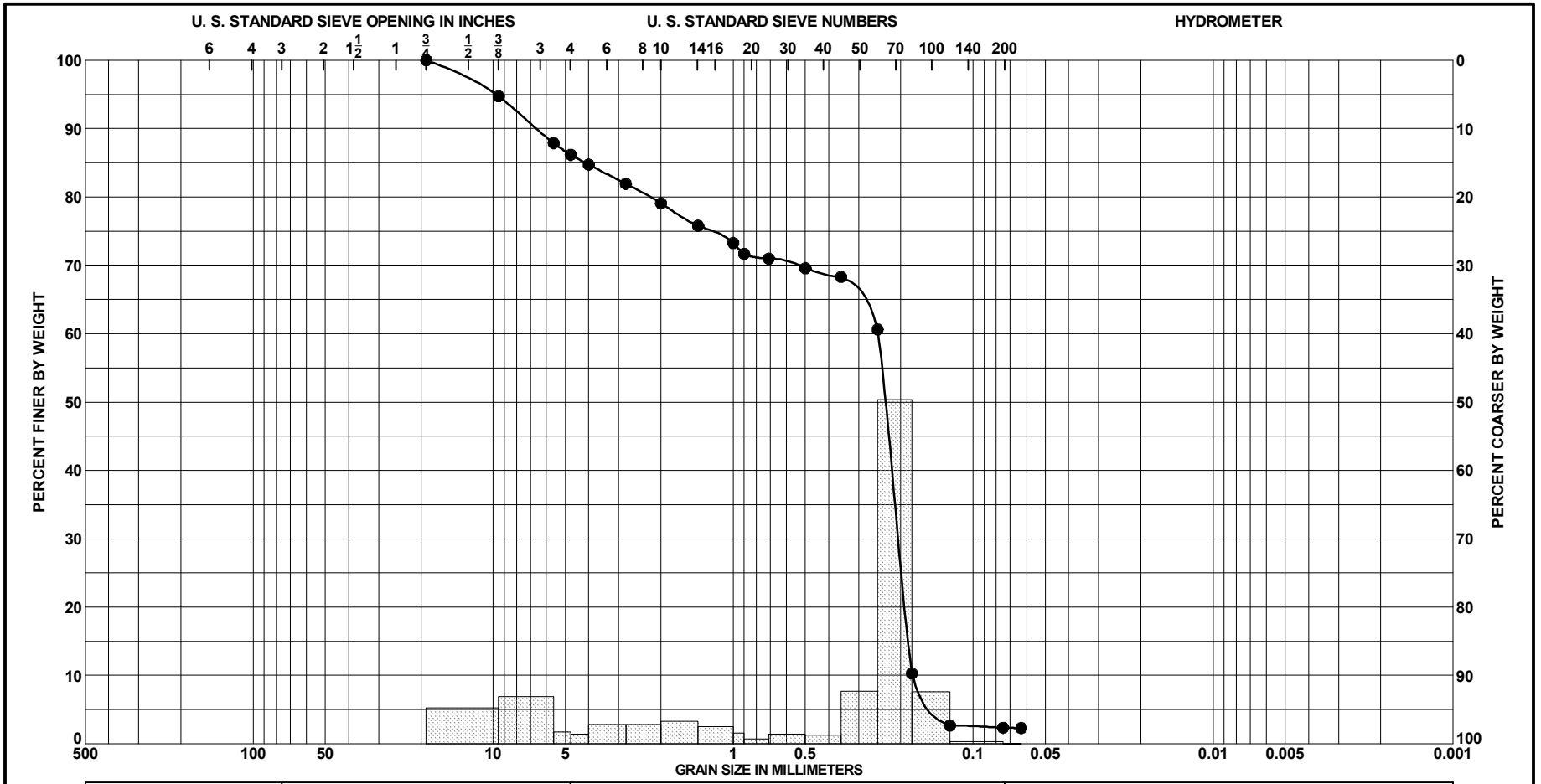


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.5 to 3.0 Ft.	SAND, poorly-graded with silt, mostly	10YR 6/1	1 (est)						
		fine-grained sand-sized quartz, few								
		silt, gray (SP-SM)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-5
BORING ELEV.	-3.9 Ft., MLLW
DATE	12/14/2010

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	5.0 to 5.5 Ft.	SAND, poorly-graded, mostly	10YR 5/1	31 (est)						
		fine-grained sand-sized quartz, little								
		medium to coarse-grained sand-sized								
		shell, little fine								
		gravel-sized shell up to 1/2", trace silt,								

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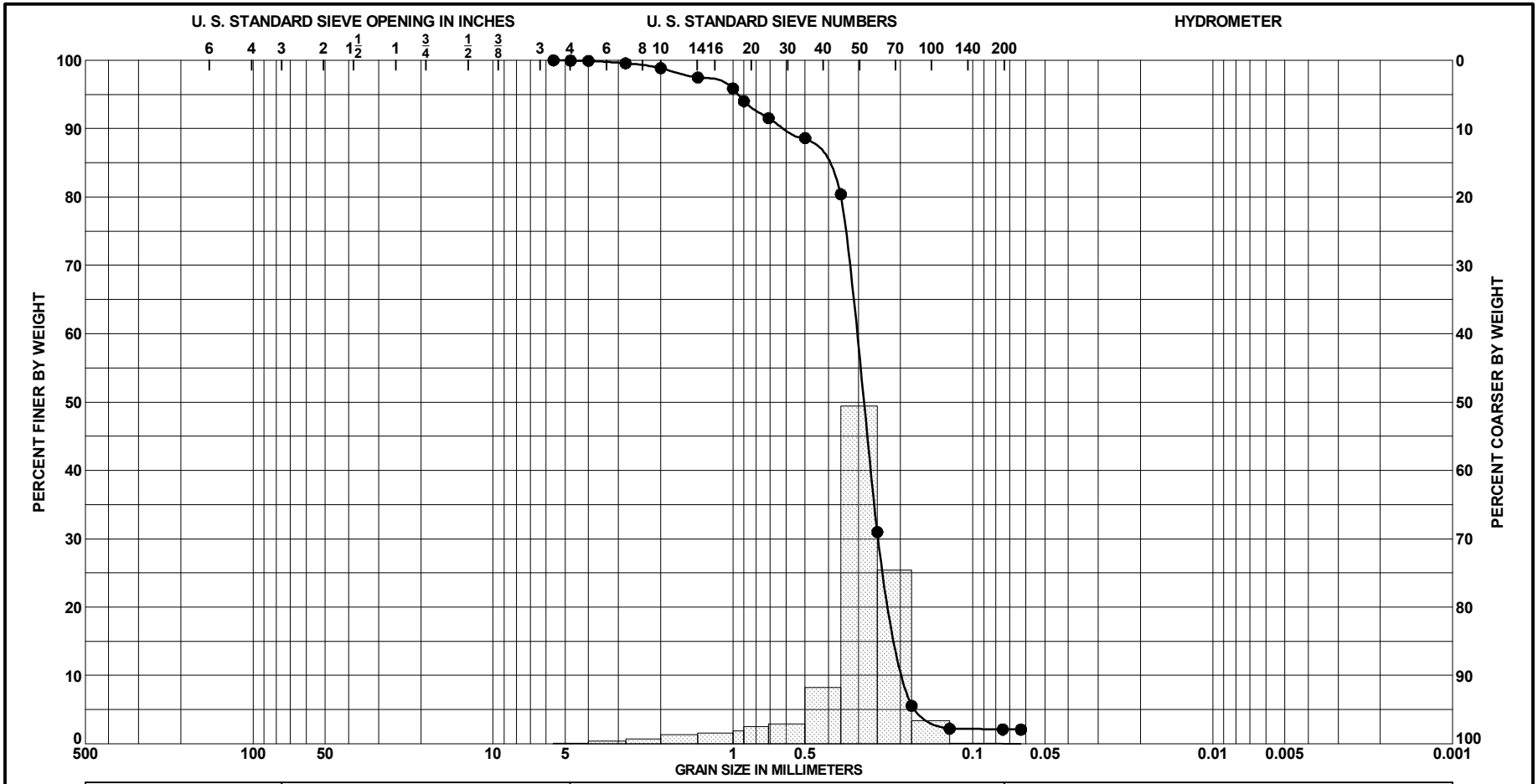
GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM5-10-5
BORING ELEV.	-3.9 Ft., MLLW
DATE	12/14/2010

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium-grained sand-sized shell, trace silt, light gray (SP)	10YR 7/1	15/18 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM7-10-1
BORING ELEV.	-5.0 Ft., MLLW
DATE	12/14/2010

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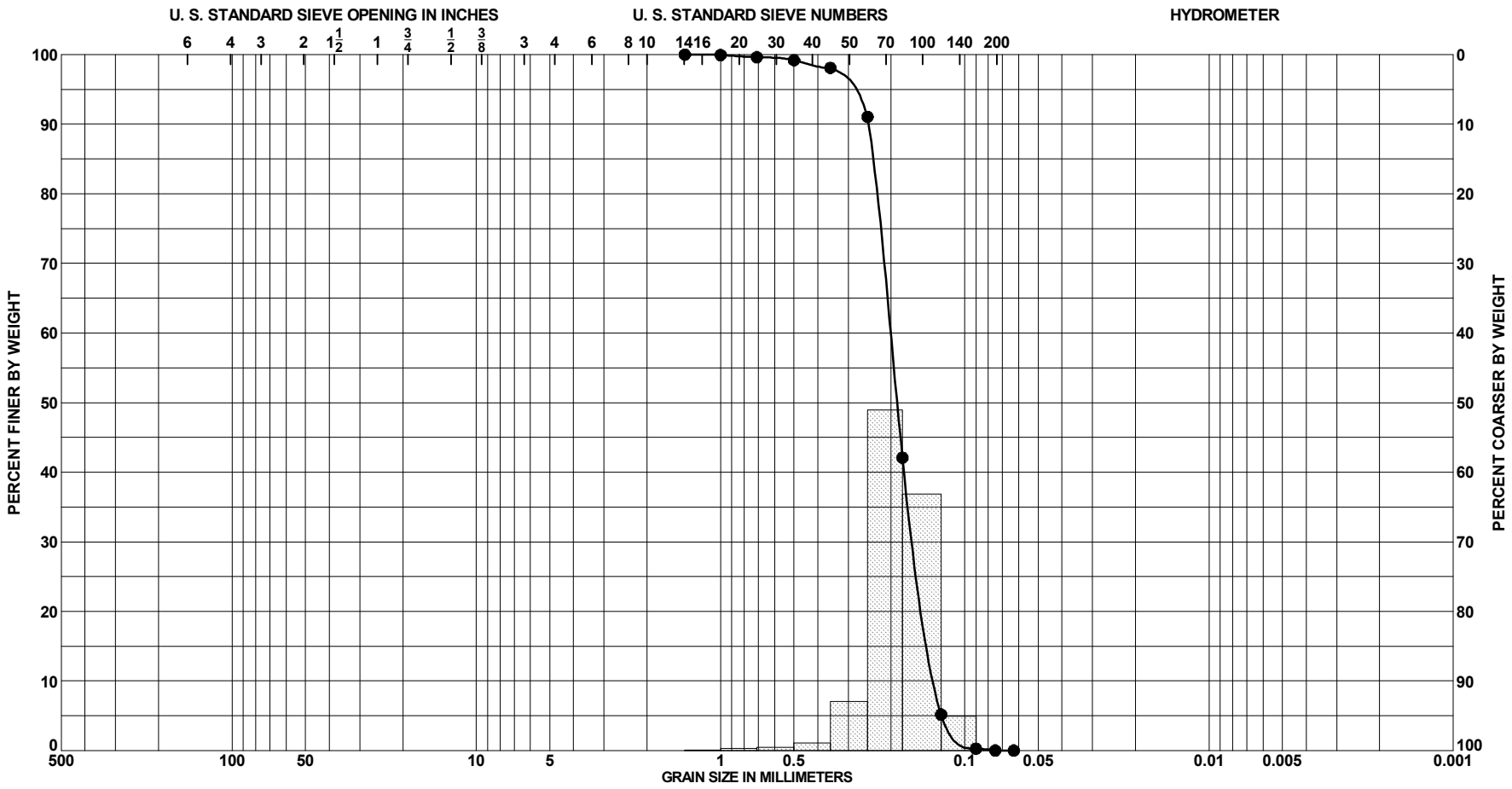
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM7-10-1
BORING ELEV.	-5.0 Ft., MLLW
DATE	12/15/2010

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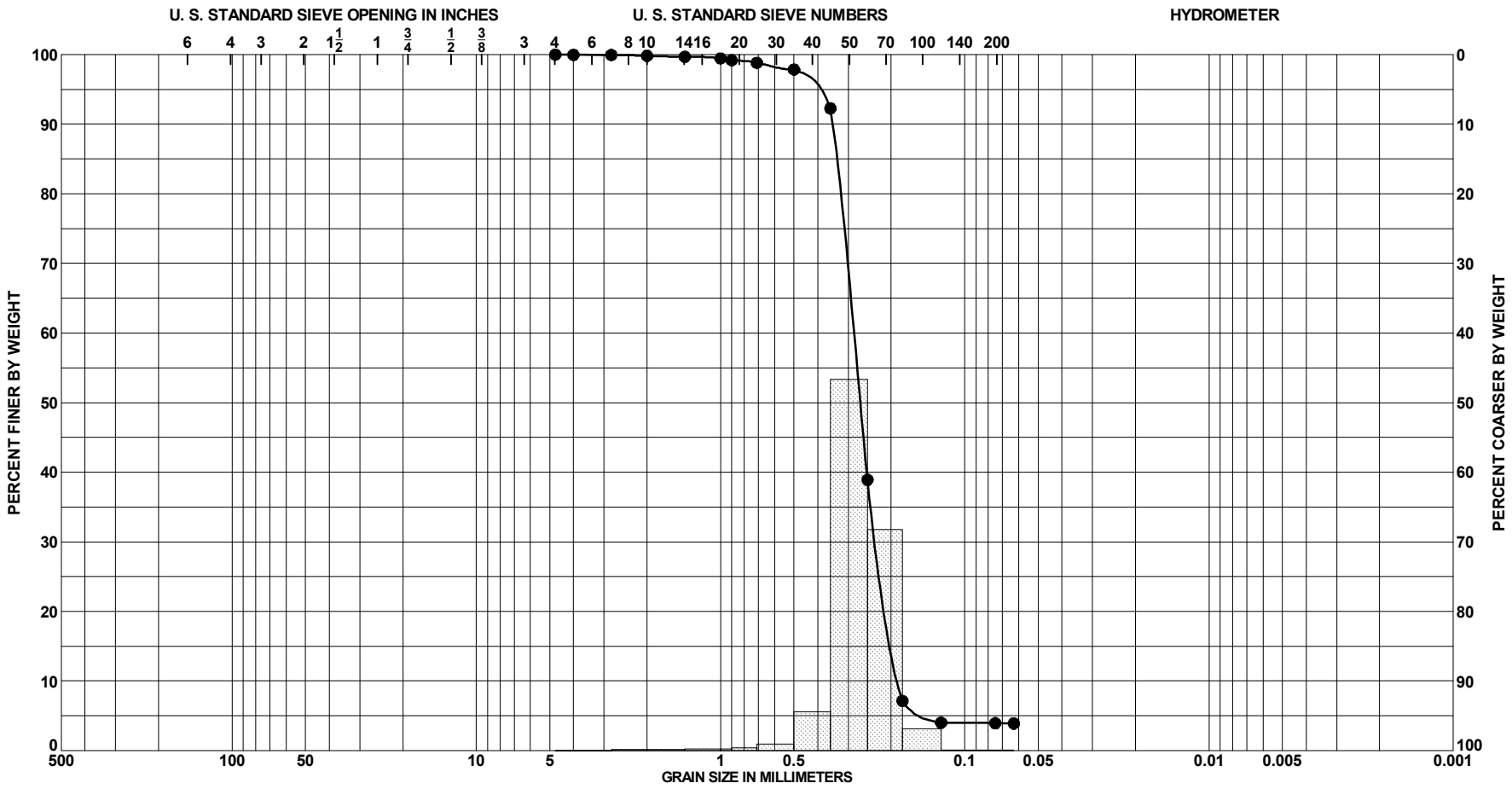
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	4.0 to 4.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1	3 (est)						
		fine-grained sand-sized quartz, trace								
		silt, trace fine to medium-grained								
		sand-sized shell, light gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM7-10-1
BORING ELEV.	-5.0 Ft., MLLW
DATE	12/14/2010

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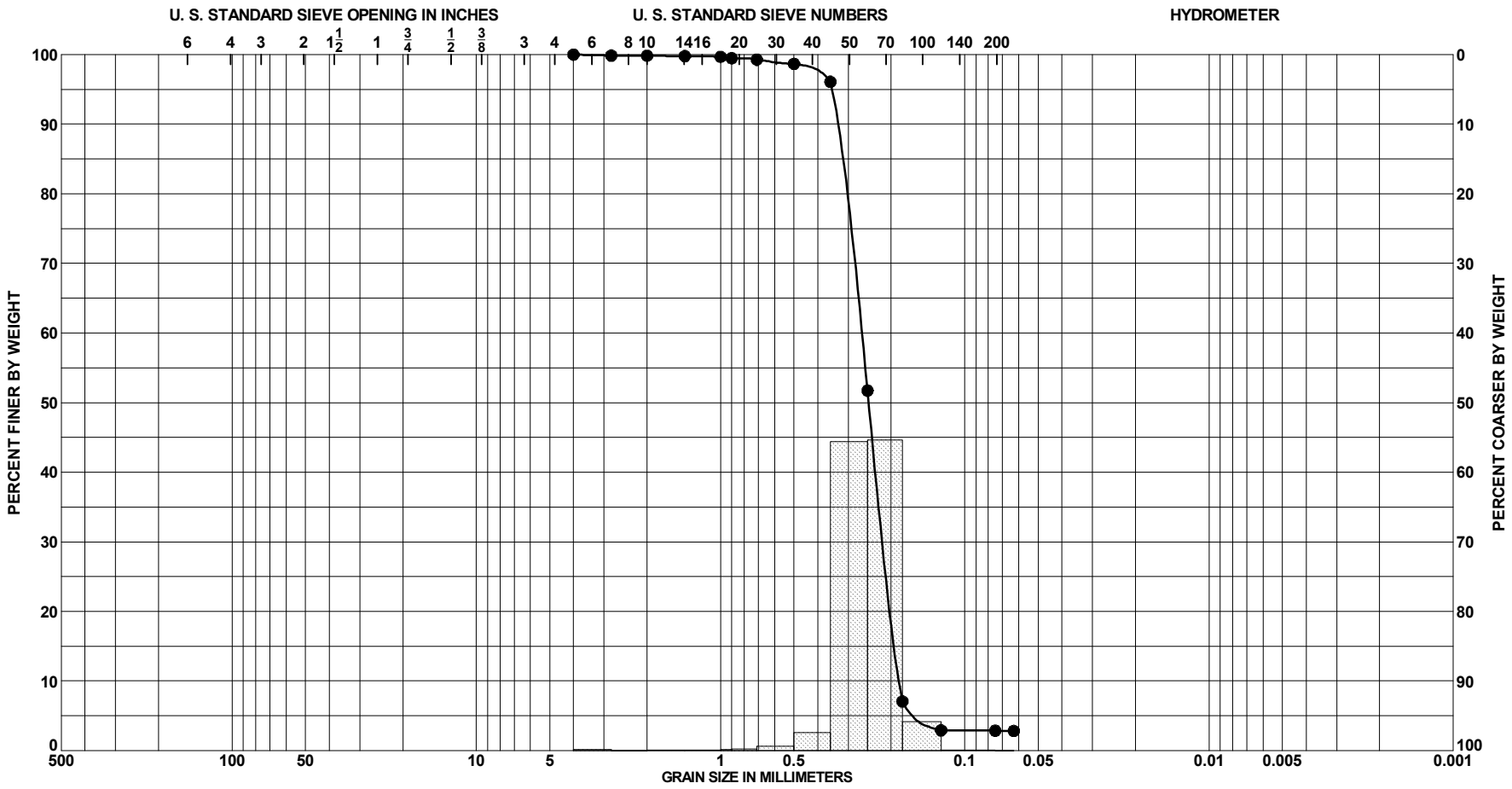

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	10YR 6/1	2 (est)						
		fine-grained sand-sized quartz, trace								
		silt, trace fine-grained sand-sized								
		shell, gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM7-10-2
BORING ELEV.	-9.4 Ft., MLLW
DATE	12/14/2010

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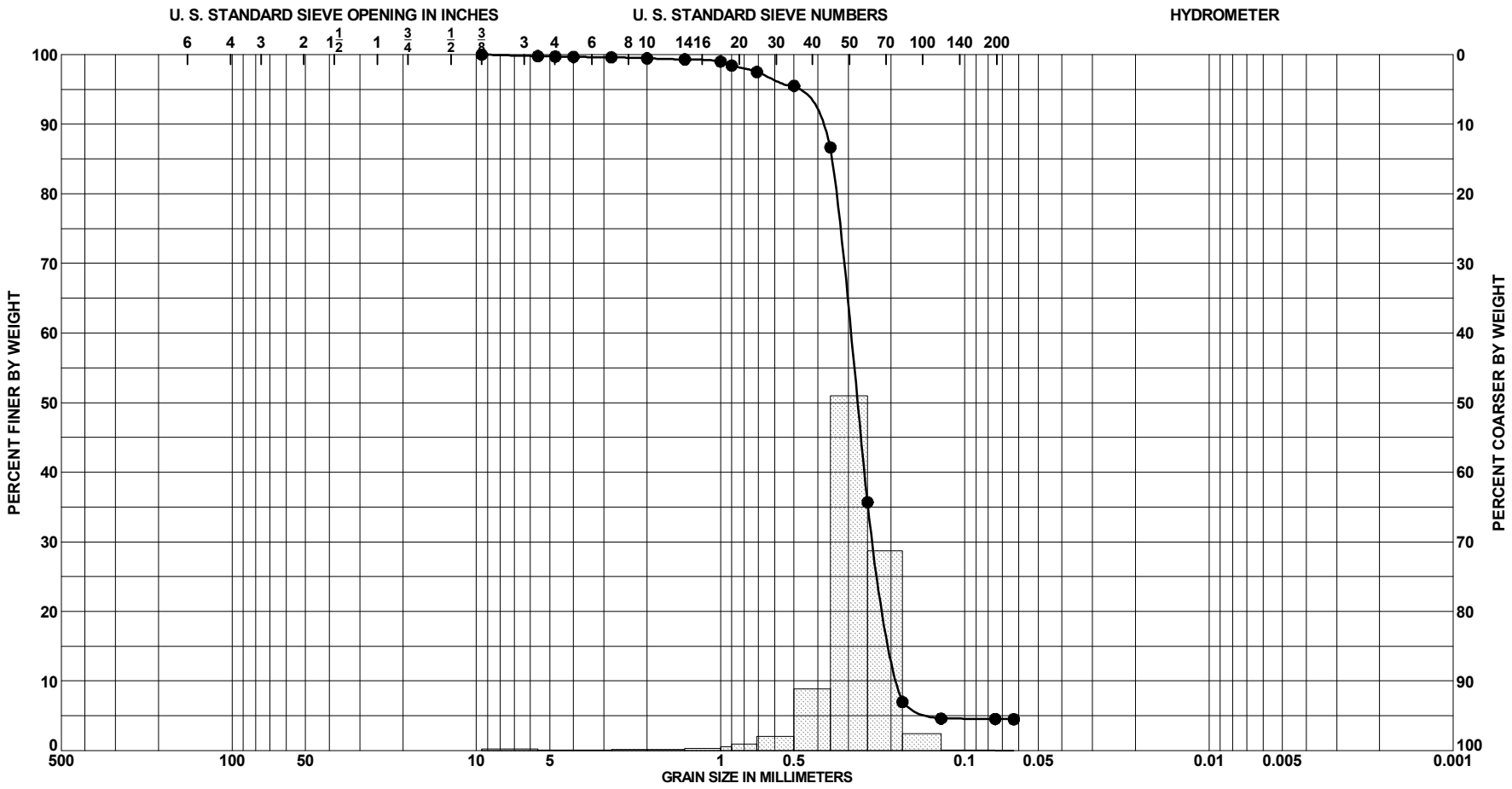

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	10YR 6/1	5 (est)						
		fine-grained sand-sized quartz, few								
		fine to medium-grained sand-sized								
		shell, trace silt, gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
BORING NO.	VB-GIWWM7-10-3
BORING ELEV.	-9.7 Ft., MLLW
DATE	12/14/2010

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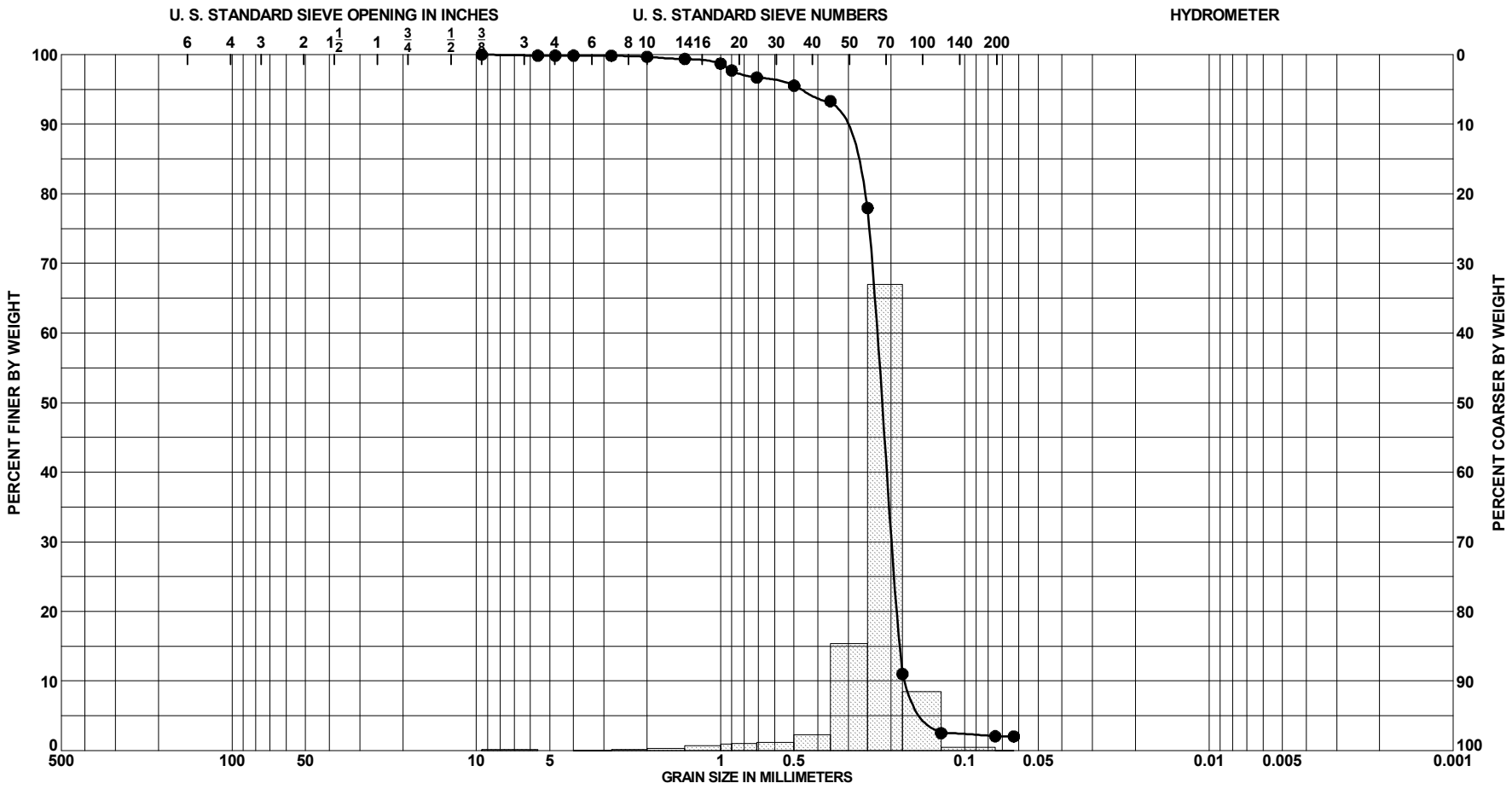

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.5 to 2.0 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium-grained sand-sized shell, trace silt, light gray (SP)	10YR 7/1	5 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
BORING NO.	VB-GIWWSC2-10-1
BORING ELEV.	-7.5 Ft., MLLW
DATE	12/14/2010

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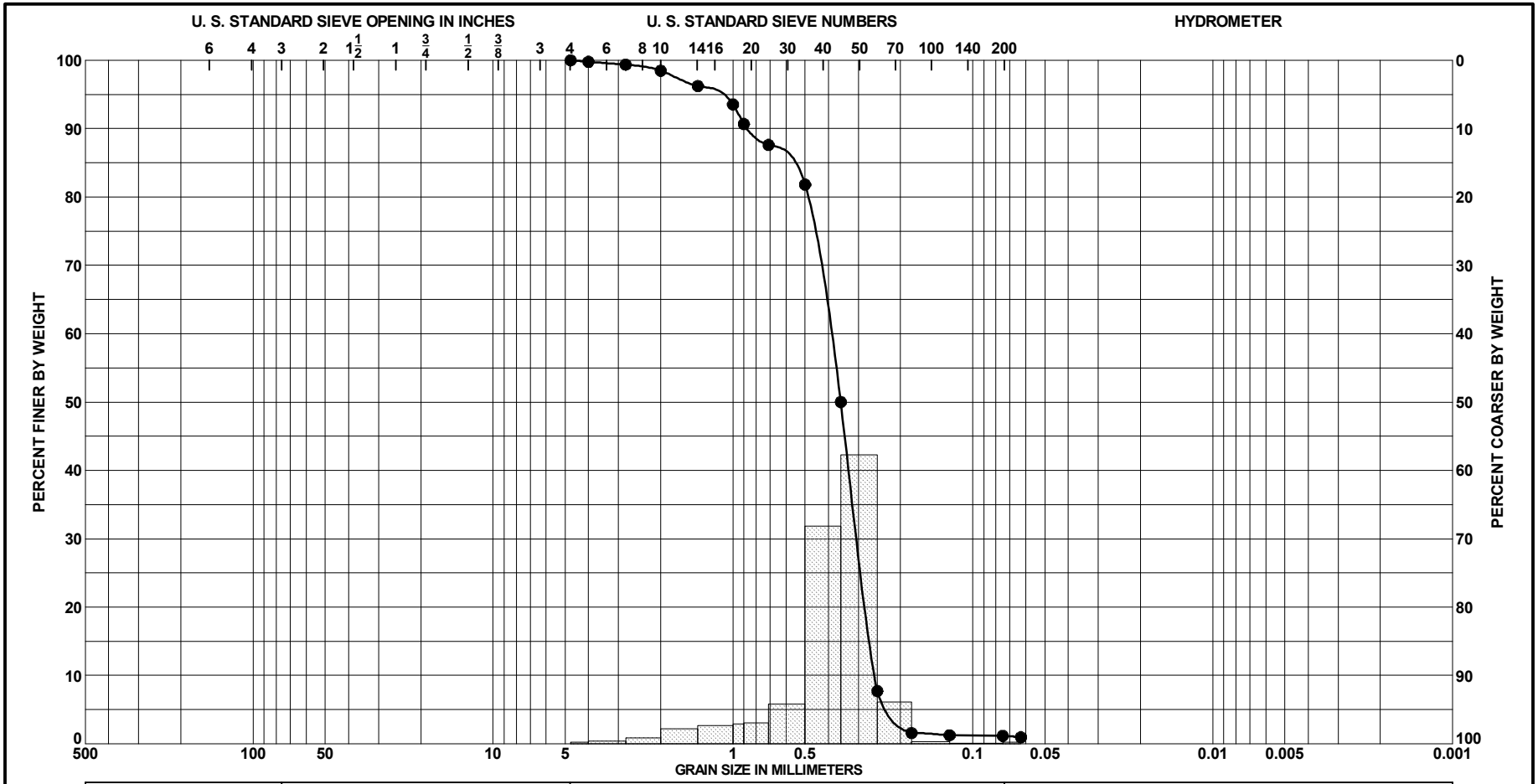

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt, white (SP)	10YR 8/1	15/18 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
BORING NO.	VB-GIWWSC2-10-2
BORING ELEV.	-5.4 Ft., MLLW
DATE	12/14/2010

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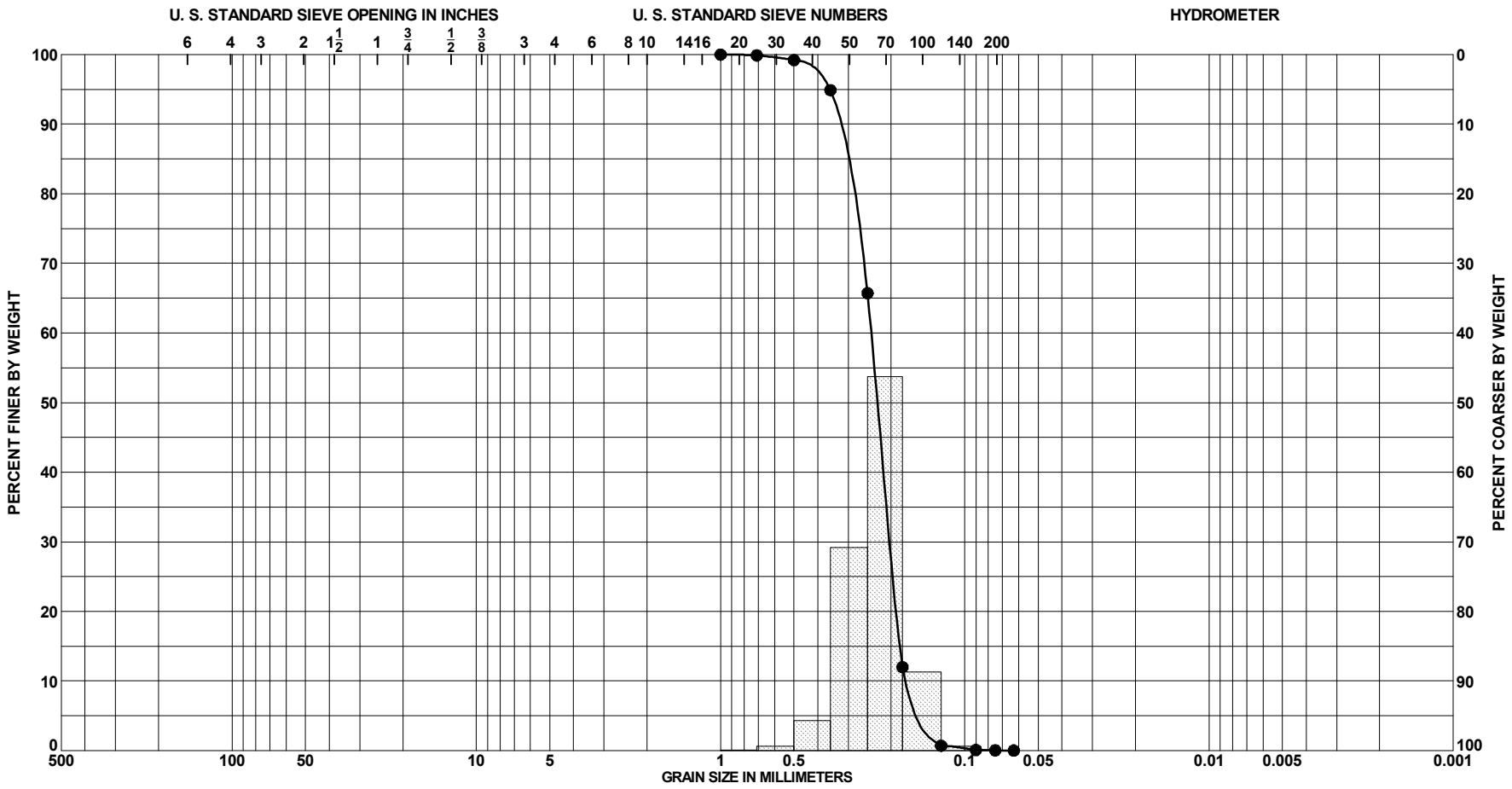

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly fine to	10YR 8/1							
		medium-grained sand-sized quartz,								
		white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
BORING NO.	VB-GIWWSC2-10-2
BORING ELEV.	-5.4 Ft., MLLW
DATE	12/15/2010

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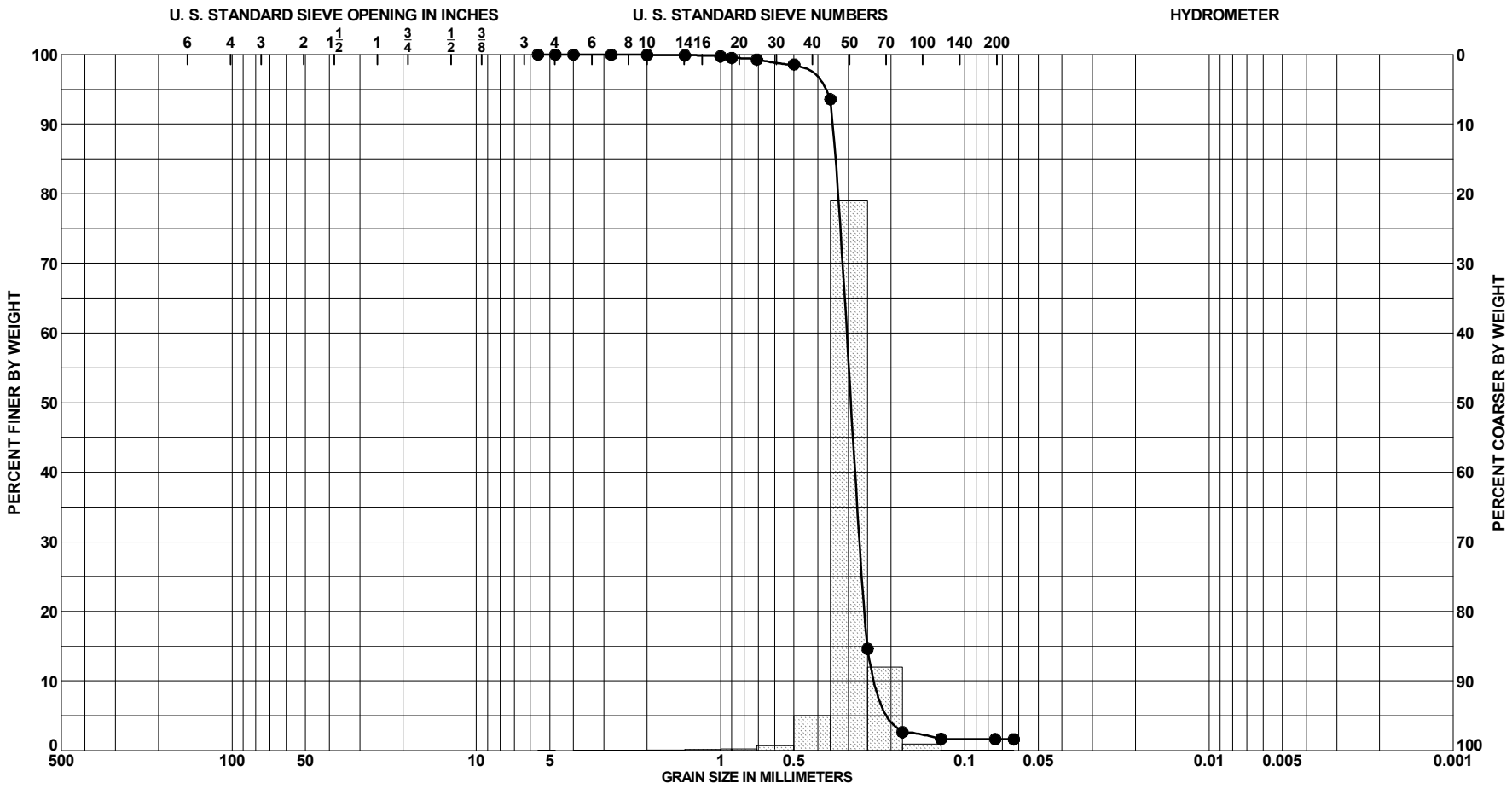

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	4.0 to 4.5 Ft.	SAND, poorly-graded, mostly	10YR 8/1	2 (est)						
		fine-grained sand-sized quartz, trace								
		silt, trace medium-grained sand-sized								
		shell, white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
BORING NO.	VB-GIWWSC2-10-2
BORING ELEV.	-5.4 Ft., MLLW
DATE	12/14/2010

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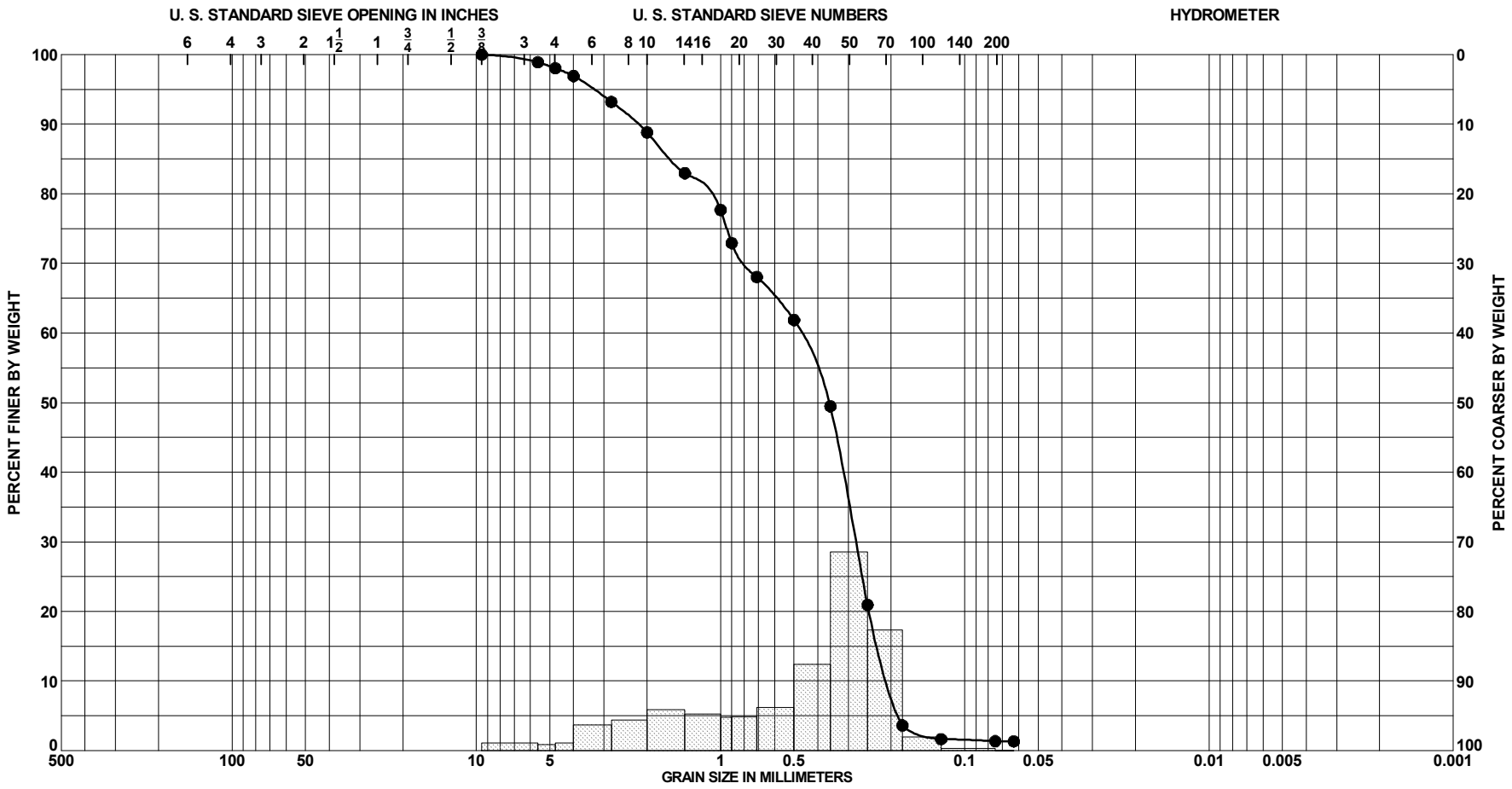

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	10YR 6/1	36 (est)						
		fine-grained sand-sized quartz, some								
		medium to coarse-grained sand-sized								
		shell, trace fine								
		gravel-sized shell, trace silt, gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
BORING NO.	VB-GIWWSC3-10-1
BORING ELEV.	-9.0 Ft., MLLW
DATE	12/14/2010

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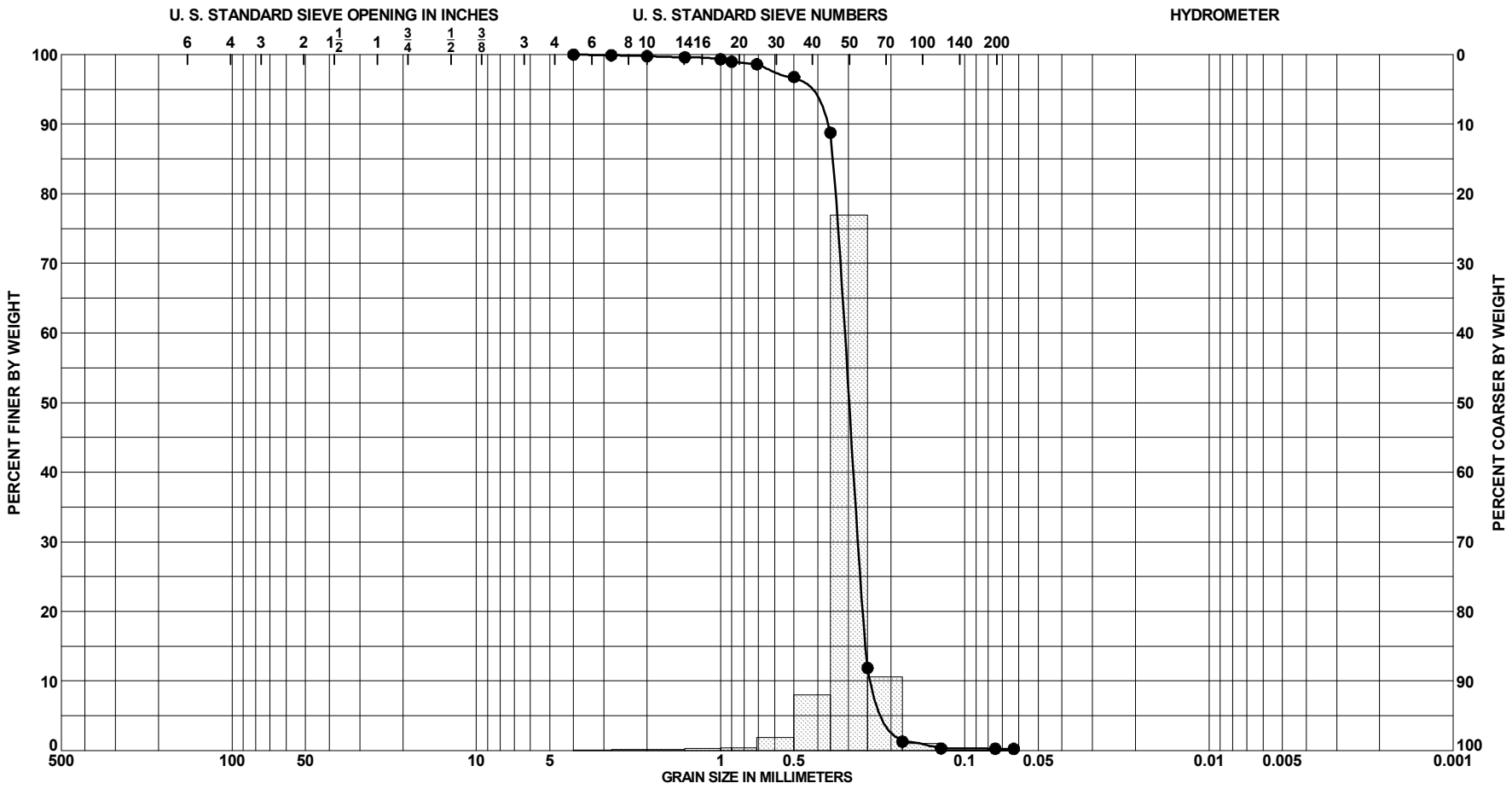
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.0 to 1.5 Ft.	SAND, poorly-graded, mostly	10YR 6/1	4 (est)						
		fine-grained sand-sized quartz, trace								
		medium-grained sand-sized shell, gray								
		(SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
BORING NO.	VB-GIWWSC3-10-2
BORING ELEV.	-6.8 Ft., MLLW
DATE	12/14/2010

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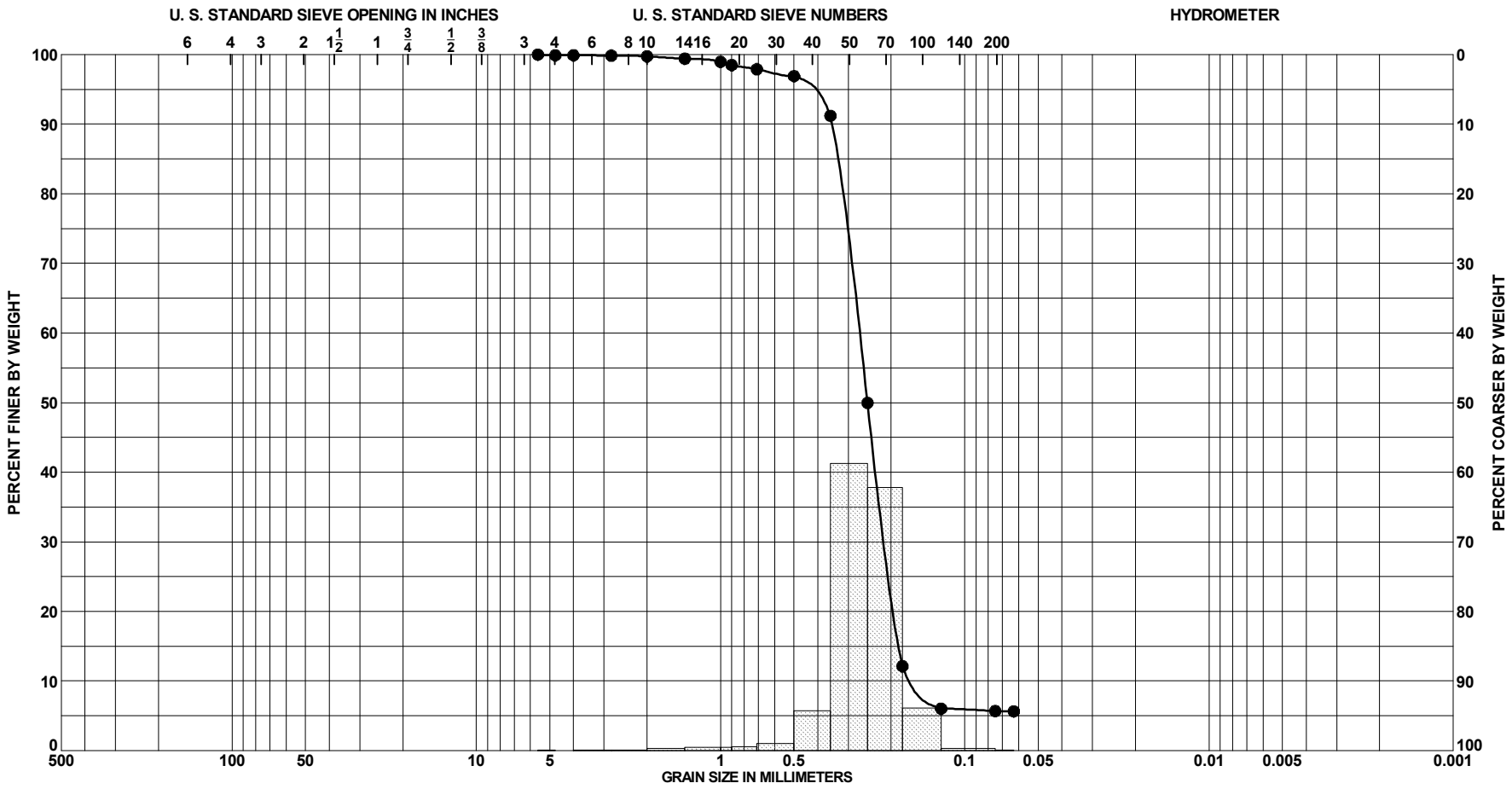
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	3.0 to 3.5 Ft.	SAND, poorly-graded with silt, mostly	10YR 5/1	4 (est)						
		fine-grained sand-sized quartz, few								
		silt, trace medium to coarse-grained								
		sand-sized shell, gray (SP-SM)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
BORING NO.	VB-GIWWSC3-10-2
BORING ELEV.	-6.8 Ft., MLLW
DATE	12/14/2010

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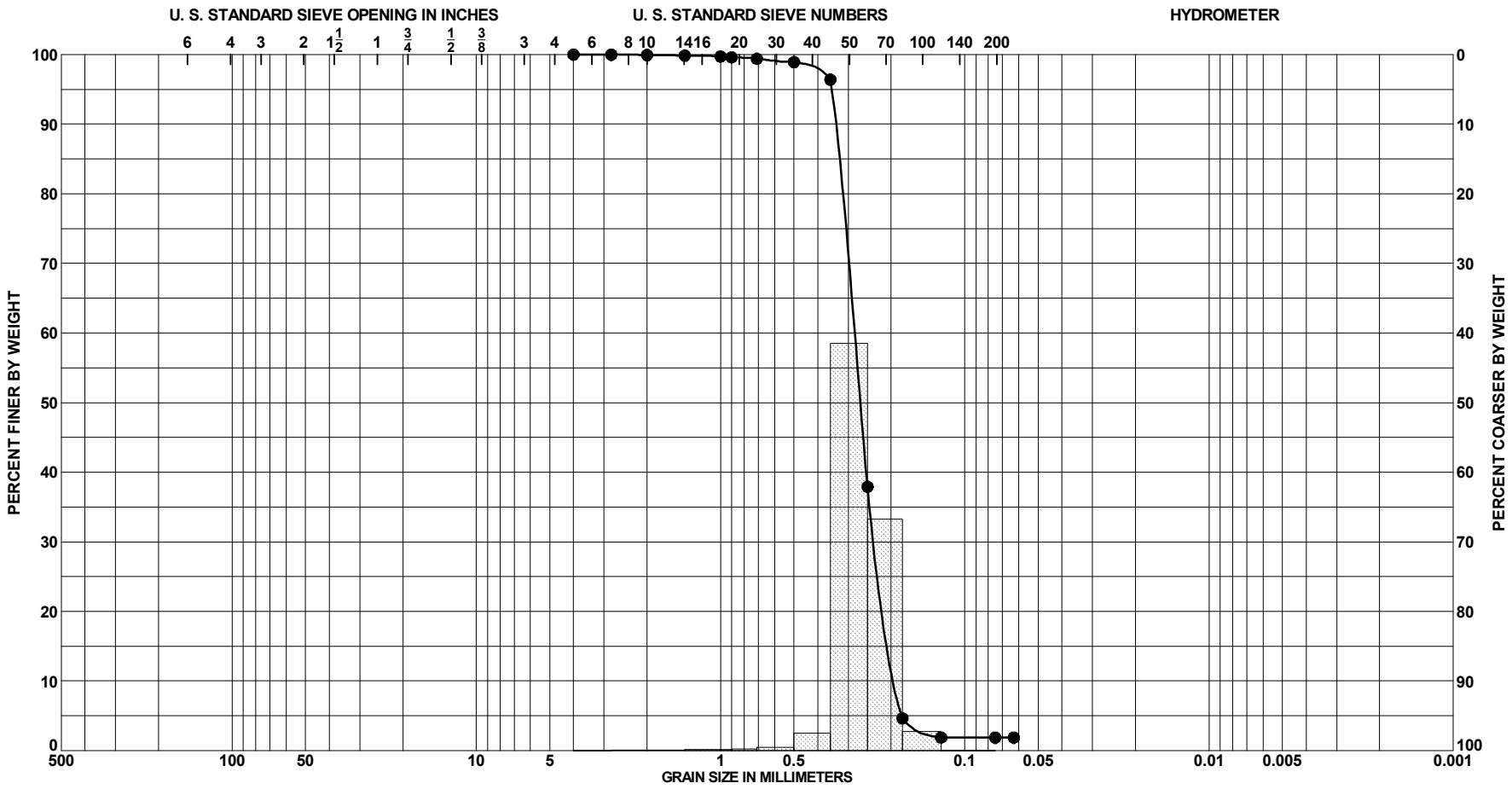
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.5 to 3.0 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace medium-grained sand-sized shell, white (SP)	10YR 8/1	2 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-1
BORING ELEV.	-7.7 Ft., MLLW
DATE	12/14/2010

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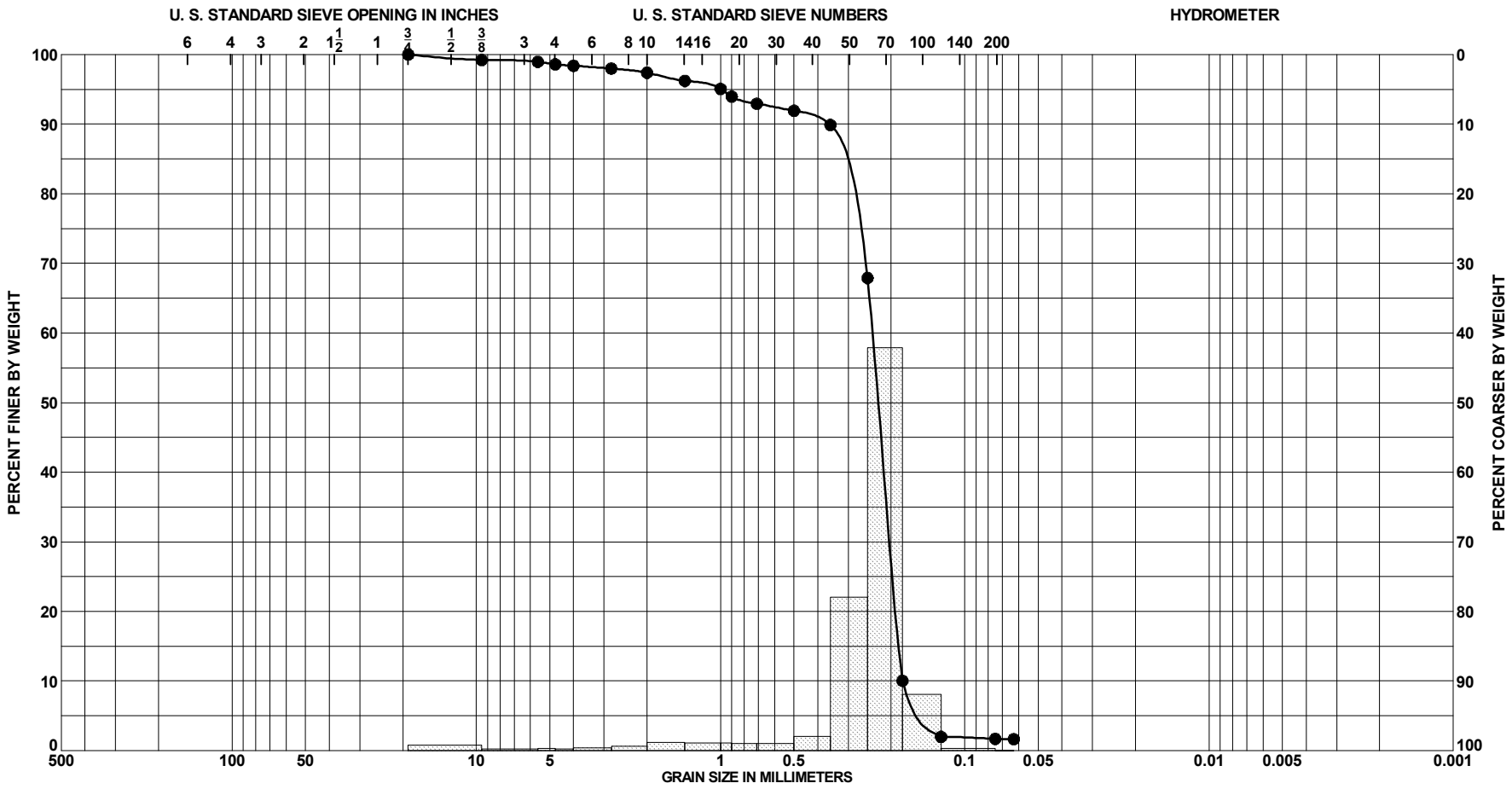

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	5.0 to 5.5 Ft.	SAND, poorly-graded, mostly	10YR 8/1	10 (est)						
		fine-grained sand-sized quartz, few								
		medium to coarse-grained sand-sized								
		shell, trace fine gravel-sized shell,								
		white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-1
BORING ELEV.	-7.7 Ft., MLLW
DATE	12/14/2010

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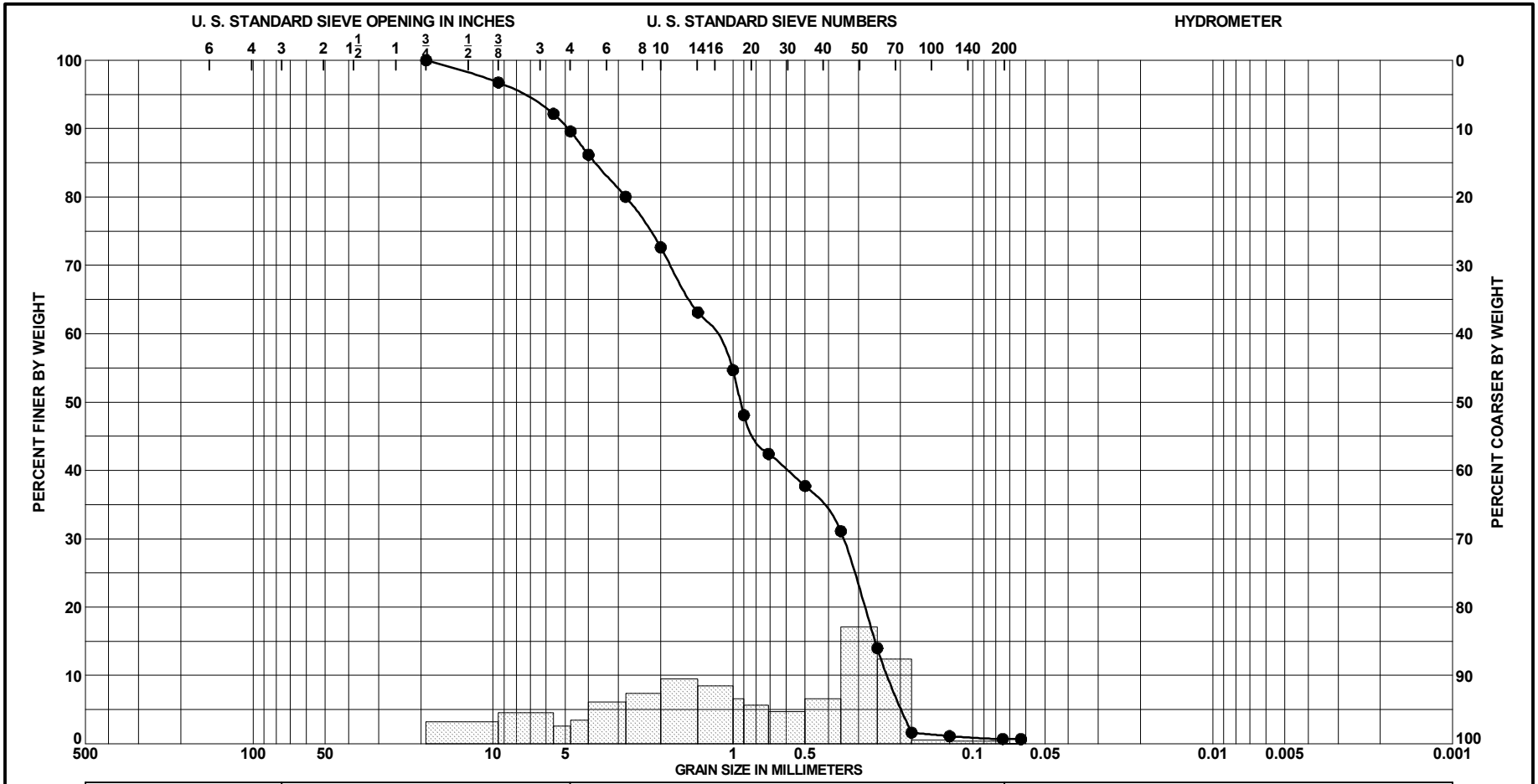

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	3.0 to 3.5 Ft.	SAND, poorly-graded, mostly medium	10YR 8/1	58 (est)						
		to coarse-grained sand-sized shell,								
		some fine-grained sand-sized quartz,								
		few fine								
		gravel-sized shell, white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-10
BORING ELEV.	-5.5 Ft., MLLW
DATE	12/14/2010

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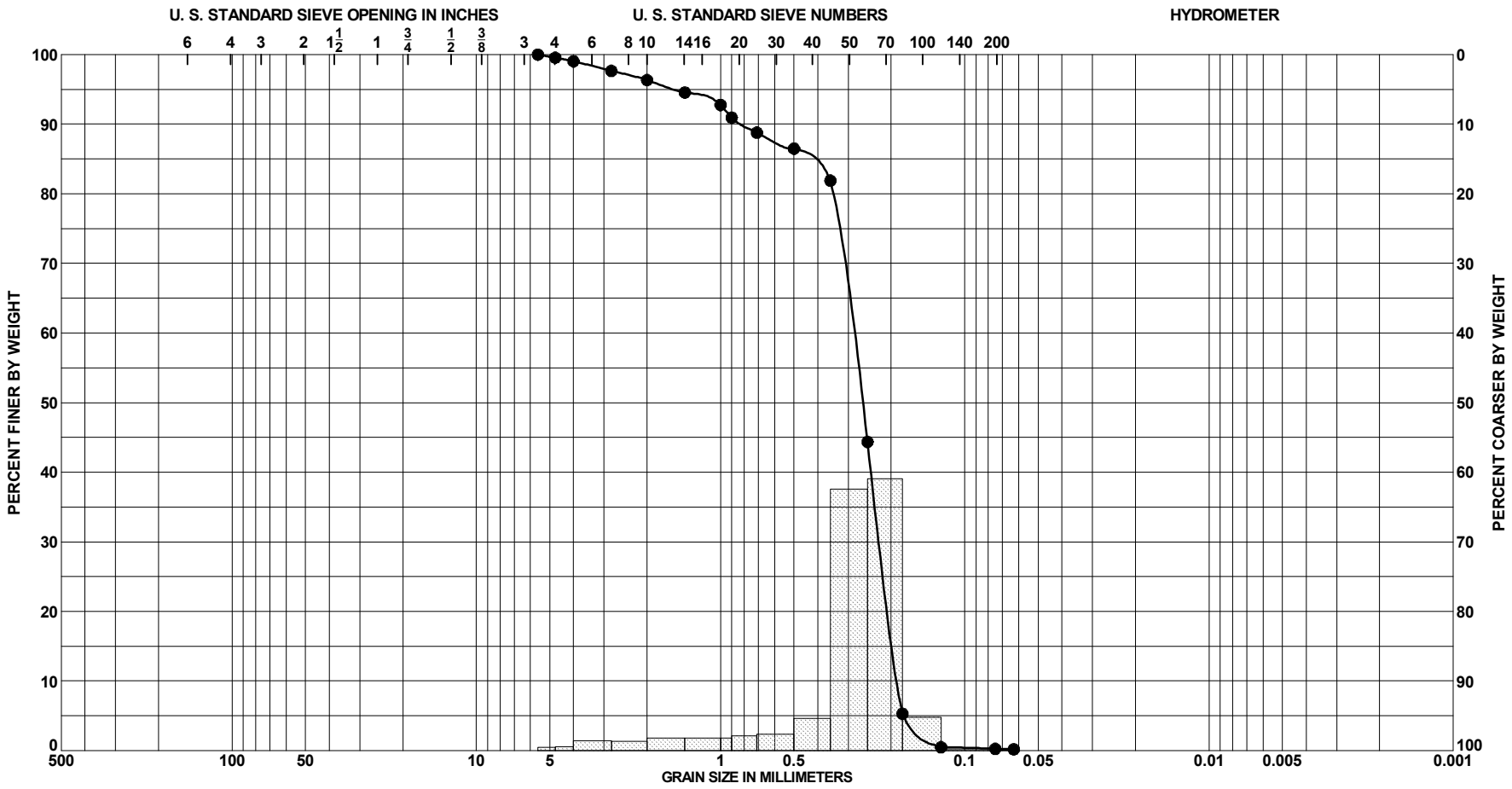

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	6.0 to 6.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, white (SP)	10YR 8/1	17/18 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-10
BORING ELEV.	-5.5 Ft., MLLW
DATE	12/14/2010

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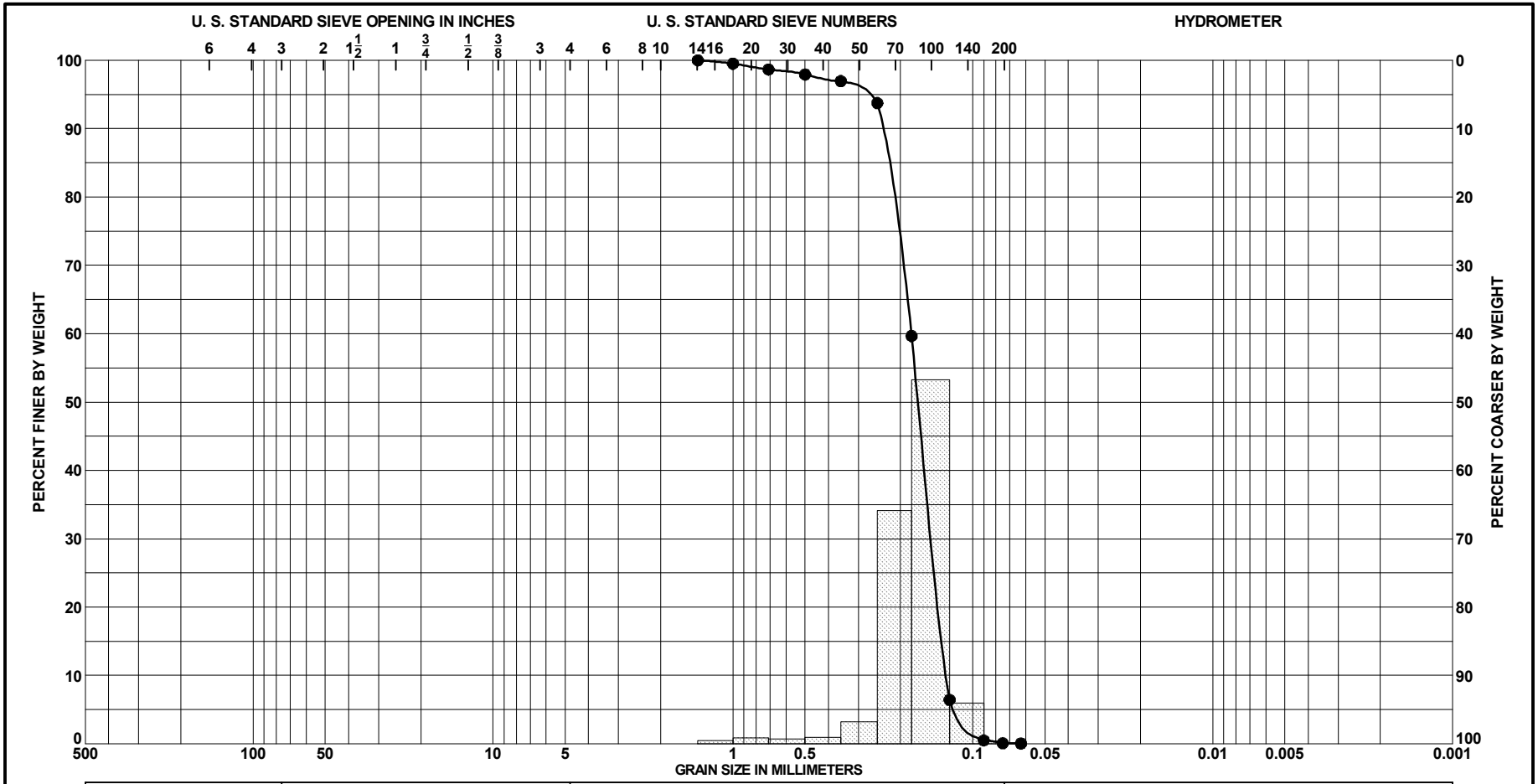

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2-Post	6.0 to 6.5 Ft.	SAND, poorly-graded, mostly	10YR 8/1							
		fine-grained sand-sized quartz, trace								
		medium-grained sand-sized quartz,								
		white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-10
BORING ELEV.	-5.5 Ft., MLLW
DATE	12/15/2010

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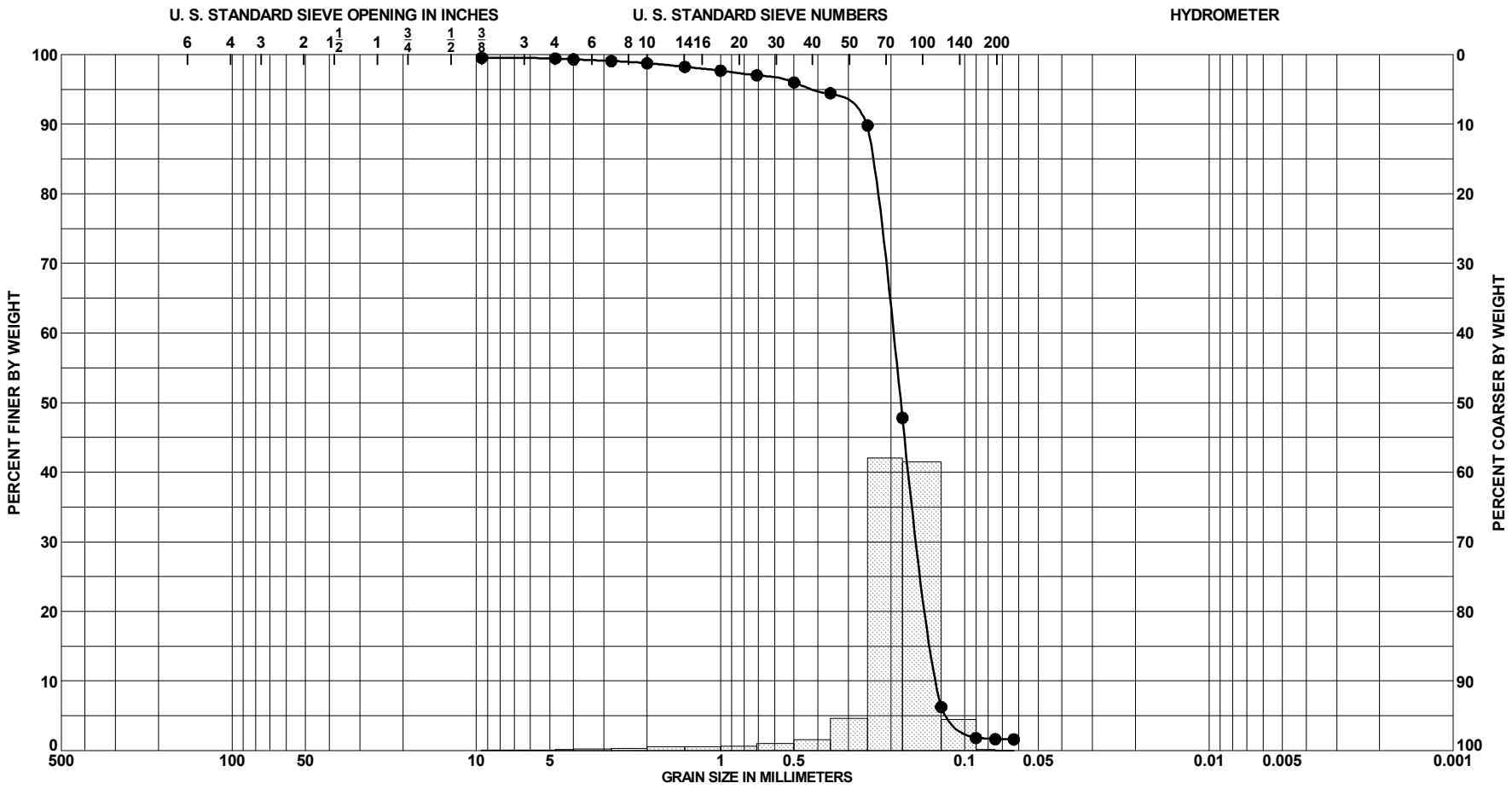

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	9.0 to 9.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt, white (SP)	10YR 8/1	10 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-10
BORING ELEV.	-5.5 Ft., MLLW
DATE	

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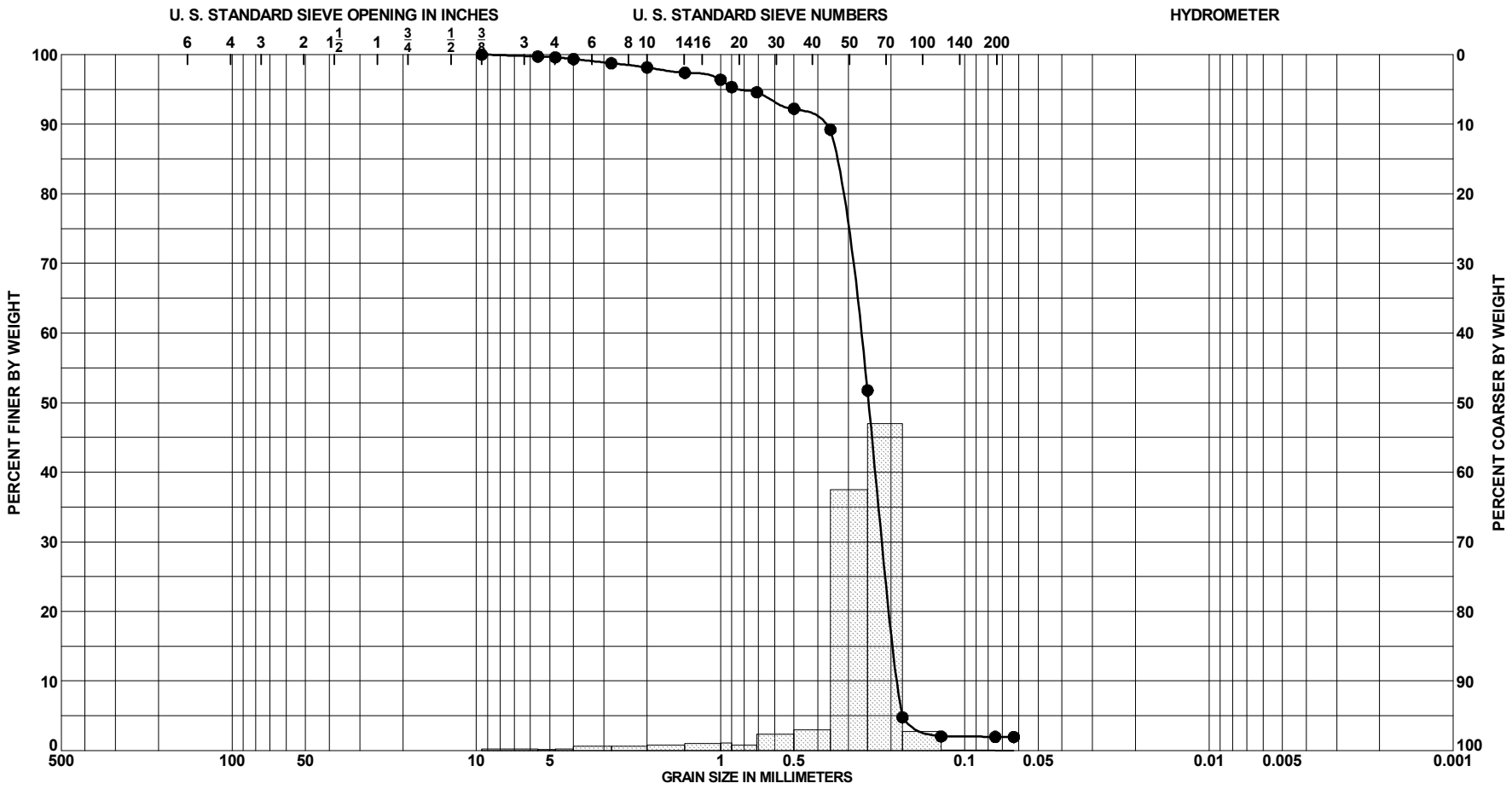

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt, white (SP)	10YR 8/1	9 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-11
BORING ELEV.	-8.0 Ft., MLLW
DATE	12/14/2010

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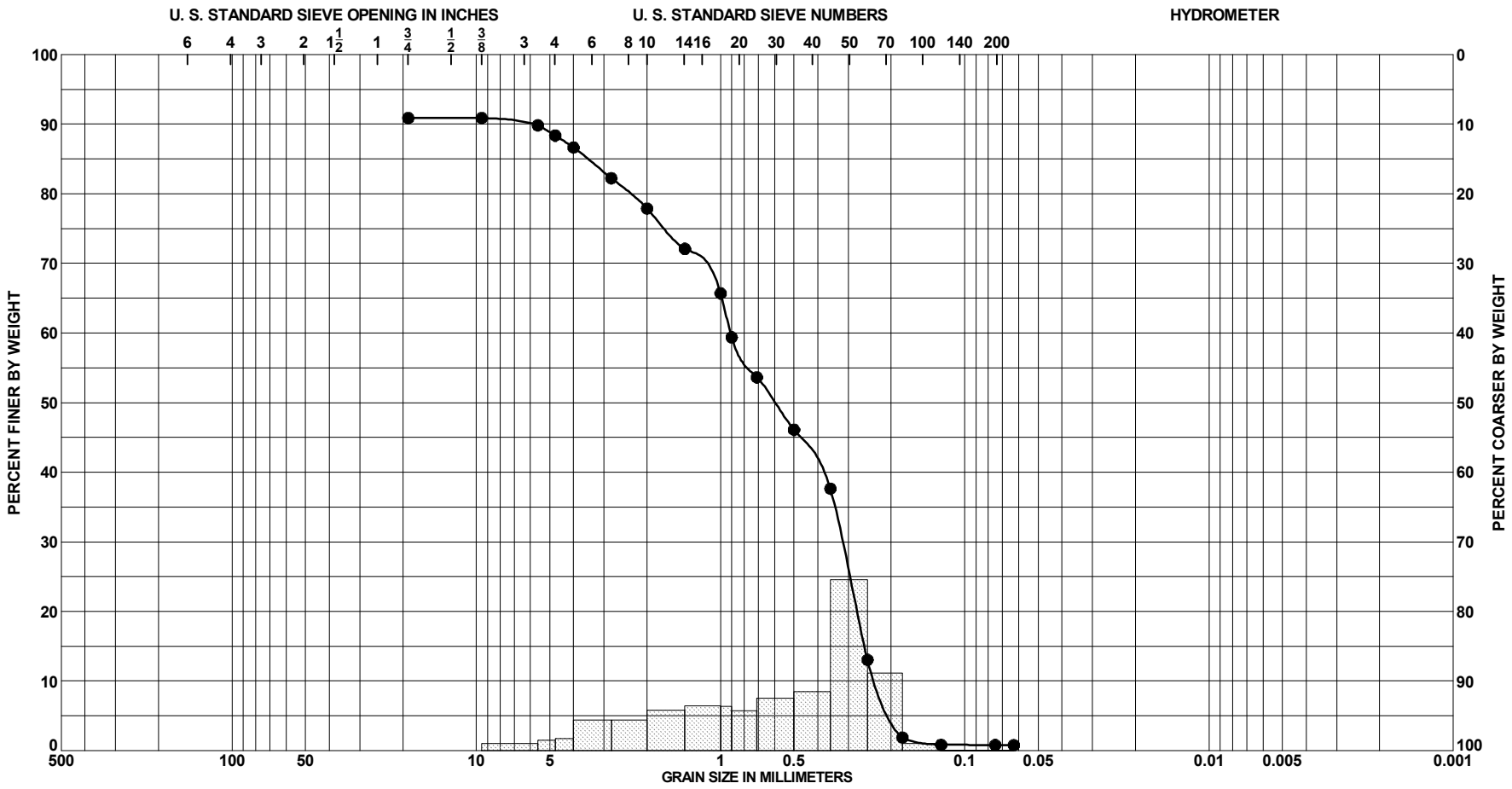

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	5.0 to 5.5 Ft.	SAND, poorly-graded, some medium	10YR 8/1	54 (est)						
		to coarse-grained sand-sized shell,								
		some fine-grained sand-sized quartz,								
		few fine to coarse gravel-sized shell,								
		white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-11
BORING ELEV.	-8.0 Ft., MLLW
DATE	12/14/2010

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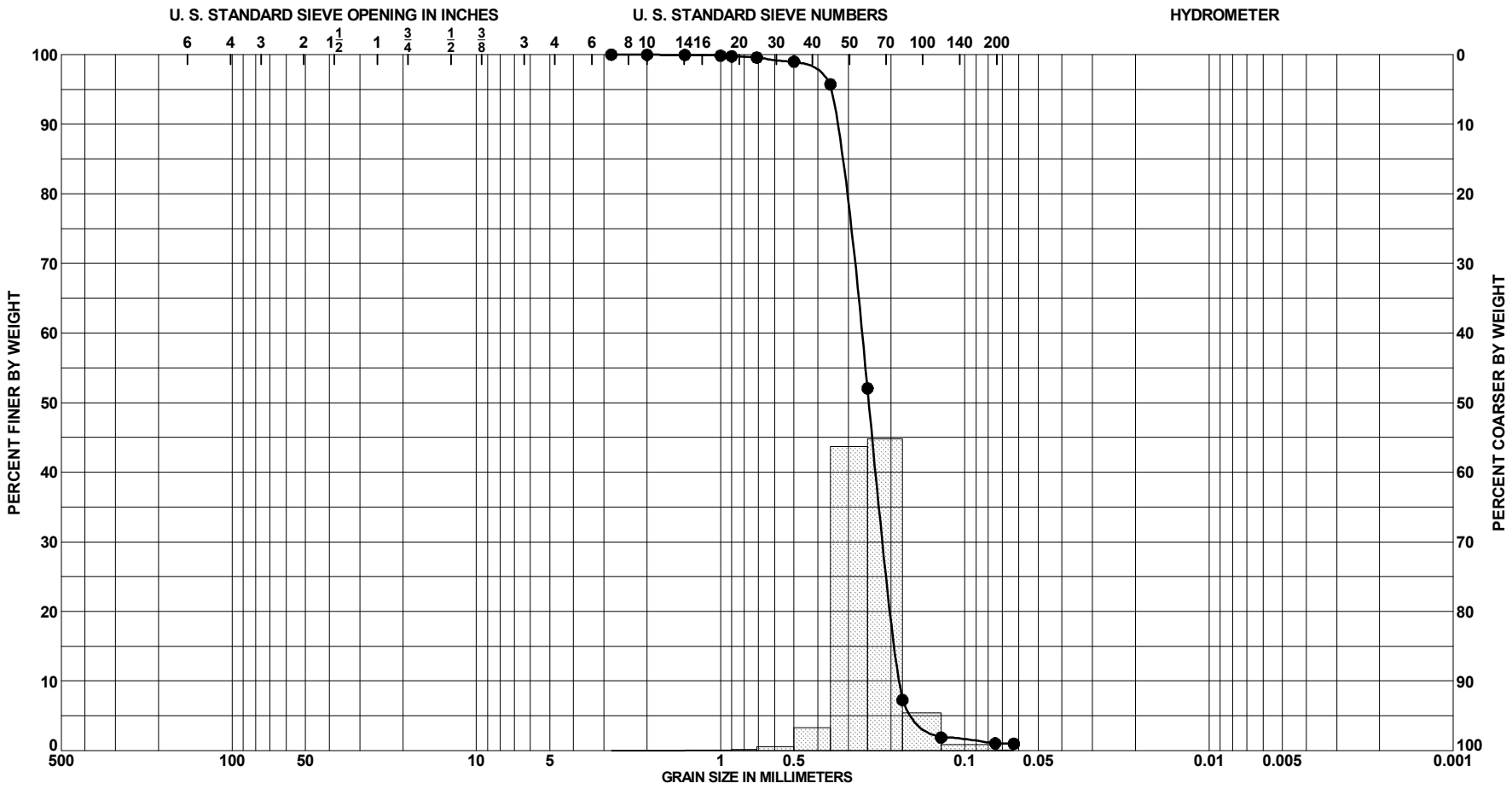

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.5 to 3.0 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt, white (SP)	10YR 8/1	3/2 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-2
BORING ELEV.	-7.1 Ft., MLLW
DATE	12/14/2010

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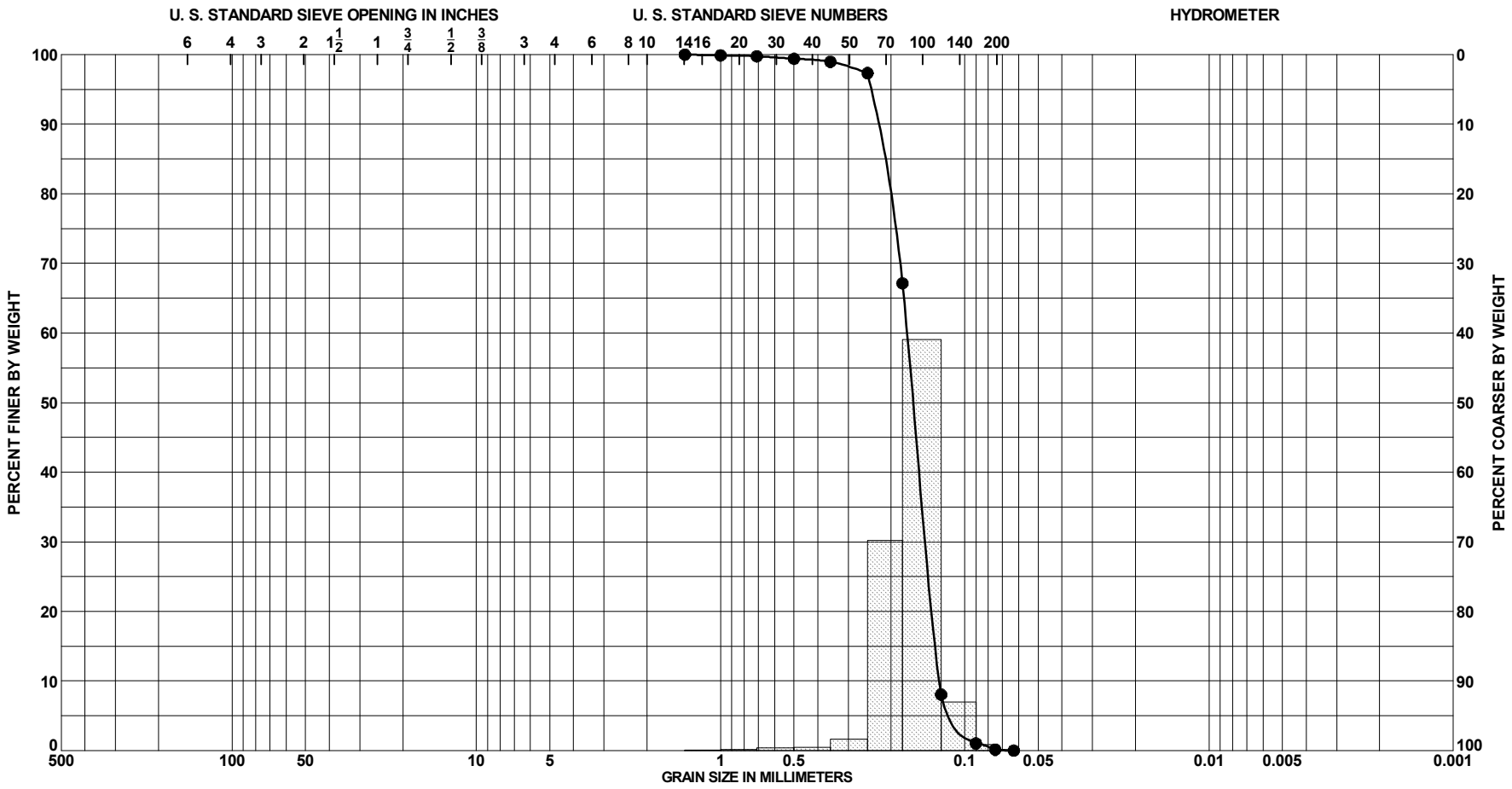

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	2.5 to 3.0 Ft.	SAND, poorly-graded, mostly	10YR 8/1							
		fine-grained sand-sized quartz, white								
		(SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-2
BORING ELEV.	-7.1 Ft., MLLW
DATE	12/15/2010

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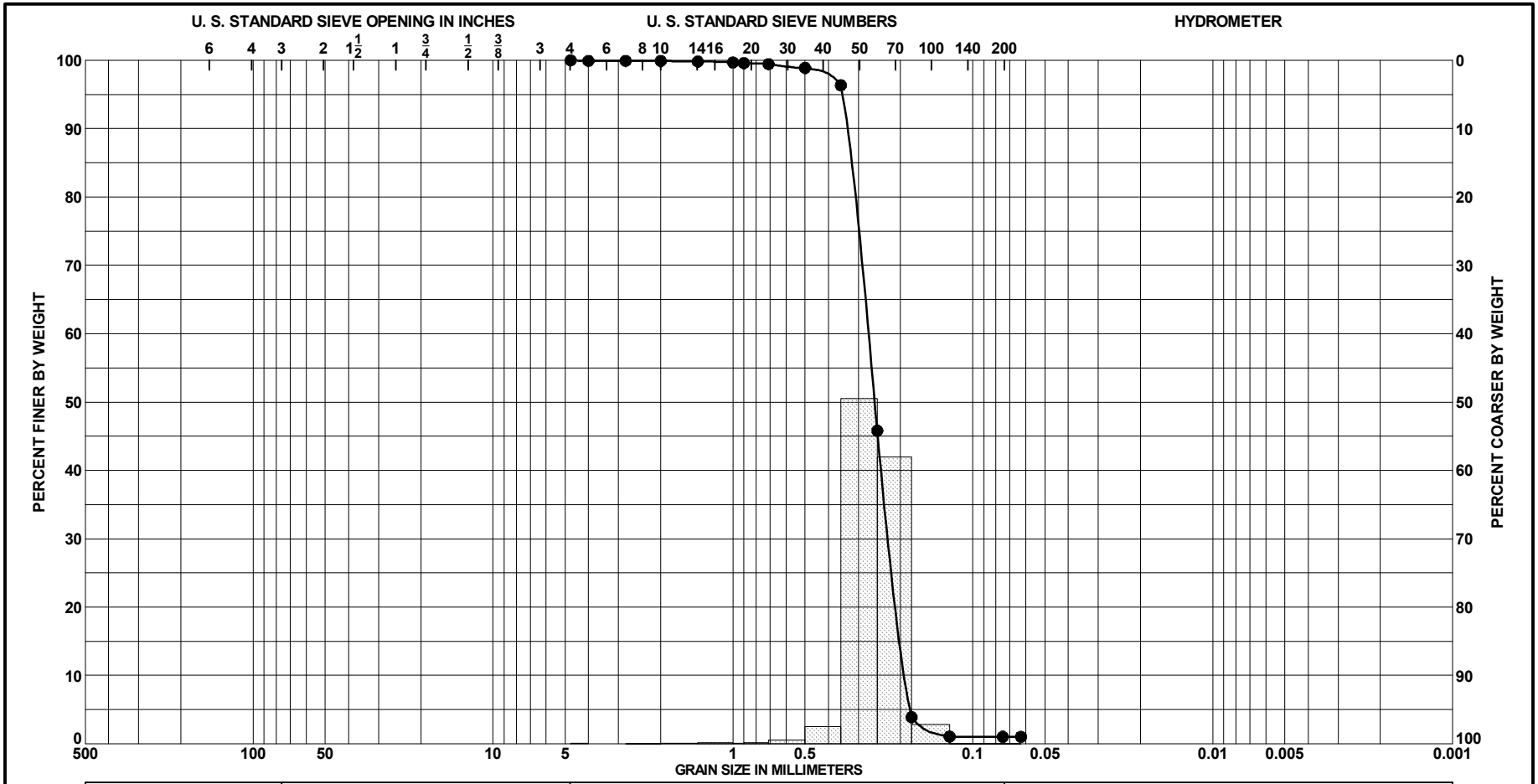

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	5.0 to 5.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt, white (SP)	10YR 8/1	3 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-2
BORING ELEV.	-7.1 Ft., MLLW
DATE	12/14/2010

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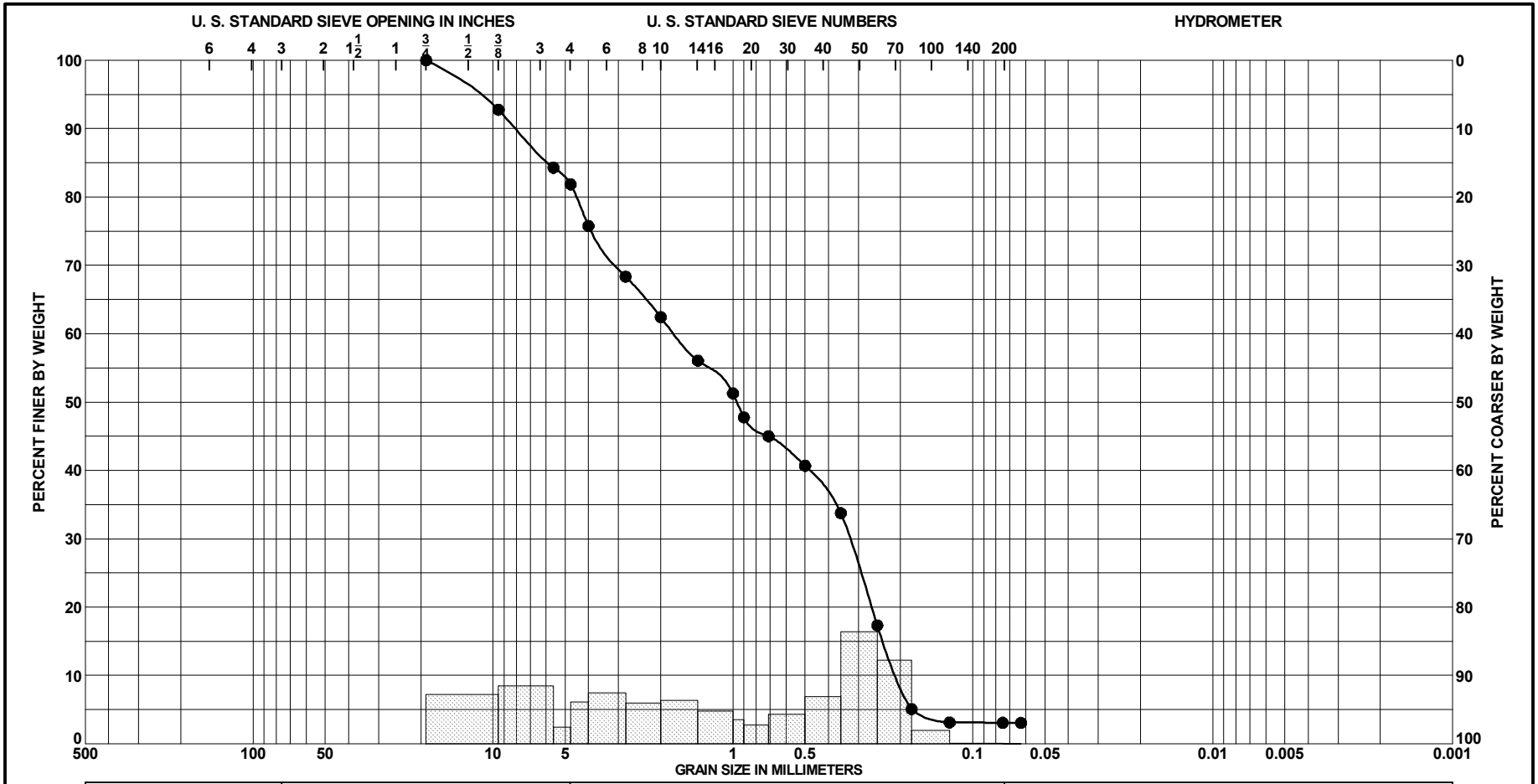

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.5 to 2.0 Ft.	SAND, poorly-graded, some medium	10YR 8/1	56 (est)						
		to coarse-grained sand-sized shell,								
		some fine-grained sand-sized quartz,								
		little fine to coarse gravel-sized shell								
		up to 1", trace silt, white (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-3
BORING ELEV.	-9.8 Ft., MLLW
DATE	12/14/2010

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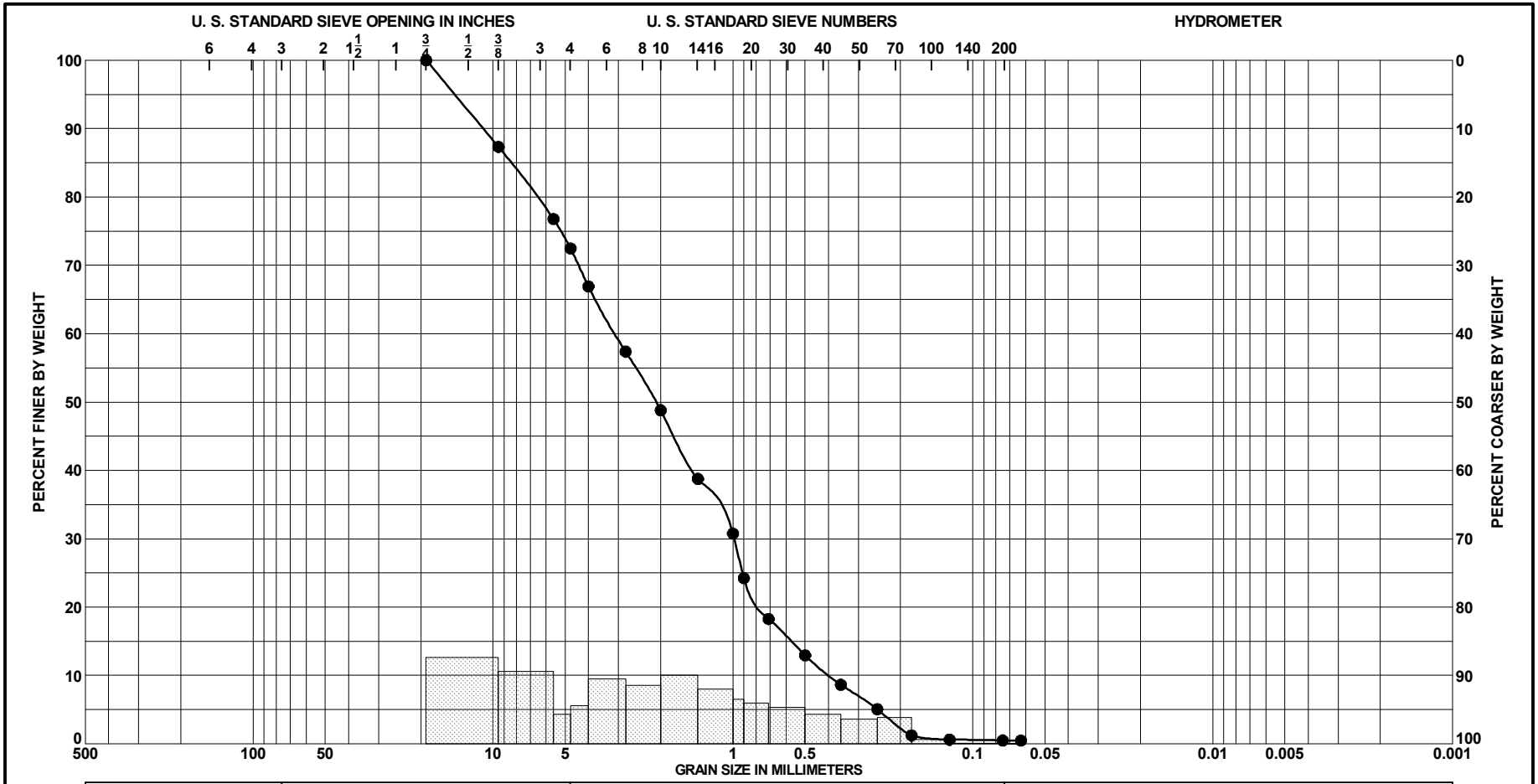
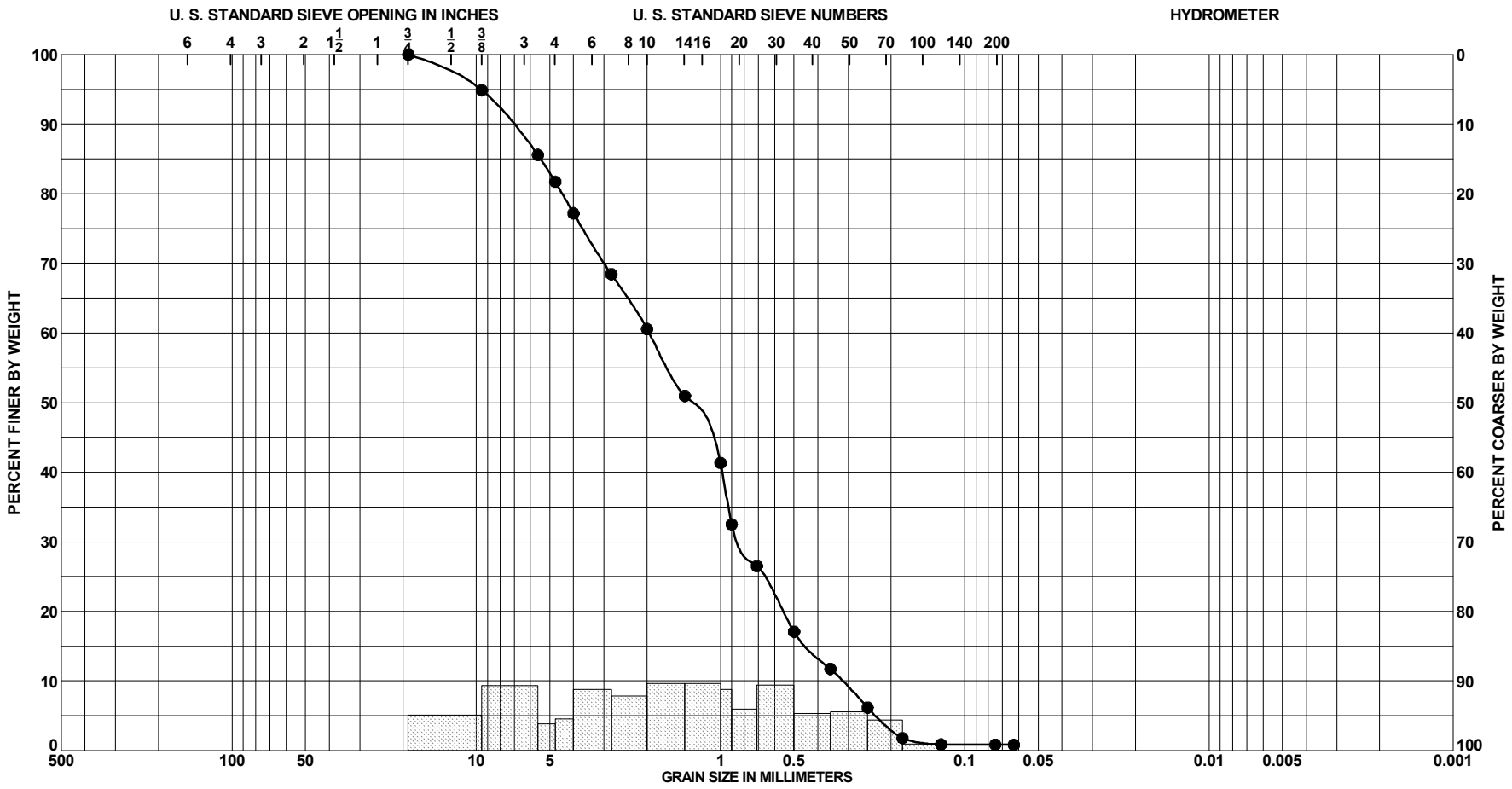


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.5 to 2.0 Ft.	SAND, poorly-graded, mostly medium	10YR 6/1	83 (est)						
		to coarse-grained sand-sized shell,								
		some fine gravel-sized shell, few								
		fine-grained sand-sized quartz, gray								
		(SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-6
BORING ELEV.	-10.5 Ft., MLLW
DATE	12/14/2010

SAJ FORM 2087
JUN 02

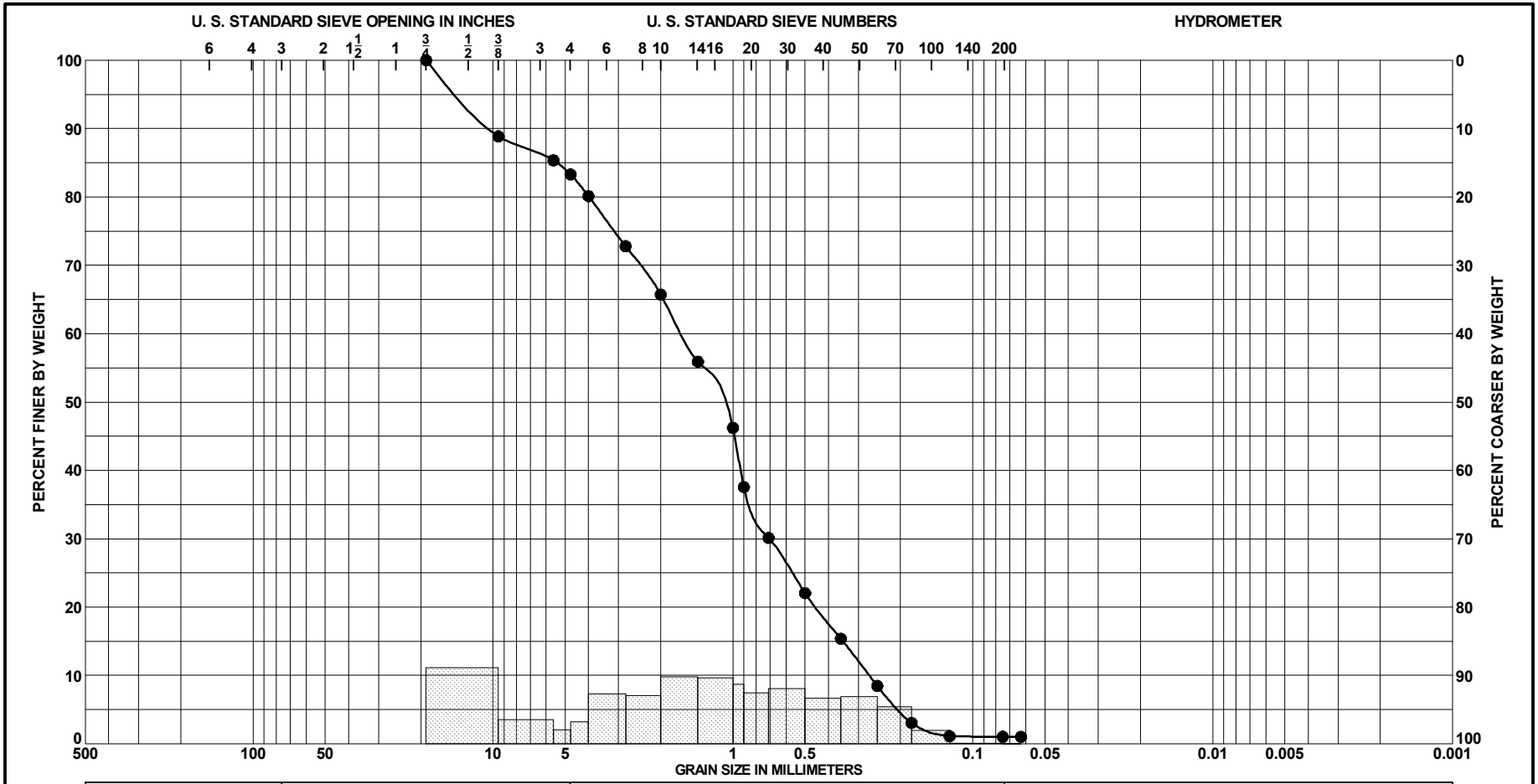


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	2.0 to 2.5 Ft.	SAND, poorly-graded, mostly medium	10YR 6/1	76 (est)						
		to coarse-grained sand-sized shell,								
		little fine gravel-sized shell up to 3/4",								
		few fine-grained sand-sized quartz,								
		gray (SW)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-7
BORING ELEV.	-8.5 Ft., MLLW
DATE	12/14/2010

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	4.0 to 4.5 Ft.	SAND, poorly-graded, mostly medium	10YR 6/1	75/73 (est)						
		to coarse-grained sand-sized shell,								
		little fine gravel-sized shell up to 3/4",								
		little fine-grained sand-sized quartz,								
		trace silt, gray (SW)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-7
BORING ELEV.	-8.5 Ft., MLLW
DATE	12/14/2010

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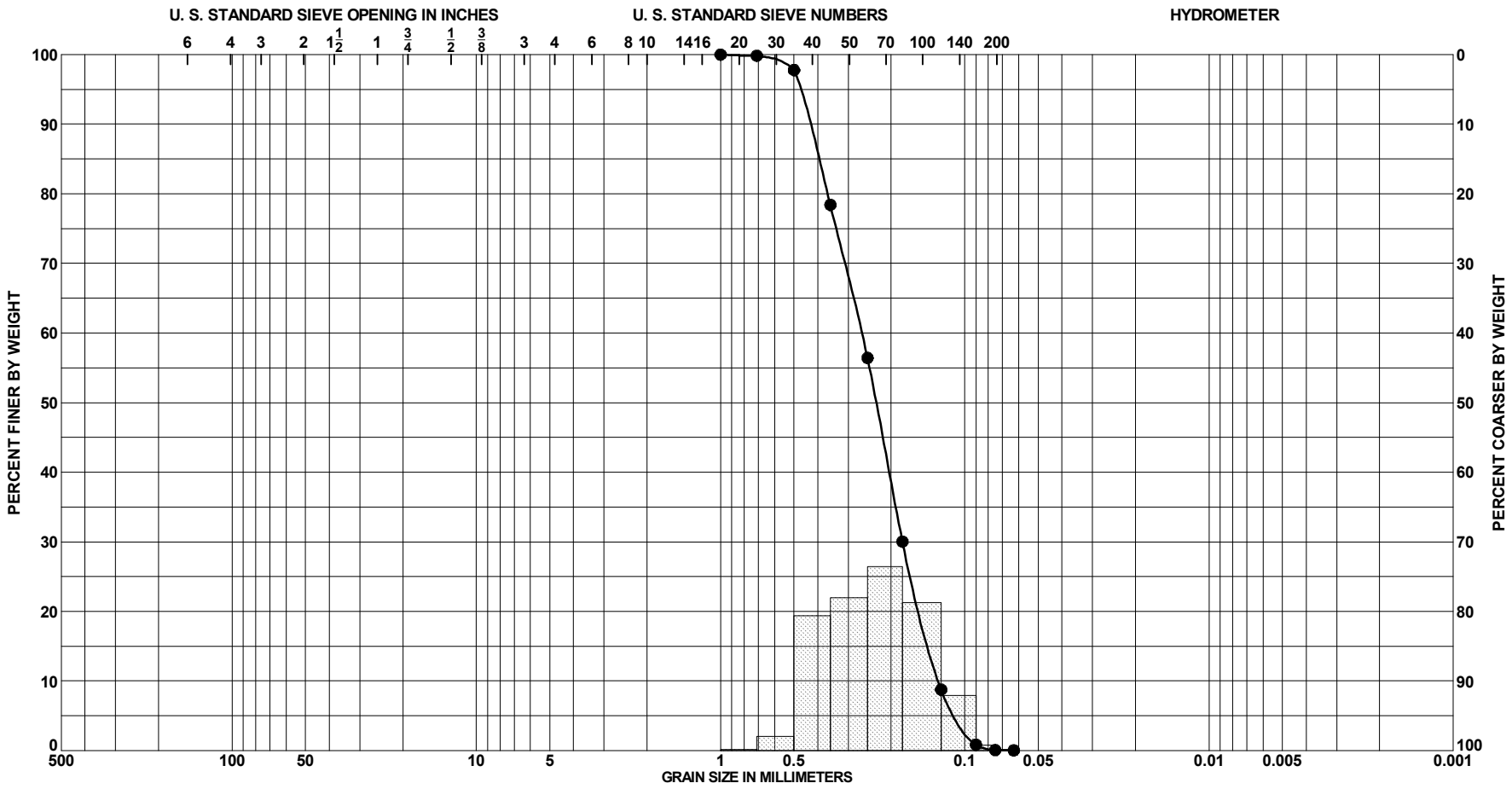

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2-Post	4.0 to 4.5 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium-grained sand-sized quartz, gray (SP)	10YR 6/1							

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-7
BORING ELEV.	-8.5 Ft., MLLW
DATE	12/15/2010

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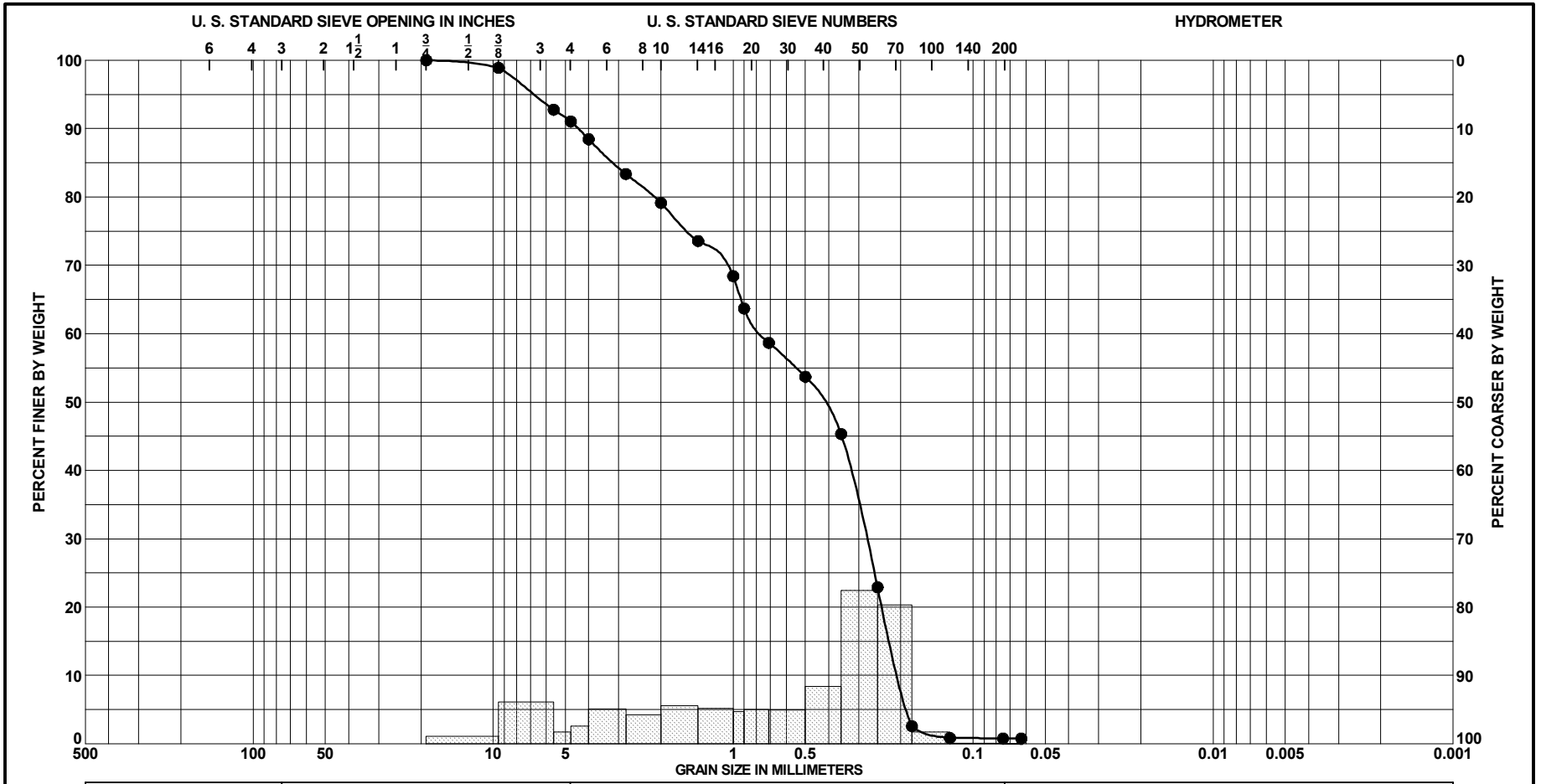

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	3.0 to 3.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1	43 (est)						
		fine-grained sand-sized quartz, some								
		medium to coarse-grained sand-sized								
		shell, few fine								
		gravel-sized shell, light gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-8
BORING ELEV.	-5.6 Ft., MLLW
DATE	12/14/2010

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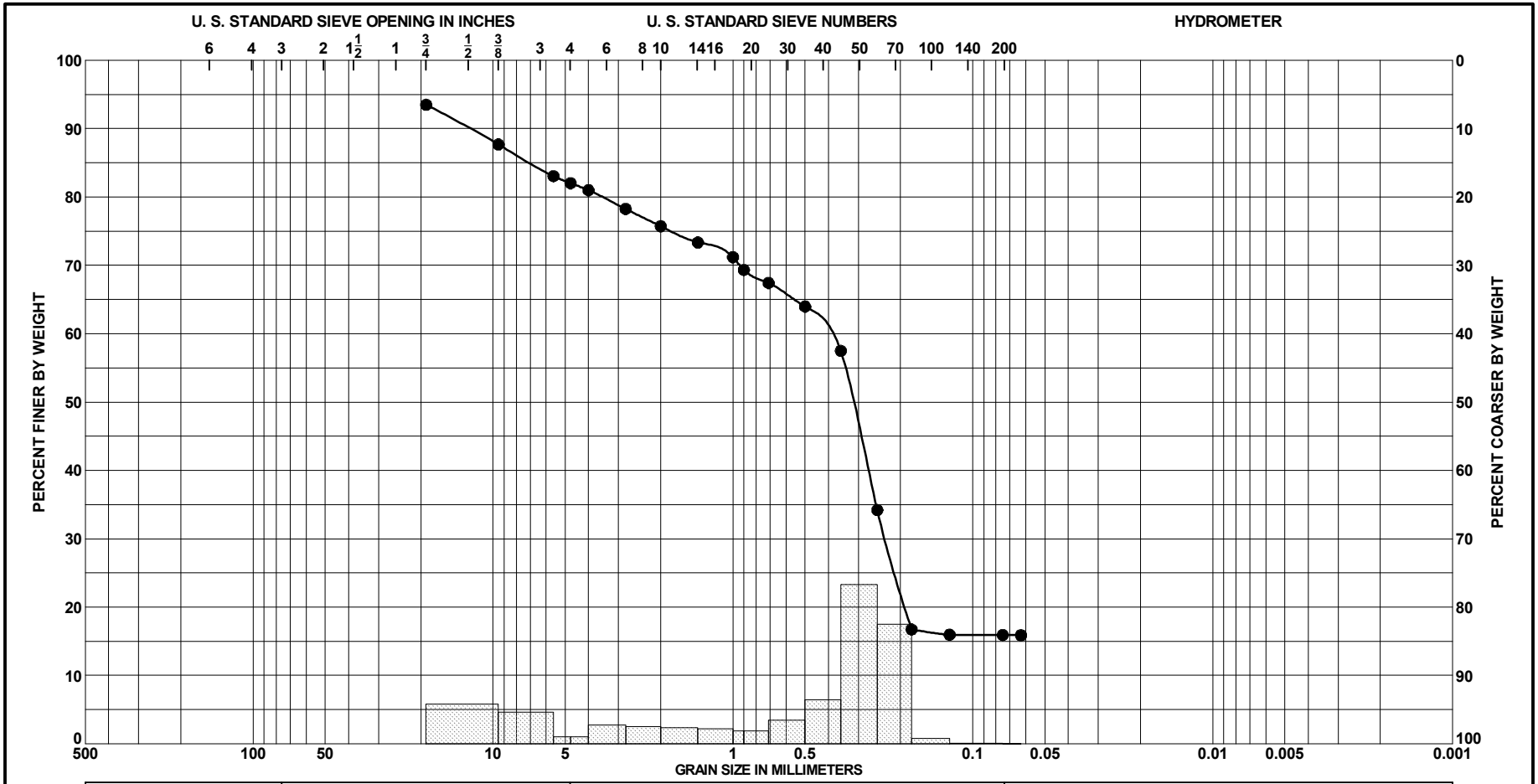

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	6.0 to 6.5 Ft.	SAND, silty, some fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, little silt, few fine gravel-sized shell, light gray (SM)	10YR 7/1	38 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-8
BORING ELEV.	-5.6 Ft., MLLW
DATE	12/14/2010

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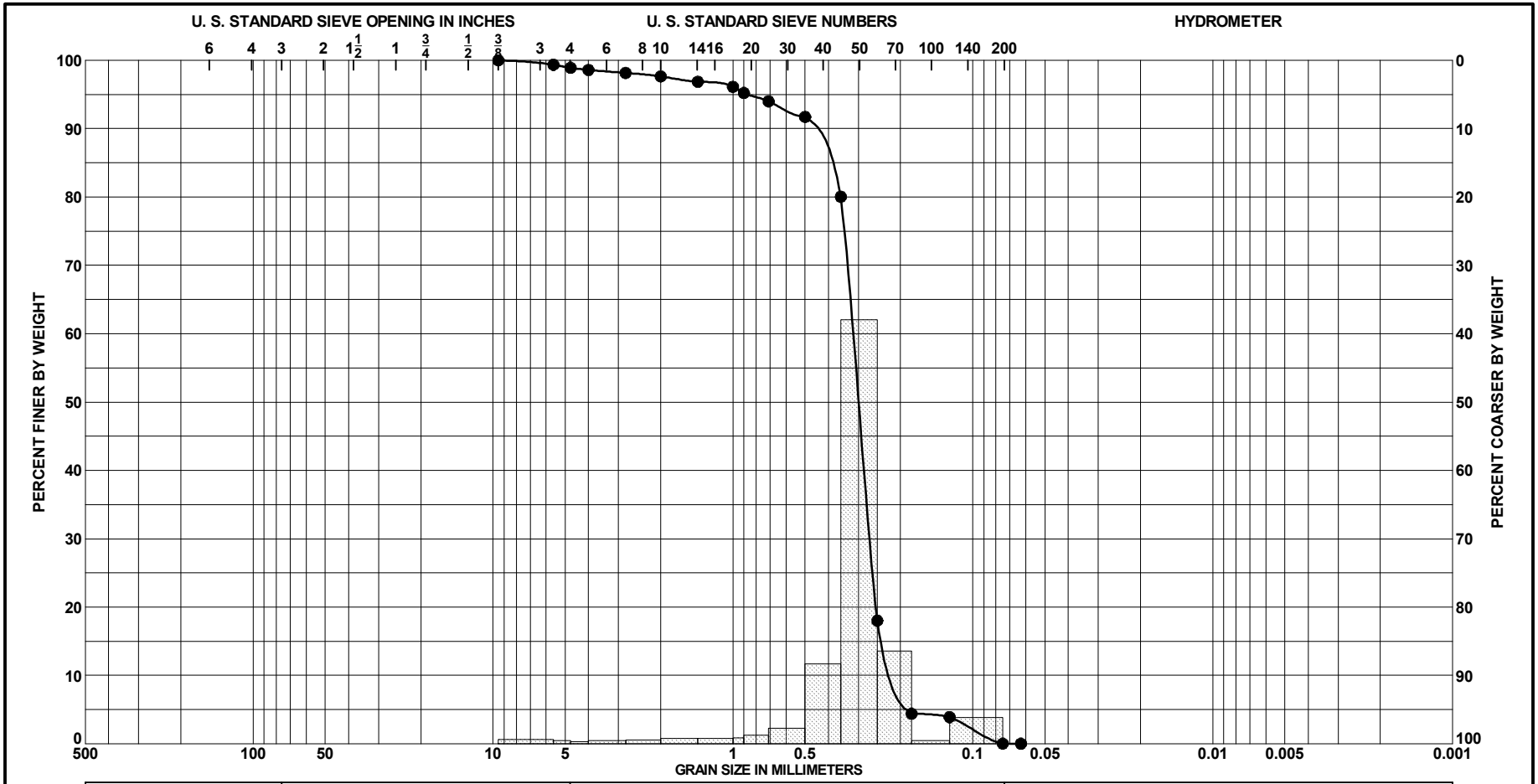

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	3.5 to 4.0 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, light gray (SP)	10YR 7/1	10 (est)						

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-9
BORING ELEV.	-5.3 Ft., MLLW
DATE	12/14/2010

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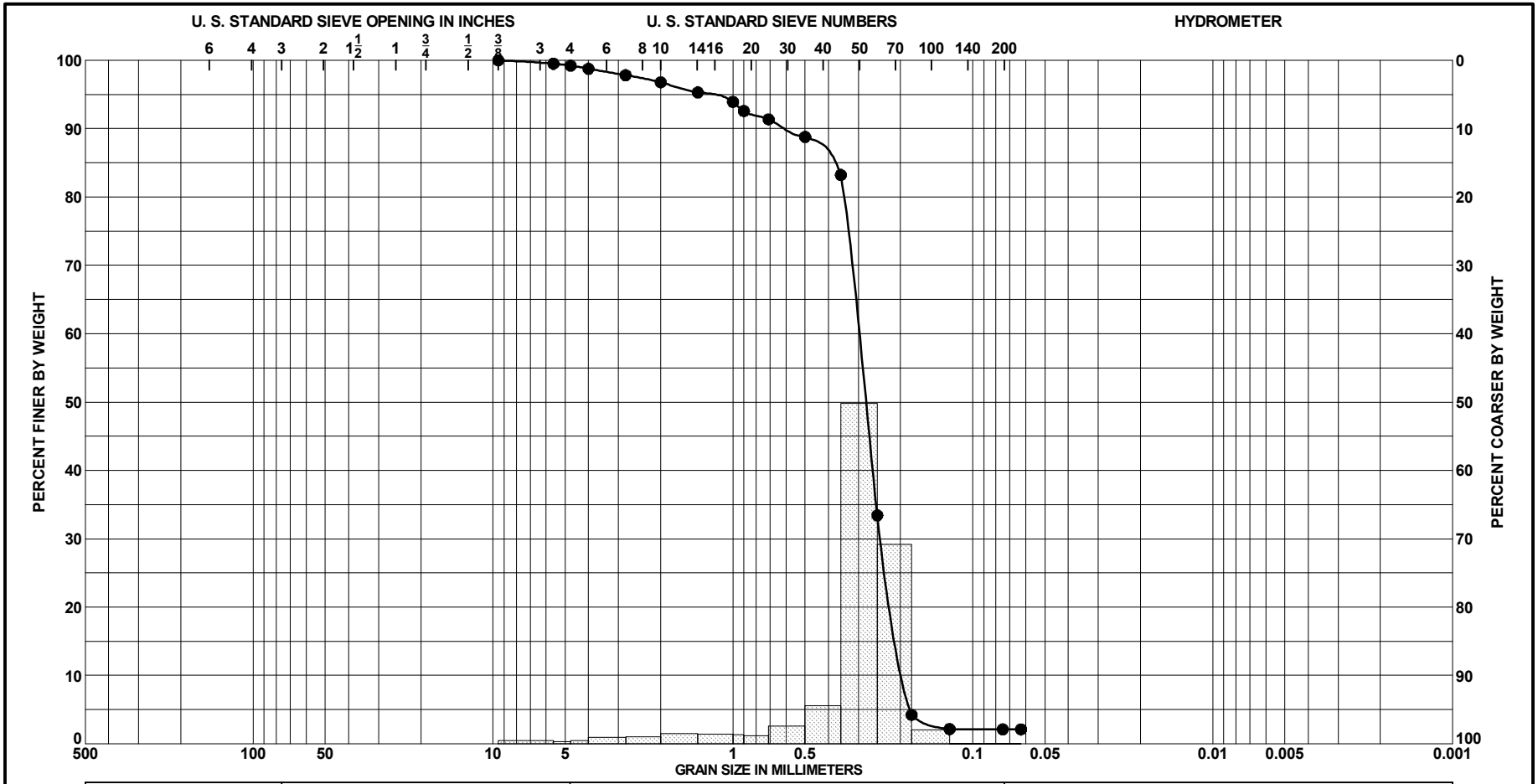

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	6.5 to 7.0 Ft.	SAND, poorly-graded, mostly	10YR 7/1	11 (est)						
		fine-grained								
		sand-sized quartz, few medium to								
		coarse-grained sand-sized shell, trace								
		silt, light gray (SP)								

GRADATION CURVES

PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
BORING NO.	VB-LBP10-9
BORING ELEV.	-5.3 Ft., MLLW
DATE	12/14/2010

SAJ FORM 2087
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Boring Designation VB-GIWWM12-10-1

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM12-10-1	LOCATION COORDINATES: X = 430,825 Y = 1,158,205	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 3 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -5.4 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 96 %	
8. TOTAL DEPTH OF BORING: 11.5 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.4	0.0						-5.4		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fine-grained sand-sized shell, trace silt, 10YR 7/1 light gray (SP)	100			Vibracore		
							-7.4		
				100	1		-7.4 Vibracore		
					1-Post				
				100			Vibracore		
-9.2	3.8		At El. -8.6 Ft., 1.5" layer of (SM)						
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, few silt, trace fine gravel-sized shell, 10YR 7/1 light gray (SP-SM)				-9.4		
-9.9	4.5				2				
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, few fine to medium-grained sand-sized shell, 10YR 4/1 dark gray (SM)						
-11.3	5.9								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, some sand to gravel-sized shell up to 3/4", few silt, 10YR 6/1 gray (SP-SM)	93			Vibracore		
-16.4	11.0								
-16.9	11.5	NR					-16.9		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION		SHEET 2 OF 2 SHEETS
	Jacksonville District		
PROJECT	**COORDINATE SYSTEM/DATUM**	**HORIZONTAL**	**VERTICAL**
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW
LOCATION COORDINATES	**ELEVATION TOP OF BORING**		
X = 430,825 Y = 1,158,205	-5.4 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.0/2.5	SP*
1-Post	2.0/2.5	SP*
2	4.0/4.5	SP-SM*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
2 Percent Visual Shell

15
20
25
30
35

Boring Designation VB-GIWWM13-10-1

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM13-10-1	LOCATION COORDINATES: X = 429,178 Y = 1,161,031	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 1 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -9.4 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 92 %	
8. TOTAL DEPTH OF BORING: 11.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-9.4	0.0						-9.4		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, trace silt, trace fine gravel-sized shell, 10YR 6/1 gray (SP)	100			-9.9 Vibracore		
-13.4	4.0				1				
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some silt, little fine to medium-grained sand-sized shell, 10YR 4/1 dark gray (SM)						
-14.8	5.4								
			CLAY, fat, high plasticity, soft, little fine to medium-grained sand-sized quartz, 10YR 8/1 white (CH)	91			Vibracore		
-16.4	7.0								
			SAND, clayey, mostly fine to medium-grained sand-sized quartz, some clay, few medium to coarse-grained sand-sized shell, trace fine gravel-sized shell up to 1/2", 10YR 7/1 light gray (SC)						
-19.5	10.1								
-20.4	11.0	NR					-20.4		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE SAMPLE LABORATORY

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 429,178 Y = 1,161,031	-9.4 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

ID	DEPTH	CLASSIFICATION
1	0.5/1.0	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell

15
20
25
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Boring Designation VB-GIWWM14-10-1

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM14-10-1	LOCATION COORDINATES: X = 428,548 Y = 1,162,955	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 2 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -5.1 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 92 %	
8. TOTAL DEPTH OF BORING: 11.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.1	0.0						-5.1		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine to medium-grained sand-sized shell, 10YR 8/1 white (SP)	100			Vibracore		
							-7.1		
				100	1		Vibracore		
							-9.1		
-9.6	4.5		At El. -8.9 Ft., little medium to coarse-grained sand-sized shell, trace fine gravel-sized shell, trace silt		2				
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, few silt, 10YR 6/1 gray (SP-SM)						
-11.2	6.1								
			SAND, silty, mostly fine to medium-grained sand-sized quartz, little silt, few medium to coarse-grained sand-sized shell, few fine to coarse gravel-sized shell up to 1-1/2", 10YR 6/1 gray (SM)	87			Vibracore		
-15.2	10.1								
-16.1	11.0	NR					-16.1		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE SAMPLE LABORATORY

(Continued)

Boring Designation VB-GIWWM14-10-1

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 428,548 Y = 1,162,955	-5.1 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

ID	DEPTH	CLASSIFICATION
1	2.0/2.5	SP*
2	4.0/4.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell
2 Percent Visual Shell

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20
25
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Boring Designation VB-GIWWM4-10-1

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM4-10-1	LOCATION COORDINATES: X = 443,579 Y = 1,122,896	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 1 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-11-10 / COMPLETED: 10-11-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.2 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 89 %	
8. TOTAL DEPTH OF BORING: 13.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.2	0.0						-7.2		
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, few silt, trace fine gravel-sized shell up to 1/2", 10YR 7/1 light gray (SP-SM)	100			Vibracore		
			At El. -7.6 Ft., little fine to coarse-grained sand-sized shell, 10YR 4/1 dark gray		1		-8.7		
			At El. -11.8 Ft., 10YR 5/1 gray						
-13.7	6.5								
			SAND, silty, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, little silt, few fine to coarse gravel-sized shell up to 1", 10YR 7/1 light gray (SM)	88			Vibracore		
-18.8	11.6								
		NR							
-20.2	13.0						-20.2		
			NOTES: 1. USACE Jacksonville is the custodian for these original files.						

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(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION		SHEET 2 OF 2 SHEETS
	Jacksonville District		
PROJECT	**COORDINATE SYSTEM/DATUM**	**HORIZONTAL**	**VERTICAL**
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW
LOCATION COORDINATES	**ELEVATION TOP OF BORING**		
X = 443,579 Y = 1,122,896	-7.2 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			2. Soils are field visually classified in accordance with the Unified Soils Classification System. 3. Laboratory Testing Results SAMPLE ID / SAMPLE DEPTH / LABORATORY CLASSIFICATION 1 / 1.5/2.0 / SP-SM* *Lab visual classification based on gradation curve 4. Additional Laboratory Testing 1 Percent Visual Shell						

15 20 25 30 35

Boring Designation VB-GIWWM4-10-2

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
2. BORING DESIGNATION	VB-GIWWM4-10-2
LOCATION COORDINATES	X = 444,243 Y = 1,122,322
3. DRILLING AGENCY	Corps of Engineers - CESAJ
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Athena Technologies, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	10.5 Ft.
9. SIZE AND TYPE OF BIT	3.5" Vibracore
10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.) / HORIZONTAL: NAD83 / VERTICAL: MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED: 2 / UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	0
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
16. ELEVATION TOP OF BORING	-7.0 Ft.
17. TOTAL RECOVERY FOR BORING	93 %
18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.0	0.0						-7.0		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt, 10YR 7/1 light gray (SP)	100			Vibracore		
							-8.5		
					1				
			At El. -9.3 Ft., little medium to coarse-grained sand-sized shell, little fine gravel-sized shell, trace silt, 10YR 4/1 dark gray	100			Vibracore		
							-10.5		
					2				
-13.1	6.1								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, 10YR 5/1 gray (SP-SM)	90			Vibracore		
-15.0	8.0								
			SAND, silty, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, few fine gravel-sized shell, few silt, 10YR 7/1 light gray (SM)						
-16.8	9.8								
-17.5	10.5	NR					-17.5		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION

(Continued)

Boring Designation VB-GIWWM4-10-2

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 444,243 Y = 1,122,322	-7.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 1.5/2.0 SP* 2 3.5/4.0 SP* *Lab visual classification based on gradation curve 4. Additional Laboratory Testing 1 Percent Visual Shell 2 Percent Visual Shell						

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Boring Designation VB-GIWWM4-10-3

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM4-10-3	LOCATION COORDINATES: X = 444,898 Y = 1,121,796	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 1 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.3 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 93 %	
8. TOTAL DEPTH OF BORING: 10.5 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.3	0.0						-7.3		
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, some fine to coarse-grained sand-sized shell, few silt, 10YR 7/1 light gray (SP-SM)	100			Vibracore		
			At El. -8.2 Ft., mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, few fine gravel-sized shell up to 1/2", 10YR 5/1 gray				-9.3		
					1				
			At El. -13.6 Ft., trace sand to gravel-sized shell up to 1/2", 10YR 4/1 dark gray	92			Vibracore		
-15.8	8.5								
			SAND, silty, mostly fine to medium-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, little silt, few fine gravel-sized shell up to 1/2", 10YR 7/1 light gray (SM)						
-17.1	9.8								
-17.8	10.5	NR					-17.8		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION

(Continued)

Boring Designation VB-GIWWM4-10-3

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 444,898 Y = 1,121,796	-7.3 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 2.0/2.5 SP-SM*						
			*Lab visual classification based on gradation curve						
			4. Additional Laboratory Testing						
			1 Percent Visual Shell						

15
20
25
30
35

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Boring Designation VB-GIWWM5-10-1

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM5-10-1	LOCATION COORDINATES: X = 437,588 Y = 1,128,226	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 1 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-11-10 / COMPLETED: 10-11-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.8 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 87 %	
8. TOTAL DEPTH OF BORING: 11.8 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.8	0.0						-7.8		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell, 10YR 7/1 light gray (SP)	100			Vibracore		
							-9.8		
					1				
			At El. -11.8 Ft., 10YR 6/1 gray						
			At El. -14.0 Ft., little fine to coarse-grained sand-sized shell	85			Vibracore		
-15.8	8.0								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, few silt, 10YR 6/1 gray (SP-SM)						
-18.1	10.3								
		NR							
-19.6	11.8						-19.6		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

(Continued)

Boring Designation VB-GIWWM5-10-1

DRILLING LOG (Cont. Sheet)	INSTALLATION		SHEET 2 OF 2 SHEETS
	Jacksonville District		
PROJECT	**COORDINATE SYSTEM/DATUM**	**HORIZONTAL**	**VERTICAL**
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW
LOCATION COORDINATES	**ELEVATION TOP OF BORING**		
X = 437,588 Y = 1,128,226	-7.8 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.0/2.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell

15 20 25 30 35

Boring Designation VB-GIWWM5-10-2

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District		**SHEET** 1 **OF** 2 **SHEETS**
1. PROJECT Vibracore Borings GIWW/Vicinity of GIWW Manatee	**9. SIZE AND TYPE OF BIT** 3.5" Vibracore		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD83	**VERTICAL** MLLW
2. BORING DESIGNATION VB-GIWWM5-10-2	**LOCATION COORDINATES** X = 437,120 Y = 1,129,250	**11. MANUFACTURER'S DESIGNATION OF DRILL**	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAJ	**CONTRACTOR FILE NO.**	**12. TOTAL SAMPLES**	**DISTURBED** 2 **UNDISTURBED (UD)** 0
4. NAME OF DRILLER Athena Technologies, Inc.		**13. TOTAL NUMBER CORE BOXES** 0	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	**DEG. FROM VERTICAL** / **BEARING**	**14. ELEVATION GROUND WATER**	
		15. DATE BORING	**STARTED** 10-11-10 **COMPLETED** 10-11-10
6. THICKNESS OF OVERBURDEN N/A		**16. ELEVATION TOP OF BORING** -7.1 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		**17. TOTAL RECOVERY FOR BORING** 89 %	
8. TOTAL DEPTH OF BORING 11.7 Ft.		**18. SIGNATURE AND TITLE OF INSPECTOR** Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.1	0.0						-7.1		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell, 10YR 7/1 light gray (SP)	100			Vibracore		
							-8.6		
					1				
				100			Vibracore		
							-11.1		
					2				
				83			Vibracore		
-16.9	9.8								
-17.5	10.4		SAND, poorly-graded, mostly fine to coarse-grained sand-sized shell, some fine to medium-grained sand-sized quartz, 10YR 6/1 gray (SP)						
-18.8	11.7	NR					-18.8		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

(Continued)

Boring Designation VB-GIWWM5-10-2

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 437,120 Y = 1,129,250	-7.1 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

SAMPLE ID | SAMPLE DEPTH | LABORATORY CLASSIFICATION

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.5/2.0	SP*
2	4.0/4.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell
2 Percent Visual Shell

15
20
25
30
35

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Boring Designation VB-GIWWM5-10-3

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM5-10-3	LOCATION COORDINATES: X = 436,263 Y = 1,131,344	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 2 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -8.9 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 89 %	
8. TOTAL DEPTH OF BORING: 11.7 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-8.9	0.0						-8.9		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell, 10YR 7/1 light gray (SP)	100			Vibracore		
							-10.9		
				100	1 1-Post		-10.9 Vibracore		
			At El. -13.2 Ft., 3" Limestone fragment						
-15.5	6.6								
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, few silt, 10YR 6/1 gray (SP-SM)	87			Vibracore		
-19.3	10.4								
-20.6	11.7	NR					-20.6		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

(Continued)

Boring Designation VB-GIWWM5-10-3

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 436,263 Y = 1,131,344	-8.9 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

SAMPLE ID | SAMPLE DEPTH | LABORATORY CLASSIFICATION

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.0/2.5	SP*
1-Post	2.0/2.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell

15
20
25
30
35

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS	
1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee	9. SIZE AND TYPE OF BIT: 3.5" Vibracore		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM5-10-4	LOCATION COORDINATES: X = 436,082 Y = 1,131,882	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 2 UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER
		15. DATE BORING	STARTED: 10-12-10 COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.1 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 88 %	
8. TOTAL DEPTH OF BORING: 11.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.1	0.0						-7.1		
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, few silt, few fine gravel-sized shell, 10YR 4/1 dark gray (SP-SM)	100			-7.6 Vibracore		
-8.1	1.0				1				
		Highly Weathered	LIMESTONE, highly weathered, 10YR 5/1 gray	100			Vibracore		
-10.0	2.9						-10.1		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt, trace fine gravel-sized shell, 10YR 6/1 gray (SP)		2				
				84			Vibracore		
-16.8	9.7								
		NR							
-18.1	11.0						-18.1		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE SAMPLE LABORATORY

(Continued)

Boring Designation VB-GIWWM5-10-4

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 436,082 Y = 1,131,882	-7.1 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

ID	DEPTH	CLASSIFICATION
1	0.5/1.0	SP-SM*
2	3.0/3.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell
2 Percent Visual Shell

15
20
25
30
35

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Boring Designation VB-GIWWM5-10-5

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District		**SHEET** 1 **OF** 2 **SHEETS**
1. PROJECT Vibracore Borings GIWW/Vicinity of GIWW Manatee	**9. SIZE AND TYPE OF BIT** 3.5" Vibracore		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD83	**VERTICAL** MLLW
2. BORING DESIGNATION VB-GIWWM5-10-5 **LOCATION COORDINATES** X = 437,298 Y = 1,128,600	**11. MANUFACTURER'S DESIGNATION OF DRILL** ☐ AUTO HAMMER ☐ MANUAL HAMMER		
3. DRILLING AGENCY Corps of Engineers - CESAJ **CONTRACTOR FILE NO.**	**12. TOTAL SAMPLES**	**DISTURBED** 2	**UNDISTURBED (UD)** 0
4. NAME OF DRILLER Athena Technologies, Inc.	**13. TOTAL NUMBER CORE BOXES** 0		
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED **DEG. FROM VERTICAL** **BEARING**	**14. ELEVATION GROUND WATER**		
	15. DATE BORING	**STARTED** 10-13-10	**COMPLETED** 10-13-10
6. THICKNESS OF OVERBURDEN N/A	**16. ELEVATION TOP OF BORING** -3.9 Ft.		
7. DEPTH DRILLED INTO ROCK N/A	**17. TOTAL RECOVERY FOR BORING** 89 %		
8. TOTAL DEPTH OF BORING 11.0 Ft.	**18. SIGNATURE AND TITLE OF INSPECTOR** Daniel G. Blaydes, Geotechnical Engineer		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
-3.9	0.0						-3.9		
-5.4	1.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few fine to coarse-grained sand-sized shell, trace silt, 10YR 6/1 gray (SP)	100			Vibracore		
-8.4	4.5		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, 10YR 6/1 gray (SP-SM)	100	1		-6.4 Vibracore -8.9		
-9.9	6.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, little fine gravel-sized shell up to 1/2", trace silt, 10YR 5/1 gray (SP)						
-13.7	9.8		SAND, silty, mostly fine to medium-grained sand-sized quartz, little sand to gravel-sized shell up to 1/2", little silt, 10YR 5/1 gray (SM)	80	2		Vibracore		
-14.9	11.0	NR					-14.9		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE SAMPLE LABORATORY

(Continued)

Boring Designation VB-GIWWM5-10-5

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 437,298 Y = 1,128,600	-3.9 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

ID	DEPTH	CLASSIFICATION
1	2.5/3.0	SP-SM*
2	5.0/5.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell
2 Percent Visual Shell

15
20
25
30
35

SAJ FORM 1836-A
JUN 02

DRILLING LOG

DIVISION	South Atlantic
INSTALLATION	Jacksonville District
SHEET	1 OF 2 SHEETS
1. PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
2. BORING DESIGNATION	VB-GIWWM7-10-1
LOCATION COORDINATES	X = 430,766 Y = 1,143,388
3. DRILLING AGENCY	Corps of Engineers - CESAJ
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Athena Technologies, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	11.4 Ft.
9. SIZE AND TYPE OF BIT	3.5" Vibracore
10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.) / HORIZONTAL NAD83 / VERTICAL MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED 3 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	0
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 10-12-10 / COMPLETED 10-12-10
16. ELEVATION TOP OF BORING	-5.0 Ft.
17. TOTAL RECOVERY FOR BORING	92 %
18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.0	0.0						-5.0		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, some fine to coarse-grained sand-sized shell, 10YR 7/1 light gray (SP)	100			Vibracore		
			At El. -6.5 Ft., little medium-grained sand-sized shell, trace silt				-7.0		
				100	1 1-Post		-7.0 Vibracore		
				100			Vibracore		
			At El. -8.5 Ft., trace fine to medium-grained sand-sized shell				-9.0		
					2				
			At El. -12.2 Ft., 3" layer of 10yr 6/1 gray (SM)	88			Vibracore		
-13.5	8.5		SAND, silty, mostly fine-grained sand-sized quartz, some silt, 10YR 5/1 gray (SM)						
-15.5	10.5								
-16.4	11.4	NR					-16.4		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

(Continued)

Boring Designation VB-GIWWM7-10-1

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,766 Y = 1,143,388	-5.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.0/2.5	SP*
1-Post	2.0/2.5	SP*
2	4.0/4.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
2 Percent Visual Shell

15
20
25
30
35

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Boring Designation VB-GIWWM7-10-2

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT	Vibracore Borings GIWW/Vicinity of GIWW Manatee
2. BORING DESIGNATION	VB-GIWWM7-10-2
LOCATION COORDINATES	X = 430,587 Y = 1,144,165
3. DRILLING AGENCY	Corps of Engineers - CESAJ
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Athena Technologies, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	11.0 Ft.
9. SIZE AND TYPE OF BIT	3.5" Vibracore
10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED: 1 UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	0
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED: 10-12-10 COMPLETED: 10-12-10
16. ELEVATION TOP OF BORING	-9.4 Ft.
17. TOTAL RECOVERY FOR BORING	89 %
18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-9.4	0.0						-9.4		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace fine-grained sand-sized shell, 10YR 6/1 gray (SP)	100			-9.9 Vibracore		
-12.3	2.9				1				
			SAND, silty, mostly fine-grained sand-sized quartz, some silt, few fine to medium-grained sand-sized shell, 10YR 5/1 gray (SM)	89			Vibracore		
-15.7	6.3								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, 10YR 7/1 light gray (SP-SM)						
-19.2	9.8								
-20.4	11.0	NR					-20.4		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE SAMPLE LABORATORY

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,587 Y = 1,144,165	-9.4 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

ID	DEPTH	CLASSIFICATION
1	0.5/1.0	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell

15
20
25
30
35

Boring Designation VB-GIWWM7-10-3

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW Manatee		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWM7-10-3	LOCATION COORDINATES: X = 430,161 Y = 1,145,657	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 1 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -9.7 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 89 %	
8. TOTAL DEPTH OF BORING: 11.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-9.7	0.0						-9.7		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, few fine to medium-grained sand-sized shell, trace silt, 10YR 6/1 gray (SP)	100			-10.2 Vibracore		
-12.7	3.0				1				
			SAND, silty, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, little silt, few fine gravel-sized shell up to 1/2", 10YR 5/1 gray (SM)						
			At El. -15.2 Ft., few fine to coarse-grained sand-sized shell	89			Vibracore		
-18.2	8.5								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, few silt, 10YR 6/1 gray (SP-SM)						
-19.5	9.8								
		NR							
-20.7	11.0						-20.7		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE	SAMPLE	LABORATORY

(Continued)

Boring Designation VB-GIWWM7-10-3

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,161 Y = 1,145,657	-9.7 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

ID	DEPTH	CLASSIFICATION
1	0.5/1.0	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell

15
20
25
30
35

SAJ FORM 1836-A
JUN 02

Boring Designation VB-GIWWSC2-10-1

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW - Pinellas		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWSC2-10-1	LOCATION COORDINATES: X = 438,080 Y = 1,200,802	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 1 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.5 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 91 %	
8. TOTAL DEPTH OF BORING: 11.3 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.5	0.0						-7.5		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium-grained sand-sized shell, trace silt, 10YR 7/1 light gray (SP)	100			Vibracore		
							-9.0		
					1				
-12.8	5.3								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few fine to coarse-grained sand-sized shell, few silt, 10YR 6/1 gray (SP-SM)	90			Vibracore		
-17.8	10.3								
-18.8	11.3	NR					-18.8		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

(Continued)

Boring Designation VB-GIWWSC2-10-1

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 438,080 Y = 1,200,802	-7.5 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.5/2.0	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell

15
20
25
30
35

SAJ FORM 1836-A
JUN 02

Boring Designation VB-GIWWSC2-10-2

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
2. BORING DESIGNATION	VB-GIWWSC2-10-2
LOCATION COORDINATES	X = 437,876 Y = 1,201,399
3. DRILLING AGENCY	Corps of Engineers - CESAJ
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Athena Technologies, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	12.2 Ft.
9. SIZE AND TYPE OF BIT	3.5" Vibracore
10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.) / HORIZONTAL: NAD83 / VERTICAL: MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED: 3 / UNDISTURBED (UD): 0
13. TOTAL NUMBER CORE BOXES	0
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
16. ELEVATION TOP OF BORING	-5.4 Ft.
17. TOTAL RECOVERY FOR BORING	100 %
18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.4	0.0						-5.4		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, trace silt, 10YR 8/1 white (SP)	100			Vibracore		
							-7.4		
				100	1 1-Post		-7.4 Vibracore		
				100			Vibracore		
			At El. -8.9 Ft., mostly fine-grained sand-sized quartz, trace silt, trace medium-grained sand-sized shell				-9.4		
					2				
-12.6	7.2								
-13.5	8.1		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, 10YR 7/1 light gray (SP-SM)						
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, 10YR 5/1 gray (SM)	100			Vibracore		
-17.6	12.2						-17.6		
			NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System.						

0 5 10 15

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 437,876 Y = 1,201,399	-5.4 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.0/2.5	SP*
1-Post	2.0/2.5	SP*
2	4.0/4.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Carbonate
1 Percent Visual Shell
2 Percent Visual Shell

15
20
25
30
35

Boring Designation VB-GIWWSC3-10-1

DRILLING LOG

DIVISION	South Atlantic
INSTALLATION	Jacksonville District
SHEET	1 OF 2 SHEETS

1. PROJECT	Vibracore Borings GIWW/Vicinity of GIWW - Pinellas
2. BORING DESIGNATION	VB-GIWWSC3-10-1
LOCATION COORDINATES	X = 434,901 Y = 1,221,024
3. DRILLING AGENCY	Corps of Engineers - CESAJ
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Athena Technologies, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	10.5 Ft.
9. SIZE AND TYPE OF BIT	3.5" Vibracore
10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED 1 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	0
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 10-12-10 / COMPLETED 10-12-10
16. ELEVATION TOP OF BORING	-9.0 Ft.
17. TOTAL RECOVERY FOR BORING	93 %
18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-9.0	0.0						-9.0		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, trace fine gravel-sized shell, trace silt, 10YR 6/1 gray (SP)	100			-9.5 Vibracore		
			At El. -10.0 Ft., few fine to coarse-grained sand-sized shell, 10YR 7/1 light gray		1				
				93			Vibracore		
-16.8	7.8		SAND, poorly-graded, mostly fine to coarse-grained sand-sized shell, some fine to medium-grained sand-sized quartz, 10YR 6/1 gray (SP)						
-18.8	9.8								
-19.5	10.5	NR					-19.5		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 434,901 Y = 1,221,024	-9.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 0.5/1.0 SP*						

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell

15
20
25
30
35

Boring Designation VB-GIWWSC3-10-2

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of GIWW - Pinellas		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWWSC3-10-2	LOCATION COORDINATES: X = 435,302 Y = 1,209,817	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 2 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -6.8 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 89 %	
8. TOTAL DEPTH OF BORING: 11.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-6.8	0.0						-6.8		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, 10YR 6/1 gray (SP)	100			Vibracore -7.8		
-9.1	2.3			100	1		Vibracore -9.8		
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace medium to coarse-grained sand-sized shell, 10YR 5/1 gray (SP-SM)		2				
-11.6	4.8								
-12.4	5.6	D	LIMESTONE, decomposed, 10YR 5/1 gray						
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, little fine to coarse-grained sand-sized shell, 10YR 4/1 dark gray (SM)	85			Vibracore		
-16.6	9.8								
-17.8	11.0	NR					-17.8		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE SAMPLE LABORATORY

(Continued)

Boring Designation VB-GIWWSC3-10-2

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 435,302 Y = 1,209,817	-6.8 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

ID	DEPTH	CLASSIFICATION
1	1.0/1.5	SP*
2	3.0/3.5	SP-SM*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell
2 Percent Visual Shell

15
20
25
30
35

Boring Designation VB-LBP10-1

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: Vibracore Borings GIWW/Vicinity of Longboat Pass		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-LBP10-1	LOCATION COORDINATES: X = 433,879 Y = 1,133,136	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 2 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-13-10 / COMPLETED: 10-13-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.7 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 88 %	
8. TOTAL DEPTH OF BORING: 9.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.7	0.0						-7.7		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, trace medium-grained sand-sized shell, 10YR 8/1 white (SP)	100			Vibracore		
							-10.2		
				100	1		Vibracore		
			At El. -12.2 Ft., mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace fine gravel-sized shell				-12.7		
				73	2		Vibracore		
-15.6	7.9								
-16.7	9.0	NR					-16.7		

BORING TERMINATED IN REFUSAL

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.5/3.0	SP*
2	5.0/5.5	SP*

*Lab visual classification based on gradation

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION		SHEET 2 OF 2 SHEETS
	Jacksonville District		
PROJECT	**COORDINATE SYSTEM/DATUM**	**HORIZONTAL**	**VERTICAL**
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW
LOCATION COORDINATES	**ELEVATION TOP OF BORING**		
X = 433,879 Y = 1,133,136	-7.7 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			curve 4. Additional Laboratory Testing 1 Percent Visual Shell 2 Percent Visual Shell						

15
20
25
30
35

Boring Designation VB-LBP10-10

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	South Atlantic	Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of Longboat Pass		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-LBP10-10	LOCATION COORDINATES: X = 429,832 Y = 1,129,266	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-11-10 / COMPLETED: 10-11-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -5.5 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 86 %	
8. TOTAL DEPTH OF BORING: 12.2 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.5	0.0						-5.5		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, 10YR 8/1 white (SP)	100			Vibracore		
-7.5	2.0		SAND, poorly-graded, mostly medium to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, few fine gravel-sized shell (SP)				-8.5		
				100	1		Vibracore		
-11.0	5.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell (SP)				-11.5		
				100	2 2-Post		-11.5 Vibracore		
			At El. -13.3 Ft., few medium to coarse-grained sand-sized shell, trace silt	100			Vibracore		
-16.0	10.5						-14.5		
		NR		47	3		Vibracore		
-17.7	12.2						-17.7		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 429,832 Y = 1,129,266	-5.5 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	3.0/3.5	SP*
2	6.0/6.5	SP*
2-Post	6.0/6.5	SP*
3	9.0/9.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell
2 Percent Carbonate
2 Percent Visual Shell
3 Percent Visual Shell

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25
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Boring Designation VB-LBP10-11

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass	9. SIZE AND TYPE OF BIT	3.5" Vibracore
		10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.) / NAD83 / MLLW
2. BORING DESIGNATION	VB-LBP10-11	LOCATION COORDINATES	X = 429,361 Y = 1,128,843
3. DRILLING AGENCY	Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Athena Technologies, Inc.		
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	
6. THICKNESS OF OVERBURDEN	N/A		
7. DEPTH DRILLED INTO ROCK	N/A		
8. TOTAL DEPTH OF BORING	10.8 Ft.		
11. MANUFACTURER'S DESIGNATION OF DRILL		☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED: 2	UNDISTURBED (UD): 0	
13. TOTAL NUMBER CORE BOXES	0		
14. ELEVATION GROUND WATER			
15. DATE BORING	STARTED: 10-11-10	COMPLETED: 10-11-10	
16. ELEVATION TOP OF BORING	-8.0 Ft.		
17. TOTAL RECOVERY FOR BORING	100 %		
18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-8.0	0.0						-8.0		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt, 10YR 8/1 white (SP)	100			Vibracore		
							-10.0		
				100	1		Vibracore		
			At El. -12.0 Ft., some medium to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, few fine to coarse gravel-sized shell				-13.0		
				99	2		Vibracore		
-18.7	10.8						-18.7		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION

(Continued)

Boring Designation VB-LBP10-11

DRILLING LOG (Cont. Sheet)	INSTALLATION		SHEET 2 OF 2 SHEETS
	Jacksonville District		
PROJECT	**COORDINATE SYSTEM/DATUM**	**HORIZONTAL**	**VERTICAL**
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW
LOCATION COORDINATES	**ELEVATION TOP OF BORING**		
X = 429,361 Y = 1,128,843	-8.0 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 2.0/2.5 SP* 2 5.0/5.5 SP* *Lab visual classification based on gradation curve 4. Additional Laboratory Testing 1 Percent Visual Shell 2 Percent Visual Shell						

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SAJ FORM 1836-A
JUN 02

Boring Designation VB-LBP10-2

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District		**SHEET** 1 **OF** 2 **SHEETS**
1. PROJECT Vibracore Borings GIWW/Vicinity of Longboat Pass	**9. SIZE AND TYPE OF BIT** 3.5" Vibracore		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD83	**VERTICAL** MLLW
2. BORING DESIGNATION VB-LBP10-2 **LOCATION COORDINATES** X = 433,714 Y = 1,132,503	**11. MANUFACTURER'S DESIGNATION OF DRILL** ☐ AUTO HAMMER ☐ MANUAL HAMMER		
3. DRILLING AGENCY Corps of Engineers - CESAJ **CONTRACTOR FILE NO.**	**12. TOTAL SAMPLES**	**DISTURBED** 3	**UNDISTURBED (UD)** 0
4. NAME OF DRILLER Athena Technologies, Inc.	**13. TOTAL NUMBER CORE BOXES** 0		
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED **DEG. FROM VERTICAL** **BEARING**	**14. ELEVATION GROUND WATER**		
	15. DATE BORING	**STARTED** 10-13-10	**COMPLETED** 10-13-10
6. THICKNESS OF OVERBURDEN N/A	**16. ELEVATION TOP OF BORING** -7.1 Ft.		
7. DEPTH DRILLED INTO ROCK N/A	**17. TOTAL RECOVERY FOR BORING** 93 %		
8. TOTAL DEPTH OF BORING 10.0 Ft.	**18. SIGNATURE AND TITLE OF INSPECTOR** Daniel G. Blaydes, Geotechnical Engineer		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
-7.1	0.0						-7.1		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace medium-grained sand-sized shell, trace silt, 10YR 8/1 white (SP)	100			Vibracore		
							-9.6		
				100	1 1-Post		-9.6 Vibracore		
				100			Vibracore		
							-12.1		
					2				
				86			Vibracore		
-16.4	9.3								
-17.1	10.0	NR					-17.1		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.5/3.0	SP*

(Continued)

Boring Designation VB-LBP10-2

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 433,714 Y = 1,132,503	-7.1 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1-Post 2.5/3.0 SP* 2 5.0/5.5 SP* *Lab visual classification based on gradation curve 4. Additional Laboratory Testing 1 Percent Carbonate 1 Percent Visual Shell 2 Percent Visual Shell						

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SAJ FORM 1836-A
JUN 02

Boring Designation VB-LBP10-3

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass	9. SIZE AND TYPE OF BIT	3.5" Vibracore
		10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.) / HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION	VB-LBP10-3	LOCATION COORDINATES	X = 433,501 Y = 1,131,462
11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER		
3. DRILLING AGENCY	Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	
12. TOTAL SAMPLES	DISTURBED: 1	UNDISTURBED (UD): 0	
4. NAME OF DRILLER	Athena Technologies, Inc.	13. TOTAL NUMBER CORE BOXES	0
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	
14. ELEVATION GROUND WATER			
15. DATE BORING	STARTED: 10-13-10	COMPLETED: 10-13-10	
6. THICKNESS OF OVERBURDEN	N/A	16. ELEVATION TOP OF BORING	-9.8 Ft.
7. DEPTH DRILLED INTO ROCK	N/A	17. TOTAL RECOVERY FOR BORING	85 %
8. TOTAL DEPTH OF BORING	11.5 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-9.8	0.0						-9.8		
			SAND, poorly-graded, some medium to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, little fine to coarse gravel-sized shell up to 1", trace silt, 10YR 8/1 white (SP)	100			Vibracore		
							-11.3		
					1				
				83			Vibracore		
-19.6	9.8								
		NR							
-21.3	11.5						-21.3		
			NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System. 3. Laboratory Testing Results						

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(Continued)

Boring Designation VB-LBP10-3

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 433,501 Y = 1,131,462	-9.8 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

SAMPLE ID | SAMPLE DEPTH | LABORATORY CLASSIFICATION

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.5/2.0	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell

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SAJ FORM 1836-A
JUN 02

Boring Designation VB-LBP10-6

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: Vibracore Borings GIWW/Vicinity of Longboat Pass		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-LBP10-6	LOCATION COORDINATES: X = 430,534 Y = 1,129,086	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 1 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-11-10 / COMPLETED: 10-11-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -10.5 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 86 %	
8. TOTAL DEPTH OF BORING: 10.2 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-10.5	0.0						-10.5		
			SAND, poorly-graded, mostly medium to coarse-grained sand-sized shell, some fine gravel-sized shell, few fine-grained sand-sized quartz, 10YR 6/1 gray (SP)	100			Vibracore		
							-12.0		
					1				
-13.0	2.5		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace fine gravel-sized shell, 10YR 8/1 white (SP)						
-15.4	4.9		SAND, poorly-graded, mostly fine to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, 10YR 6/1 gray (SP)	84			Vibracore		
-18.3	7.8								
			SAND, clayey, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, little clay, few fine gravel-sized shell up to 1/2", 10YR 5/1 gray (SC)						
-19.3	8.8	NR							
-20.7	10.2						-20.7		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.5/2.0	SP*

(Continued)

Boring Designation VB-LBP10-6

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 430,534 Y = 1,129,086	-10.5 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			*Lab visual classification based on gradation curve 4. Additional Laboratory Testing 1 Percent Visual Shell						

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SAJ FORM 1836-A
JUN 02

Boring Designation VB-LBP10-7

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: Vibracore Borings GIWW/Vicinity of Longboat Pass		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-LBP10-7	LOCATION COORDINATES: X = 432,297 Y = 1,131,001	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 3 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-12-10 / COMPLETED: 10-12-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -8.5 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 86 %	
8. TOTAL DEPTH OF BORING: 12.5 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-8.5	0.0						-8.5		
			SAND, poorly-graded, mostly medium to coarse-grained sand-sized shell, little fine gravel-sized shell up to 3/4", few fine-grained sand-sized quartz, 10YR 6/1 gray (SP)	100			Vibracore		
							-10.5		
					1				
				100			Vibracore		
			At El. -12.0 Ft., little fine-grained sand-sized quartz, trace silt				-12.5		
				100	2 2-Post		-12.5 Vibracore		
				79			Vibracore		
-19.2	10.7								
		NR							
-21.0	12.5						-21.0		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 432,297 Y = 1,131,001	-8.5 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE

System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	2.0/2.5	SW*
2	4.0/4.5	SW*
2-Post	4.0/4.5	SP*

*Lab visual classification based on gradation curve

4. Additional Laboratory Testing

1 Percent Visual Shell
2 Percent Carbonate
2 Percent Visual Shell

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Boring Designation VB-LBP10-8

DRILLING LOG

DIVISION	South Atlantic
INSTALLATION	Jacksonville District
SHEET	1 OF 2 SHEETS
1. PROJECT	Vibracore Borings GIWW/Vicinity of Longboat Pass
2. BORING DESIGNATION	VB-LBP10-8
LOCATION COORDINATES	X = 431,441 Y = 1,130,530
3. DRILLING AGENCY	Corps of Engineers - CESAJ
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Athena Technologies, Inc.
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	10.5 Ft.
9. SIZE AND TYPE OF BIT	3.5" Vibracore
10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED 2 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	0
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 10-11-10 / COMPLETED 10-11-10
16. ELEVATION TOP OF BORING	-5.6 Ft.
17. TOTAL RECOVERY FOR BORING	89 %
18. SIGNATURE AND TITLE OF INSPECTOR	Daniel G. Blaydes, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.6	0.0						-5.6		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, some medium to coarse-grained sand-sized shell, few fine gravel-sized shell, 10YR 7/1 light gray (SP)	100			Vibracore		
							-8.6		
				100	1		Vibracore		
-10.6	5.0						-11.6		
			SAND, silty, some fine-grained sand-sized quartz, little medium to coarse-grained sand-sized shell, little silt, few fine gravel-sized shell, 10YR 7/1 light gray (SM)	73	2		Vibracore		
-14.9	9.3								
-16.1	10.5	NR					-16.1		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION

(Continued)

Boring Designation VB-LBP10-8

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 431,441 Y = 1,130,530	-5.6 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 3.0/3.5 SP* 2 6.0/6.5 SM* *Lab visual classification based on gradation curve 4. Additional Laboratory Testing 1 Percent Visual Shell 2 Percent Visual Shell						

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SAJ FORM 1836-A
JUN 02

Boring Designation VB-LBP10-9

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: Vibracore Borings GIWW/Vicinity of Longboat Pass		9. SIZE AND TYPE OF BIT: 3.5" Vibracore	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-LBP10-9	LOCATION COORDINATES: X = 430,686 Y = 1,129,853	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAJ	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 2 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Athena Technologies, Inc.		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 10-11-10 / COMPLETED: 10-11-10
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -5.3 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 94 %	
8. TOTAL DEPTH OF BORING: 10.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Daniel G. Blaydes, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.3	0.0						-5.3		
-6.3	1.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, 10YR 8/1 white (SP)						
-8.3	3.0		SAND, poorly-graded, mostly fine to coarse-grained sand-sized shell, some fine-grained sand-sized quartz, 10YR 7/1 light gray (SP)	100			Vibracore		
-9.3	4.0		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell (SP)				-8.8		
-11.3	6.0		SAND, poorly-graded, mostly fine to coarse-grained sand-sized shell, some fine-grained sand-sized quartz (SP)	100	1		Vibracore		
-13.6	8.3		SAND, poorly-graded, mostly fine-grained sand-sized quartz, few medium to coarse-grained sand-sized shell, trace silt (SP)				-11.8		
-14.7	9.4		SAND, poorly-graded, mostly fine to coarse-grained sand-sized shell, some fine-grained sand-sized quartz (SP)	83	2		Vibracore		
-15.3	10.0	NR					-15.3		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	3.5/4.0	SP*

(Continued)

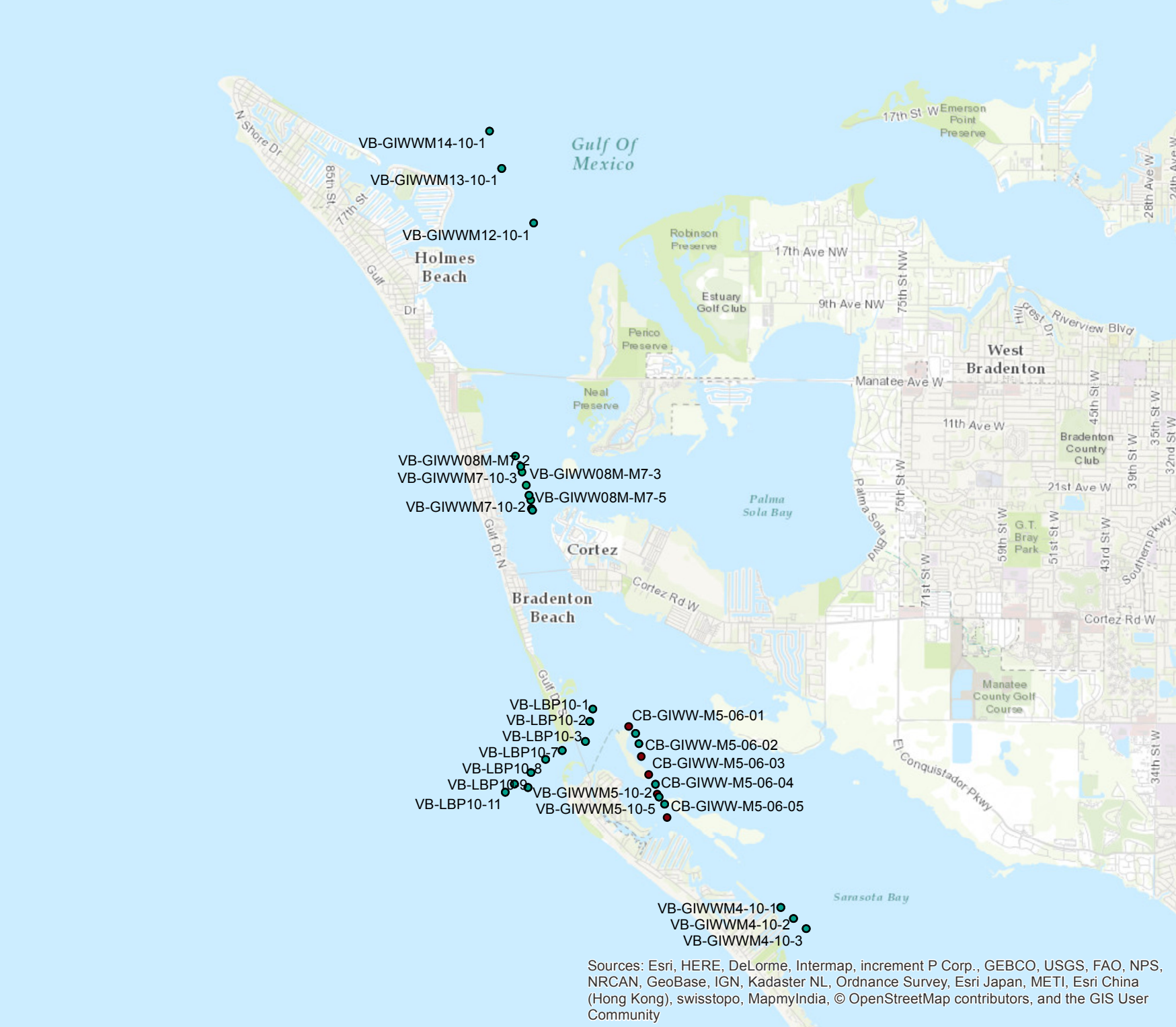
Boring Designation VB-LBP10-9

DRILLING LOG (Cont. Sheet)	INSTALLATION		SHEET 2 OF 2 SHEETS
	Jacksonville District		
PROJECT	**COORDINATE SYSTEM/DATUM**	**HORIZONTAL**	**VERTICAL**
Vibracore Borings GIWW/Vicinity of	State Plane, FLW (U.S. Ft.)	NAD83	MLLW
LOCATION COORDINATES	**ELEVATION TOP OF BORING**		
X = 430,686 Y = 1,129,853	-5.3 Ft.		

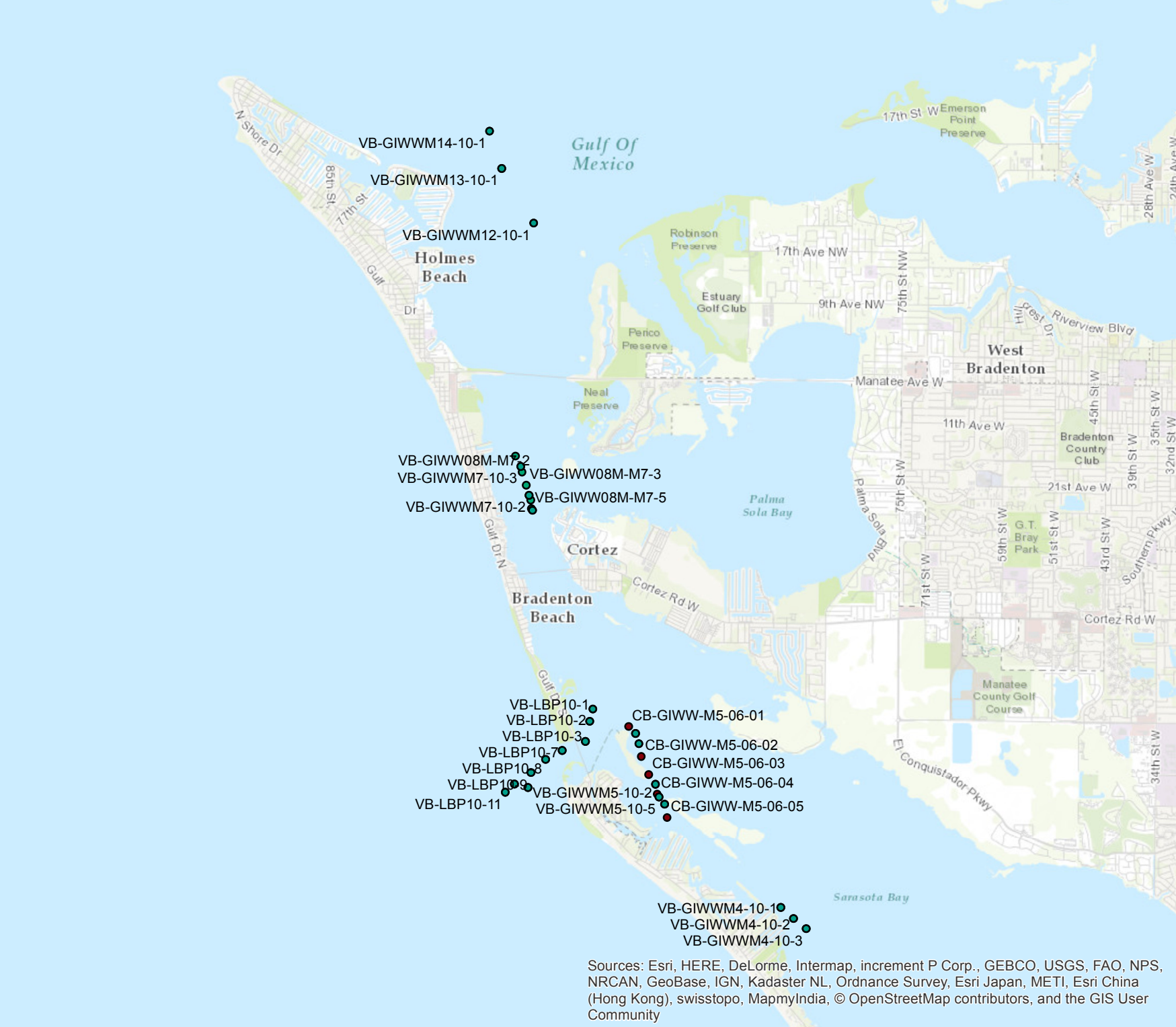
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			2 6.5/7.0 SP*						
			*Lab visual classification based on gradation curve						
			4. Additional Laboratory Testing						
			1 Percent Visual Shell 2 Percent Visual Shell						

15
20
25
30
35

SAJ FORM 1836-A
JUN 02



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

APPENDIX B – PART 2

SARASOTA COUNTY GEOTECHNICAL DATA

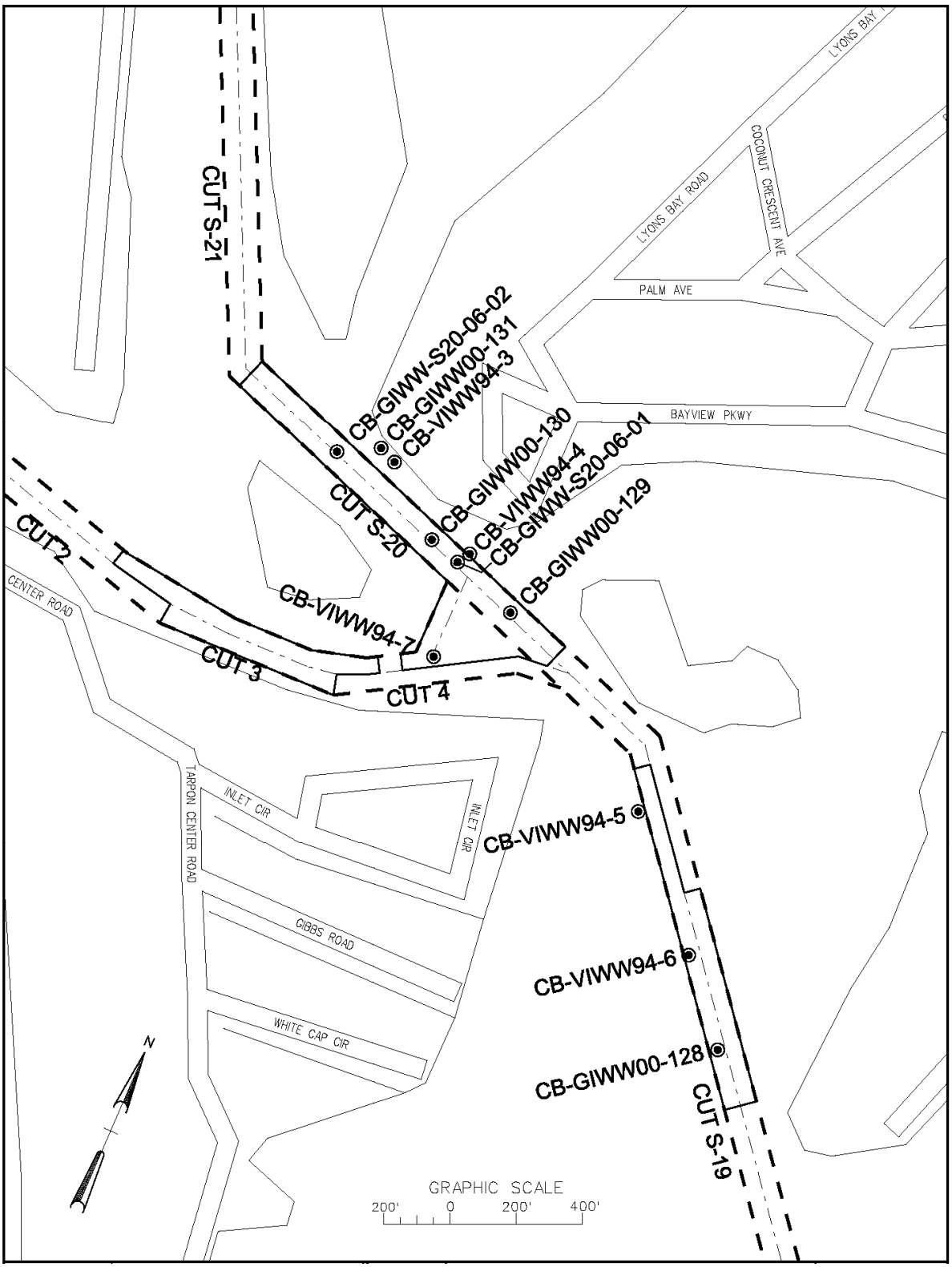


Plate 2. Location of Field Investigations

Hole No.CB-VIWW94-3

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Intracoastal Waterway, Venice Fla.
2. LOCATION (Coordinates or Station): X=349,220 Y=1010,820
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-VIWW94-3
5. NAME OF DRILLER: M. Whitson
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 10 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW (FEET)
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 4 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: TIDAL
16. DATE HOLE STARTED: 7/27/94 COMPLETED: 7/27/94
17. ELEVATION TOP OF HOLE: -3.7 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 70 %
19. SIGNATURE OF Geologist: Bob Ross

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-3.7	.0					-3.7	
			SAND, fine to medium quartz, trace sand sized shell, gray (SP)	80	1	2" SAMPLER	6 2 2 4 6
-8.7	5.0		below -8.7 feet, trace phoshhate pebbles		2	-8.7	5 8
-10.7	7.0		CLAYEY SAND, medium to coarse quartz and phosphate pebbles, little clay, dark gray, (SC)	60	3	2" SAMPLER	9 11
-12.7	9.0		Limestone and gravel, some clay, gray		4	-13.7	23
-13.7	10.0						

NOTE:
Soils are field visually classified in accordance with the Unified Soils Classification System.

Samples recovered using a 2 inch (I.D.) sampler, 5 feet long, driven with a 300 pound hammer, 18 inch drop

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-3.7 / -8.7	(SP-SM)*
-10.7 / -12.7	(SC)*

* Visual classification based on gradation curve. No Atterberg Limits.

0 2 4 6 8 10 12 14 16 18

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Intracoastal Waterway, Venice Fla. | HOLE NUMBER: CB-VIWW94-3

Hole No.CB-VIWW94-4

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Intracoastal Waterway, Venice Fla.
2. LOCATION (Coordinates or Station): X=349,539 Y=1010,656
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-VIWW94-4
5. NAME OF DRILLER: M. Whitson
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 5 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW (FEET)
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 1 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: TIDAL
16. DATE HOLE STARTED: 7/26/94 COMPLETED: 7/26/94
17. ELEVATION TOP OF HOLE: -6.0 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 40 %
19. SIGNATURE OF Geologist: Bob Ross

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-6.0	.0					-6.0	
			SAND, fine to medium quartz, trace sand sized shell, gray (SP-SM)				0
							1
				40	1	2" SAMPLER	4
			less silt with depth				3
							2
-11.0	5.0					-11.0	

NOTE:
Soils are field visually classified in accordance with the Unified Soils Classification System.

Samples recovered using a 2 inch (I.D.) sampler, 5 feet long, driven with a 300 pound hammer, 18 inch drop

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-6.0 / -11.0	(SP-SM)*

*Visual classification based on gradation curve. No Atterberg Limits.

0 2 4 6 8 10 12 14 16 18

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Intracoastal Waterway, Venice Fla. | HOLE NUMBER: CB-VIWW94-4

Hole No.CB-VIWW94-5

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1

1. PROJECT: Intracoastal Waterway, Venice Fla.
2. LOCATION (Coordinates or Station): X=350,315 Y=1010,145
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-VIWW94-5
5. NAME OF DRILLER: M. Whitson
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 5 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW (FEET)
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 2 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: TIDAL
16. DATE HOLE STARTED: 7/26/94 COMPLETED: 7/26/94
17. ELEVATION TOP OF HOLE: -6.6 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 60 %
19. SIGNATURE OF Geologist: Bob Ross

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-6.6	.0					-6.6	
			SILTY SAND, fine to medium quartz, little shell, dark gray, (SM)		1		1 3
-9.1	2.5			60		2" SAMPLER	3
			SAND, fine to medium quartz, little sand sized shell, gray, (SP-SC)		2		3 1
-11.6	5.0					-11.6	

NOTE:
Soils are field visually classified in accordance with the Unified Soils Classification System.

Samples recovered using a 2 inch (I.D.) sampler, 5 feet long, driven with a 300 pound hammer, 18 inch drop

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-6.6 / -9.1	(SP-SM)*
-9.1 / -11.6	(SM)*

*Visual classification based on gradation curve. No Atterberg Limits.

0 2 4 6 8 10 12 14 16 18

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Intracoastal Waterway, Venice Fla.

HOLE NUMBER: CB-VIWW94-5

Hole No.CB-VIWW94-6

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Intracoastal Waterway, Venice Fla.
2. LOCATION (Coordinates or Station): X=350,628 Y=1009,806
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-VIWW94-6
6. NAME OF DRILLER: M. Whitson
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 5 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW (FEET)
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 2 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: TIDAL
16. DATE HOLE STARTED: 7/26/94 COMPLETED: 7/26/94
17. ELEVATION TOP OF HOLE: -8.0 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 60 %
19. SIGNATURE OF Geologist: Bob Ross

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC *	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-8.0	.0					-8.0	
			CLAYEY SAND, fine to medium quartz, dark gray, (SC)	60	1		0
							1
-10.5	2.5					2" SAMPLER	1
			SAND, fine to medium quartz, little sand sized shell, gray, (SP-SC)		2		5
							4
-13.0	5.0					-13.0	

NOTE:
Soils are field visually classified in accordance with the Unified Soils Classification System.

Samples recovered using a 2 inch (I.D.) sampler, 5 feet long, driven with a 300 pound hammer, 18 inch drop

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-8.0 / -10.5	(SM)*
-10.5 / -13.0	(SM)*

*Visual classification based on gradation curve. No Atterberg Limits.

Hole No.CB-VIWW94-7

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District
	SHEET 1 OF 1
1. PROJECT: Intracoastal Waterway, Venice Fla.	10. SIZE AND TYPE OF BIT: See Remarks
2. LOCATION (Coordinates or Station): X=349,562 Y=1010,328	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW (FEET)
3. DRILLING AGENCY: Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
4. HOLE NO. (As shown on drawing title and file number): CB-VIWW94-7	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 1 undisturbed: 0
5. NAME OF DRILLER: M. Whitson	14. TOTAL NUMBER OF CORE BOXES: 1
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED	15. ELEVATION GROUND WATER: TIDAL
	16. DATE HOLE STARTED: 7/26/94 COMPLETED: 7/26/94
7. THICKNESS OF BURDEN: Ft.	17. ELEVATION TOP OF HOLE: -8.6 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.	18. TOTAL CORE RECOVERY FOR BORING: 60 %
9. TOTAL DEPTH OF HOLE: 5 Ft.	19. SIGNATURE OF Geologist: Bob Ross

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-8.6	.0					-8.6	
			SAND, fine to medium quartz, trace sand sized shell, gray, (SP)				0
							1
				60	1	2" SAMPLER	7
							13
							15
-13.6	5.0					-13.6	

NOTE:
Soils are field visually classified in accordance with the Unified Soils Classification System.

Samples recovered using a 2 inch (I.D.) sampler, 5 feet long, driven with a 300 pound hammer, 18 inch drop

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-8.6 / -13.6	(SP)

0 2 4 6 8 10 12 14 16 18

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT	HOLE NUMBER
Intracoastal Waterway, Venice Fla.	CB-VIWW94-7

Hole No.CB-GIWW00-128

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: GIWW - Part #2
2. LOCATION (Coordinates or Station): X=350,822 Y=1009,579
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. (As shown on drawing title and file number): CB-GIWW00-128
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 4.5 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 3 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 2/29/00 COMPLETED: 2/29/00
17. ELEVATION TOP OF HOLE: -11.2 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 45 %
19. SIGNATURE OF Civil Engineer: Andy Gibiser (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC *	SAMPLE NUMBER	REMARKS Vibracore
-11.2	.0					-11.2
			SAND, fine quartz, some silt, gray-dark gray (SM)		1	
-13.2	2.0		SAND, fine quartz, little silt, trace fine gravel to sand sized shell fragments, gray (SM)	45	2	
-15.2	4.0					
-15.7	4.5		SAND, fine quartz, little silt, dark brown (SM)		3	-15.7

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	LAB CLASSIF.*
1	0.0 - 2.0	SM
2	2.0 - 4.0	SM

*Lab classification based on gradation curve with no Atterberg Limits.

Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW - Part #2 | HOLE NUMBER: CB-GIWW00-128

Hole No.CB-GIWW00-129

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: GIWW - Part #2
2. LOCATION (Coordinates or Station): X=349,722 Y=1010,542
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. (As shown on drawing title and file number): CB-GIWW00-129
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 7.2 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 4 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 3/1/00 COMPLETED: 3/1/00
17. ELEVATION TOP OF HOLE: -8.6 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 72 %
19. SIGNATURE OF Civil Engineer: Brian Hathaway (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-8.6	.0					-8.6
			SAND, fine quartz, trace silt, light gray (SP-SM)		1	
			- thin silty sand seams			
-12.3	3.7			72		
-12.8	4.2		SAND, fine quartz, clayey, green-gray (SC)		2	
			SAND, fine quartz, light brown (SP)		3	
-15.3	6.7					
-15.8	7.2		CLAY, some fine quartz sand, little fine to medium sand sized cemented limestone rock fragments, light tan-gray (CH)		4	-15.8
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.
			NOTE: Elevation is based on predicted tide tables.			

SAMPLE NO.	SAMPLE DEPTH	LAB CLASSIF.*
2	3.7 - 4.2	SC

*Lab classification based on gradation curve with no Atterberg Limits.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW - Part #2 | HOLE NUMBER: CB-GIWW00-129

Hole No.CB-GIWW00-130

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1

1. PROJECT: GIWW - Part #2
2. LOCATION (Coordinates or Station): X=349,417 Y=1010,650
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. (As shown on drawing title and file number): CB-GIWW00-130
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 7.2 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 4 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 3/1/00 COMPLETED: 3/1/00
17. ELEVATION TOP OF HOLE: -9.3 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 72 %
19. SIGNATURE OF Civil Engineer: Andy Gibiser (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-9.3	.0					-9.3
			SAND, fine quartz, trace silt, dark gray-gray (SP-SM)		1	
-11.8	2.5					
			SAND, fine quartz, trace silt, light gray (SP)	72	2	
-14.3	5.0					
-15.0	5.7		SAND, fine quartz, trace silt, trace fine gravel to sand sized rock fragments, gray-red (SP)		3	
			SAND, fine quartz, little silt, little fine gravel to sand sized rock fragments, gray (SM)		4	
-16.5	7.2					-16.5

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	LAB CLASSIF.*
1	0.0 - 2.5	SP-SM

*Lab classification based on gradation curve with no Atterberg Limits.

Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW - Part #2

HOLE NUMBER: CB-GIWW00-130

Hole No.CB-GIWW00-131

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: GIWW - Part #2
2. LOCATION (Coordinates or Station): X=349,166 Y=1010,843
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. (As shown on drawing title and file number): CB-GIWW00-131
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 4.0 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 4 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 3/1/00 COMPLETED: 3/1/00
17. ELEVATION TOP OF HOLE: -4.1 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 40 %
19. SIGNATURE OF Civil Engineer: Brian Hathaway (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-4.1	.0					-4.1
			SAND, fine quartz, trace silt, tan (SP)		1	
-5.5	1.4					
-5.9	1.8		SAND, fine to coarse quartz, shelly, gray (SP)	40	2	
					3	
-6.6	2.5		SAND, fine quartz, trace silt, gray-light brown (SP-SM)			
			SAND, fine quartz, some clay, trace well cemented silt nodules, green-gray (SC)		4	
-8.1	4.0					-8.1

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	LAB CLASSIF.*
1	0.0 - 1.4	SP

*Lab classification based on gradation curve with no Atterberg Limits.

Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW - Part #2 | HOLE NUMBER: CB-GIWW00-131

Boring Designation CB-GIWW-S20-06-01

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: GIWW CR to AR GIWW Cut S-20		9. SIZE AND TYPE OF BIT: See Remarks	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: CB-GIWW-S20-06-01	LOCATION COORDINATES: X = 505,744 Y = 1,010,783	11. MANUFACTURER'S DESIGNATION OF DRILL: CET - 2006	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.: 2004D30	12. TOTAL SAMPLES	DISTURBED: 8 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Doug Gardner		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER: N/A
		15. DATE BORING	STARTED: 06-28-06 / COMPLETED: 06-28-06
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.0 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 90 %	
8. TOTAL DEPTH OF BORING: 10.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: V. J. Thompson III, Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/0.5 FT.	N-VALUE
-7.0	0.0						-7.0		
			SAND, poorly-graded with silt, mostly fine to medium-grained sand-sized quartz, trace angular shell up to 1/8", 2.5Y 6/1 gray (SP-SM)	90	1		SPT Sampler	2 2 2	4
							-8.5		
				95	2		SPT Sampler	5 9 8	17
							-10.0		
			At El. -10.0 Ft., mostly fine-grained sand-sized quartz, few silt, 5Y 5/1 gray	90	3		SPT Sampler	12 12 8	20
							-11.5		
				95	4		SPT Sampler	7 6 7	13
							-13.0		
			At El. -13.0 Ft., mostly medium-grained sand-sized quartz, trace angular shell up to 1/4", 5Y 5/1 gray	90	5		SPT Sampler	4 3 4	7
							-14.5		
			At El. -14.5 Ft., mostly fine to medium-grained sand-sized quartz, some angular shell up to 3/4", trace clay, trace silt, 5Y 6/1 gray	90	6		SPT Sampler	5 5 4	9
-16.0	9.0						-16.0		
		Sl. Weathered	LIMESTONE, coquina, non-fossiliferous, moderately hard, slightly weathered, aphanitic, solid, 2.5Y 7/6 yellow	80	7		SPT Sampler	23 50/0.4'	
							-16.9		
-17.6	10.6						-17.5 Advanced Boring		
				0	8		-17.6 SPT Sampler	50/0.1'	
			BORING TERMINATED IN REFUSAL				140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Set 18 Ft. Of 4" Steel Casing

4. Munsell Colors Determined When Samples

(Continued)

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 505,744 Y = 1,010,783	-7.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE

Were Wet After Removal From Splitspoon Sampler.

5. Borings Sampled From 40 Ft. x 11 Ft. Pontoon Barge.

6. Elevations Determined From Established Tide Gauge.

7. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1 & 3	/10.6	SP-SM*
1	0.0/1.5	SP-SM*
3	3.0/4.5	SP-SM*
6	7.5/9.0	SP-SM*

*Lab visual classification based on gradation curve

8. Additional Laboratory Testing

1 & 3Percent Carbonate
1 & 3Percent Visual Shell
1 Percent Visual Shell
3 Percent Visual Shell
6 Percent Visual Shell

15
20
25
30
35

Boring Designation CB-GIWW-S20-06-02

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT	GIWW CR to AR GIWW Cut S-20	9. SIZE AND TYPE OF BIT	See Remarks
		10. COORDINATE SYSTEM/DATUM	HORIZONTAL: NAD83 / VERTICAL: MLLW
			State Plane, FLW (U.S. Ft.)
2. BORING DESIGNATION	CB-GIWW-S20-06-02	LOCATION COORDINATES	X = 505,277 Y = 1,010,944
11. MANUFACTURER'S DESIGNATION OF DRILL	CET - 2006	☐ AUTO HAMMER ☒ MANUAL HAMMER	
3. DRILLING AGENCY	Challenge Engineering & Testing, Inc.	CONTRACTOR FILE NO.	2004D30
12. TOTAL SAMPLES	DISTURBED: 14	UNDISTURBED (UD): 0	
4. NAME OF DRILLER	Doug Gardner	13. TOTAL NUMBER CORE BOXES	1
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER: N/A
15. DATE BORING	STARTED: 06-28-06	COMPLETED: 06-28-06	
6. THICKNESS OF OVERBURDEN	N/A	16. ELEVATION TOP OF BORING	-5.3 Ft.
7. DEPTH DRILLED INTO ROCK	N/A	17. TOTAL RECOVERY FOR BORING	83 %
8. TOTAL DEPTH OF BORING	21.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR	V. J. Thompson III, Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/0.5 FT.	N-VALUE
-5.3	0.0						-5.3		
			SAND, poorly-graded, mostly subangular medium-grained sand-sized quartz, few angular shell up to 1/4", 2.5Y 5/1 gray (SP)	70	1		SPT Sampler	2 1 1	2
			At El. -6.8 Ft., some angular shell up to 1/2"				-6.8		
				95	2		SPT Sampler	3 4 4	8
-8.3	3.0						-8.3		
			SHELL, mostly angular coarse gravel-sized shell up to 3/4", some sand, trace silt, 2.5Y 6/1 gray	70	3		SPT Sampler	2 1 1	2
-9.8	4.5						-9.8		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, few silt, trace angular shell up to 1/4", 2.5Y 6/1 gray (SP-SM)	70	4		SPT Sampler	1 1 3	4
-11.3	6.0						-11.3		
			SAND, poorly-graded, mostly subangular medium-grained sand-sized quartz, trace angular shell up to 1/4", 2.5Y 6/1 gray (SP)	90	5		SPT Sampler	5 6 4	10
							-12.8		
				90	6		SPT Sampler	4 5 2	7
-14.3	9.0						-14.3		
			SAND, poorly-graded with silt, mostly subangular fine to medium-grained sand-sized quartz, few angular shell up to 3/4", trace silt, 5Y 5/1 gray (SP-SM)	90	7		SPT Sampler	2 1 3	4
-15.8	10.5						-15.8		
			SAND, silty, mostly subangular fine to medium-grained sand-sized quartz, some clay, few silt, trace angular shell up to 1/4", trace subrounded limestone up to 1/4", 5Y 4/2 olive gray (SM)	90	8		SPT Sampler	4 3 6	9
-17.3	12.0						-17.3		
			CLAY, fat, medium plasticity, firm, some subrounded sand to gravel-sized limestone up to 1/4", trace silt, trace sand, 2.5Y 6/1 gray (CH)	90	9		SPT Sampler	5 5 6	11
							-18.8		
				90	10		SPT Sampler	3 3 4	7
							-20.3		

(Continued)

Boring Designation CB-GIWW-S20-06-02

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW CR to AR	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 505,277 Y = 1,010,944	-5.3 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
			At El. -20.3 Ft., trace sand, 5Y 7/4 pale yellow	80	11		SPT Sampler	3 3 2	5
-21.8	16.5						-21.8		
		Slightly Weathered	LIMESTONE, coquina, non-fossiliferous, soft, slightly weathered, aphanitic, solid, 5Y 8/3 pale yellow	80	12		SPT Sampler	2 3 4	7
							-23.3		
			At El. -23.3 Ft., moderately hard, 5Y 6/4 pale olive	80	13		SPT Sampler	11 31 12	43
							-24.8		
			At El. -24.8 Ft., 5Y 6/3 pale olive	80	14		SPT Sampler	10 7 6	13
-26.3	21.0						-26.3		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Set 15 Ft. Of 4" Steel Casing

4. Munsell Colors Determined When Samples Were Wet After Removal From Splitspoon Sampler.

5. Borings Sampled From 40 Ft. x 11 Ft. Pontoon Barge.

6. Elevations Determined From Established Tide Gauge.

7. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
#1,#3&#4	/21.0	SP*
1	0.0/1.5	SP*
3	3.0/4.5	SP-SM*
4	4.5/6.0	SP-SM*

*Lab visual classification based on gradation curve

8. Additional Laboratory Testing

#1,#3&#4Percent Carbonate
#1,#3&#4Percent Visual Shell
1 Percent Visual Shell
3 Percent Visual Shell
4 Percent Visual Shell

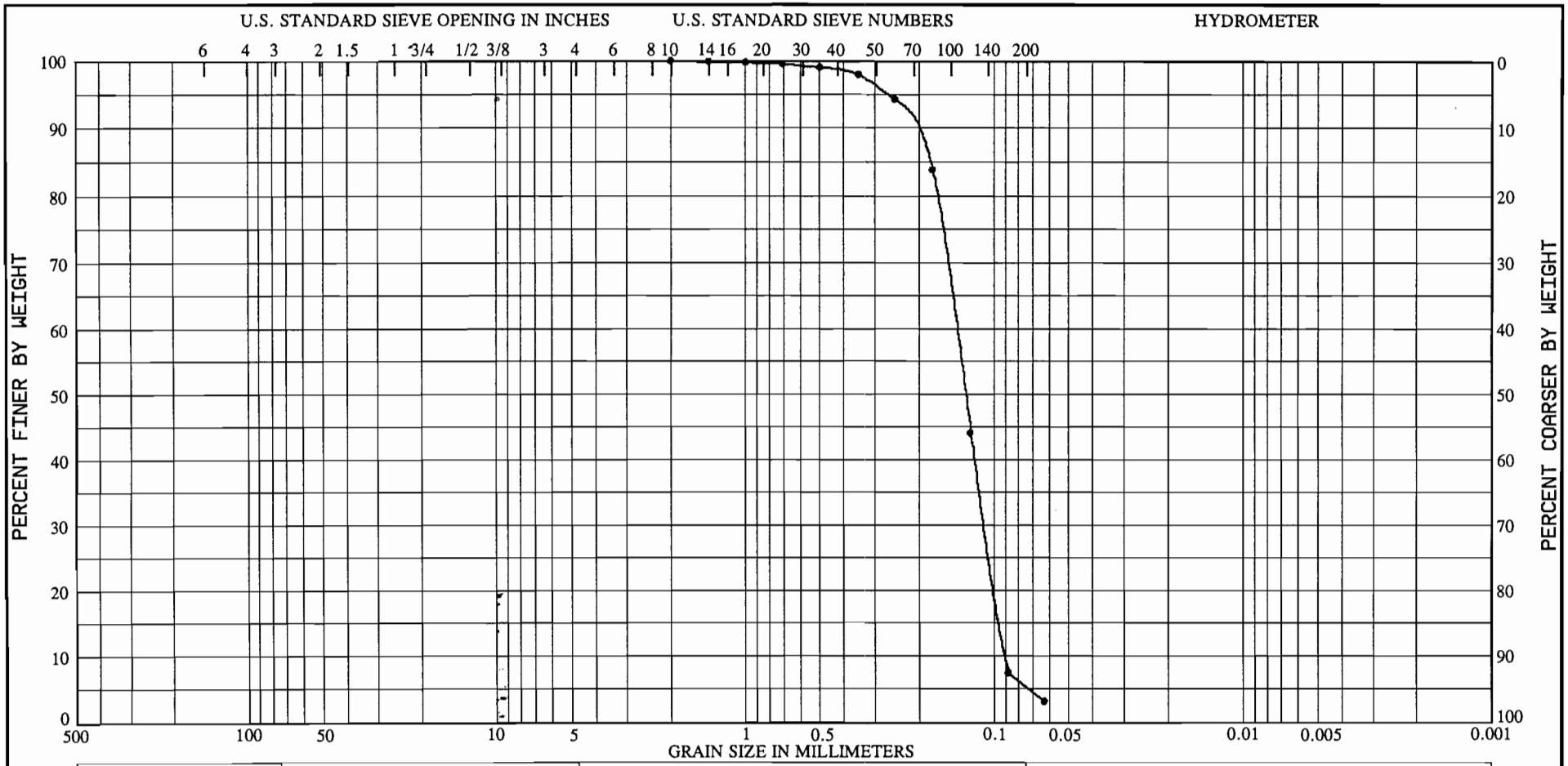
140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

1.4.7 Laboratory Testing Data

Applicable laboratory testing data are presented on the following page.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

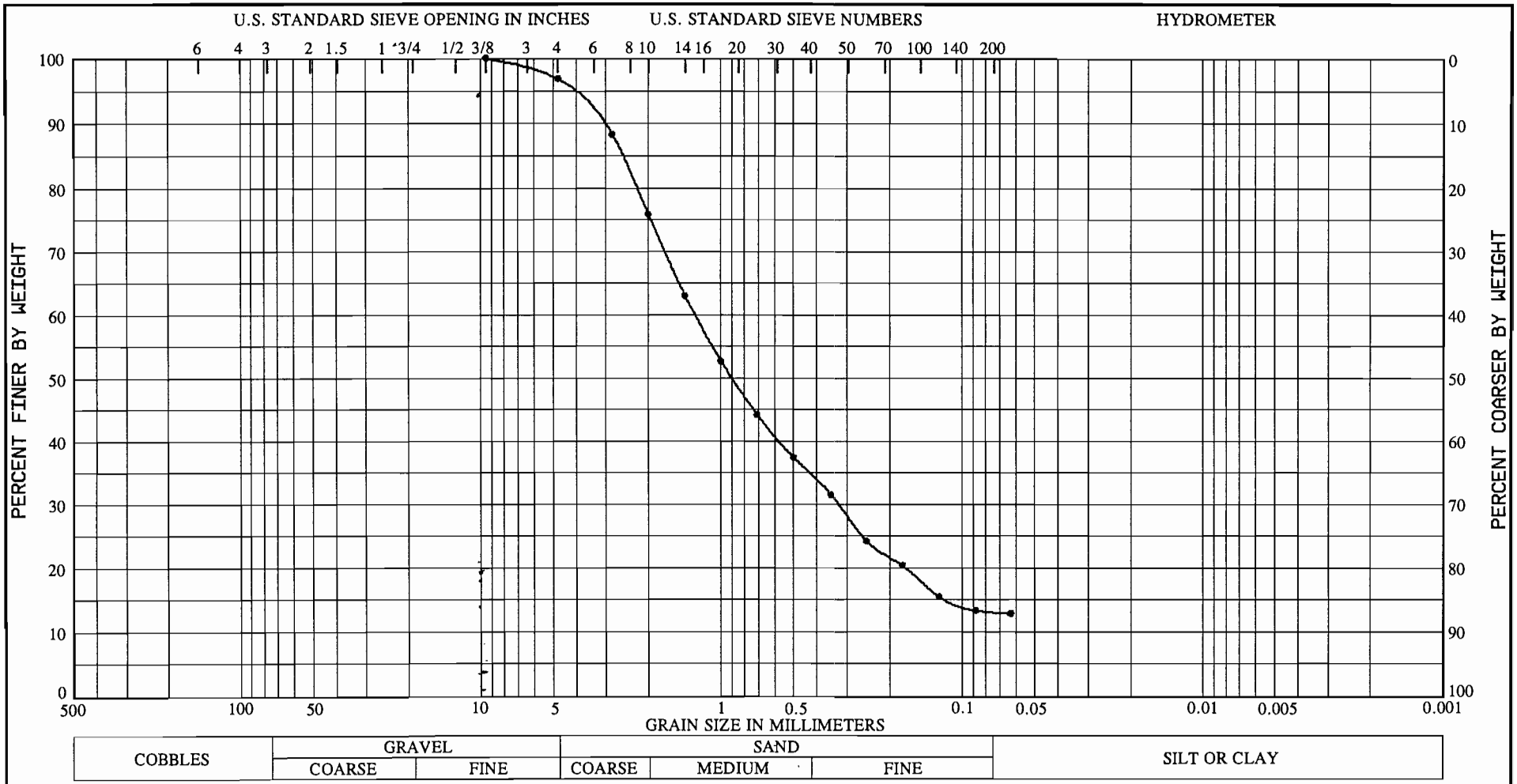
Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
1	-3.7 / -8.7	(VISUAL) LT. GRAY, POORLY GRADED SILTY				
		SAND (SP-SM).				
		SP GRAVITY = 2.68				
		VISUAL PERCENT SHELL IS APPROX. < 1 %.				

GRADATION CURVES

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA
Lab No. 73/6565
Boring No. CB-VIWW94-3
Date 08/22/94

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

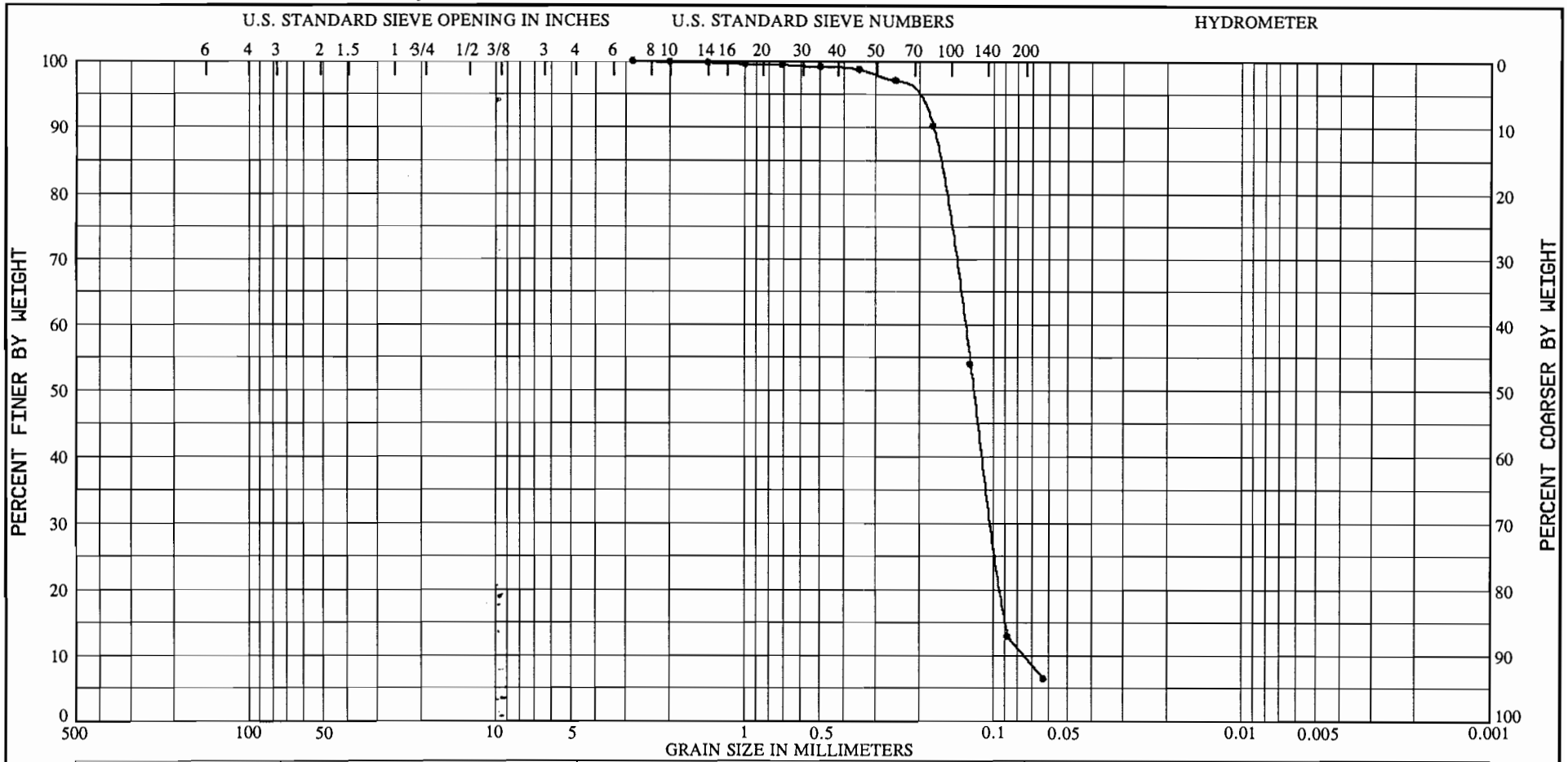
Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
3	-10.7 / -12.7	(VISUAL) LT GRAY. CLAYEY SAND (SC).				
		SP GRAVITY = 2.75				
		NO VISIBLE SHELL.				

GRADATION CURVES

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA
Lab No. 73/6566
Boring No. CB-VIWW94-3
Date 08/22/94

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



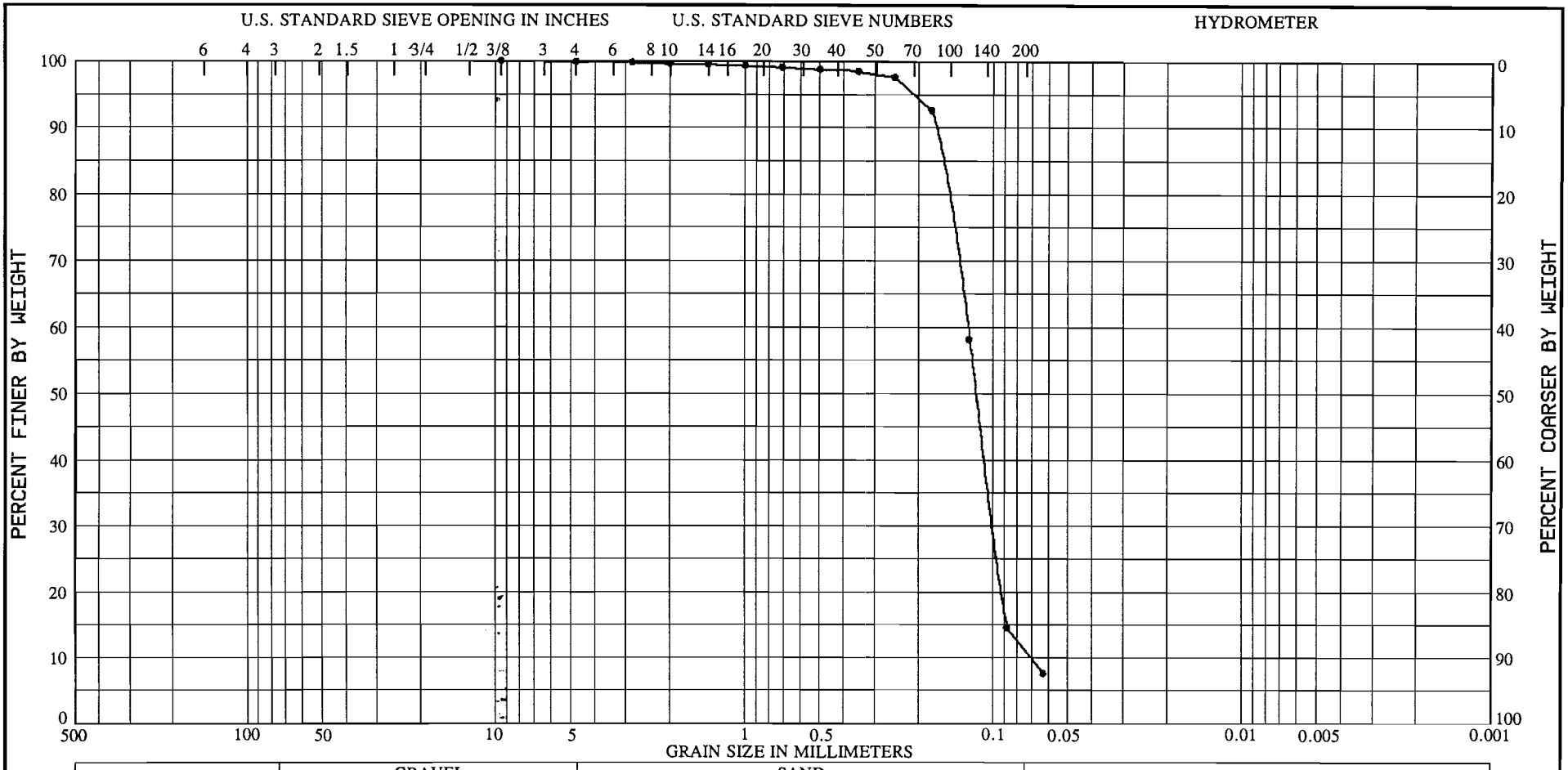
Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
1	-6.0 / -11.0	(VISUAL) LT. GRAY, POORLY GRADED SILTY				
		SAND (SP-SM).				
		SP GRAVITY = 2.67				
		VISUAL PERCENT SHELL IS APPROX. < 1 %.				

GRADATION CURVES

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA
Lab No. 73/6567
Boring No. CB-VIWW94-4
Date 08/22/94

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

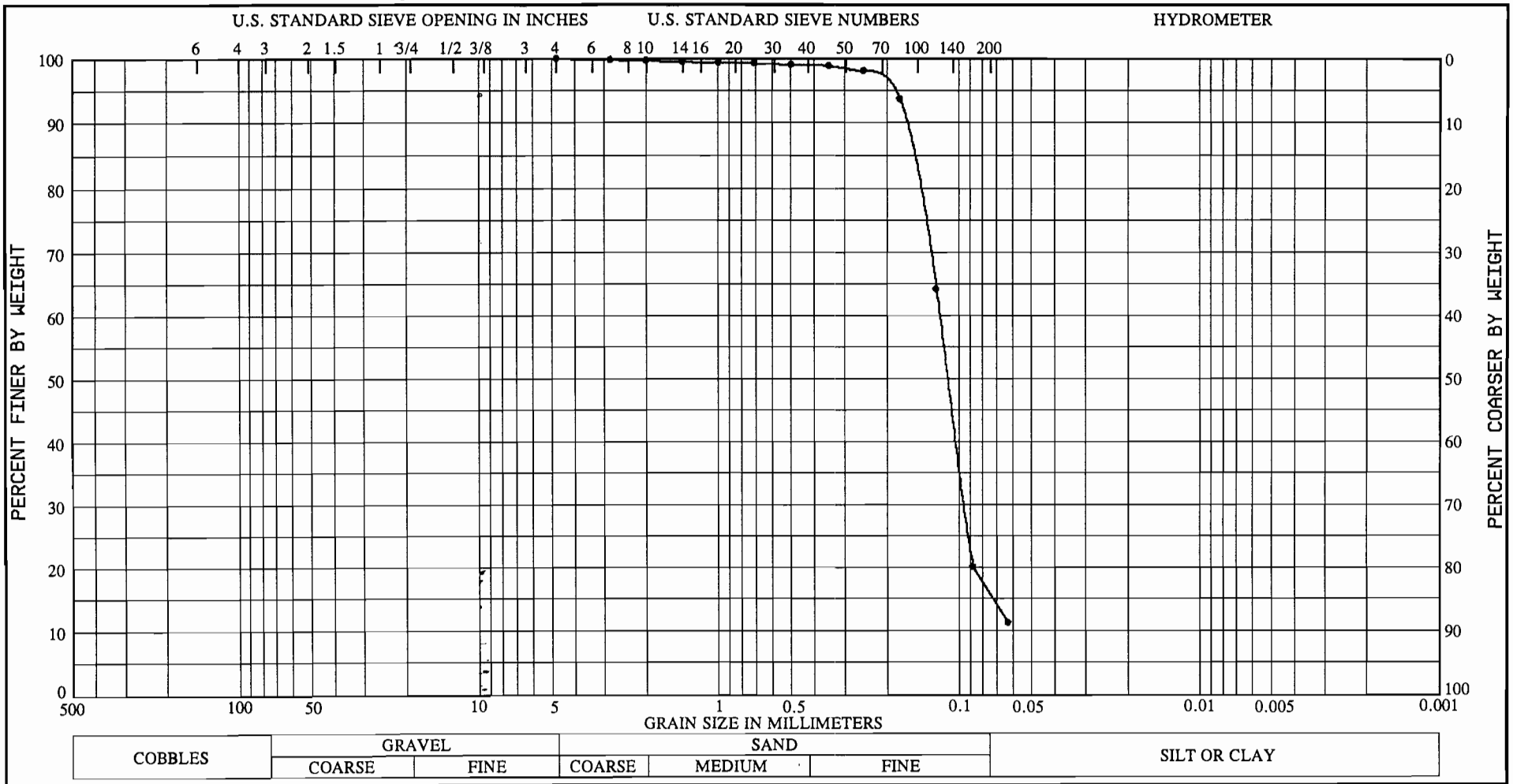
Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
1	-6.6 / -9.1	(VISUAL) GRAY, POORLY GRADED SILTY SAND				
		(SP-SM), WITH A TRACE OF SHELL FRAGMENTS.				
		SP GRAVITY = 2.68				
		VISUAL PERCENT SHELL IS APPROX. 1 %.				

GRADATION CURVES

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA
Lab No. 73/6568
Boring No. CB-VIWW94-5
Date 08/22/94

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

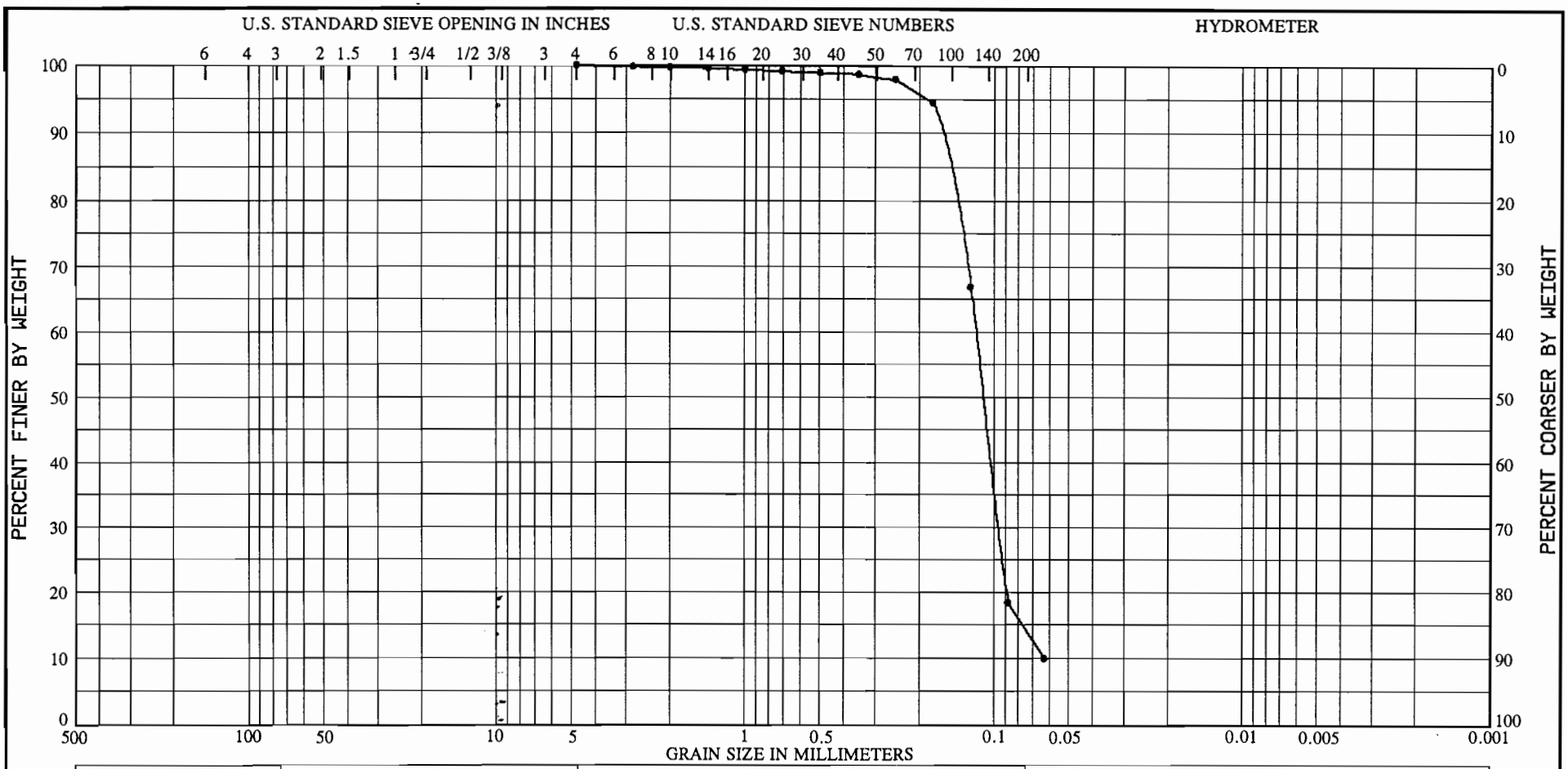
Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
2	-9.1 / -11.6	(VISUAL) LT GRAY. SILTY SAND (SM), WITH				
		A TRACE OF SHELL FRAGMENTS.				
		SP GRAVITY = 2.67				
		VISUAL PERCENT SHELL IS APPROX. 1 %.				

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA
Lab No. 73/6569
Boring No. CB-VIWW94-5
Date 08/22/94

GRADATION CURVES

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

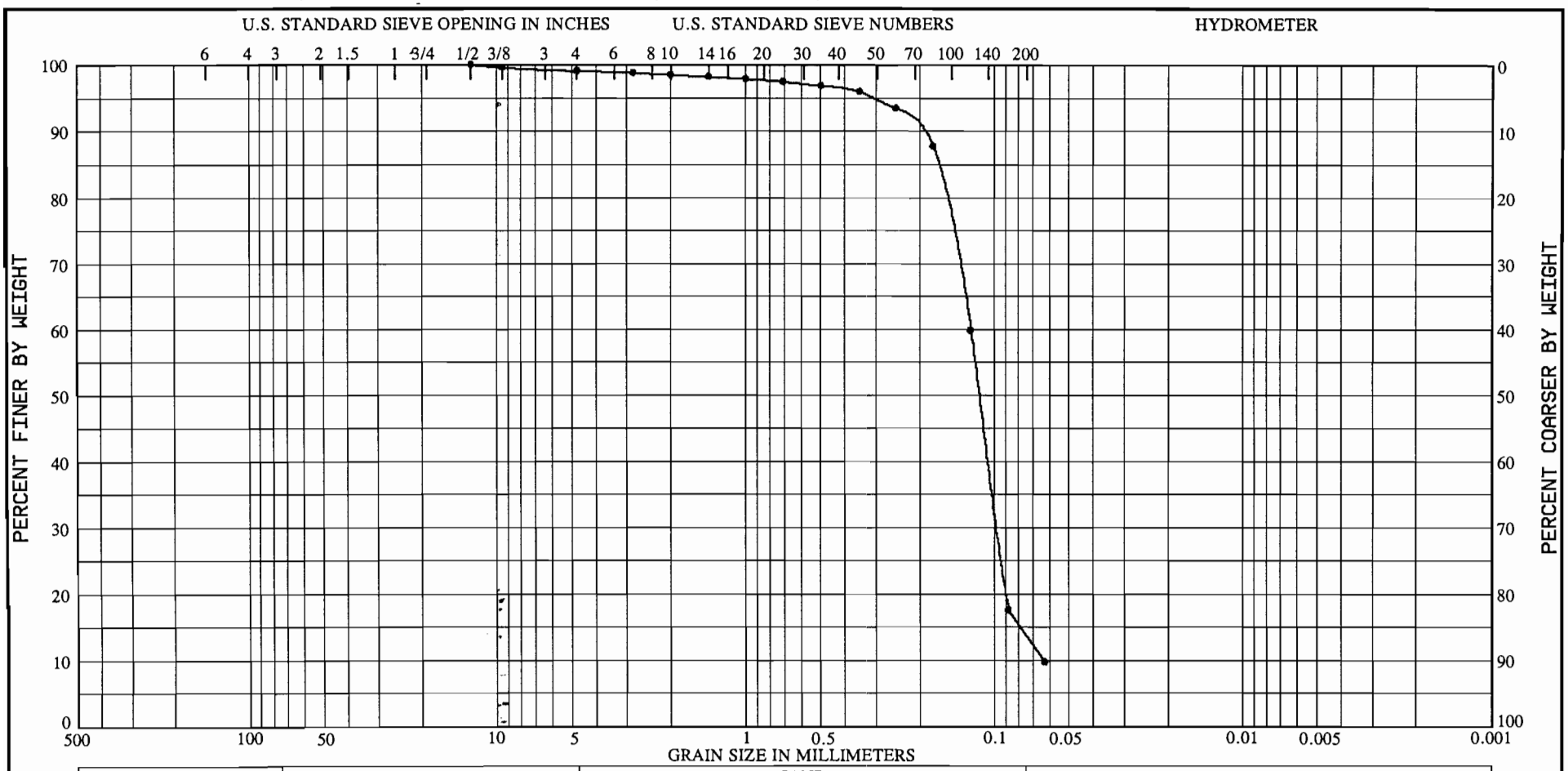
Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
1	-8.0 / -10.5	(VISUAL) GRAY, SILTY SAND (SM), WITH				
		A TRACE OF SHELL FRAGMENTS.				
		SP GRAVITY = 2.66				
		VISUAL PERCENT SHELL IS APPROX. 1 %.				

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA
Lab No. 73/6570
Boring No. CB-VIWW94-6
Date 08/22/94

GRADATION CURVES

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
2	-10.5 / -13.0	(VISUAL) LT GRAY, SILTY SAND (SM), WITH				
		A TRACE OF SHELL FRAGMENTS.				
		SP GRAVITY = 2.66				
		VISUAL PERCENT SHELL IS APPROX. 2 %.				

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA

Lab No. 73/6571

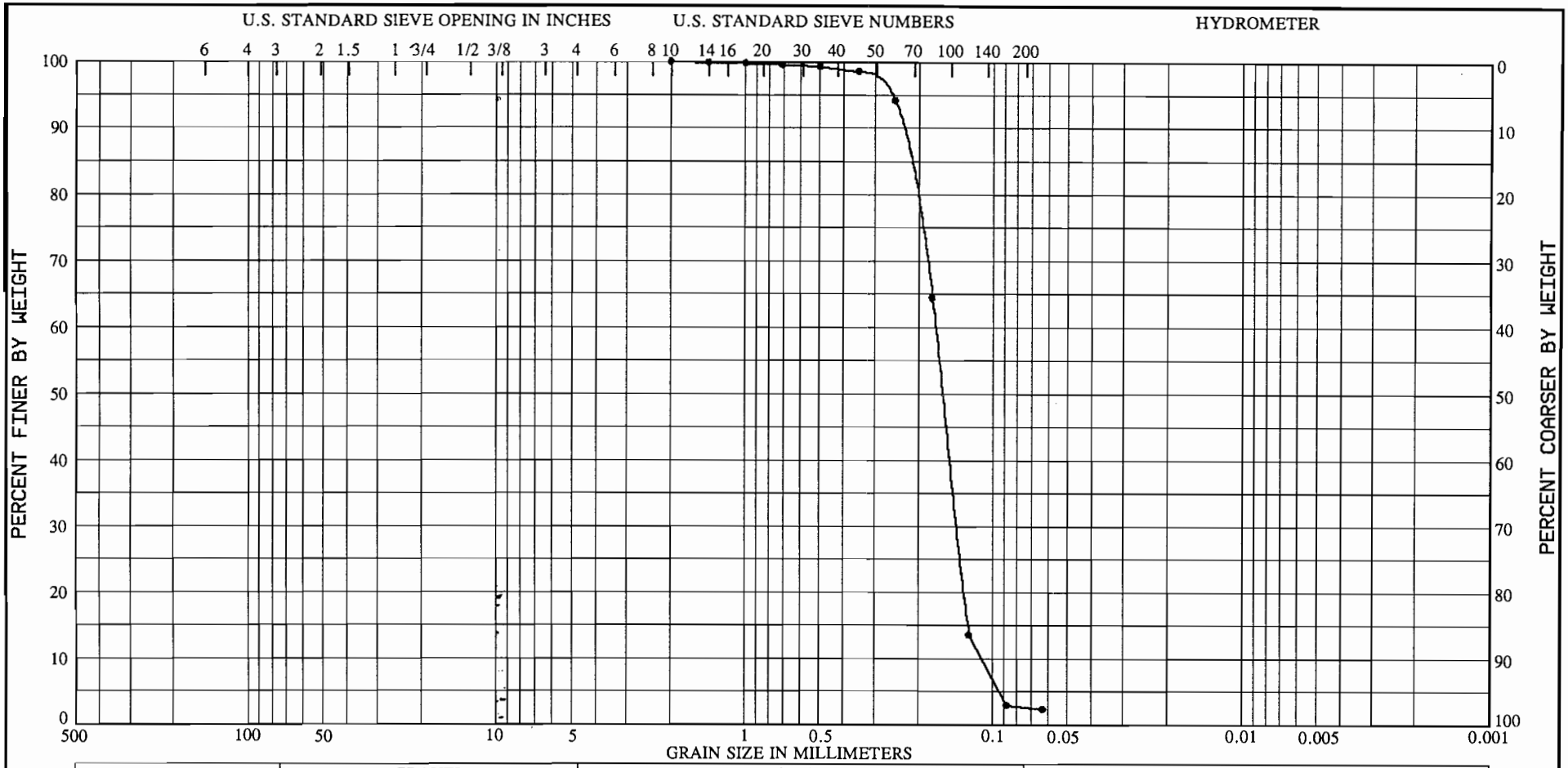
Boring No. CB-VIWW94-6

Date 08/22/94

GRADATION CURVES

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE , MARIETTA, GA. 30060

WORK ORDER: 7395
REQUISITION: RM-CW-94-0158



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

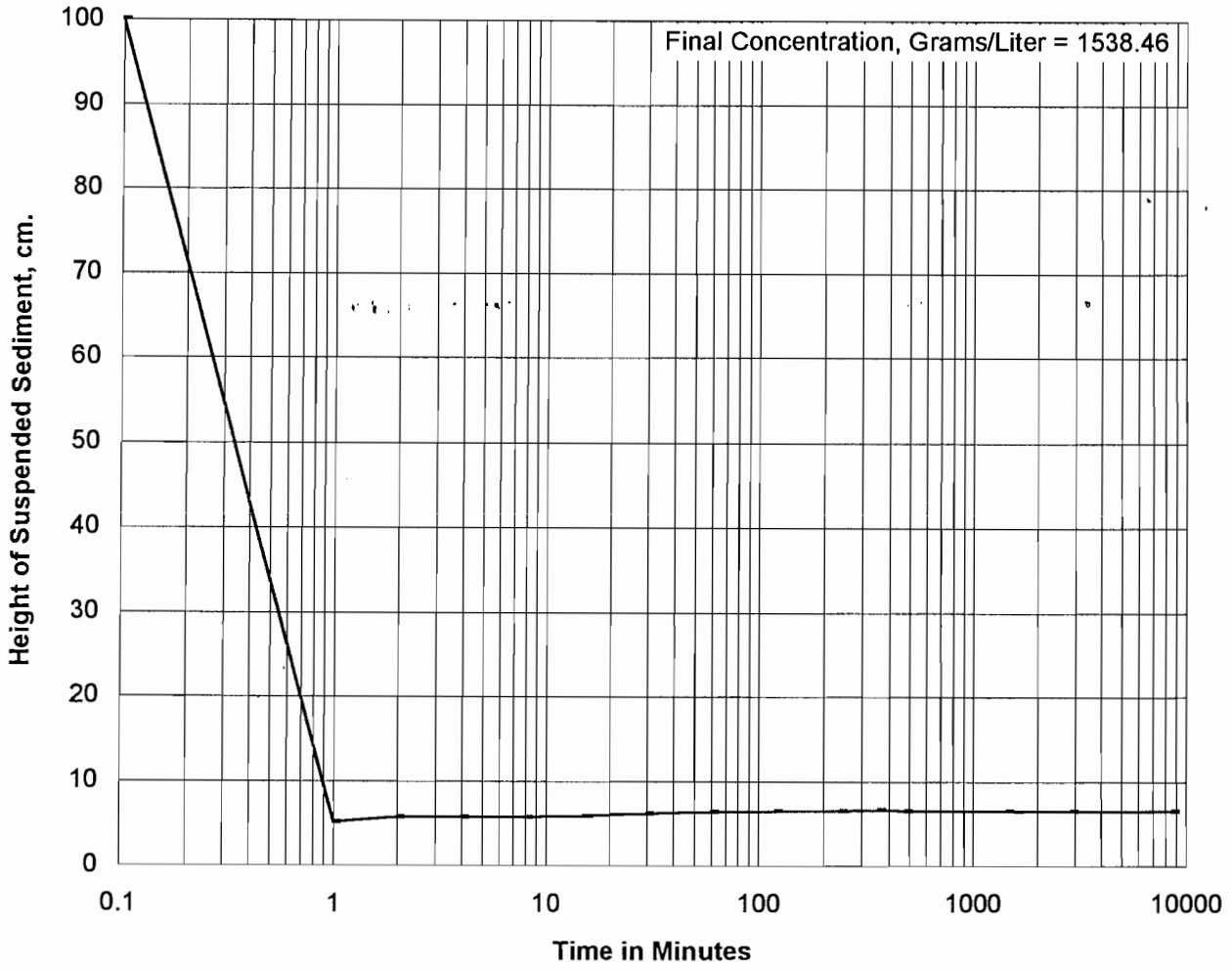
Sample No.	Elev.	Classification	Nat w%	LL	PL	PI
1	-8.6 / -13.6	(VISUAL) LT. GRAY, POORLY GRADED SAND				
		(SP).				
		SP. GRAVITY = 2.67				
		VISUAL PERCENT SHELL IS APPROX. < 1 %.				

GRADATION CURVES

Project VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA
Lab No. 73/6572
Boring No. CB-VIWW94-7
Date 08/23/94

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

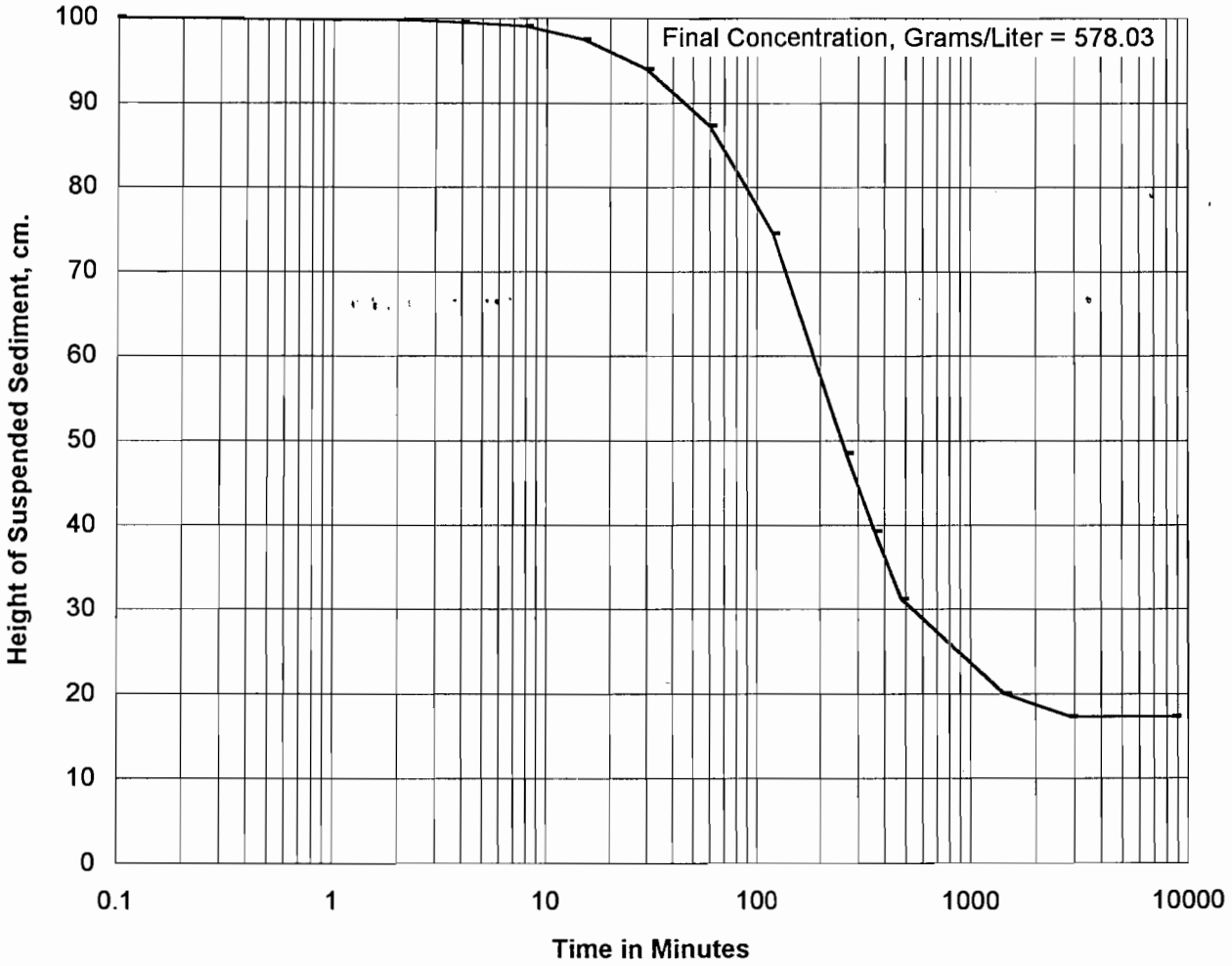


NOTES:
1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 81.99

PROJECT:	VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA	**REQ'N NO:**	RM-CW-94-0158
		W.O. NO:	7395
AREA:		**DATE RECEIVED:**	15-Aug-94
		DATE REPORTED:	23-Aug-94
BORING NO:	CB-VIWW94-3	**ELEV:**	-3.7 TO -8.7
SAMPLE NO:	1	**LAB NO:**	73/6565

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

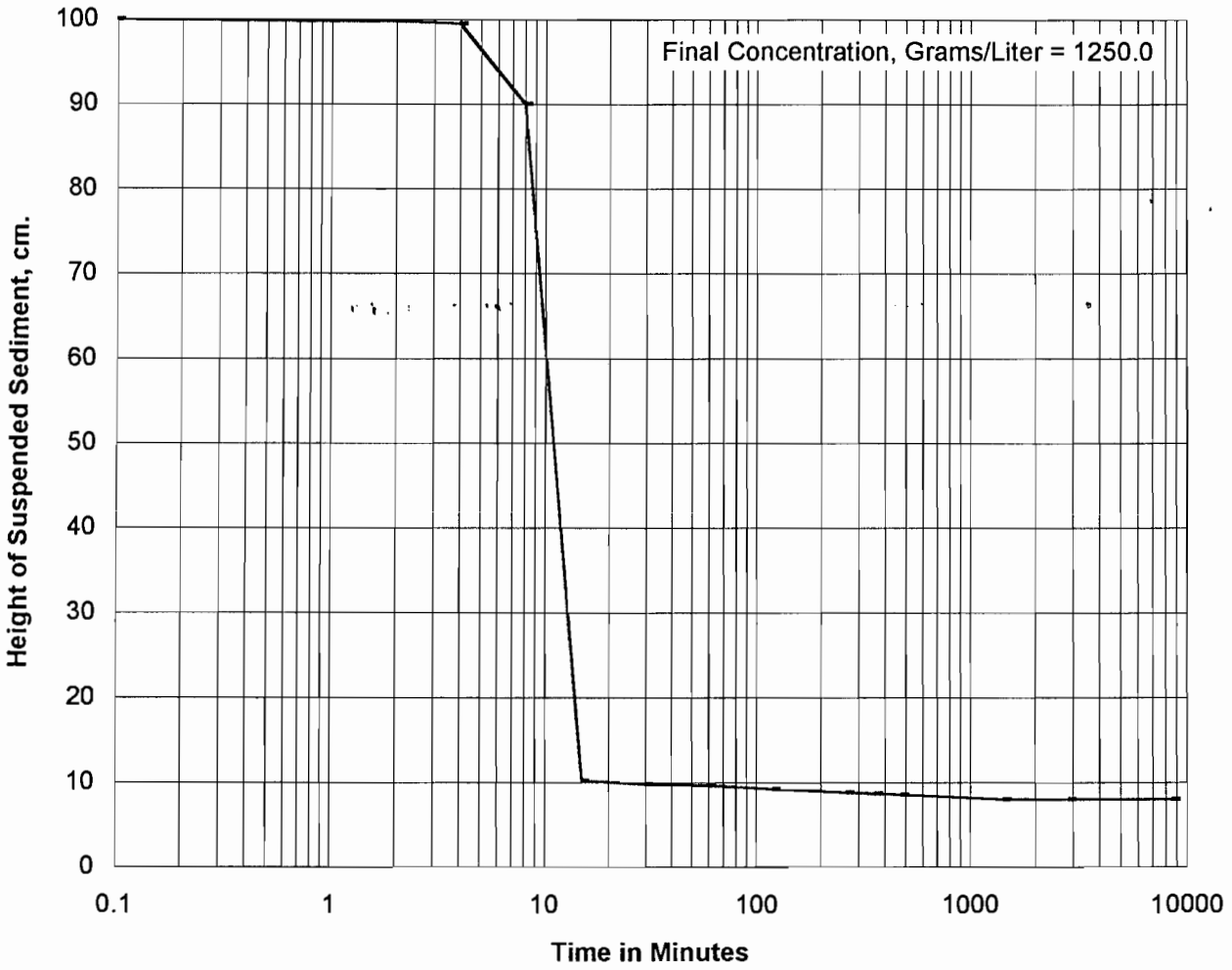


NOTES:
1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 87.41

PROJECT:	VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA	**REQ'N NO:**	RM-CW-94-0158
		W.O. NO:	7395
AREA:		**DATE RECEIVED:**	15-Aug-94
		DATE REPORTED:	23-Aug-94
BORING NO:	CB-VIWW94-3	**ELEV:**	-10.7 TO -12.7
SAMPLE NO:	3	**LAB NO:**	73/6566

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

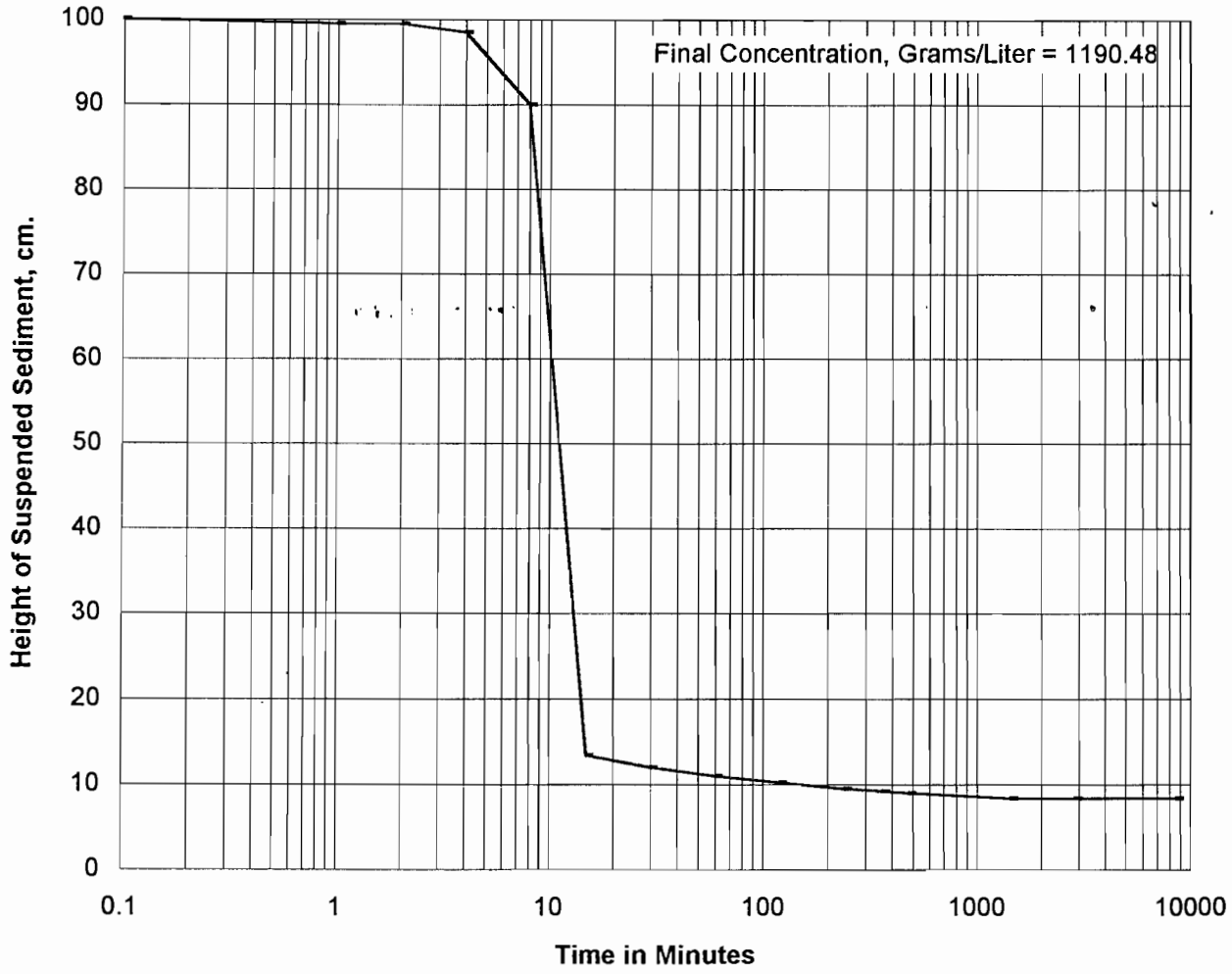


NOTES:
1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 79.95

PROJECT:	VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA	**REQ'N NO:**	RM-CW-94-0158
		W.O. NO:	7395
AREA:		**DATE RECEIVED:**	15-Aug-94
		DATE REPORTED:	23-Aug-94
BORING NO:	CB-VIWW94-4	**ELEV:**	-6.0 TO -11.0
SAMPLE NO:	1	**LAB NO:**	73/6567

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

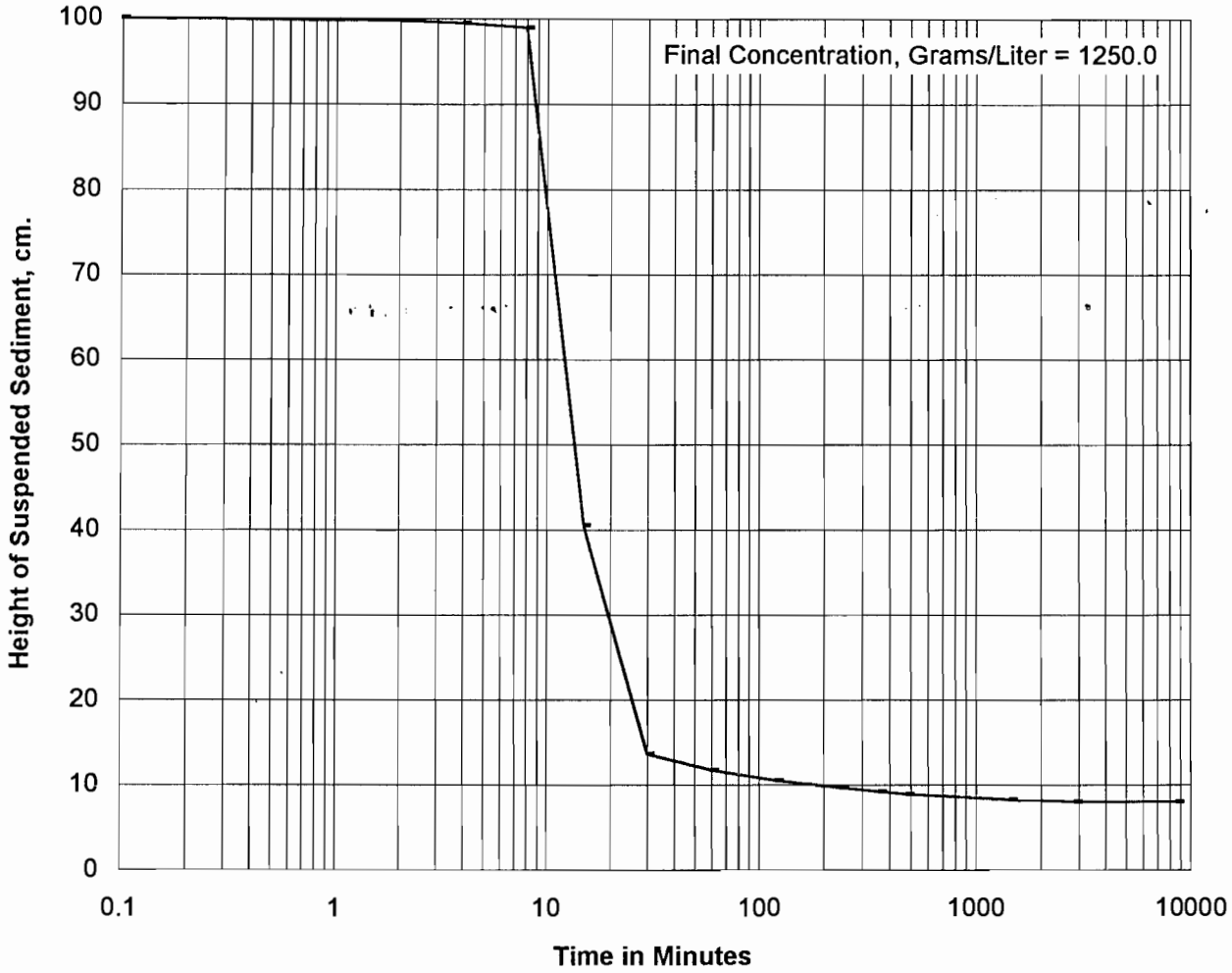


NOTES:
1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 80.61

PROJECT:	VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA	**REQ'N NO:**	RM-CW-94-0158
		W.O. NO:	7395
AREA:		**DATE RECEIVED:**	15-Aug-94
		DATE REPORTED:	23-Aug-94
BORING NO:	CB-VIWW94-5	**ELEV:**	-6.6 TO -9.1
SAMPLE NO:	1	**LAB NO:**	73/6568

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

SUSPENDED SEDIMENT-TIME CURVE

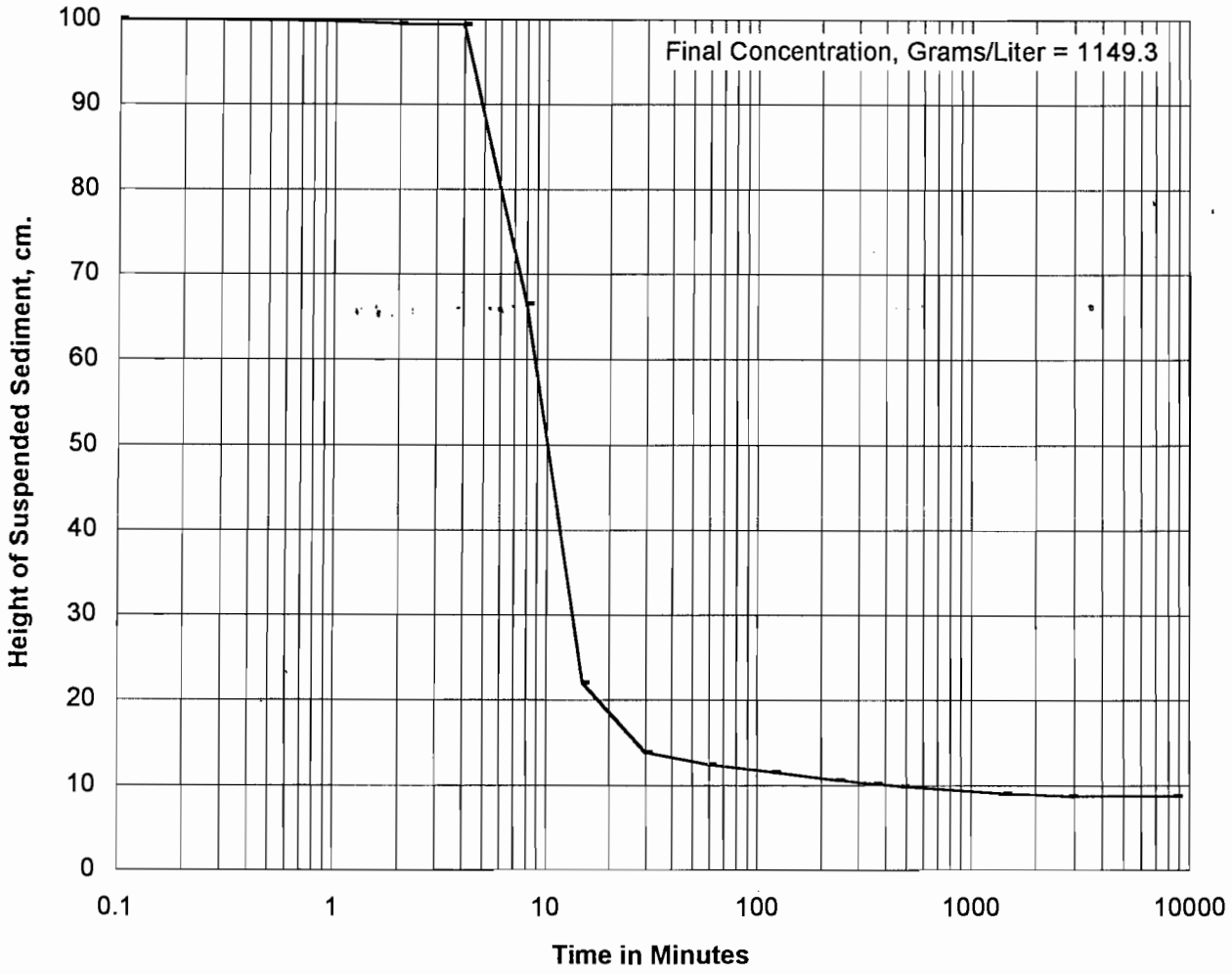


NOTES:
1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 80.00

PROJECT:	VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA	**REQ'N NO:**	RM-CW-94-0158
		W.O. NO:	7395
AREA:		**DATE RECEIVED:**	15-Aug-94
		DATE REPORTED:	23-Aug-94
BORING NO:	CB-VIWW94-5	**ELEV:**	-9.1 TO -11.6
SAMPLE NO:	2	**LAB NO:**	73/6569

U.S. ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION LABORATORY
MARIETTA, GEORGIA

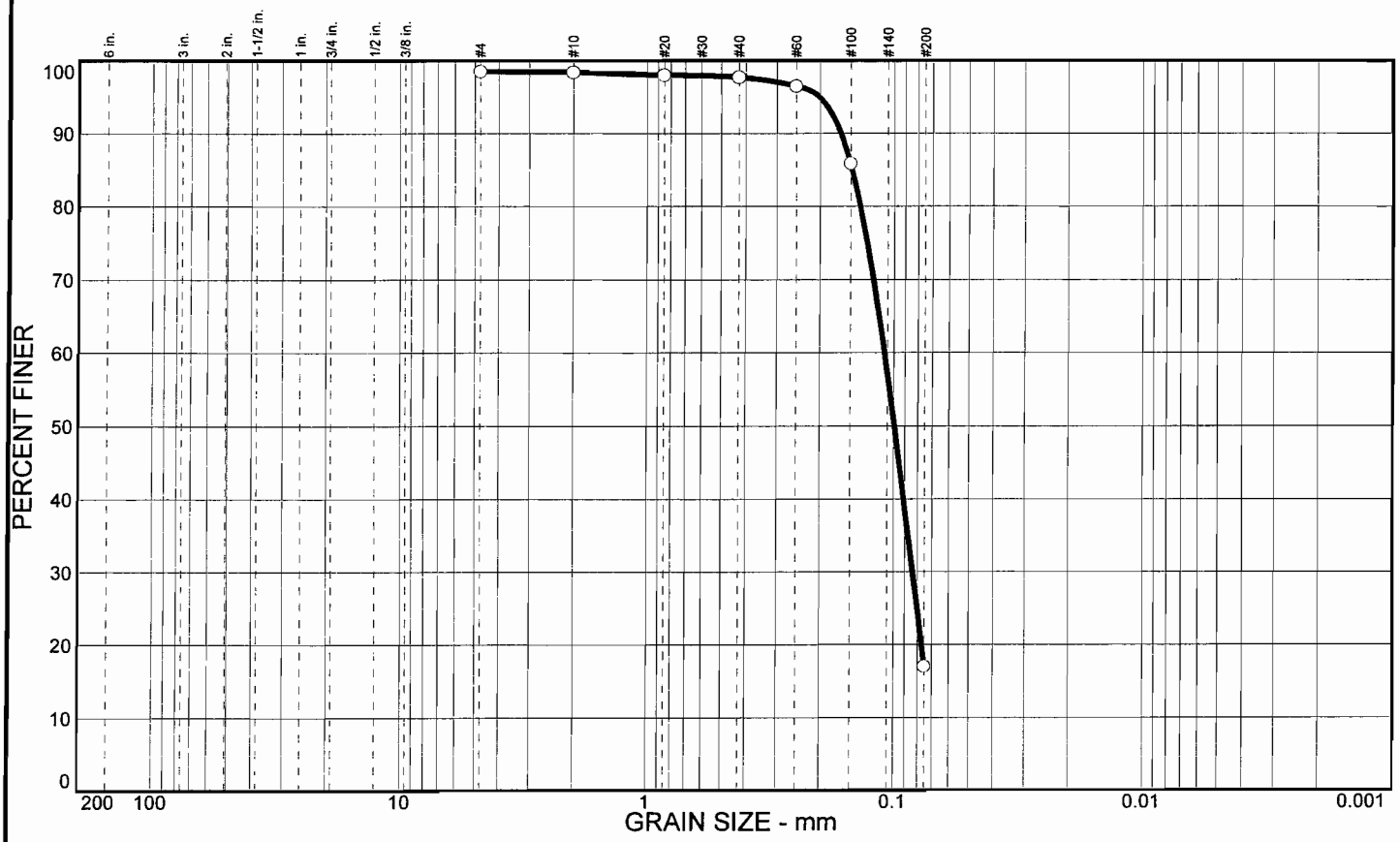
SUSPENDED SEDIMENT-TIME CURVE



NOTES:
1. Test specimens (100 grams/ liter ,moist weight of specimen) suspended in sea water(salinity about 11 ppT) in 100 cm. long bottom withdrawal tubes.
2. Suspended sediment-time curves represent the contact surface between the sediment still in suspension and the "clear" water on top at the elapsed time indicated.
3. See grain-size data on enclosed gradation curve.
4. Percent Solids = 79.81

PROJECT:	VENICE INLET GIWW MAINT. DREDGING & SNAKE ISLAND DISPOSAL AREA	**REQ'N NO:**	RM-CW-94-0158
		W.O. NO:	7395
AREA:		**DATE RECEIVED:**	15-Aug-94
		DATE REPORTED:	23-Aug-94
BORING NO:	CB-VIWW94-6	**ELEV:**	-8.0 TO -10.5
SAMPLE NO:	1	**LAB NO:**	73/6570

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			81.5	17.0		SM	A-2-4(0)		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.109		
D_{30}	0.0835		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○
#4	98.5
#10	98.4
#20	98.0
#40	97.7
#60	96.5
#100	85.9
#200	17.0

SOIL DESCRIPTION

○ SAND, fine quartz, little silt, gray-dark gray

REMARKS:

○

○ Source: Boring No. 128 Sample No.: 1 Elev./Depth: 0.0 - 2.0

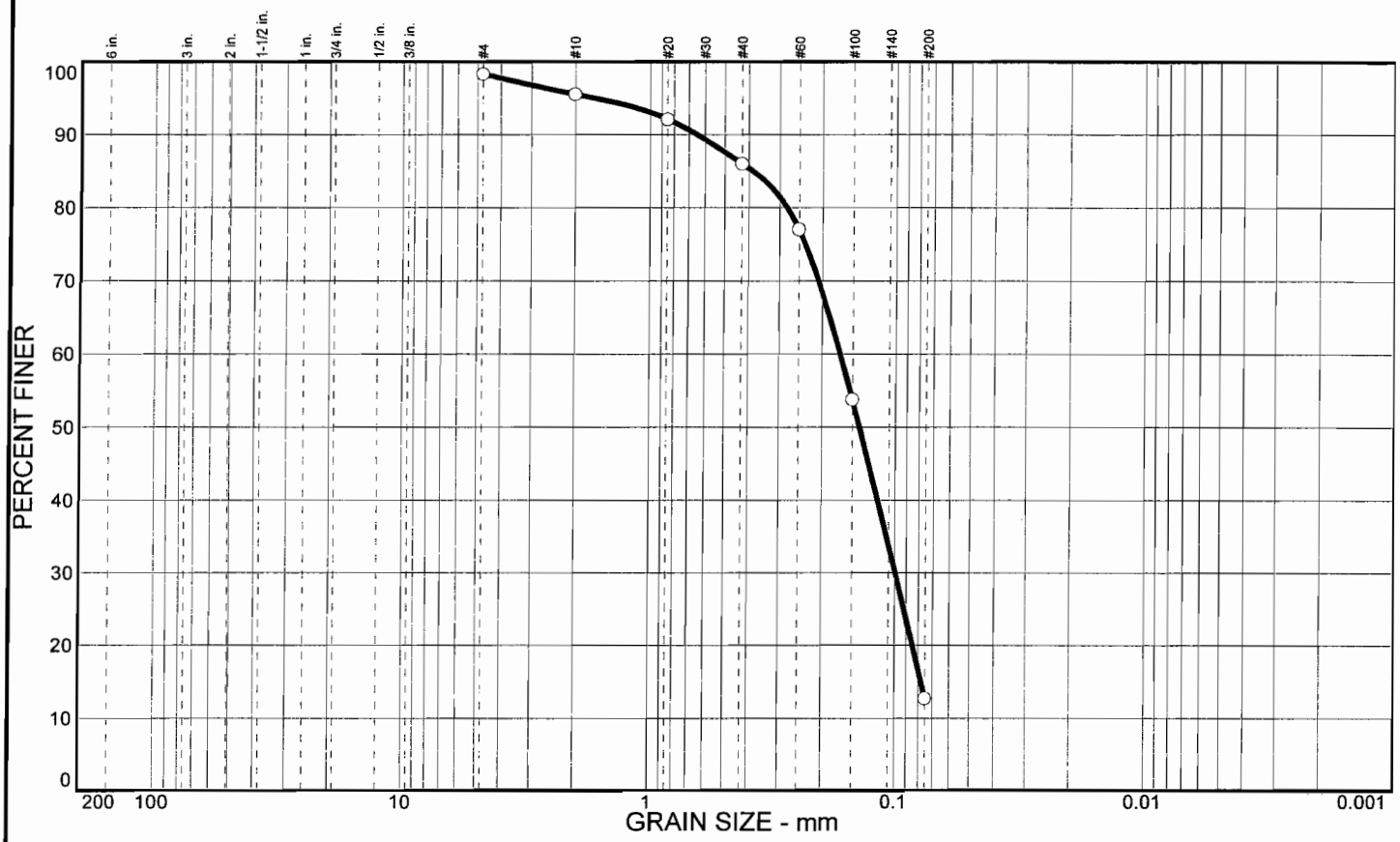
Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part Two

Project No.: 40521-8-8051-40

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			85.6	12.7		SM	A-2-4(0)		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.168		
D_{30}	0.0996		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	98.3		
#10	95.5		
#20	92.1		
#40	86.0		
#60	77.0		
#100	53.8		
#200	12.7		

SOIL DESCRIPTION

○ SAND, fine quartz, little silt, trace fine gravel to sand size shell fragments, gray

REMARKS:

○

○ Source: Boring No. 128 Sample No.: 2 Elev./Depth: 2.0 - 4.0

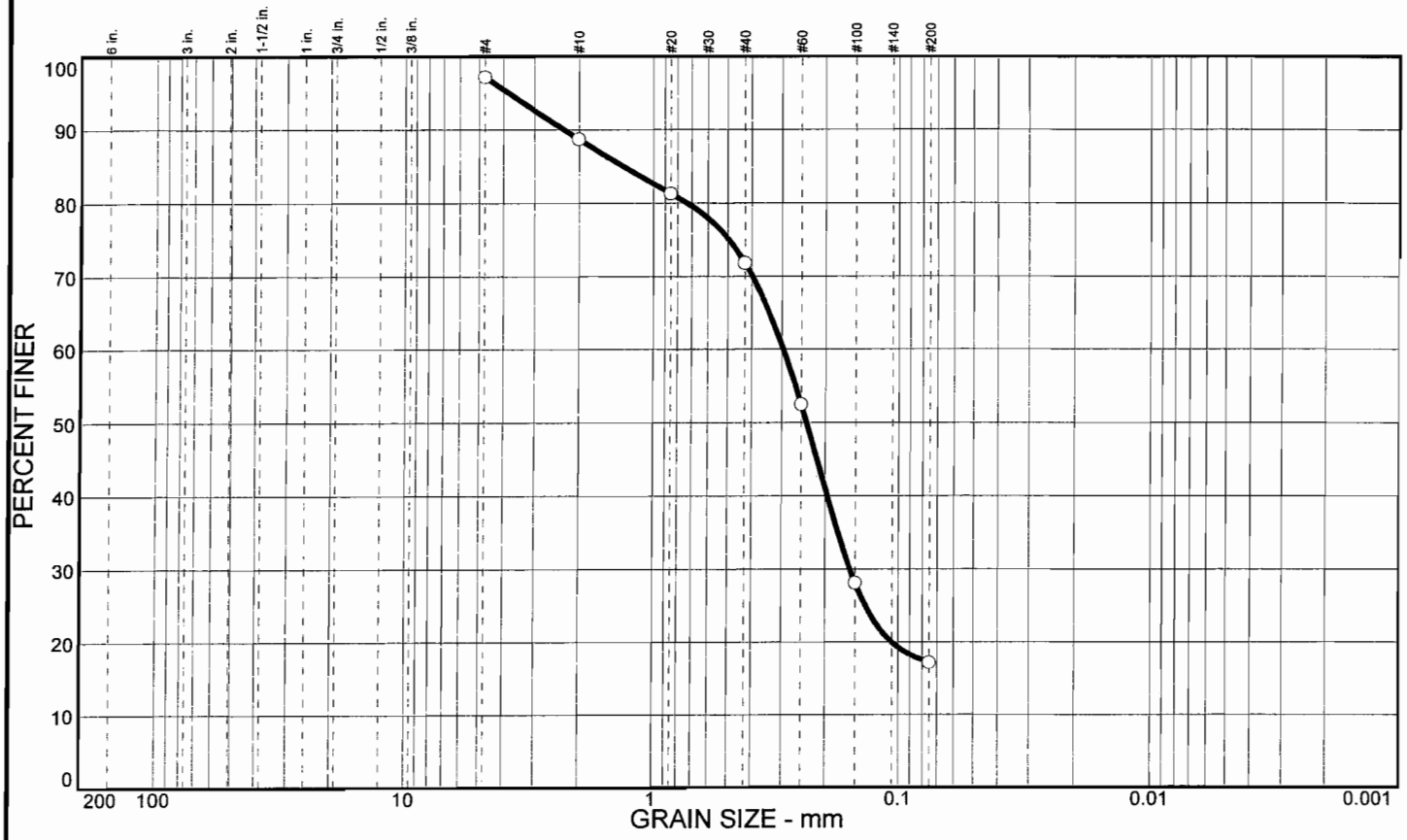
Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part Two

Project No.: 40521-8-8051-40

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			80.0	17.2		SC	A-2-6(0)		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.296		
D_{30}	0.158		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	97.2		
#10	88.7		
#20	81.3		
#40	71.8		
#60	52.5		
#100	28.1		
#200	17.2		

SOIL DESCRIPTION

○ SAND, fine to medium quartz, little clay, green-gray

REMARKS:

○

○ Source: Boring No. 129 Sample No.: 2 Elev./Depth: 3.7 - 4.2

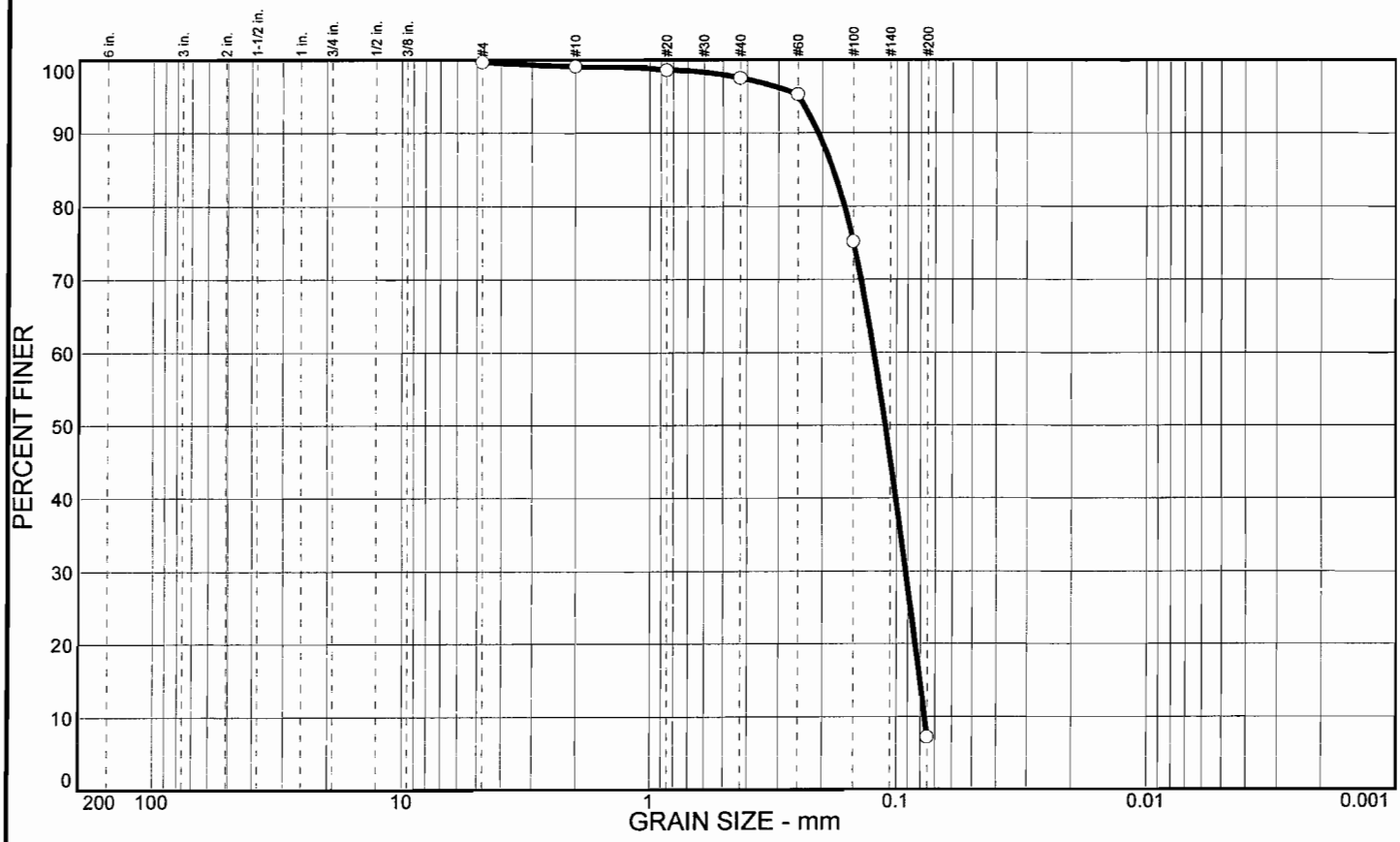
Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part Two

Project No.: 40521-8-8051-40

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			92.5	7.2		SP-SM	A-3		

SIEVE inches size	PERCENT FINER ○		

GRAIN SIZE			
D_{60}	0.123		
D_{30}	0.0917		
D_{10}	0.0769		

COEFFICIENTS			
C_c	0.89		
C_u	1.60		

SIEVE number size	PERCENT FINER ○		
#4	99.7		
#10	99.1		
#20	98.6		
#40	97.5		
#60	95.3		
#100	75.2		
#200	7.2		

SOIL DESCRIPTION

○ SAND, fine quartz, trace silt, dark gray- gray

REMARKS:

○

○ Source: Boring No. 130 Sample No.: 1 Elev./Depth: 0.0 - 2.5

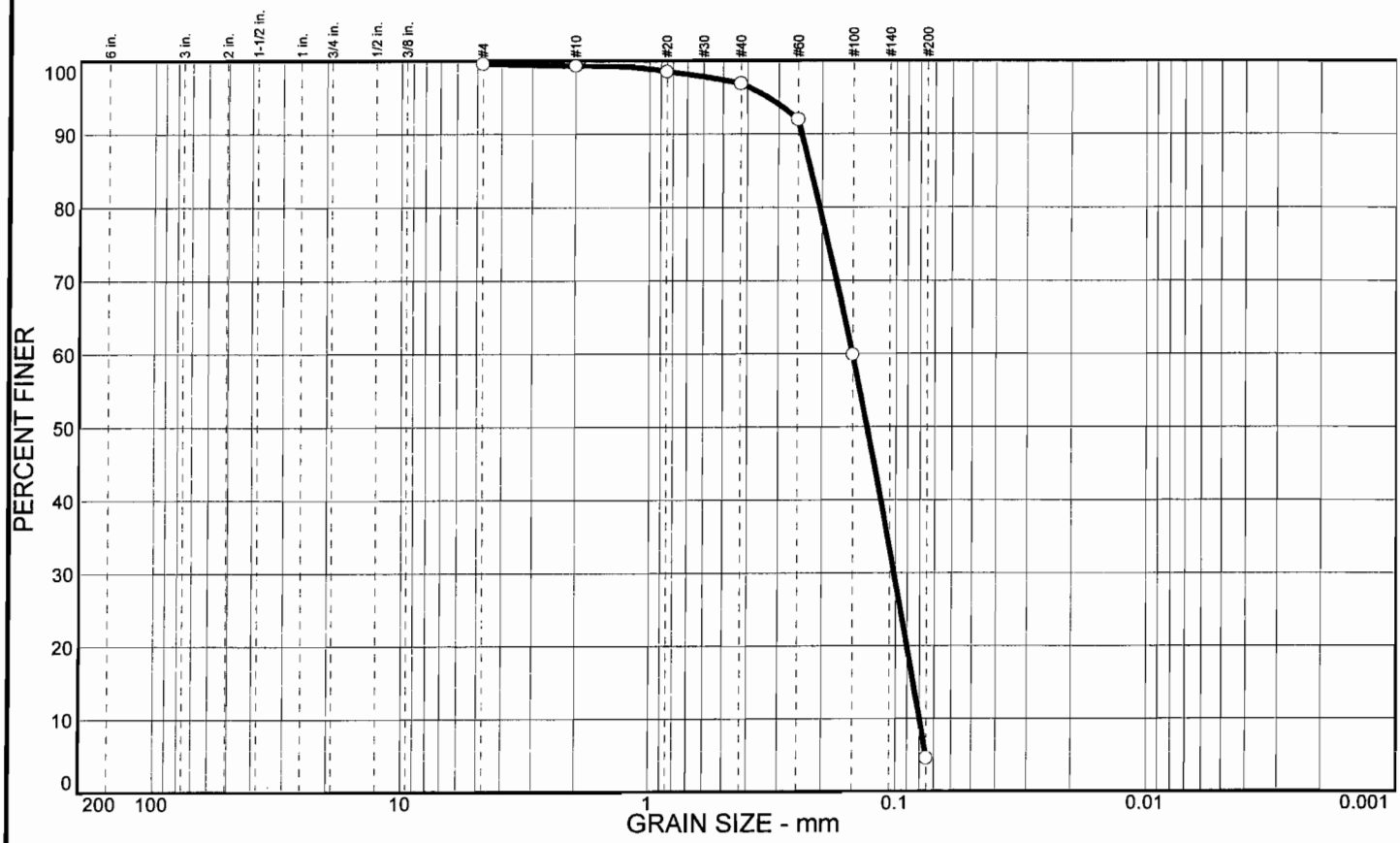
Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part Two

Project No.: 40521-8-8051-40

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			95.0	4.6		SP	A-3		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.150		
D_{30}	0.102		
D_{10}	0.0800		
	COEFFICIENTS		
C_C	0.86		
C_U	1.88		

SIEVE number size	PERCENT FINER ○
#4	99.6
#10	99.3
#20	98.5
#40	96.9
#60	92.0
#100	59.9
#200	4.6

SOIL DESCRIPTION

○ SAND, fine quartz, trace silt, tan

REMARKS:

○

○ Source: Boring No. 131 Sample No.: 1 Elev./Depth: 0.0 - 1.4

Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part Two

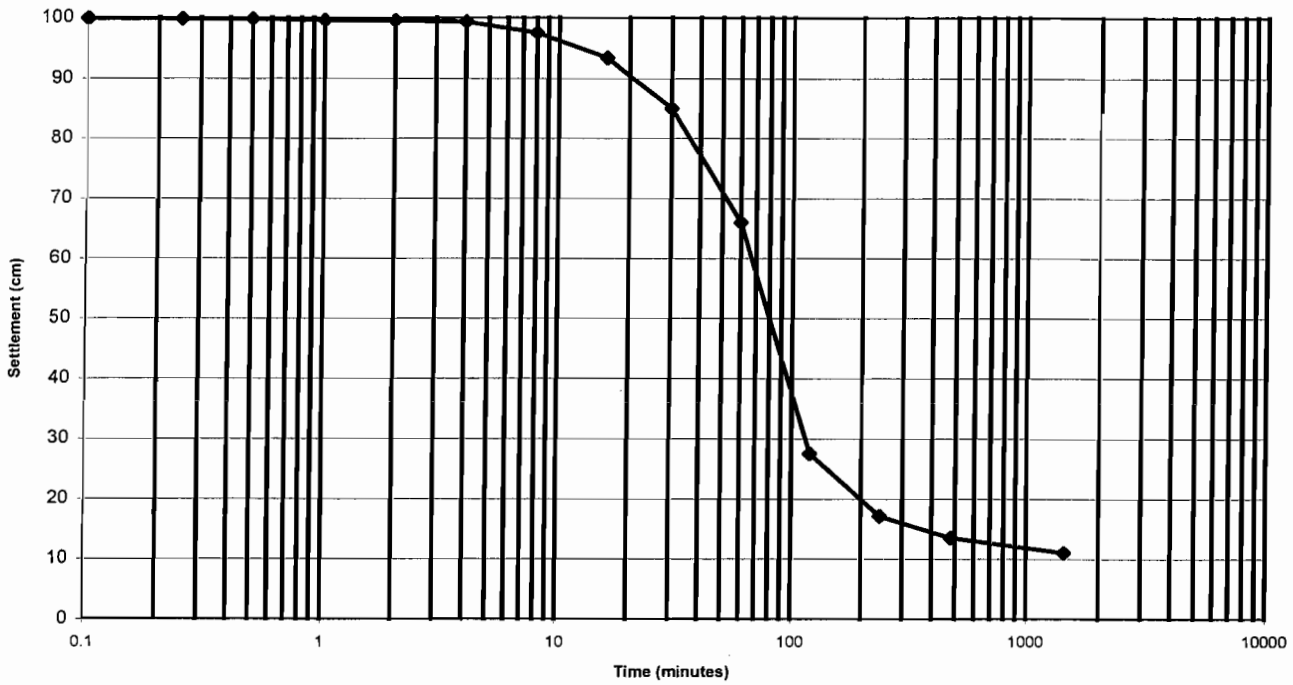
Project No.: 40521-8-8051-40

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904)396-5173

REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-8-8051-40
PROJECT: GIWWOO Part 2
CLIENT: USACE, Jacksonville District

STATION CB-GIWWOO-130
SAMPLE NO 4
CONCENTRATION: 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	99.9	30	85
0.25	99.8	60	66
0.5	99.8	120	27.5
1	99.6	240	17.1
2	99.5	480	13.5
4	99.3	1440	11
8	97.5	0	0
16	93.4		

Final Concentration: 909.09 g/L

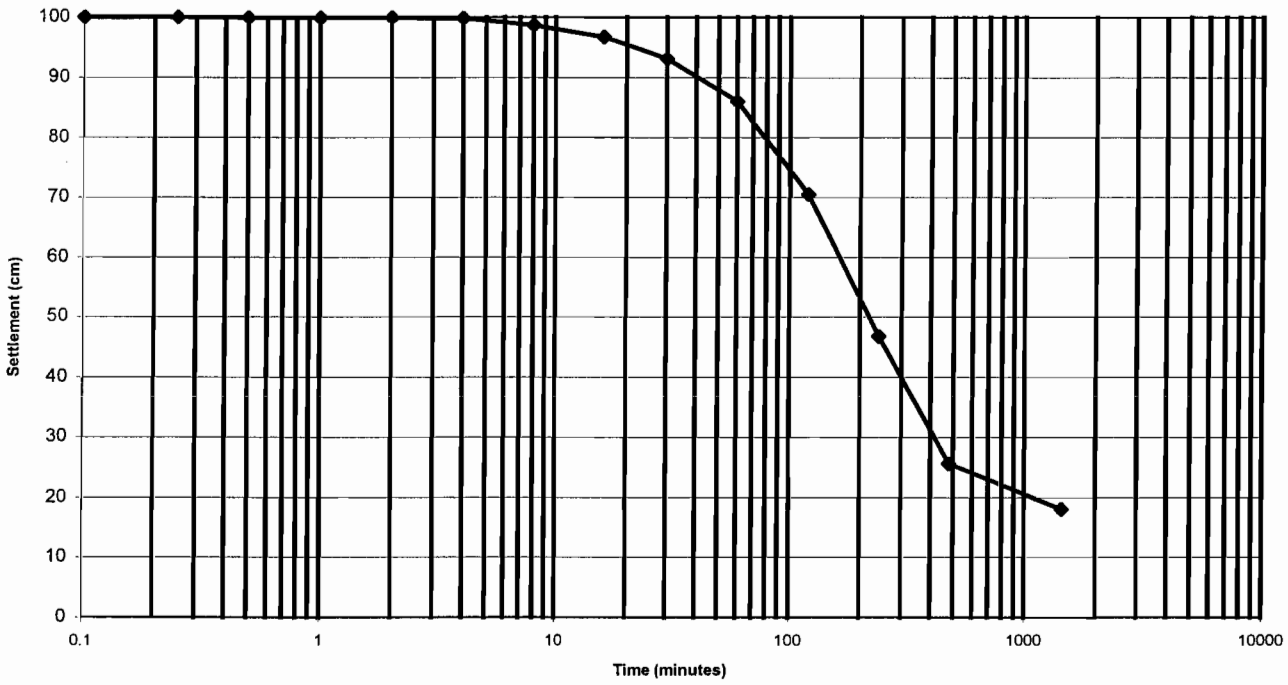
Salinity: 11 ppt

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES
3901 CARMICHAEL AVENUE
JACKSONVILLE, FLORIDA 32207
(904)396-5173

REPORT OF SETTLING RATE TESTING

LAW PROJECT NO: 40521-8-8051-40
PROJECT: GIWWOO Part 2
CLIENT: USACE, Jacksonville District

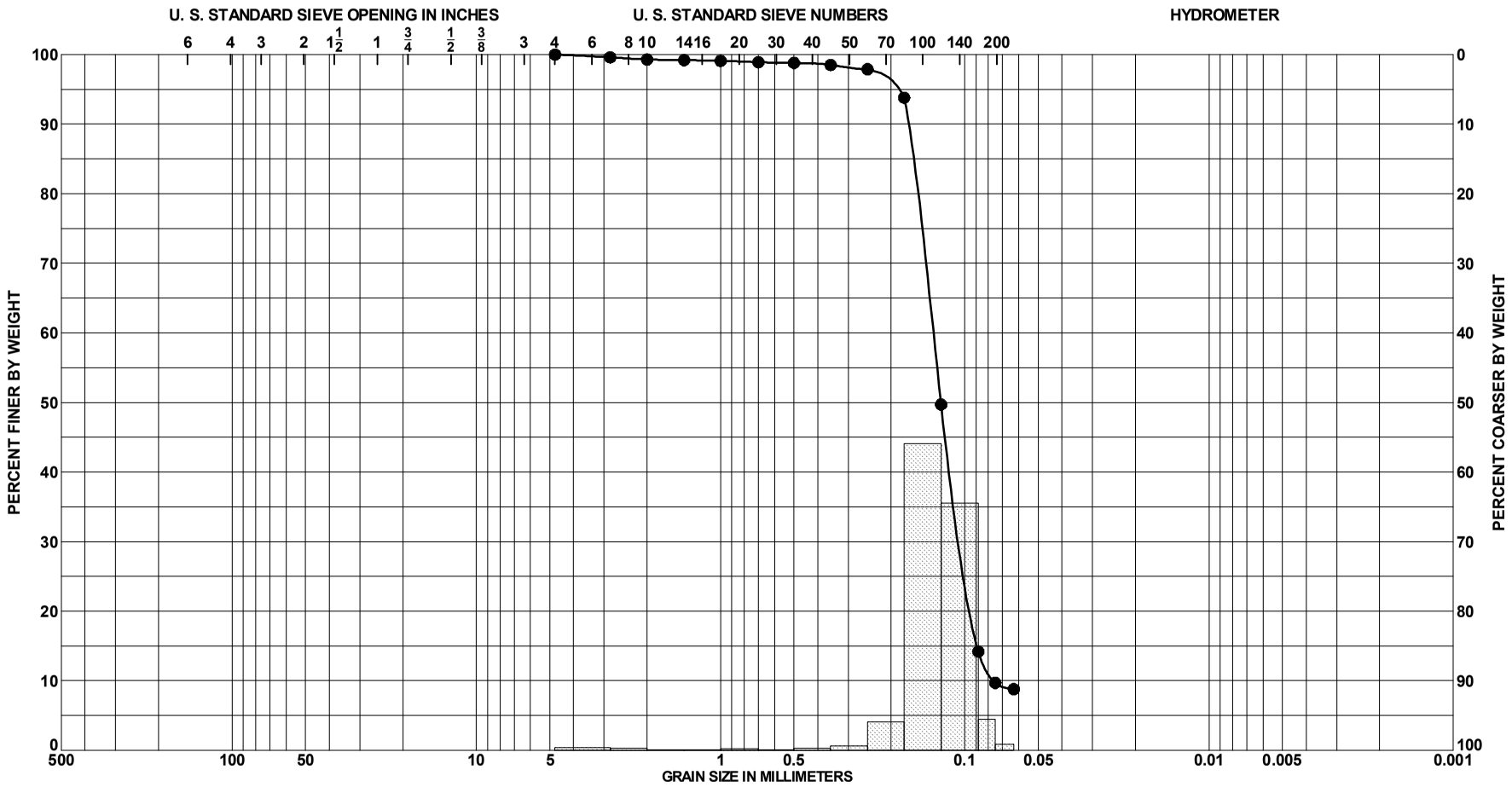
STATION CB-GIWWOO-131
SAMPLE NO 4
CONCENTRATION: 100 g/L



TIME	INTERFACE (cm)	TIME	INTERFACE (cm)
0.1	100	30	93.1
0.25	100	60	86
0.5	99.9	120	70.5
1	99.9	240	46.8
2	99.9	480	25.6
4	99.8	1440	18
8	98.7		
16	96.7		

Final Concentration: 555.56 g/L

Salinity: 11 ppt

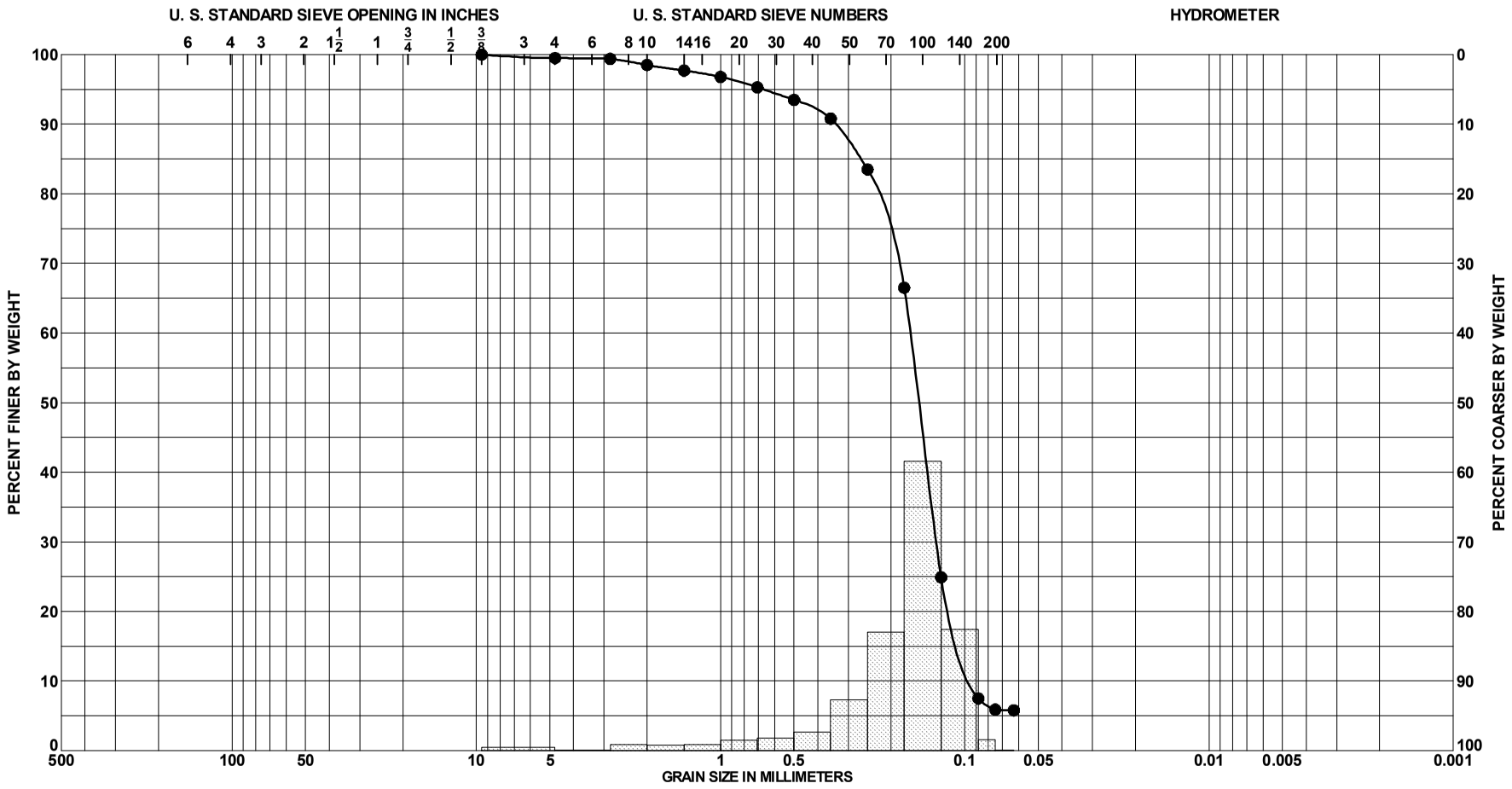


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1 & 3	to 10.6 Ft.	, gray (SP-SM)	2.5Y 6/1	10/2 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-01
BORING ELEV.	-7.0 Ft., MLLW
DATE	7/24/2006

SAJ FORM 2087
JUN 02

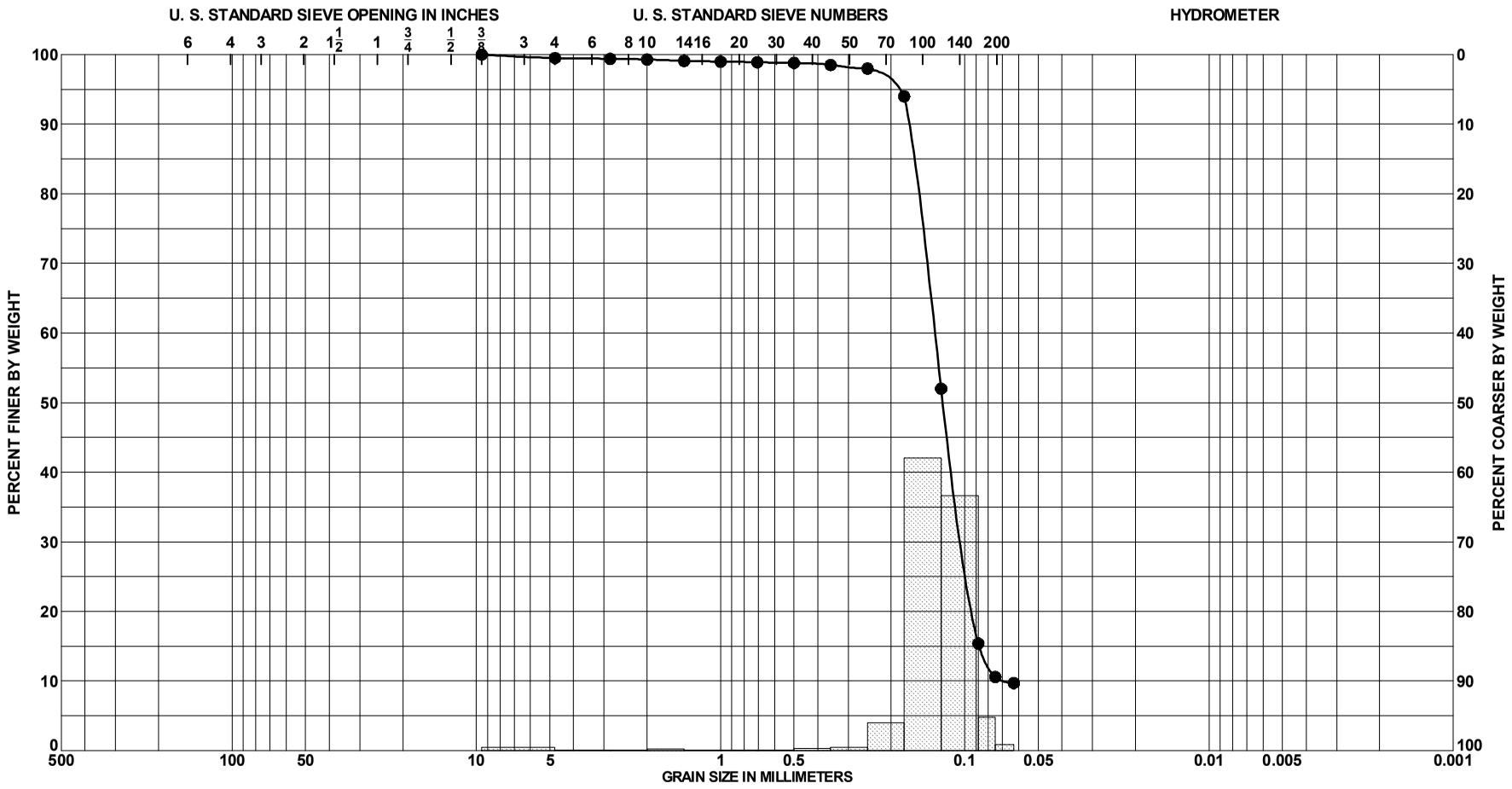


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	, gray (SP-SM)	2.5Y 6/1	5 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-01
BORING ELEV.	-7.0 Ft., MLLW
DATE	7/24/2006

SAJ FORM 2087
JUN 02

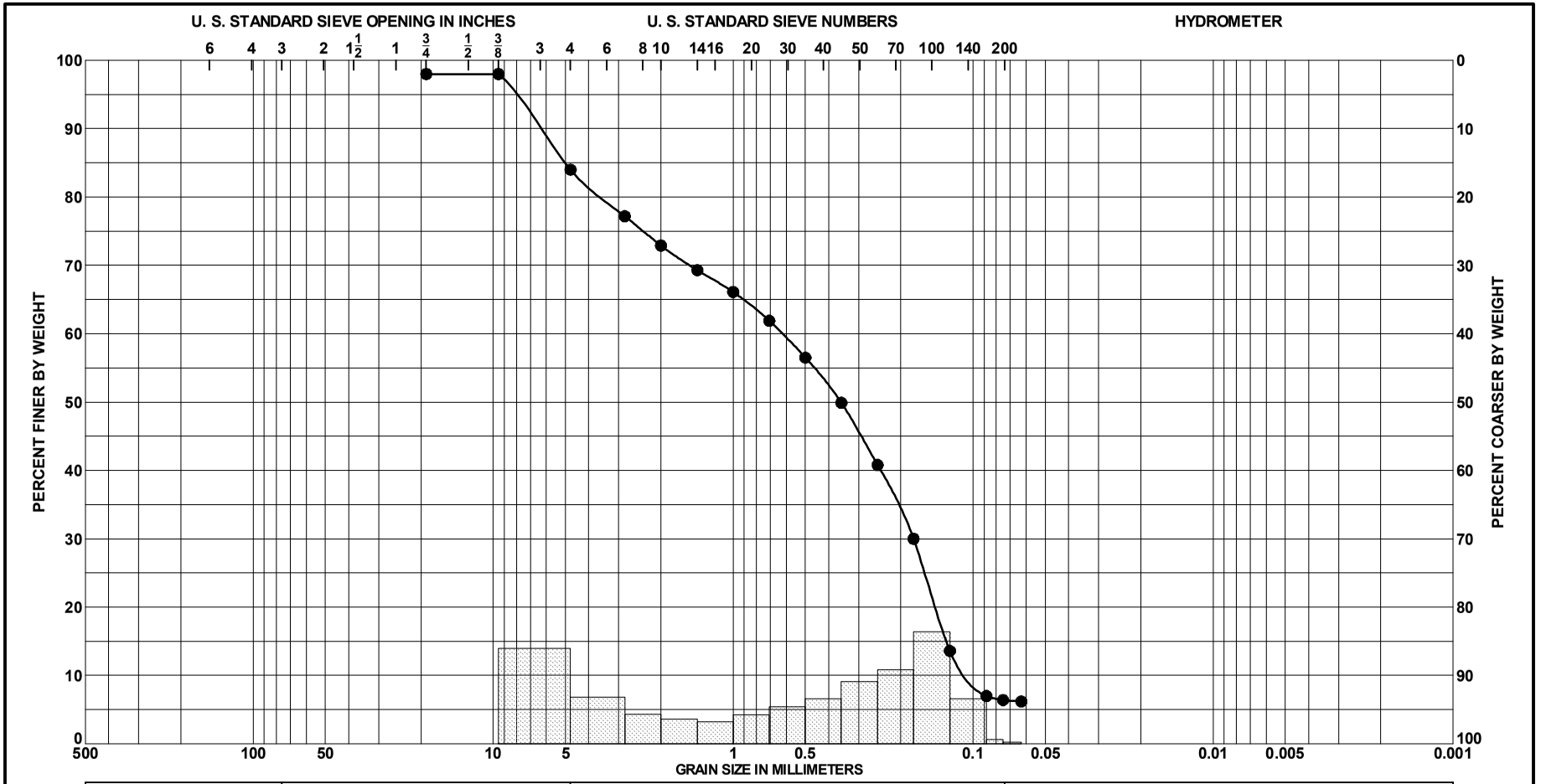


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	3.0 to 4.5 Ft.	, gray (SP-SM)	5Y 5/1	2 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-01
BORING ELEV.	-7.0 Ft., MLLW
DATE	7/24/2006

SAJ FORM 2087
JUN 02

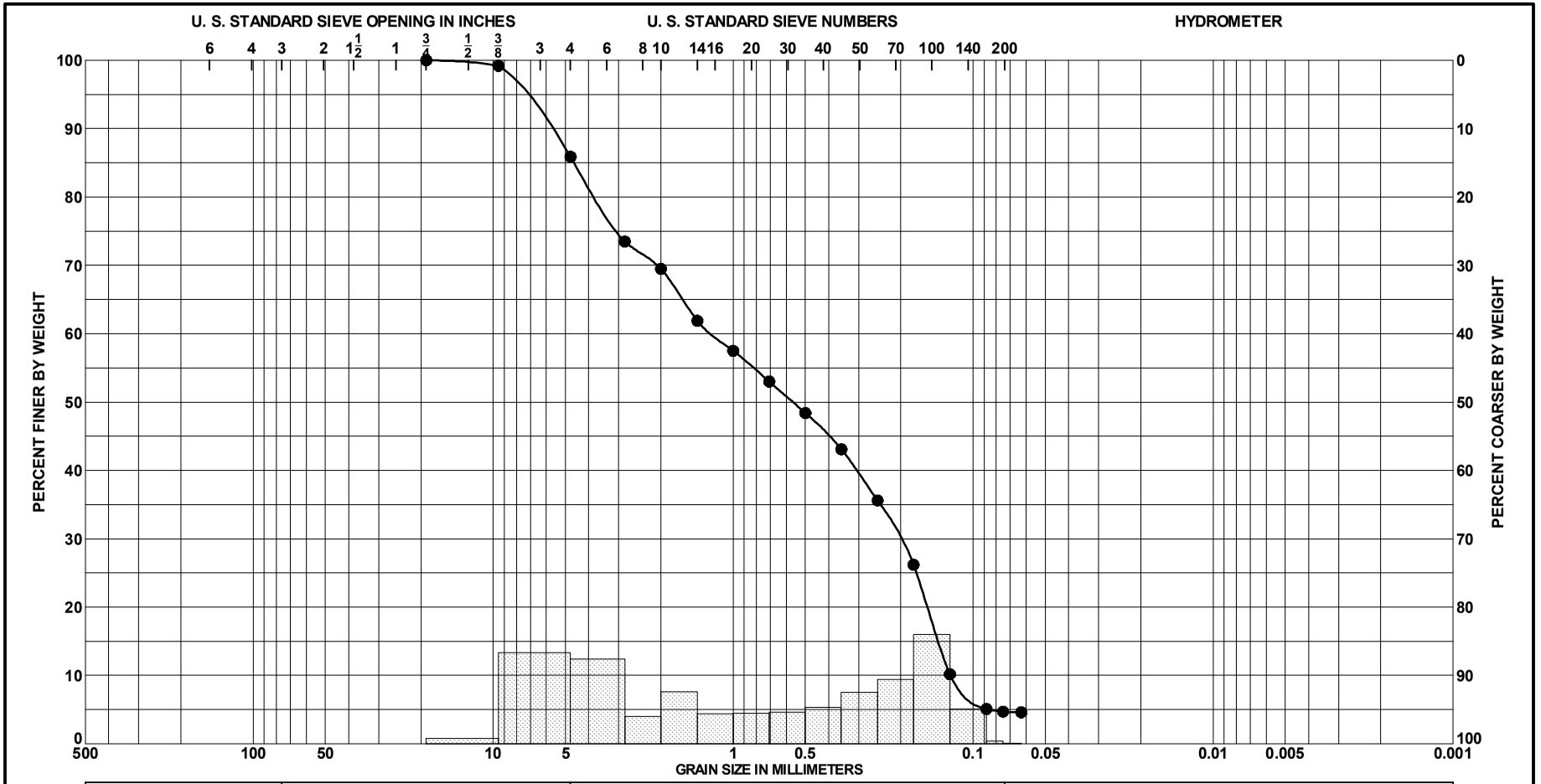


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 6	7.5 to 9.0 Ft.	, gray (SP-SM)	5Y 6/1	45 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-01
BORING ELEV.	-7.0 Ft., MLLW
DATE	7/24/2006

SAJ FORM 2087
JUN 02

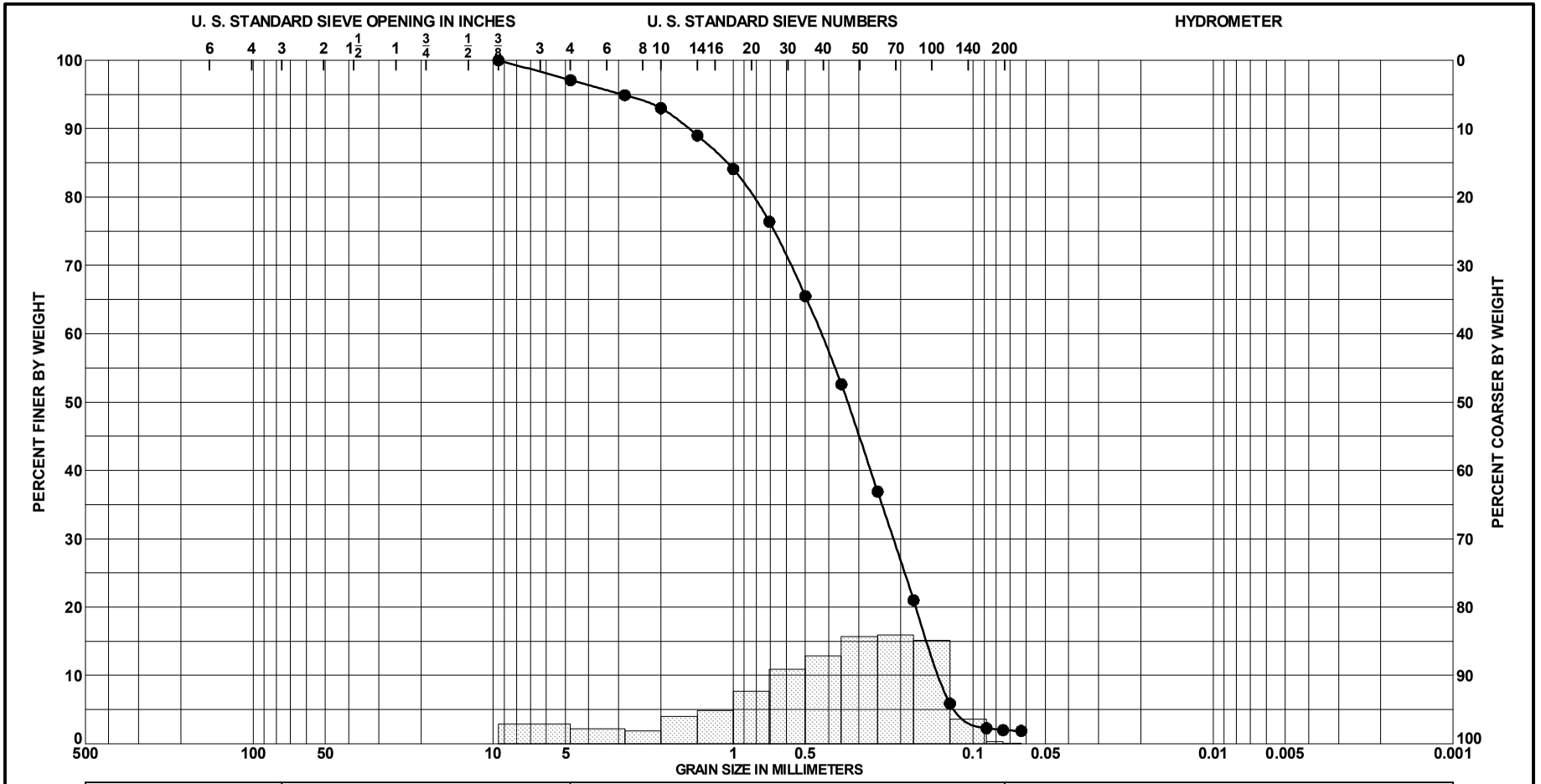


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● #1,#3&#4	to 21.0 Ft.	SAND, poorly-graded, gray (SP)	2.5Y 6/1	18/25 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-02
BORING ELEV.	-5.3 Ft., MLLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

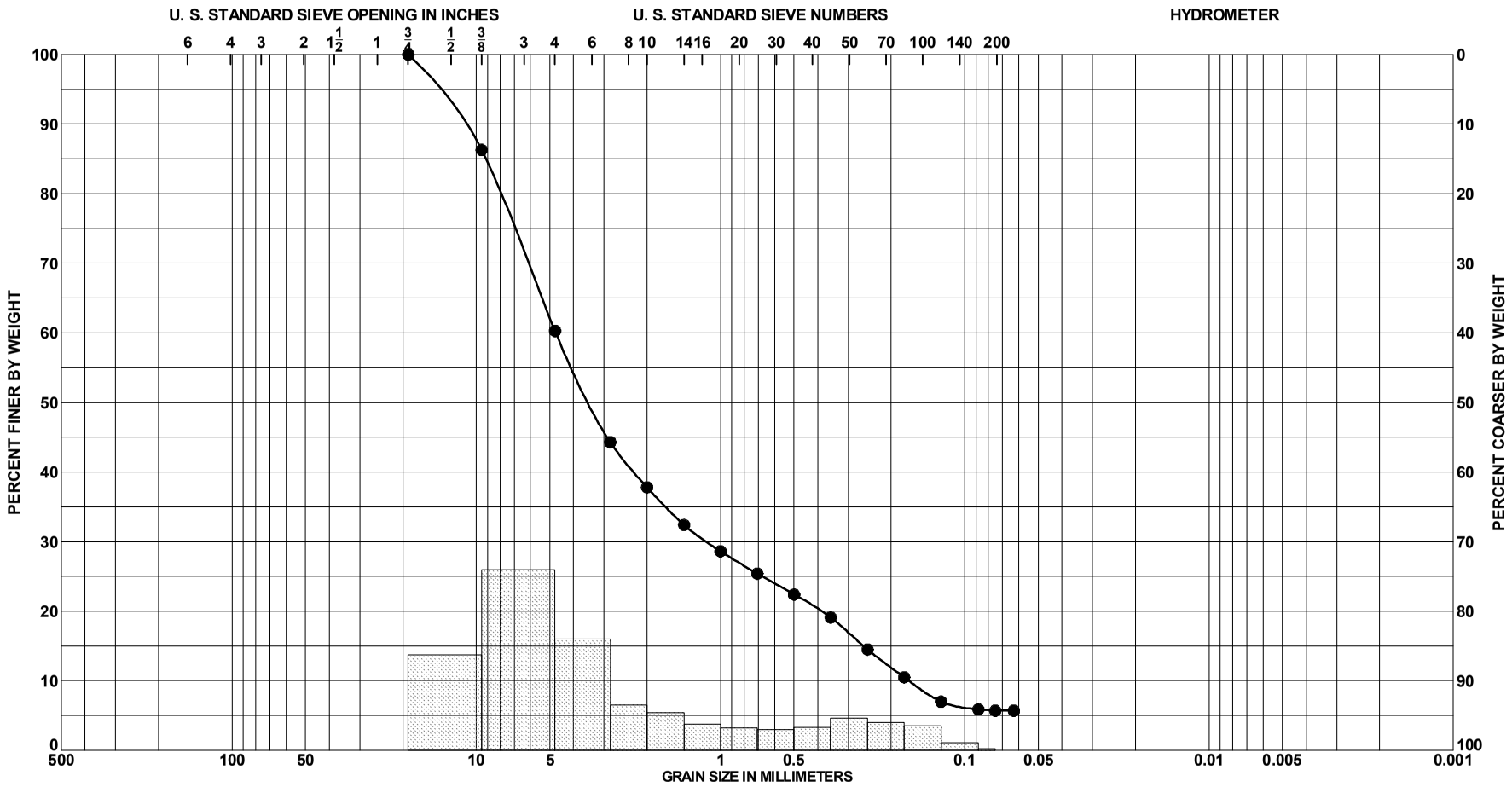


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	SAND, poorly-graded, gray (SP)	2.5Y 5/1	20 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-02
BORING ELEV.	-5.3 Ft., MLLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

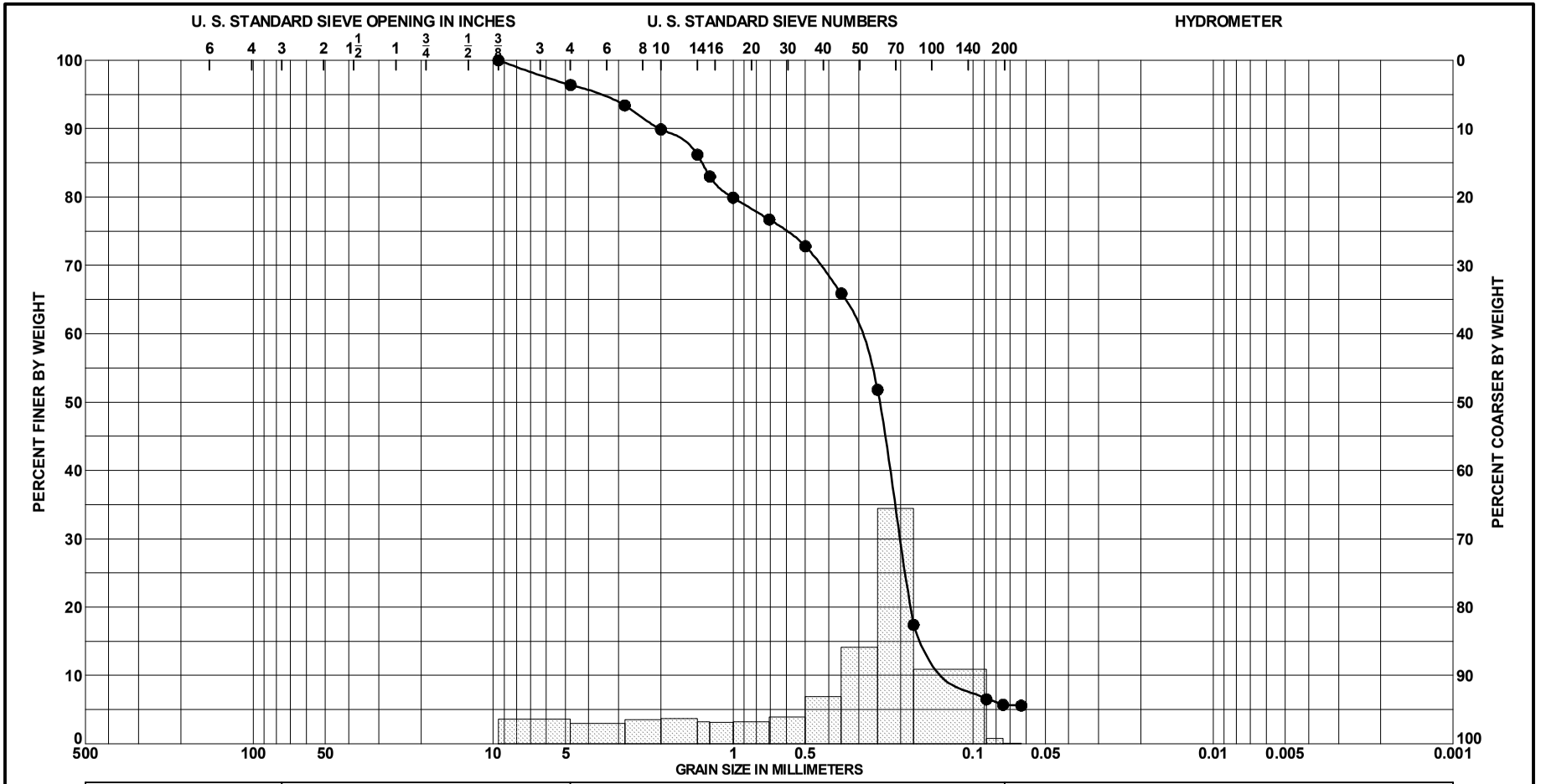


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	3.0 to 4.5 Ft.	, gray (SP-SM)	2.5Y 6/1	75 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-02
BORING ELEV.	-5.3 Ft., MLLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 4	4.5 to 6.0 Ft.	, gray (SP-SM)	2.5Y 6/1	15 (est)						

GRADATION CURVES

PROJECT	GIWW CR to AR
	GIWW Cut S-20
BORING NO.	CB-GIWW-S20-06-02
BORING ELEV.	-5.3 Ft., MLLW
DATE	7/25/2006

SAJ FORM 2087
JUN 02

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 0 ft

Analysis Date: 7/24/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,744	1,010,783	State Plane, FLW (U.S. Ft.)	-7.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 9.70 #230 - 8.80		10.00	2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.76	0.00	0.00
#7	-1.50	2.83	0.40	0.40
#10	-1.00	2.00	0.30	0.70
#14	-0.50	1.41	0.10	0.80
#18	0.00	1.00	0.10	0.90
#25	0.50	0.70	0.20	1.10
#35	1.00	0.50	0.10	1.20
#45	1.50	0.35	0.30	1.50
#60	2.00	0.25	0.60	2.10
#80	2.50	0.18	4.10	6.20
#120	3.00	0.13	44.10	50.30
#170	3.50	0.09	35.50	85.80
#200	3.75	0.08	4.50	90.30
#230	4.00	0.06	0.90	91.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.47	3.35	3.00	2.71	2.61	2.35

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.92	0.13	3.00	0.13	0.58	-4.49	34.47

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 1.5 ft

Analysis Date: 7/24/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,744	1,010,783	State Plane, FLW (U.S. Ft.)	-8.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 5.90 #230 - 5.80			5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	0.50	0.50
#7	-1.50	2.83	0.10	0.60
#10	-1.00	2.00	0.90	1.50
#14	-0.50	1.41	0.80	2.30
#18	0.00	1.00	0.90	3.20
#25	0.50	0.71	1.50	4.70
#35	1.00	0.50	1.80	6.50
#45	1.50	0.35	2.70	9.20
#60	2.00	0.25	7.30	16.50
#80	2.50	0.18	17.00	33.50
#120	3.00	0.13	41.60	75.10
#170	3.50	0.09	17.40	92.50
#200	3.75	0.08	1.60	94.10
#230	4.00	0.06	0.10	94.20

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.26	3.00	2.70	2.25	1.97	0.58

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.44	0.18	2.70	0.15	0.92	-2.49	11.11

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 4.5 ft

Analysis Date: 7/24/2006

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,744	1,010,783	State Plane, FLW (U.S. Ft.)	-11.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 5/1	#200 - 10.60 #230 - 9.70			2

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#4	-2.25	4.76	0.50	0.50
#7	-1.50	2.83	0.10	0.60
#10	-1.00	2.00	0.10	0.70
#14	-0.50	1.41	0.20	0.90
#18	0.00	1.00	0.10	1.00
#25	0.50	0.71	0.10	1.10
#35	1.00	0.50	0.10	1.20
#45	1.50	0.35	0.30	1.50
#60	2.00	0.25	0.50	2.00
#80	2.50	0.18	4.00	6.00
#120	3.00	0.13	42.00	48.00
#170	3.50	0.09	36.60	84.60
#200	3.75	0.08	4.80	89.40
#230	4.00	0.06	0.90	90.30

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.49	3.37	3.03	2.73	2.62	2.38

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.92	0.13	3.03	0.12	0.64	-5.36	44.26

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-01 @ 9 ft

Analysis Date: 7/24/2006

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,744	1,010,783	State Plane, FLW (U.S. Ft.)	-16.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 6/1	#200 - 6.40 #230 - 6.20			45

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	2.00	2.00
3/8"	-3.25	9.51	0.00	2.00
#4	-2.25	4.76	14.00	16.00
#7	-1.50	2.83	6.80	22.80
#10	-1.00	2.00	4.30	27.10
#14	-0.50	1.41	3.60	30.70
#18	0.00	1.00	3.20	33.90
#25	0.50	0.71	4.20	38.10
#35	1.00	0.50	5.40	43.50
#45	1.50	0.35	6.60	50.10
#60	2.00	0.25	9.10	59.20
#80	2.50	0.18	10.80	70.00
#120	3.00	0.13	16.40	86.40
#170	3.50	0.09	6.60	93.00
#200	3.75	0.08	0.60	93.60
#230	4.00	0.06	0.20	93.80

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.93	2.65	1.49	-1.24	-2.25	-3.82

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.57	0.67	1.49	0.36	2.06	-0.32	1.72

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 0 ft

Analysis Date: 7/25/2006

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,277	1,010,944	State Plane, FLW (U.S. Ft.)	-5.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 6/1	#200 - 4.70 #230 - 4.60		18.00	25

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.51	0.80	0.80
#4	-2.25	4.76	13.30	14.10
#7	-1.50	2.83	12.40	26.50
#10	-1.00	2.00	4.00	30.50
#14	-0.50	1.41	7.60	38.10
#18	0.00	1.00	4.40	42.50
#25	0.50	0.71	4.50	47.00
#35	1.00	0.50	4.60	51.60
#45	1.50	0.35	5.30	56.90
#60	2.00	0.25	7.50	64.40
#80	2.50	0.18	9.40	73.80
#120	3.00	0.13	16.00	89.80
#170	3.50	0.09	5.10	94.90
#200	3.75	0.08	0.40	95.30
#230	4.00	0.06	0.10	95.40

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.56	2.82	2.54	0.83	-1.59	-2.14	-2.93

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.35	0.78	0.83	0.56	2.09	-0.18	1.59

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 1.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,277	1,010,944	State Plane, FLW (U.S. Ft.)	-6.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 5/1	#200 - 2.00 #230 - 1.90			20

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	2.90	2.90
#7	-1.50	2.83	2.20	5.10
#10	-1.00	2.00	1.90	7.00
#14	-0.50	1.41	4.00	11.00
#18	0.00	1.00	4.90	15.90
#25	0.50	0.71	7.70	23.60
#35	1.00	0.50	10.90	34.50
#45	1.50	0.35	12.90	47.40
#60	2.00	0.25	15.70	63.10
#80	2.50	0.18	15.90	79.00
#120	3.00	0.13	15.10	94.10
#170	3.50	0.09	3.60	97.70
#200	3.75	0.08	0.30	98.00
#230	4.00	0.06	0.10	98.10

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.13	2.67	2.37	1.58	0.56	0.01	-1.53

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.28	0.41	1.58	0.33	1.38	-0.97	3.67

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 4.5 ft

Analysis Date: 7/25/2006

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,277	1,010,944	State Plane, FLW (U.S. Ft.)	-9.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 5.70 #230 - 5.70			75

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.51	13.70	13.70
#4	-2.25	4.76	26.00	39.70
#7	-1.50	2.83	16.00	55.70
#10	-1.00	2.00	6.50	62.20
#14	-0.50	1.41	5.40	67.60
#18	0.00	1.00	3.80	71.40
#25	0.50	0.71	3.20	74.60
#35	1.00	0.50	3.00	77.60
#45	1.50	0.35	3.30	80.90
#60	2.00	0.25	4.60	85.50
#80	2.50	0.18	4.00	89.50
#120	3.00	0.13	3.50	93.00
#170	3.50	0.09	1.10	94.10
#200	3.75	0.08	0.20	94.30
#230	4.00	0.06	0.00	94.30

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	1.84	0.57	-1.77	-2.82	-3.16	-3.89

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	-1.36	2.57			1.97	0.75	2.44

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

US Army Corps of Engineers
Jacksonville District

Project Name: GIWW CR to AR

Sample Name: CB-GIWW-S20-06-02 @ 6 ft

Analysis Date: 7/25/2006

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
505,277	1,010,944	State Plane, FLW (U.S. Ft.)	-11.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 5.70 #230 - 5.60			15

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.51	0.00	0.00
#4	-2.25	4.76	3.60	3.60
#7	-1.50	2.83	3.00	6.60
#10	-1.00	2.00	3.50	10.10
#14	-0.50	1.41	3.70	13.80
#120	-0.25	1.25	3.20	17.00
#18	0.00	1.00	3.10	20.10
#25	0.50	0.71	3.20	23.30
#35	1.00	0.50	3.90	27.20
#45	1.50	0.35	6.90	34.10
#60	2.00	0.25	14.10	48.20
#80	2.50	0.18	34.40	82.60
#170	3.50	0.09	10.90	93.50
#200	3.75	0.08	0.80	94.30
#230	4.00	0.06	0.10	94.40

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.63	2.39	2.03	0.72	-0.33	-1.90

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.34	0.40	2.03	0.24	1.52	-1.15	3.44

GRANULARMETRIC REPORT % GIWW_S20_SPT2006_05-D-0010_0002_NEW_TEMPLATE_.GPJ CESAJ3.GDT 9/13/16

APPENDIX B – PART 3

CHARLOTTE COUNTY GEOTECHNICAL DATA

Hole No. CB-CHS-1

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): STA: 23+50 RGE: 250
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-1
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 15 Feb 77 COMPLETED 15 Feb 77
17. ELEVATION TOP OF HOLE: -28.1
18. TOTAL CORE RECOVERY FOR BORING: 81 %
19. ~~SIGNATURE OF~~ [redacted] GEOLOGIST: T. NOVAK

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-28.1	0.0					BIT OR BARREL -28.1
-33.1	5.0		SAND, fine, quartz, slightly shelly, light gray (SP)	60	1	2 inch Sampler -33.1
-37.1	9.0		SAND, silty (SM)	100	2	" " -37.1
-40.1	12.0		Very shelly (up to 50%) below -37.1 (SP)	83	3	" " -40.1
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

Hole No. CB-CHS-2

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): STA: 28+00 RGE: 250
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-2
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 8.0'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 15 Feb 77 COMPLETED 15 Feb 77
17. ELEVATION TOP OF HOLE: -32.7
18. TOTAL CORE RECOVERY FOR BORING: 78 %
19. [redacted]

GEOLOGIST: T. NOVAK

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-32.7	0.0					BIT OR BARREL -32.7
			SAND, fine, quartz, shelly, light gray (SP-SM)	80	1	2-inch Sampler -37.7
			Shelly from -37.5 to -37.7	75	2	" " -40.7
-40.7	8.0					
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

Hole No. CB-CHS-3

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Jacksonville District	1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): STA: 32+00 RGE: 250
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-3
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 15 Feb 77 COMPLETED 15 Feb 77
17. ELEVATION TOP OF HOLE: -34.9
18. TOTAL CORE RECOVERY FOR BORING: 98 %
19. SIGNATURE OF [redacted]: GEOLOGIST: T. NOVAK

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-34.9	0.0					BIT OR BARREL -34.9
-39.9	5.0		SAND, fine, quartz, shelly light gray (SP-SM)	98	1	2-inch Sampler -39.9
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

PROJECT: Charlotte Harbor

HOLE NO.: CB-CHS-3

Hole No. CB-CHS-4

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): STA: 56+00 RGE: 275
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-4
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 10'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 15 Feb 77 COMPLETED 15 Feb 77
17. ELEVATION TOP OF HOLE: -29.4
18. TOTAL CORE RECOVERY FOR BORING: 85 %
19. [redacted]: GEOLOGIST: T. NOVAK

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	[redacted] SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-29.4	0.0					BIT OR BARREL -29.4
-36.4	7.0		SAND, fine, quartz, slightly shelly, light gray (SP)	90	1	2" SAMPLER -34.4
-37.4	8.0		LIMESTONE, coquina, hard fossiliferous, porous, light gray	80	2	" " -39.4
-39.4	10.0		LIMESTONE, soft, fossiliferous, poorly cemented, porous, sandy, light gray			

CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79

Hole No. CB-CHS-5

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): STA: 109+00 RGE: 250
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-5
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 8.0'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 16 Feb 77 COMPLETED 17 Feb 77
17. ELEVATION TOP OF HOLE: -32.4
18. TOTAL CORE RECOVERY FOR BORING: 53 %
19. [redacted]: GEOLOGIST: T. NOVAK

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-32.4	0.0					BIT OR BARREL
						-32.4
			SAND, clayey, fine, quartz, slightly shelly, soft, sticky, gray, silty (SM)	55	1	2" SAMPLER
-36.9	4.5					-37.4
			LIMESTONE, soft, poorly cemented, sandy, very shelly, with coquina fragments, light gray	50		" "
-40.4	8.0					-40.4
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

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PROJECT: Charlotte Harbor HOLE NO.: CB-CHS-5

Hole No. CB-CHS-6

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): STA: 136+00 RGE: 275
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-6
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 7.0'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 16 Feb 77 COMPLETED 16 Feb 77
17. ELEVATION TOP OF HOLE: -33.4
18. TOTAL CORE RECOVERY FOR BORING: 70 %
19. [redacted] OF [redacted]: GEOLOGIST: T. NOVAK

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	[redacted] SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-33.4	0.0					BIT OR BARREL -33.4
-38.9	5.5		SAND, fine, quartz, shelly, light gray (SP)	50	1	2" SAMPLER -38.4
-40.4	7.0		LIMESTONE, soft, poorly cemented, sandy, shelly, light gray	90	2	" " -40.4

CONFORMS TO SAD
LABORATORY CLASSIFICATION
AUG 79

Hole No. CB-CHS-7

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): STA: 175+00 RGE: 52
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-7
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 7.0'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W
12. MANUFACTURER'S DESIGNATION OF DRILL: FAILING 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidol
16. DATE HOLE: STARTED 16 Feb 77 COMPLETED 16 Feb 77
17. ELEVATION TOP OF HOLE: -34.0
18. TOTAL CORE RECOVERY FOR BORING: 58 %
19. [redacted]
GEOLOGIST: R. STROSS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	[redacted] SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						BIT OR BARREL
-34.0	0.0					-34.0
			LIMESTONE, medium hard, medium to well cemented, very fossiliferous, sandy, porous, gray	60		2" SAMPLER
						-39.0
				50		" "
-41.0	7.0					-41.0

CONFORMS TO SAD
LABORATORY CLASSIFICATION
AUG 79

Hole No. CB-CHS-8

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=397326 Y=852730
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-8
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 22.5'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 3 Nov 77 COMPLETED 3 Nov 77
17. ELEVATION TOP OF HOLE: -19.2
18. TOTAL CORE RECOVERY FOR BORING: 63 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST: R. STROSS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-19.2	0.0					Bit or Barrel -19.2 BLS/0.5 ft.
			SAND, fine, gray, quartz (SP-SM)	80	1	-20.7 SPLIT SPOON 2 3 5
				73	2	" " -22.2 4 14 25
				53	3	" " -23.7 6 11 33
				0	None	" " -25.2 5 9 27
				80	4	" " -26.7 3 8 40
				100	5	" " -28.2 3 4 14
				87	6	" " -29.7 5 9 20
				80	7	" " -31.2 4 8 13
				67	8	" " -32.7 3 4 7
-34.2	15.0			67	9	" " -34.2 5 9 14
			SAND, silty, fine, gray, quartz (SM)	60	10	" " -35.7 3 2 3
				67	11	" " -37.2 5 6 9
				53	12	" " -38.7 1 1 2
			slightly shelly below -37.7	33	13	" " -40.2 2 3 5
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79	40	14	" " -41.7 5 5 6
-41.7	22.5					140# hammer with 30" drop used on 2' split spoon (1-3/8" I.D.x2"O.D

Hole No. CB-CHS-9

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=398526 Y=853739
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-9
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 15'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: ; UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 3 Nov 77 COMPLETED 3 Nov 77
17. ELEVATION TOP OF HOLE: -27.5
18. TOTAL CORE RECOVERY FOR BORING: 63 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST: R. STROSS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-27.5	0.0					Bit or Barrel -27.5 BLS/0.5 ft.
			SAND, fine, gray, quartz, (SP) slightly silty (SP-SM)	40	1	SPLIT SPOON 1 1 -29.0 3
				40	2	" " 1 4 -30.5 4
-32.0	4.5			53	3	" " 1 1 -32.0 3
			SAND, clayey, fine, gray, quartz, Silty (SM)	47	4	" " 1 2 -33.5 2
				40	5	" " 1 2 -35.0 5
-35.5	8.0			87	6	" " 5 9 -36.5 14
			LIMESTONE, light gray, sandy, shelly, recovered almost entirely as coarse sand size particles	80	7	" " 17 25 -38.0 32
				100	8	" " 20 18 -39.5 38
				73	9	" " 20 18 -41.0 23
-42.5	15.0			73	10	" " 6 11 -42.5 24
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			140# hammer with 30" drop used on 2' split spoon (1 3/8" I.D. x 2" O.D.)

Hole No. CB-CHS-10

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 2 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=399212 Y=855322
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-10
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [XX] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 29'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 3 Nov 77 COMPLETED 3 Nov 77
17. ELEVATION TOP OF HOLE: -13.1
18. TOTAL CORE RECOVERY FOR BORING: 60 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST: R. STROSS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-13.1	0.0					Bit or Barrel -13.1 BLS/0.5 Ft.
			SAND, fine to medium, light gray, quartz (SP)	53	1	SPLIT SPOON -14.6 1 2 4
				67	2	" -16.1 3 5 8
				53	3	" -17.6 3 4 6
				53	4	" -19.1 4 7 10
				27	5	" -20.6 3 4 6
				27	6	" -22.1 3 5 7
				27	7	" -23.6 6 13 28
				27	8	" -25.1 10 38 50
				33	9	" -26.6 2 7 11
				40	10	" -28.1 8 11 28
				100	11	" -29.6 3 16 26
				100	12	" -31.1 6 26 48
-31.6	18.5					
			SAND, silty with some clay, fine, gray, quartz (SM)	73	13	" -32.6 5 12 10
-34.1	21.0			87	14	" -34.1 9 17 24
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

DRILLING LOG (Cont Sheet) | ELEVATION TOP OF HOLE -13.1 | **Hole No.** CB-CHS-10

PROJECT Charlotte Harbor | INSTALLATION Jacksonville District | SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						BIT OR BARREL
-34.1	21.0					-34.1 Blows/0.5 Ft.
			SAND, clayey, fine, gray, quartz (SC)	47	15	SPLIT SPOON 2 / 2 / 2
-36.6	23.5					-35.6
				67	16	" " 3 / 6 / 8
-37.6	24.5		CLAY, sandy, gray (CL)			-37.1
			LIMESTONE, white, medium hard, shelly, sandy, porous	80	17	" " 2 / 28 / 28
						-38.6
				80	18	" " 17 / 22 / 27
						-40.1
				87	19	" " 15 / 30 / 50
-42.1	29.0					-41.6
				100	20	-42.1 " " 16
						140# hammer with 30" drop used on 2' split spoon (1-3/8" I.D. x 2" O.D.)
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

Hole No. CB-CHS-11

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=400413 Y=856326
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-11
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 13.5'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 3 Nov 77 COMPLETED 3 Nov 77
17. ELEVATION TOP OF HOLE: -29.2
18. TOTAL CORE RECOVERY FOR BORING: 65 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST: R. STROSS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-29.2	0.0					-29.2 BLS/0.5 ft.
			SAND, silty, fine gray quartz (SM)	53	1	SPLIT SPOON 1 2 1
						-30.7
				27	2	" " 1 1 1
						-32.2
				40	3	" " 7 2 6
-33.7	4.5					-33.7
			LIMESTONE, medium hard, gray-white, very shelly and silty, porous	13	4	" " 15 17 25
						-35.2
				87	5	" " 18 17 36
						-36.7
				80	6	" " 24 18 33
						-38.2
				87	7	" " 24 21 28
						-39.7
				100	8	" " 16 21 28
						-41.2
				87	9	" " 10 18 17
-42.7	13.5					-42.7
						140# hammer with 30" drop used on 2' split spoon (1-3/8" I.D. x 2" O.D.)
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

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PROJECT: Charlotte Harbor HOLE NO.: CB-CHS-11

Hole No. CB-CHS-12

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=401081 Y=857925
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-12
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 14.5'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: ½
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2 Nov 77 COMPLETED 2 Nov 77
17. ELEVATION TOP OF HOLE: -27.8
18. TOTAL CORE RECOVERY FOR BORING: 54 %
19. SIGNATURE OF INSPECTOR: Geologist: R. Stross

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-27.8	0.0					Bit or Barrel -27.8 BLS/0.5 ft.
			SAND, silty, gray, fine to medium, quartz (SM)	40	1	SPLIT SPOON Pushed 1 -29.3 1
				40	2	" " 1 1 -30.8 1
				33	3	" " 1 1 -32.3 1
-34.3	6.5			60	4	" " 1 3 -33.8 1
			LIMESTONE, sandy, silty, porous, white, medium hard	60	5	" " 2 18 -35.3 26
				60	6	" " 12 18 -36.8 29
				80	7	" " 13 14 -38.3 22
				80	8	" " 10 9 -39.8 10
				53	9	" " 10 9 -41.3 10
-42.3	14.5			70	10	-42.3 " " 9 14
						140# hammer with 30" drop used on 2.0 split spoon (1 3/8" I.D. x 2" O.D.)
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

Hole No. CB-CHS-13

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=402290 Y=858719
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-13
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 18'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: ½
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2 Nov 77 COMPLETED 2 Nov 77
17. ELEVATION TOP OF HOLE: -24.3
18. TOTAL CORE RECOVERY FOR BORING: 56 %
19. ~~SIGNATURE OF INSPECTOR~~: Geologist: R. Stross

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-24.3	0.0					Bit or Barrel B/S/0.5 ft. -24.3
-28.0	3.7		SAND, silty, light gray, fine, quartz (SM-SC)	53	1	SPLIT SPOON Pushed -25.8 2 3
				87	2	" " -27.3 5 8 9
-30.3	6.0		SAND, silty, approximately 50% shell fragments, medium to course, light gray, quartz (SM-SC)	66	3	" " -28.8 1 3 10
				66	4	" " -30.3 6 9 12
			SAND, very silty, gray, fine, quartz (SM-SC)	60	5	" " -31.8 2 4 5
				87	6	" " -33.3 5 10 11
				47	7	" " -34.8 1 1 2
				47	8	" " -36.3 2 2 5
				40	9	" " -37.8 2 3 3
				40	10	" " -39.3 2 2 1
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79	27	11	" " -40.8 4 7 5
-42.3	18.0			53	12	" " -42.3 9 12 18
						140# hammer with 30" drop used on 2.0' split spoon (1 3/8" I.D. x 2" O.D)

Hole No. CB-CHS-14

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=402567 Y=859948
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-14
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: ½
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2 Nov 77 COMPLETED 2 Nov 77
17. ELEVATION TOP OF HOLE: -28.0
18. TOTAL CORE RECOVERY FOR BORING: 66 %
19. SIGNATURE OF INSPECTOR: Geologist: R. Stross

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-28.0	0.0					Bit or Barrel -28.0 BIS/0.5 ft.
-29.5	1.5		SAND, fine to medium, gray, quartz (SP)	73	1	SPLIT SPOON 2, 4, 7 -29.5
-31.0	3.0		SAND, approximately 40 percent shell fragments, medium to coarse, light gray (SP)	100	2	" " 8, 10, 11 -31.0
-36.0	8.0		SAND, clayey, gray, fine, quartz, silty (SM)	60	3	" " 3, 3, 2 -32.5
				73	4	" " 5, 4, 7 -34.0
				60	5	" " 1, 8, 8 -35.5
-42.0	14.0		LIMESTONE, medium hard, very sandy, porous, recovered mostly as coarse sand size fragments	87	6	" " 5, 18, 16 -37.0
				40	7	" " 8, 13, 11 -38.5
				53	8	" " 6, 8, 16 -40.0
				47	9	" " 9, 14, 22 -41.5
				60	None	-42.0 " " 9

140# hammer with 30" drop used on 2.0 split spoon (1 3/8" I.D. x 2" O.D.)

CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79

Hole No. CB-CHS-15

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=404832 Y=860483
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-15
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 8.0'
10. SIZE AND TYPE OF BIT: See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: ½
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2 Nov 77 COMPLETED 2 Nov 77
17. ELEVATION TOP OF HOLE: -34.2
18. TOTAL CORE RECOVERY FOR BORING: 45 %
19. SIGNATURE OF INSPECTOR: ~~XXXXXXXXXXXXXXXXXXXX~~ Geologist: R. Stross

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-34.2	0.0		SAND, fine to coarse, silty, gray, quartz (SM) some shell fragments			-34.2 BIS/0.5 ft.
-34.8	0.6			87	1	SPLIT SPOON 7 13
-35.4	1.2	III	LIMESTONE, gray, medium-hard, sandy, very porous		2	-35.7 16
-35.7	1.5		SAND, fine, gray, silty, quartz (SM)	33	3	" " 22 20 -37.2 21
			LIMESTONE, gray, medium-hard, sandy, very porous, recovered mostly as coarse sand size particles and pebbles under one inch across. Only one small pebble, about 3/4 inch was recovered between -38.7 and -40.2. Silty from -41.2 to -42.2	40	4	" " 18 23 -38.7 38
				0	No Sample	" " 15 15 -40.2 28
				53	5	" " 13 18 -41.7 22
-42.2	8.0			40		-42.2 " " 24

140# Hammer with 30" drop used on 2' split spoon (1 3/8" I.D. x 2" O.D.)

CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79

Hole No. CB-CHS-16

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: Charlotte Harbor
2. LOCATION (Coordinates or Station): X=405233 Y=861070
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHS-16
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [XX] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 15.5'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.L.W.
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 3 Nov 77 COMPLETED 3 Nov 77
17. ELEVATION TOP OF HOLE: -26.5
18. TOTAL CORE RECOVERY FOR BORING: 52 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST: R. STROSS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-26.5	0.0					Bit or Barrel -26.5 BLS/0.5 ft.
			SAND, approximately 55 percent shell fragments and small whole shells up to one inch across. Coarse, quartz sand (SP)	40	1	SPLIT SPOON 2, 3, 4 -28.0
				53	2	" " 2, 2, 2 -29.5
-31.0	4.5			27	3	" " 2, 3, 5 -31.0
			LIMESTONE, medium-hard recovered mostly as coarse sand size particles, very porous and shelly, light gray-white	47	4	" " 10, 8, 12 -32.5
				40	5	" " 4, 8, 12 -34.0
				53	6	" " 7, 12, 16 -35.5
				53	7	" " 8, 14, 9 -37.0
				40	8	" " 4, 13, 12 -38.5
				53	9	" " 4, 8, 13 -40.0
				87	10	" " 7, 12, 16 -41.5
-42.0	15.5			100	11	-42.0 " " 8
						140# hammer with 30" drop used on 2' split spoon (1-3/8" I.D.x2"O.D.)
			CONFORMS TO SAD LABORATORY CLASSIFICATION AUG 79			

1979

ARDAMAN & ASSOCIATES, INC.
CONSULTING ENGINEERS IN SOIL SCIENCES AND MATERIALS TESTING

BORING LOG

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
5					
				Water (0.0-22.0')	
10					
15					
20					
				-20.7 MLW	
	2 2				
	2	4	1	Greenish-gray slightly clayey fine sand with shell	
	2				
25	3	4	2	Greenish-gray slightly clayey fine sand with shell & cementations	
	2 2				
	2	4	3	Gray silty & cemented sand with phosphate	
	3				
	2 3	5	4	Yellowish-brown silty cemented sand with phosphate	
	6				
	4 6	10	5	Light brown slightly silty cemented sand with phosphate	
30	5				
	4 4	8	6	Same as above	
	5				
	2 3	5	7	Light gray silty cemented sand (crushed)	
	3				
	2 4	6	8	Same as above	
	2				
	2		9	Same as above	

GENERAL DATA

FILE NO. 79-6148
CLIENT: A.C.O.E.
SITE: Charlotte Harbor
CB-CH-M1
HOLE NO. ____ SHEET 1 OF 2

LOCATION OF BORING
See site plan
X = 403270
Y = 859089

DATE 8/13/79

CASING: 3"NW
INSIDE DIAMETER 3.0 IN.
OUTSIDE DIAMETER 3.25 IN.
DEPTH OF CASING 30 FT.

SPOON:
INSIDE DIAMETER 1.5 IN.
OUTSIDE DIAMETER 2.0 IN.

HAMMER:
HAMMER WEIGHT 140 LB.
DROP OF HAMMER 30 IN.

ELEVATION: (time 2:40pm)
GROUND SURFACE ____ FT.
GWL: +22.0'
DATE 1st 8/13/79
DATE 2nd
ACTUAL ELEVATION

DRILLING CREW:
J. May/L. Miller/R. Farley

REMARKS:
(W/L)-Loss water at 24.0'
Drove 10' more NW casing/Loss water again at 31.0'(drove 5' casing) 35' loss water at 35.0'

ARDAMAN & ASSOCIATES, INC.
CONSULTING ENGINEERS IN SOIL SCIENCES AND MATERIALS TESTING

FILE NO. 79-6148 BORING NO. CB-CH-M1 SHEET 2 OF 2

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
	2	4	9	-39.7	
	3				
	1	3		No sample (rock)	
	3				
	50/1"				
40				Soft layer - no sample	
				Rock	
	50/1"			No sample	
				43.0' Term.	
45					
50					
55					
60					
65					
70					

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
75					
80					
85					
90					
95					
100					
105					

1979

ARDAMAN & ASSOCIATES, INC.
CONSULTING ENGINEERS IN SOIL SCIENCES AND MATERIALS TESTING

BORING LOG

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
5					
				Water (0.0-24.0')	
10					
15					
20				-22.1 MLW	
25	4 4 5	9	1	Gray silty fine sand with shell	
	5 4 4	8	2	Same as above	
	4 6 8	14	3	Gray slightly clayey fine sand with shell and cementations	
30	8 7 7	14	4	Same as above	
	8 3 50/1"	11	5	Yellowish-green silty fine sand with shell and phosphate No sample - Rock	
35					

GENERAL DATA

FILE NO. 79-6148
CLIENT: A.C.O.E.
SITE: Charlotte Harbor
CB-CH-M2
HOLE NO. _____ SHEET 1 OF 2

LOCATION OF BORING
See site plan
X=399544
Y=855695

DATE 8/13/79

CASING: 3"NW/Mud
INSIDE DIAMETER 3 IN.
OUTSIDE DIAMETER 3.25 IN.
DEPTH OF CASING 30 FT.

SPOON:
INSIDE DIAMETER 1.5 IN.
OUTSIDE DIAMETER 2.0 IN.

HAMMER:
HAMMER WEIGHT 140 LB.
DROP OF HAMMER 30 IN.

ELEVATION: (time 1:05pm)
GROUND SURFACE _____ FT.
GWL: +24.0'
DATE 1st 8/13/79
DATE 2nd
ACTUAL ELEVATION

DRILLING CREW:
May/Miller/Farley

REMARKS:

ARDAMAN & ASSOCIATES, INC.
CONSULTING ENGINEERS IN SOIL SCIENCES AND MATERIALS TESTING

FILE NO. 79-6148 BORING NO. CB-CH-M2 SHEET 2 OF 2

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
	50/0"			No penetration	
				soft layer	
40	50/0"			No penetration	
				soft - rock - could not cut through the rock	
				43.0' Term	
45					
50					
55					
60					
65					
70					

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
75					
80					
85					
90					
95					
100					
105					

ARDAMAN & ASSOCIATES, INC.
CONSULTING ENGINEERS IN SOIL SCIENCES AND MATERIALS TESTING

1979

BORING LOG

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
				↑	
5					
10				Water (0.0-33.0')	
15					
20					
25					
30				↓	
				-30.2 MLW ↴	
35	4 5 6 7	11	1	Gray silty sand with thin slightly clayey fine sand seams & shell & phosphate	

GENERAL DATA

FILE NO. 79-6148
CLIENT: A.C.O.E.
SITE: Charlotte Pass
CB-CH-M3
HOLE NO. _____ SHEET 1 OF 2

LOCATION OF BORING
See site plan
x = 397756
y = 853162

DATE 8/13/79

CASING: Used mud & 3NW
INSIDE DIAMETER 3.0 IN.
OUTSIDE DIAMETER 3.25 IN.
DEPTH OF CASING 35 FT.

SPOON:
INSIDE DIAMETER 1.5 IN.
OUTSIDE DIAMETER 2.0 IN.

HAMMER:
HAMMER WEIGHT 140 LB.
DROP OF HAMMER 30 IN.

ELEVATION: (time 9:54 am)
GROUND SURFACE _____ FT.
GWL: +33.0'
DATE 1st 8/13/79
DATE 2nd _____
ACTUAL ELEVATION _____

DRILLING CREW:
May/Miller/Farley

REMARKS:

ARDAMAN & ASSOCIATES, INC.
CONSULTING ENGINEERS IN SOIL SCIENCES AND MATERIALS TESTING

FILE NO. 79-6148 BORING NO. CB-CH-M3 SHEET 2 OF 2

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
	6				
	6	12	2	Gray slightly clayey fine sand with shell & phosphate	
	6				
	6				
	8	14	3	Greenish-gray clayey fine sand with phosphate & thin seams of greenish-gray clay q_u=1.00TSF	
	7				
	7				
	8				
	3				
40	4		4	Gray fine sand with shell & phosphate	
	4				
	5				
	6				
	6	12	5	Light gray slightly silty fine sand with phosphate & cemented sand	
	3				
45	4		6	Gray cemented sand with shell & phosphate	
	5	9			
				45.0' Term.	
50					
55					
60					
65					
70					

DEPTH FT.	BLOWS PER 6"	'N' VALUE	SAMPLE NO.	DESCRIPTION OF MATERIAL	% RECOVERY
75					
80					
85					
90					
95					
100					
105					

Hole No. CB-CHM83-1

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=397,600 Y=853,021
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-1
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 15.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/25/83 COMPLETED 5/25/83
17. ELEVATION TOP OF HOLE: -23.5
18. TOTAL CORE RECOVERY FOR BORING: 56 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-23.5	0.0					-23.5 BLS/FT
			SAND, fine to medium quartz, clean, tight, light gray(SP)	80	1	2" x 5' Sampler Settled
						5
						16
						21
			Slightly silty, gray, from -30.5 to -35.5			-28.5 31
				24	2	" " 8
						25
						45
						62
						-33.5 100
					3	" " 11
-35.5	12.0			64		50
			SAND, fine to medium, quartz, silty, slightly clayey, gray (SM)			46
					4	52
-38.5	15.0					-38.5 71
						300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: CHARLOTTE HARBOR MAINTENANCE DREDGING HOLE NO.: CB-CHM83-1

Hole No. CB-CHM83-2

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=398,319 Y=854,027
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-2
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 23.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/25/83 COMPLETED 5/25/83
17. ELEVATION TOP OF HOLE: -18.2
18. TOTAL CORE RECOVERY FOR BORING: 73 %
19. SIGNATURE OF INSPECTOR: XXXXXXXXXXXXXXXX GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-18.2	0.0					Bit or Barrel -18.2 BLS/FT.
			SAND, fine to medium, quartz, clean, light gray (SP)	64	1	2" x 5' Sam-pler Settled 5 -23.2 8
				60	2	" " 7 12 24 39 -28.2 61
			Slightly silty from -30.2 to -32.2	100	3	" " 22 56 94 -32.2 150
				100	4	" " 18 -34. 2 116
			Clean, slightly shelly, light gray, from -32.2 to -37.2	40	5	" " 43 90 -37.2 96
-37.2	19.0		SAND, fine to medium quartz, slightly silty to silty, gray, slightly shelly(SM)	75	6	" " 5 16
-39.2	21.0		SILT, slightly compact, slightly clayey, gray, sandy, shelly (ML)		7	35 -41.2 40
-41.2	23.0					300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: CHARLOTTE HARBOR MAINTENANCE DREDGING HOLE NO.: CB-CHM83-2

Hole No. CB-CHM83-3

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=398,544 Y=853,834
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-3
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/26/83 COMPLETED 5/26/83
17. ELEVATION TOP OF HOLE: -32.8
18. TOTAL CORE RECOVERY FOR BORING: 90 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-32.8	0.0					Bit or Barrel -32.8 BLS/FT
-36.8	4.0		SAND, fine to medium, quartz, slightly silty to silty, gray (SM) slightly clayey, gray from -34.8 to -36.8	90	1	2" Sampler Settled 1 5 9
-37.8	5.0		LIMESTONE, medium hard, porous, poorly consolidated sandy, very fossiliferous			18 -37.8 300# hammer with 18" drop used on 2" Sampler

CORE BOX AND SAMPLES DISCARDED 12/88.

Hole No. CB-CHM83-4

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=398,538 Y=854,452
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-4
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 28.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 6/6/83 COMPLETED 6/6/83
17. ELEVATION TOP OF HOLE: -12.0
18. TOTAL CORE RECOVERY FOR BORING: 73 %
19. [redacted] GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-12.0	0.0					-12.0 BLS/FT
			SAND, fine to medium, quartz, clean, light gray, slightly shelly (SP)	92	1	2" Sampler Settled 1 6 17
			Gray, slightly silty, tight, slightly shelly, from -17.0 to -27.5			-17.0 31
				60	2	" " 11 32 48 87
						-22.0 94
				50	3	" " 15 60
						-25.0 120
				64	4	" " 29 54
					5	30 32
-27.5	15.5					-30.0 37
			SAND, fine to medium, quartz, silty, gray (SM)	80	6	6
-33.0	21.0					" " 9 12
			very silty, very fine quartz, seams sandy silt, from -33.0 to -35.0		7	10
-35.0	23.0					-35.0 10
			SILT, slightly compact, sandy, gray, seams silty sand (ML)	94	8	" " Pushed 2
			very sandy, very shelly from -38.0 to -40.0			-40.0 3
-40.0	28.0					
						300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

Hole No. CB-CHM83-5

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=398,902 Y=854,793
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-5
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 15.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 6/1/83 COMPLETED 6/1/83
17. ELEVATION TOP OF HOLE: -27.0
18. TOTAL CORE RECOVERY FOR BORING: 74 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-27.0	0.0					Bit or Barrel -27.0 BLS/FT
			SAND, fine to medium quartz, clean, tight, light gray (SP)	78	1	2" Sampler Settled 1 18 27 -32.0 52
-37.0	10.0			64	2	" 14 33 38 47 -37.0 54
-40.0	13.0		SAND, fine to medium, quartz, silty, slightly shelly, gray (SM)	80	3	" Washed 2 3
-42.0	15.0		LIMESTONE, medium hard, porous, very fossiliferous, cemented fossils, gray, slightly sandy in composition			14 -42.0 23 300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

Hole No. CB-CHM83-6

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=399,127 Y=854,618
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-6
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 10.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/24/83 COMPLETED 5/24/83
17. ELEVATION TOP OF HOLE: -28.0
18. TOTAL CORE RECOVERY FOR BORING: 74 %
19. ~~SIGNATURE OF INSPECTOR~~: GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-28.0	0.0					Bit or Barrel -28.0 BLS/FT
-32.0	4.0		SAND, fine to medium quartz, clean, light gray (SP)	90	1 2	2" Sampler Settled 1 9 9
-35.5	7.5		SAND, fine to medium quartz, silty, gray (SM)	58	3	-33.0 7 1 2 " " 10 27 -38.0 34
-38.0	10.0		LIMESTONE, medium hard, very porous, very fossiliferous sandy in composition, light gray			300# hammer with 18" drop used on 2" Sampler

CORE BOX AND SAMPLES DISCARDED 12/88.

Hole No. CB-CHM83-7

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=399,141 Y=855,257
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-7
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 30.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 6/7/83 COMPLETED 6/7/83
17. ELEVATION TOP OF HOLE: -9.0
18. TOTAL CORE RECOVERY FOR BORING: 59 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-9.0	0.0					Bit or Barrel -9.0 BLS/FT
			SAND, fine to medium, quartz, clean, tan (SP)	50	1	2" Sampler: Settled, 5, 15, 20, 26
			Light gray, slightly silty, from -14.0 to -25.0	60	2	-14.0 " " : 11, 19, 30, 40, 38
				76	3	-19.0 " " : 16, 30, 47, 68, 78
-25.0	16.0					-24.0
			SAND, fine quartz, slightly silty to silty, very tight, light gray (SM)	46	4	-25.0 " " : 19, 45, 76, 110, 100
-29.0	20.0		very fine quartz, very silty, from -29.0 to -36.0	60	5	-29.0 : 13, 9, 13, 10, 11
-36.0	27.0			64	6	-34.0 " " : Settled, 3, 8, 21, 24.
			LIMESTONE, medium hard, very porous, very fossiliferous, light gray			-39.0
						300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

Hole No. CB-CHM83-8

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=399,435 Y=855,512
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-8
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 28.5'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/24/83 COMPLETED 5/24/83
17. ELEVATION TOP OF HOLE: -10.5
18. TOTAL CORE RECOVERY FOR BORING: 53 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-10.5	0.0					-10.5 BLS/FT
			SAND, fine to medium quartz, clean, slightly shelly, tan, (SP)	66	1	2" Sampler 1 5 11 14
						-15.5 14
			slightly silty, light gray, from -21.0 to -36.5	50	2	" " 4 13 17 18
						-20.5 16
				50	3	" " 11 23 25 43
						-25.5 48
				42	4	" " 15 31 41 60
						-30.5 79
				50	5	" " 18 59 88
						-34.5 110
-36.5	26.0		SAND, fine quartz, silty, gray, slightly clayey(SM)	60	6	" " 37 100
					7	78 72
-39.0	28.5					-39.0 25
			CORE BOX AND SAMPLES DISCARDED 12/88.			300# hammer with 18" drop used on 2" Sampler

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: CHARLOTTE HARBOR MAINTENANCE DREDGING HOLE NO.: CB-CHM83-8

Hole No. CB-CHM83-9

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=399,657 Y=855,346
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-9
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 10.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/23/83 COMPLETED 5/23/83
17. ELEVATION TOP OF HOLE: -29.0
18. TOTAL CORE RECOVERY FOR BORING: 80 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-29.0	0.0					-29.0 BLS/FT
			SAND, fine to medium, quartz, clean, tight, light gray, slightly shelly (SP)	80	1	2" Sampler 1 / 8 / 9 / 10 / 17
						-34.0
-35.5	6.5				2	" " 5 / 4
			SILT, slightly plastic, sandy, gray (ML)	80		
-37.0	8.0				3	1 / 18
			LIMESTONE, medium hard, very porous, sandy in composition, seams loose sand and shell, light gray, very fossiliferous			
-39.0	10.0					32
						-39.0
						300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

Hole No. CB-CHM83-10

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=399,557 Y=855,799
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-10
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 32.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 6/3/83 COMPLETED 6/3/83
17. ELEVATION TOP OF HOLE: -7.5
18. TOTAL CORE RECOVERY FOR BORING: 73 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-7.5	0.0					Bit or Barrel -7.5 BLS/FT.
			SAND, fine to medium, quartz, clean, light gray (SP)	66	1	2" Sampler Settled 8 8 15 -12.5 18
				40	2	" " 9 22 26 30 17.5 28
			Slightly silty, slightly shelly, gray, from -12.5 to -30.5	70	3	" " 9 14 16 18 -22.5 24
				50	4	7 " " 14 18 27 -27.5 48
				60	5 6	18 " " 34 31 15 -32.5 7
-30.5	23.0			90	7	Pushed " " -37.5
			SILT, very sandy (fine quartz) slightly shelly, gray (ML)			
-37.5	30.0					
-39.5	32.0		LIMESTONE, medium hard, very porous, very fossiliferous, seams poorly cemented shell and sand, gray	60		" " 8 -39.5 15
						300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: CHARLOTTE HARBOR MAINTENANCE DREDGING HOLE NO.: CB-CHM83-10

Hole No. CB-CHM83-11

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=399,740 Y=856,052
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-11
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 30.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 6/2/83 COMPLETED 6/2/83
17. ELEVATION TOP OF HOLE: -10.0
18. TOTAL CORE RECOVERY FOR BORING: 70 %
19. SIGNATURE OF INSPECTOR: XXXXXXXXXXXXXXXXX GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-10.0	0.0					Bit or Barrel -10.0 BLS/FT
-12.5	2.5		SAND, fine to medium, quartz, shelly, poorly graded, clean, light gray (SP)	70	1	2" Sampler Settled 1 9
-16.0	6.0		slightly shelly, clean, tight from -12.5 to -16.0		2	15 -15.0 26
-27.0	17.0		Slightly silty, slightly shelly, gray from -16.0 to -27.0	60	3	" " 9 13 23 25 -20.0 29
				46	4	" " 10 13 29 34 -25.0 40
-31.0	21.0		SAND, fine quartz, slightly silty to silty, gray (SM)	80	5 6	" " 9 15 10 16 -30.0 28
-32.8	22.8		SILT, slightly sandy, slightly compact, gray (ML)	90	7 8 9	" " 5 2 2 2 -35.0 3
-36.0	26.0		SAND, very fine quartz, very silty, slightly shelly, gray (SM)	76	10	" " 1 17 16 14
-40.0	30.0		LIMESTONE, medium hard, very porous, very fossiliferous, sandy in composition, light gray, massive bedded			-40.0 21
			CORE BOX AND SAMPLES DISCARDED 12/88.			300# hammer with 18" drop used on 2" I.D. Sampler

Hole No. CB-CHM83-12

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=399,957 Y=856,238
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-12
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 17.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/23/83 COMPLETED 5/23/83
17. ELEVATION TOP OF HOLE: -22.0
18. TOTAL CORE RECOVERY FOR BORING: 74 %
19. ~~SIGNATURE OF INSPECTOR~~: GEOLOGIST J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-22.0	0.0					Bit or Barrel -22.0 BLS/FT
			SAND, fine to medium, quartz, clean, slightly shelly, light gray (SP)	54	1	2" Sampler 1 3 7 6 -27.0 12
			Gray, slightly silty, fine to medium quartz, from -27.0 to -34.0	80	2	" " 3 11 20 23 -32.0 31
-34.0	12.0			60	3	" " 12 29 56 -36.0 84
			LIMESTONE, medium hard, very porous, very fossiliferous, light gray, slightly sandy in composition, cemented fossils	100		" " 48 37 -39.0 39
-39.0	17.0					300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: CHARLOTTE HARBOR MAINTENANCE DREDGING HOLE NO.: CB-CHM83-12

Hole No. CB-CHM83-13

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 1 SHEETS

1. PROJECT	Charlotte Hbr Maintenance Dredging
2. LOCATION (Coordinates or Station)	X=402,160 Y=858,675
3. DRILLING AGENCY	Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number)	CB-CHM83-13
5. NAME OF DRILLER	J. Detloff
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.0'
10. SIZE AND TYPE OF BIT	see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MLW
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	1
15. ELEVATION GROUND WATER	Tidal
16. DATE HOLE	STARTED 5/18/83 COMPLETED 5/18/83
17. ELEVATION TOP OF HOLE	-30.0
18. TOTAL CORE RECOVERY FOR BORING	44 %
19. ~~SIGNATURE OF INSPECTOR~~	GEOLOGIST J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-30.0	0.0					Bit or Barrel -30.0 BLS/FT.
-34.0	4.0		SAND, fine quartz, silty, slightly shelly, gray (SM)	66	1	Settled 2" Sampler " 8 9 13 -35.0
-38.0	8.0		compacted, fine quartz, silty, slightly clayey, gray from -34.0 to -38.0 very silty, soft, from -38.0 to -40.0	22	2	" " 4 3 4 1 2 -40.0
-40.0	10.0		CORE BOX AND SAMPLES DISCARDED 12/88.			300# hammer with 18" drop used on 2" I.D. Spoon.

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: CHARLOTTE HBR MAINTENANCE DREDGING HOLE NO.: CB-CHM83-13

Hole No. CB-CHM83-14

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X-402,601 Y=859,853
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM-83-14
5. NAME OF DRILLER: J. DETLOFF
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 10.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/18/83 COMPLETED 5/18/83
17. ELEVATION TOP OF HOLE: -31.0
18. TOTAL CORE RECOVERY FOR BORING: 87 %
19. SIGNATURE OF INSPECTOR: GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-31.0	0.0					Bit or Barrel -31.0 BLS/FT
-34.0	3.0		SAND, fine to medium, quartz, clean, shelly, light gray (SP)	80	1 2	2" Sampler 1 2 4
-36.7	5.7		SAND, fine, quartz, slightly compact silty, slightly clayey, gray (SM)			5 -36.0 4
-41.0	10.0		LIMESTONE, cemented shell and sand, very porous, medium hard, light gray, seams of loose sand and shell; soft, poorly consolidated, many seams loose shell and sand, from -39.0 to -41.0	94	3	7 " " 11 14 10 -41.0 10
			CORE BOX AND SAMPLES DISCARDED 12/88.			300# hammer with 18" drop used on 2" I.D. Spoon

Hole No. CB-CHM83-15

DRILLING LOG

VISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=402,919 Y=859,293
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-15
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 10.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/19/83 COMPLETED 5/19/83
17. ELEVATION TOP OF HOLE: -30.0
18. TOTAL CORE RECOVERY FOR BORING: 90 %
19. ~~SIGNATURE OF INSPECTOR~~: GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-30.0	0.0					-30.0 BLS/FT
			SAND, fine, quartz, slightly silty to silty, light gray, (SM), gray, slightly shelly, silty from -32.0 to -35.0	90	1	2" Sampler Settled 1 5 9
-35.0	5.0		SAND, fine quartz, clean, light gray, very shelly from -36.0 to -37.0 (SP)			-35.0 9
-37.0	7.0			90	2	" " 8 9
			LIMESTONE, medium hard, very porous, cemented shell, light gray, very fossiliferous, seams loose sand and shell			17 17
-40.0	10.0					-40.0 20
						300# hammer with 18" drop used on 2" I.D. Spoon
			CORE BOX AND SAMPLES DISCARDED 12/88.			

Hole No. CB-CHM83-16

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=403,683 Y=859,954
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-16
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/26/83 COMPLETED 5/26/83
17. ELEVATION TOP OF HOLE: -35.0
18. TOTAL CORE RECOVERY FOR BORING: 82 %
19. SIGNATURE OF INSPECTOR: XXXXXXXXXXXXXXXXX GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-35.0	0.0					Bit or Barrel -35.0 BLS/FT
-37.0	2.0		SAND, fine to medium quartz, slightly silty to silty, shelly, gray (SM)	82	1	2" Sampler 1 3
-40.0	5.0		LIMESTONE, medium hard, porous, very fossiliferous, sandy, light gray, poorly consolidated seams			14 14 -40.0 11
						300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: CHARLOTTE HARBOR MAINTENANCE DREDGING HOLE NO.: CB-CHM83-16

Hole No. CB-CHM83-17

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=407,845 Y=861,849
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-17
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/26/83 COMPLETED 5/26/83
17. ELEVATION TOP OF HOLE: -34.0
18. TOTAL CORE RECOVERY FOR BORING: 82 %
19. SIGNATURE OF INSPECTOR: ~~XXXXXXXXXXXXXXXXX~~ GEOLOGIST J. GENTILE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-34.0	0.0					Bit or Barrel -34.0 BLS/FT
-39.0	5.0		LIMESTONE, medium hard, very porous, cemented fossils, light gray, massive bedded, seams of poorly consolidated shell	82	-	2" Sampler 11 14 10 4 -39 5
						300# hammer with 18" drop used on 2" Sampler

ALL OTHER CORE BOXES AND SAMPLES IN THIS SERIES WERE DISCARDED 12/88. IT IS LIKELY THAT THIS SAMPLE WAS ALSO DISCARDED. HOWEVER, RECORDS ARE NOT CLEAR.

Hole No. CB-CHM83-18

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station): X=408,385 Y=862,087
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CHM83-18
5. NAME OF DRILLER: J. Detloff
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 6.0'
10. SIZE AND TYPE OF BIT: see remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 5/27/83 COMPLETED 5/27/83
17. ELEVATION TOP OF HOLE: -33.0
18. TOTAL CORE RECOVERY FOR BORING: 83 %
19. GEOLOGIST J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-33.0	0.0					-33.0 BLS/ FT
-33.8	0.8		SAND, fine to medium, quartz, (SP)			2" Sampler
-34.5	1.5		SHELL, sandy, slightly silty limestone fragments		1	Settled 1
-37.0	4.0		SAND, fine to medium, quartz, very silty, slightly clayey, gray (SM)	83	2	3 7
-39.0	6.0		LIMESTONE, medium hard, very porous, very fossiliferous, cemented fossils, seams of poorly cemented shell and sand, gray		3	9 -39.0 7
						300# hammer with 18" drop used on 2" Sampler
			CORE BOX AND SAMPLES DISCARDED 12/88.			

Hole No. CB-CH90-1

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT: Charlotte Harbor Maintenance		10. SIZE AND TYPE OF BIT: See Remarks	
2. LOCATION (Coordinates or Station): x = 397,750 y = 853,202		11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W	
3. DRILLING AGENCY: US Army Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500	
4. HOLE NO. (As shown on drawing title and file number): CB-CH90-1		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED / UNDISTURBED
5. NAME OF DRILLER: J. Horsley		14. TOTAL NUMBER CORE BOXES: 1	
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER: Tidal	
		16. DATE HOLE	STARTED: 2/21/90 / COMPLETED: 2/21/90
7. THICKNESS OF OVERBURDEN		17. ELEVATION TOP OF HOLE: -31.0	
8. DEPTH DRILLED INTO ROCK		18. TOTAL CORE RECOVERY FOR BORING: 60 %	
9. TOTAL DEPTH OF HOLE: 5.0'		19. SIGNATURE OF INSPECTOR: Geologist, J. Gentile	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-31.0	0.0					Bit or Barrel -31.0 Blows/FT
-36.0	5.0		SAND, fine to medium, quartz, trace silt, trace shell, gray (SP)	60	1	2" Sampler 4 9 13 12 -36.0 18
			Soils are field visually classified in accordance with the Unified Soils Classification System. SAMPLE ELEVATION / LABORATORY ANALYSIS -31.0/-36.0 (SP-SM)* NOTE: *Visual Classification based on Gradation Curve. No Atterberg Limits			300# hammer with 18" drop used on 2" sampler

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Charlotte Harbor Maintenance HOLE NO.: CB-CH90-1

Hole No. CB-CH90-2

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Jacksonville District	1 OF 1 SHEETS

1. PROJECT	Charlotte Harbor Maintenance	10. SIZE AND TYPE OF BIT	See Remarks
2. LOCATION (Coordinates or Station)	x = 398,276 y = 853,844	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	M L W
3. DRILLING AGENCY	US Army Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
4. HOLE NO. (As shown on drawing title and file number)	CB-CH90-2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED / UNDISTURBED
5. NAME OF DRILLER	J. Horsley	14. TOTAL NUMBER CORE BOXES	1
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER	Tidal
		16. DATE HOLE	STARTED 2/21/90 COMPLETED 2/21/90
7. THICKNESS OF OVERBURDEN		17. ELEVATION TOP OF HOLE	-29.6
8. DEPTH DRILLED INTO ROCK		18. TOTAL CORE RECOVERY FOR BORING	30 %
9. TOTAL DEPTH OF HOLE	5.0'	19. SIGNATURE OF INSPECTOR	Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-29.6	0.0					Bit or Barrel -29.6 Blows/FT
-34.6	5.0		SAND, fine to medium, quartz, clean, light gray, trace shell (SP)	30	1	2" Sampler 2 4 6 12 36 -34.6
			Soils are field visually classified in accordance with the Unified Soils Classification System. SAMPLE ELEVATION / LABORATORY ANALYSIS -29.6/-34.6 (SP)* NOTE: *Visual Classification based on Gradation Curve. No Atterberg Limits.			300# hammer with 18" drop used on 2" sampler

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PROJECT: Charlotte Harbor Maintenance HOLE NO.: CB-CH90-2

Hole No. CB-CH90-3

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Jacksonville District	1 OF 1 SHEETS

1. PROJECT	Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station)	x = 399,233 y = 854,784
3. DRILLING AGENCY	US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number)	CB-CH90-3
5. NAME OF DRILLER	J. Horsley
6. DIRECTION OF HOLE	[XX] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	8.0'
10. SIZE AND TYPE OF BIT	See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	M L W
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	1
15. ELEVATION GROUND WATER	Tidal
16. DATE HOLE	STARTED 2/21/90 COMPLETED 2/21/90
17. ELEVATION TOP OF HOLE	-28.6
18. TOTAL CORE RECOVERY FOR BORING	61 %
19. SIGNATURE OF INSPECTOR	Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-28.6	0.0					Bit or Barrel -28.6 Blows/FT
			SAND, fine to medium, quartz, trace silt, trace shell, light gray (SP)	42	1	Settled 2" Sampler 2 7 11 -33.6 14
-34.6	6.0		Isolated limestone lenses and seams clayey sand, from -34.6 to -36.6	93	2	" 11 18 -36.6 28
-36.6	8.0					
			Soils are field visually classified in accordance with the Unified Soils Classification System.			300# hammer with 18" drop used on 2" sampler

SAMPLE ELEVATION	LABORATORY ANALYSIS
-28.6/-33.6	(SP-SM)*

NOTE:
*Visual Classification based on Gradation Curve. No Atterberg Limits.

Hole No. CB-CH90-4

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station): x = 399,270 y = 855,170
3. DRILLING AGENCY: US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CH90-4
5. NAME OF DRILLER: J. Horsley
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 18.0'
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2/22/90 COMPLETED 2/22/90
17. ELEVATION TOP OF HOLE: -18.0
18. TOTAL CORE RECOVERY FOR BORING: 45 %
19. SIGNATURE OF INSPECTOR: Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-18.0	0.0					Bit or Barrel -18.0 Blows/FT
			SAND, fine to medium, quartz, some shell, clean, light gray (SP)	48	1	2" Sampler 5 5 6 12 -23.0 26
			Fine to medium, quartz, trace clay, trace phosphate grains, little shell, from -23.0 to -33.0	24	2	2" Sampler 10 20 22 35 -28.0 45
				30	3	2" Sampler 15 22 28 32 -33.0 39
-36.0	18.0		Fine to medium, quartz, clean, no shell, gray, from -33.0 to -36.0	100	4	2" Sampler 16 49 61 -36.0

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEVATION	LABORATORY ANALYSIS
-18.0/-23.0	(SP)*
-23.0/-28.0	(SP)*
-28.3/-33.0	(SP-SM)*
-33.0/-36.0	(SP-SM)*

NOTE:
* Visual Classification based on Gradation Curve. No Atterberg Limits.

300# hammer with 18" drop used on 2" sampler

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PROJECT: Charlotte Harbor Maintenance HOLE NO.: CB-CH90-4

Hole No. CB-CH90-5

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station): x = 399,835 y = 855,991
3. DRILLING AGENCY: US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CH90-5
5. NAME OF DRILLER: J. Horsley
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 8.0'
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2/21/90 COMPLETED 2/21/90
17. ELEVATION TOP OF HOLE: -28.2
18. TOTAL CORE RECOVERY FOR BORING: 51 %
19. SIGNATURE OF INSPECTOR: Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-28.2	0.0					Bit or Barrel -28.2 Blows/FT 0
			SAND, fine to medium, quartz, little shell, trace silt, light gray (SP)	38	1	2" Sampler 1 4 8 12 -33.2 14 5
-36.2	8.0			73	2	2" Sampler 9 12 -36.2 25

Soils are field visually classified in accordance with the Unified Soils Classification System.

300# hammer with 18" drop used on 2" sampler

SAMPLE ELEVATION	LABORATORY ANALYSIS
-28.2/-33.2	(SP)*
-33.2/-36.2	(SP-SM)*

NOTE:
* Visual Classification based on Gradation Curve. No Atterberg Limits.

Hole No. CB-CH90-6

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station): x = 400,995 y = 857,532
3. DRILLING AGENCY: US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CH90-6
5. NAME OF DRILLER: J. Horsley
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2/21/90 COMPLETED 2/21/90
17. ELEVATION TOP OF HOLE: -32.3
18. TOTAL CORE RECOVERY FOR BORING: 64 %
19. SIGNATURE OF INSPECTOR: Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-32.3	0.0					Bit or Barrel -32.3 Blows/FT
-35.3	3.0		SAND, fine, quartz, little clay, trace shell, gray (SC)	64	1	2" Sampler Settled 2 14
-37.3	5.0		LIMESTONE, (cemented shell) moderately hard, very porous, permeable, light gray, very fossiliferous, massive bedded		2	-37.3 22

Soils are field visually classified in accordance with the Unified Soils Classification System.

300# hammer with 18" drop used on 2" sampler

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-32.3/-35.3	(SP-SM)*

*NOTE: Based on Gradation curves, no atterberg limits

Hole No. CB-CH90-7

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Jacksonville District	1 OF 1 SHEETS

1. PROJECT	Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station)	x = 401,481 y = 857,928
3. DRILLING AGENCY	US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number)	CB-CH90-7
5. NAME OF DRILLER	J. Horsley
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	5.0'
10. SIZE AND TYPE OF BIT	See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MLW
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	1
15. ELEVATION GROUND WATER	Tidal
16. DATE HOLE	STARTED 2/21/90 COMPLETED 2/21/90
17. ELEVATION TOP OF HOLE	-30.8
18. TOTAL CORE RECOVERY FOR BORING	50 %
19. SIGNATURE OF INSPECTOR	Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-30.8	0.0					Bit or Barrel -30.8 Blows/FT
-34.8	4.0		SAND, fine to medium, quartz, little clay, trace shell, gray (SC)	50	1	2" Sampler Settled 3, 9, 7
-35.8	5.0		LIMESTONE, cemented shell			-35.8 19
			Soils are field visually classified in accordance with the Unified Soils Classification System.			300# hammer with 18" drop used on 2" sampler

SAMPLE ELEV	LAB CLASS
-30.8/-34.8	(SM)*

*NOTE: Based on Gradation curves, no atterberg limits

Hole No. CB-CH90-8

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station): x = 401,991 y = 859,023
3. DRILLING AGENCY: US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CH90-8
5. NAME OF DRILLER: J. Horsley
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2/21/90 COMPLETED 2/21/90
17. ELEVATION TOP OF HOLE: -32.2
18. TOTAL CORE RECOVERY FOR BORING: 74 %
19. SIGNATURE OF INSPECTOR: Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-32.2	0.0					-32.2 Blows/FT 0
-34.2	2.0		SAND, fine to medium, quartz, trace clay, trace shell, gray (SP)	74	1	2" Sampler Settled 8 14 19 22 5
-37.2	5.0		LIMESTONE, moderately hard, porous, permeable, very fossiliferous (cemented shell), light gray, massive bedded		2	-37.2

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEV	LAB CLASS
-32.2/-34.2	(SP-SM)*

*NOTE: Based on Gradation curves, no atterberg limits

300# hammer with 18" drop used on 2" sampler

Hole No. CB-CH90-9

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station): x = 402,846 y = 860,014
3. DRILLING AGENCY: US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CH90-9
5. NAME OF DRILLER: J. Horsley
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2/22/90 COMPLETED 2/22/90
17. ELEVATION TOP OF HOLE: -29.6
18. TOTAL CORE RECOVERY FOR BORING: 44 %
19. SIGNATURE OF INSPECTOR: Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-29.6	0.0					Bit or Barrel -29.6 Blows/FT
-31.6	2.0		SAND, fine to medium, quartz, shelly, clean, light gray (SP)	44	1	2" Sampler 2 4
-34.6	5.0		SAND, fine quartz, little clay, gray (SC)		2	10 14 -34.6 13

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEV	LAB CLASS
-29.6/-31.6	(SP)*

*NOTE: Based on Gradation curves, no atterberg limits

300# hammer with 18" drop used on 2" sampler

Hole No. CB-CH90-10

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	South Atlantic	Jacksonville District	

1. PROJECT	Charlotte Harbor Maintenance	10. SIZE AND TYPE OF BIT	See Remarks
2. LOCATION (Coordinates or Station)	x = 402,784 y = 859,044	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	M L W
3. DRILLING AGENCY	US Army Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
4. HOLE NO. (As shown on drawing title and file number)	CB-CH90-10	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED / UNDISTURBED
5. NAME OF DRILLER	J. Horsley	14. TOTAL NUMBER CORE BOXES	1
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER	Tidal
		16. DATE HOLE	STARTED 2/21/90 COMPLETED 2/21/90
7. THICKNESS OF OVERBURDEN		17. ELEVATION TOP OF HOLE	-21.0
8. DEPTH DRILLED INTO ROCK		18. TOTAL CORE RECOVERY FOR BORING	46 %
9. TOTAL DEPTH OF HOLE	15.0'	19. SIGNATURE OF INSPECTOR	Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Bit or Barrel
-21.0	0.0					-21.0 Blows/FT
-22.0	1.0		SHELL, trace clay, sand to gravel size fragments	36	1	2" Sampler 3 / 8
			SAND, fine to medium, quartz, shelly, little to some clay, light gray (SC)		2	6 / 6
						-26.0 4
			Little shell, little clay, from -27.0 to -31.0	42	3	2" Sampler 4 / 9 / 14 / 16
-31.0	10.0		Fine quartz, clayey, gray, trace shell, from -31.0 to -36.0			-31.0 19
				60	4	2" Sampler 4 / 4 / 4 / 4
-36.0	15.0					-36.0 3

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEVATION	LABORATORY ANALYSIS
-21.0/-22.0	(SP)*
-22.0/-26.0	(SP-SM)*
-26.0/-31.0	(SM)*
-31.0/-36.0	(SM)*

NOTE:
* Visual Classification based on Gradation Curve. No Atterberg Limits.

300# hammer with 18" drop used on 2" sampler

Hole No. CB-CH90-11

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1 SHEETS

1. PROJECT: Charlotte Harbor Maintenance
2. LOCATION (Coordinates or Station): x = 404,241 y = 860,566
3. DRILLING AGENCY: US Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): CB-CH90-11
5. NAME OF DRILLER: J. Horsley
6. DIRECTION OF HOLE: [XX] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN:
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 10.0'
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M L W
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE: STARTED 2/22/90 COMPLETED 2/22/90
17. ELEVATION TOP OF HOLE: -26.5
18. TOTAL CORE RECOVERY FOR BORING: 30 %
19. SIGNATURE OF INSPECTOR: Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-26.5	0.0					Bit or Barrel -26.5 Blows/FT
			SAND, medium to fine, quartz and shell, shelly, clean, light gray (SP)	22	1	2" Sampler 1 3 4 5 -31.5 5
-34.0	7.5				2	2" Sampler 8 6 13 27 -36.5 45
-36.5	10.0		LIMESTONE, moderately hard, porous, permeable, very fossiliferous (cemented shell), light gray, massive bedded	38	3	

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEVATION	LABORATORY ANALYSIS
-26.5/-31.5	(SP)*

NOTE:
* Visual Classification based on Gradation Curve. No Atterberg Limits.

300# hammer with 18" drop used on 2" sampler

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: CHARLOTTE HARBOR MAINT.
2. LOCATION *(Coordinates or Station)*: X=402275, Y=858792
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH91-1
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 ft.
8. DEPTH DRILLED INTO ROCK: 0 ft.
9. TOTAL DEPTH OF HOLE: 10.0 ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'R DESGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 6/20/91 COMPLETED: 6/20/91
17. ELEVATION TOP OF HOLE: -29.4
18. TOTAL CORE RECOVERY FOR BORING: 42%
19. SIGNATURE OF GEOLOGIST: J. GENTILE

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-29.4	0					-29.4	
			SAND, fine to medium, quartz, little to some silt, gray (SM)				SETTLE
							SETTLE
				38	1	2" SAMPLER	SETTLE
							SETTLE
							2
						-34.4	
							SETTLE
					2		SETTLE
				46		2" SAMPLER	SETTLE
-37.9	8.5						10
			LIMESTONE, cemented shell and little quartz, light gray, porous, moderately hard		3		21
-39.4	10.0					-39.4	
			Soils are field visually classified in accordance with the Unified Soils Classification System.			Note: 300# hammer with 18 in. drop used on 2 in. I.D. sampler	
			SAMPLE ELEVATION LABORATORY CLASSIFICATION			# bls/ft. refers to the number of hammer blows required to advance a 2 in. sampler (2" I.D. x 2-1/2" O.D.) one foot. The sampler is 5 ft. long and driven continuously 5 ft. where possible.	
			-29.4/-34.4 (SP-SM)				

0 2 4 6 8 10 12 14 16 18

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PROJECT: CHARLOTTE HARBOR MAINT.

HOLE NUMBER: CB-CH91-1

Hole No.CB-CH91-2

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 1

1. PROJECT CHARLOTTE HARBOR MAINT DREDGING	10. SIZE AND TYPE OF BIT See Remarks
2. LOCATION *(Coordinates or Station)* X=402763, Y=859186	11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)* MLW
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'R DESGNATION OF DRILL Failing 1500
4. HOLE NO. *(As shown on drawing title and file number)* CB-CH91-2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN disturbed: 0 undisturbed: 0
5. NAME OF DRILLER R. Gordon	14. TOTAL NUMBER OF CORE BOXES 1
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED	15. ELEVATION GROUND WATER Tidal
7. THICKNESS OF BURDEN 0 ft.	16. DATE HOLE STARTED 6/20/91 COMPLETED 6/20/91
8. DEPTH DRILLED INTO ROCK 0 ft.	17. ELEVATION TOP OF HOLE -29.9
9. TOTAL DEPTH OF HOLE 7.0 ft.	18. TOTAL CORE RECOVERY FOR BORING 57%
	19. SIGNATURE OF GEOLOGIST J. GENTILE

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/ 1'
-29.9	0					-29.9	
			SAND, fine to medium, quartz, little shell, trace silt, gray (SP)	40	1	2" SAMPLER	SETTLE 4 2 5 6 4 9
						-34.9	
-35.9	6.0			100	2	2" SAMPLER	1 6 14
			LIMESTONE, cemented shell and little quartz, gray, porous,				
-36.9	7.0					-36.9	

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-29.9/-34.9	(SP)

Note: 300# hammer with 18 in. drop used on 2 in. I.D. sampler.

blows/ft. refers to the number of hammer blows required to advance a 2 in. sampler (2" I.D. x 2-1/2" O.D.) one foot. The sampler is 5 ft. long and driven continuously 5 ft. where possible.

0 2 4 6 8 10 12 14 16 18

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PROJECT CHARLOTTE HARBOR MAINT DREDGING | HOLE NUMBER CB-CH91-2

Hole No.CB-CH91-3

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 1
1. PROJECT CHARLOTTE HARBOR MAINT DREDGING		10. SIZE AND TYPE OF BIT See Remarks	
2. LOCATION *(Coordinates or Station)* X=403184, Y=859515		11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)* MLW	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'R DESGNATION OF DRILL Failing 1500	
4. HOLE NO. *(As shown on drawing title and file number)* CB-CH91-3		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN disturbed: 0 undisturbed: 0	
5. NAME OF DRILLER R. Gordon		14. TOTAL NUMBER OF CORE BOXES 1	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED		15. ELEVATION GROUND WATER Tidal	
		16. DATE HOLE STARTED 6/20/91 COMPLETED 6/20/91	
7. THICKNESS OF BURDEN 0 ft.		17. ELEVATION TOP OF HOLE -30.9	
8. DEPTH DRILLED INTO ROCK 0 ft.		18. TOTAL CORE RECOVERY FOR BORING 68%	
9. TOTAL DEPTH OF HOLE 5.0 ft.		19. SIGNATURE OF GEOLOGIST J. GENTILE	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/ 1'
-30.9	0					-30.9	
			SAND, fine to medium, quartz, little shell, trace silt, gray (SP)	68	1	2" SAMPLER	SETTLE 5 6 9 23
-35.4	4.5						
-35.9	5.0		LIMESTONE, moderately hard, cemented shell and little quartz grains, gray			-35.9	

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-30.4/-35.4	(SP)

Note: 300 # hammer with 18 in. drop used on 2 in. I.D. sampler.

blows/ft. refers to the number of hammer blows required to advance a 2 in. sampler (2" I.D. x 2-1/2" O.D.) one foot. The sampler is 5 ft. long and driven continuously 5 ft. where possible.

0 2 4 6 8 10 12 14 16 18

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PROJECT CHARLOTTE HARBOR MAINT DREDGING | HOLE NUMBER CB-CH91-3

Hole No.CB-CH91-4

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1

1. PROJECT: CHARLOTTE HARBOR MAINT DREDGING
2. LOCATION *(Coordinates or Station)*: X=402774, Y=859940
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH91-4
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 ft.
8. DEPTH DRILLED INTO ROCK: 0 ft.
9. TOTAL DEPTH OF HOLE: 6.0 ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'R DESGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 6/20/91 COMPLETED: 6/20/91
17. ELEVATION TOP OF HOLE: -30.4
18. TOTAL CORE RECOVERY FOR BORING: 71%
19. SIGNATURE OF GEOLOGIST: J. GENTILE

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-30.4	0					-30.4	
			SAND, fine to coarse, quartz and sand size shell fragments, well graded, clean, light gray, some shell (gravel size) (SW)	71	1	2 IN. SAMPLER	SETTLE SETTLE 2 4 3
-35.4	5.0						
-36.4	6.0		SAND, fine quartz, silty, gray, little shell (SM)		2	-36.4	4

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-30.9/35.4	(SP)

Note: 300# hammer with 18 in. drop used on 2 in. I.D. sampler.

blows/ft. refers to the number of hammer blows required to advance a 2 in. sampler (2" I.D. x 2-1/2" O.D.) one foot. The sampler is 5 ft. long and driven continuously 5 ft. where possible.

0 2 4 6 8 10 12 14 16 18

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PROJECT: CHARLOTTE HARBOR MAINT DREDGING

HOLE NUMBER: CB-CH91-4

Hole No.CB-CH91-5

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 1
1. PROJECT CHARLOTTE HARBOR MAINT DREDGING		10. SIZE AND TYPE OF BIT See Remarks	
2. LOCATION *(Coordinates or Station)* X=402968, Y=860010		11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)* MLW	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'R DESGNATION OF DRILL Failing 1500	
4. HOLE NO. *(As shown on drawing title and file number)* CB-CH91-5		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN disturbed: 0 undisturbed: 0	
5. NAME OF DRILLER R. Gordon		14. TOTAL NUMBER OF CORE BOXES 1	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED		15. ELEVATION GROUND WATER Tidal	
		16. DATE HOLE STARTED 6/20/91 COMPLETED 6/20/91	
7. THICKNESS OF BURDEN 0 ft.		17. ELEVATION TOP OF HOLE -31.2	
8. DEPTH DRILLED INTO ROCK 0 ft.		18. TOTAL CORE RECOVERY FOR BORING 66%	
9. TOTAL DEPTH OF HOLE 5.0 ft.		19. SIGNATURE OF GEOLOGIST J. GENTILE	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/ 1'
-31.2	0					-31.2	
			SAND, fine to coarse quartz and sand size shell fragments, well graded, clean, light gray, some shell (gravel size) (SW)	66	1	2 IN. SAMPLER	2 2 2 3 2
-36.2	5.0					-36.2	
			Soils are field visually classified in accordance with the Unified Soils Classification System. SAMPLE ELEVATION: -31.2/-36.2 LABORATORY CLASSIFICATION: (SP)			Note: 300# hamer with 18 in. drop used on 2 in. i.D. sampler. # blows/ft. refers to the number of hammer blows required to advance a 2 in. sampler (2" I.D. x 2-1/2" O.D.) one foot. The sampler is 5 ft. long and driven continuously 5 ft. where possible.	

0 2 4 6 8 10 12 14 16 18

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PROJECT CHARLOTTE HARBOR MAINT DREDGING

HOLE NUMBER CB-CH91-5

CB-CH91-7

Hole No. CB-CH91-6

DRILLING LOG	**DIVISION** South Atlantic
INSTALLATION	Jacksonville District
SHEET	1 OF 1 SHEETS
1. PROJECT	Charlotte Harbor Maintenance Dredging
2. LOCATION (Coordinates or Station)	x=403,528 y=860,257
3. DRILLING AGENCY	Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number)	CB-CH91-6
5. NAME OF DRILLER	R. Gordon
6. DIRECTION OF HOLE	[XX] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	13.0'
10. SIZE AND TYPE OF BIT	See remarks
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MLW
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	1
15. ELEVATION GROUND WATER	Tidal
16. DATE HOLE	STARTED 6/21/91 COMPLETED 6/21/91
17. ELEVATION TOP OF HOLE	-23.7
18. TOTAL CORE RECOVERY FOR BORING	54 %
19. SIGNATURE OF INSPECTOR	Geologist, J. Gentile

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
-23.7	0.0					Bit or Barrel -23.7 Blows/Ft
-25.7	2.0		SHELL, sand to gravel size fragments, clean, tan	50	1	2" Sampler settled 2 4
-32.7	9.0		SAND, fine to coarse, quartz and sand size shell fragments, well graded, clean, light gray (SW), shelly		2	5 -28.7 5
				30	3	3 2" Sampler 3 7 5
-35.7	12.0		SAND, fine to medium, quartz, little to some shell, gray, clean (SP)			-33.7 9
-36.7	13.0		LIMESTONE, cemented shell and little quartz grains, seams poorly cemented material, moderately hard	100	4 5	7 2" Sampler 10 -36.7 30

Soils are field visually classified in accordance with the Unified Soils Classification System.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-23.7/-25.7	(SP)
-25.7/-28.7	(SP)
-33.7/-35.7	(SP)

300# hammer with 18" drop used on 2" ID sampler.

bls/ft referred to number of hammer blows required to advance 2" sampler (2" ID X 2½" OD) one foot. Sampler is 5' long and driven continuously 5' where possible.

Hole No.CB-CH91-7

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: CHARLOTTE HARBOR MAINT DREDGING
2. LOCATION *(Coordinates or Station)*: X=408745, Y=862247
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH91-7
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 ft.
8. DEPTH DRILLED INTO ROCK: 0 ft.
9. TOTAL DEPTH OF HOLE: 5.0 ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'R DESGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 0 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 6/21/91 COMPLETED: 6/21/91
17. ELEVATION TOP OF HOLE: -31.5
18. TOTAL CORE RECOVERY FOR BORING: 80%
19. SIGNATURE OF GEOLOGIST: J. GENTILE

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Bit or Barrel	BLOWS/1'
-31.5	0					-31.5	
			LIMESTONE, moderately hard, porous, permeable, cemented shell and little quartz grains, tan, massive bedded	80	1	2" SAMPLER	SETTLE 7 13 17 16
-36.5	5.0					-36.5	
			Soils are field visually classified in accordance with the Unified Soils Classification System.			Note: 300# hammer with 18 in. drop used on 2 in. I.D. sampler. # blows/ft. refers to the number of hammer blows required to advance a 2 in. sampler (2" I.D. x 2-1/2" O.D.) one foot. The sampler is 5 ft. long and driven continuously 5 ft. where possible.	

0 2 4 6 8 10 12 14 16 18

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PROJECT: CHARLOTTE HARBOR MAINT DREDGING

HOLE NUMBER: CB-CH91-7

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=397,353 Y=852,664
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-1
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 19 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 8/1/94 COMPLETED: 8/1/94
17. ELEVATION TOP OF HOLE: -17.1 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 62 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-17.1	.0					-17.1	
			SAND, very fine to fine quartz, dense, trace medium sand size shell, light gray (SP)	75	1	2" SAMPLER	SETTLED 11 13 27 31
						-22.1	
				60	2	2" SAMPLER	22 50 27 27 47
						-27.1	
				60	3	2" SAMPLER	15 19 39 33 38
						-32.1	
				50	4	2" SAMPLER	21 33 39 46
-36.1	19.0					-36.1	
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.	

0 — 2.5 — 5 — 7.5 — 10 — 12.5 — 15 — 17.5 — 20 — 22.5

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE OF NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2"I.D. X 2 1/2" O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

Hole No.CB-CH94-2

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=397,926 Y=853,493
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-2
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 20 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 8/2/94 COMPLETED: 8/2/94
17. ELEVATION TOP OF HOLE: -15.4 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 71 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'	
-15.4	.0					-15.4		
			SAND, very fine to fine quartz, dense, light gray (SP)				4	0
							9	
				20	1	2" SAMPLER	12	2.5
							35	
							47	
						-20.4		5
							16	
							15	
			BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.	70	2	2" SAMPLER	18	7.5
							40	
			BLOWS/1' REFERS TO NUMBER OF HAMMER BLOWS RFEQUIRED TO ADVANCE A 2" SAMPLER (2"I.D. X 2 1/2" O.D.) ONE FOOT. THE SAMPLER 5 IS 5 FEET LONG AND DRIVEN CONTINOUSLY WHERE POSSIABLE.				70	
						-25.4		10
							10	
							15	
				80	3	2" SAMPLER	24	12.5
							55	
							81	
						-30.4		15
			a little fine sand to gravel size shell				20	
							28	
			2" layer of very fine Silty SAND at -33.0	80	4	2" SAMPLER	30	17.5
							60	
							90	
-35.4	20.0					-35.4		20
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.		22.5

Hole No.CB-CH94-3

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=398,245 Y=853,911
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-3
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 13 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED COMPLETED: 7/23/94 7/23/94
17. ELEVATION TOP OF HOLE: -17.2 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 45 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-17.2	.0					-17.2	
			SAND, very fine quartz, very dense, light gray (SP)				8
							15
				40	1	2" SAMPLER	18
							24
							42
						-22.2	
				0		2" SAMPLER	10
							30
							50
						-25.2	
				80	2	2" SAMPLER	12
							20
							27
							35
							60
-30.2	13.0					-30.2	

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-17.1/-22.1	(SP)*
-25.2/-30.2	(SP-SM)*

NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.

300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

Hole No.CB-CH94-4

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=398,840 Y=854,265
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-4
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 4 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED COMPLETED: 7/23/94 7/23/94
17. ELEVATION TOP OF HOLE: -29.9 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 75 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-29.9	.0					-29.9	
			SAND, fine quartz, dense, light gray (SP)	75	1	2" SAMPLER	9 9 12 16
-33.9	4.0					-33.9	

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-29.9/-34.9	(SP-SM)*

NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.

300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=399,135 Y=855,261
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-5
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 23 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 8/2/94 COMPLETED: 8/2/94
17. ELEVATION TOP OF HOLE: −12.5 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 43 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'	
−12.5	.0					−12.5		0
			SAND, fine quartz, trace fine to medium shell, light gray (SP)				SETTLED	
				40	1	2" SAMPLER	5	2.5
							7	
							11	
						−17.5		5
				70	2	2" SAMPLER	3	
							22	
							28	7.5
							56	
							79	
						−22.5		10
							WASHED	
						−24.5		
				10	3	2" SAMPLER	9	12.5
							13	
							60	15
							110	
						−28.5		
							WASHED	
						−30.5		17.5
				80	4		8	
							14	20
							32	
					5		32	
							48	22.5
−33.0	20.5		SILT, calcareous, sandy (fine quartz), some shell, gray (ML)					
						(continued)		

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PROJECT: Charlotte Harbor, Boca Grande

HOLE NUMBER: CB-CH94-5

DRILLING LOG (Cont. Sheet)

ELEVATION TOP OF HOLE -12.5 Ft.

PROJECT: Charlotte Harbor, Boca Grande

INSTALLATION: Jacksonville District

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 1'
-35.0	22.5						
-35.5	23.0			80	5	-35.5	48

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

22.5
25
27.5
30
32.5
35
37.5
40
42.5
45
47.5
50

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=400,103 Y=856,477
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-6
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 19 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED COMPLETED: 7/23/94 7/23/94
17. ELEVATION TOP OF HOLE: -16.9 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 55 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'	
-16.9	.0					-16.9		0
			SAND, fine quartz, a little fine to coarse shell, light gray (SP)				5	
							6	
				60	1	2" SAMPLER	14	2.5
							14	
							14	
						-21.9		5
							9	
							16	
			BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN USE OF THE DATA FOR THE 2" SAMPLR.	60	2	2" SAMPLER	27	7.5
							44	
			BLS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2"I.D. X 2 1/2" O.D.) ONE FOOT. THE SAMPLER IS 5' LONG AND DRIVEN CONTINOUSLY 5' WHERE POSSIABLE.				35	
						-26.9		10
							9	
							15	
				50	3	2" SAMPLER	21	12.5
							25	
							30	
						-31.9		15
							10	
							18	
-33.5	16.6			50	4	2" SAMPLER	25	17.5
			Silty SAND, fine quartz, calcareous silt, dense, trace shell, light gray/green (SM)				35	
-35.9	19.0					-35.9		
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.		20
						NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.		
			SAMPLE ELEVATION / LABORATORY CLASSIFICATION -16.9/-21.9 (SP)* -21.9/-26.9 (SP-SM)* -26.9/-31.9 (SP)*					22.5

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PROJECT: Charlotte Harbor, Boca Grande

HOLE NUMBER: CB-CH94-6

Hole No.CB-CH94-7

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=857,428 Y=400,750
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-7
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 5 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED COMPLETED: 7/23/94 7/23/94
17. ELEVATION TOP OF HOLE: -28.8 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 50 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-28.8	.0					-28.8	
			SAND, fine quartz, trace calcareous silt and shell, ligjt gray (SP)	50	1	2" SAMPLER	6 8 6 6 9
-33.8	5.0					-33.8	

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-28.8/-33.8	(SP-SM)*

NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.

300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

Hole No.CB-CH94-8

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

SHEET 1 OF 1

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=858,375 Y=401,845
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-8
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 10 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED COMPLETED: 7/22/94 7/22/94
17. ELEVATION TOP OF HOLE: -27.2 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 35 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-27.2	.0					-27.2	
			SAND, very fine to fine quartz, trace shell and silt (SP)	30	1	2" SAMPLER	SETTLED 2 5 5 7
						-32.2	
				40	2	2" SAMPLER	6 8 10 11 20
-34.5	7.3		Silty SAND, very fine quartz, dense, light gray (SM)				
-37.2	10.0					-37.2	

0
2.5
5
7.5
10
12.5
15
17.5
20
22.5

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-27.2/-32.2	(SP-SM)*

NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.

300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

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MAR 71

PROJECT: Charlotte Harbor, Boca Grande

HOLE NUMBER: CB-CH94-8

Hole No.CB-CH94-9

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=402,727 Y=859,245
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-9
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 7 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 7/22/94 COMPLETED: 7/22/94
17. ELEVATION TOP OF HOLE: -29.2 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 44 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-29.2	.0					-29.2	
			SAND, very fine to fine quartz, trace shell,slightly silty, gray (SP-SM)				3
							4
							5
				44	1	2" SAMPLER	4
-33.5	4.3						SETTLED
			Silty SAND, very fine to fine quartz, fine to coarse shell, gray (SM)				
-36.2	7.0					-36.2	

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-29.2/-33.5	(SP-SM)*

NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.

300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

Hole No.CB-CH94-10

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=403,350 Y=859,635
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-10
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 5 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 7/21/94 COMPLETED: 7/21/94
17. ELEVATION TOP OF HOLE: -28 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 40 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-28.0	.0					-28.0	
			SAND, fine quartz, fine to coarse shell, slightly silty, gray (SP-SM)	40	1	2" SAMPLER	4 6 6 5
-33.0	5.0				2	-33.0	2

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-16.2/-21.2	(SP-SM)*

NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.

300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

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MAR 71

PROJECT: Charlotte Harbor, Boca Grande

HOLE NUMBER: CB-CH94-10

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=402,840 Y=860,045
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-11
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 10 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 7/21/94 COMPLETED: 7/21/94
17. ELEVATION TOP OF HOLE: -16.2 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 35 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-16.2	.0					-16.2	
			SHELL, fine to coarse sand size,fine quartz sand and a trace of fine to medium phosohate and calcareous silt, light gray	30	1	2" SAMPLER	4 7 7 8
						-21.2	
-23.2	7.0						8 10
			SAND, fine quartz, trace fine phosphate and calcareous silt, light gray (SP)	40	2	2" SAMPLER	14 17 16
-26.2	10.0					-26.2	
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER. BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER. BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.	

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

Hole No.CB-CH94-11A

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=860,060 Y=402,910
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-11A
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 14.5 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 7/24/94 COMPLETED: 7/24/94
17. ELEVATION TOP OF HOLE: -21.6 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 20 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-21.6	.0					-21.6	
			SHELL, coarse sand to fine gravel size, a little fine quartz, gray (SP)	0		WASHED	0
						-26.1	2.5
				20	1	2" SAMPLER	3 7 8 13 15
-31.1	9.5					-31.1	5 7.5
			SAND, fine quartz, shelly, fine to medium, gray (SP)	20	2	2" SAMPLER	8 8 10 14 25
-36.1	14.5					-36.1	10 12.5
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.	15
			SAMPLE ELEVATION -32.0/-33.0 — LABORATORY CLASSIFICATION (SP-SM)*			BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.	17.5
			NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.			BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.	20 22.5

Hole No.CB-CH94-12

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=403,538 Y=860,325
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-12
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 14 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 7/21/94 COMPLETED: 7/21/94
17. ELEVATION TOP OF HOLE: -19.2 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 45 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-19.2	.0					-19.2	
			SHELL, fine to coarse sand to gravel size with fine quartz sand and a trace of fine to medium phosohate and calcareous silt, light gray	30	1	2" SAMPLER	1 3 4 3 4
-24.2	5.0					-24.2	
			SAND, fine quartz, fine to coarse shell, trace of fine to medium phosphate and calcareous silt, light gray (SP)	40	2	2" SAMPLER	8 8 8 8 8
						-29.2	
				45	3	2" SAMPLER	10 10 9 12
-33.2	14.0					-33.2	
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER. BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER. BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.	

0 — 2.5 — 5 — 7.5 — 10 — 12.5 — 15 — 17.5 — 20 — 22.5

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: Charlotte Harbor, Boca Grande
2. LOCATION *(Coordinates or Station)*: X=404,182 Y=860,585
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. *(As shown on drawing title and file number)*: CB-CH94-13
5. NAME OF DRILLER: R. Gordon
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 15 Ft.
10. SIZE AND TYPE OF BIT: See Remarks
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: Sprague & Henwood
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: undisturbed:
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: MLW
16. DATE HOLE STARTED: 7/21/94 COMPLETED: 7/21/94
17. ELEVATION TOP OF HOLE: -20.3 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 47 %
19. SIGNATURE OF GEOLOGIST: J. Hand

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/1'
-20.3	.0					-20.3	
			SAND, fine quartz, fine to coarse shell, trace of fine to medium phosphate and calcareous silt, light gray (SP)	40	1	2" SAMPLER	2 7 7 7 7
						-25.3	
				40	2	2" SAMPLER	8 5 9 10 14
						-30.3	
				60	3	2" SAMPLER	15 14 18 11 10
-33.5	13.2					-35.3	
-35.3	15.0		LIMESTONE, maderately hard, light gray				

0 — 2.5 — 5 — 7.5 — 10 — 12.5 — 15 — 17.5 — 20 — 22.5

SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.

SAMPLE ELEVATION	LABORATORY CLASSIFICATION
-20.3/-25.3	(SP-SM)*
-25.3/-30.3	(SP)*

NOTE: *VISUAL CLASSIFICATION BASED ON GRADATION CURVE. NO ATTERBERG LIMITS.

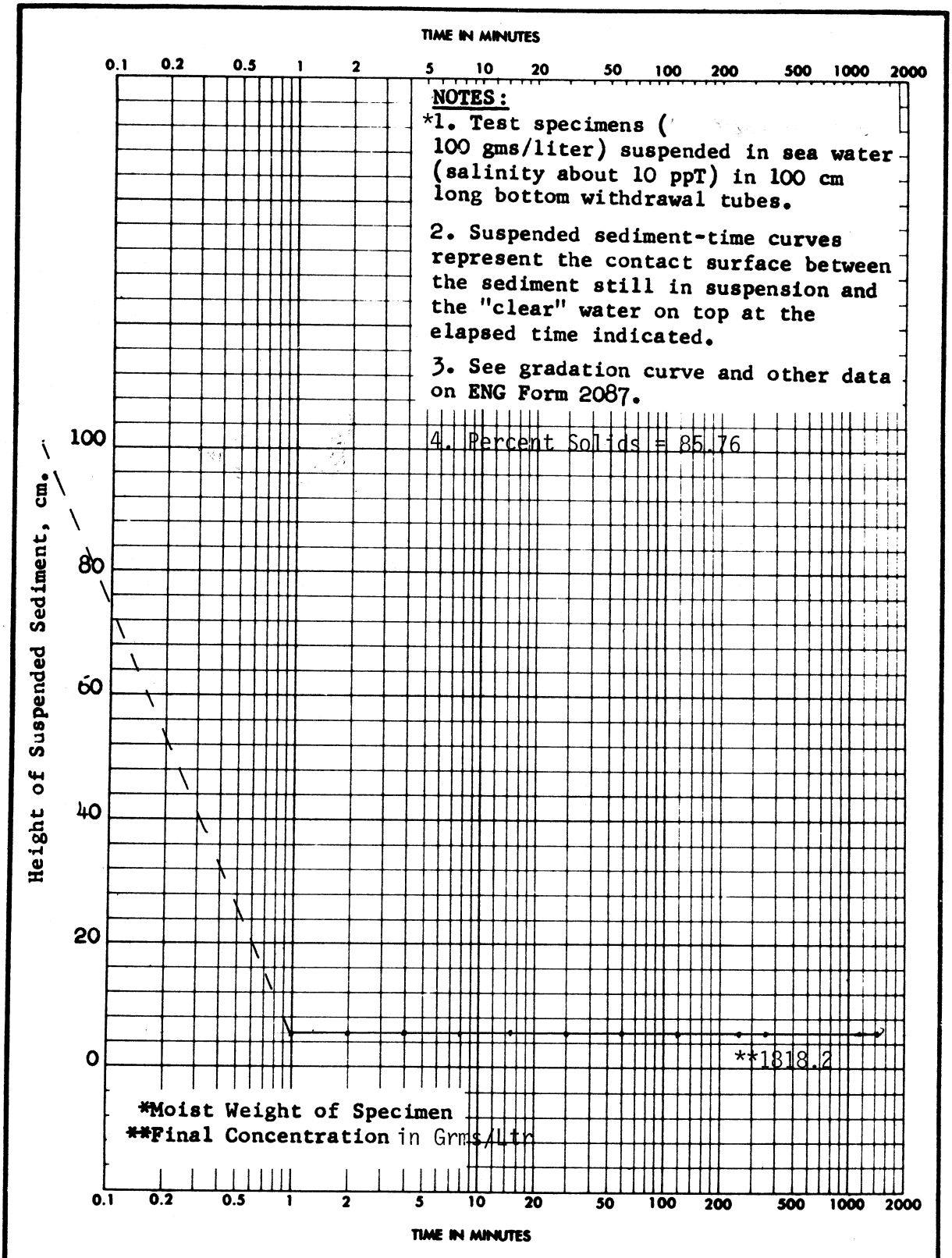
300 # HAMMER WITH 18" DROP USED ON 2" SAMPLER.

BLOW COUNTS FOR THE 2" SAMPLER ARE NOT COORELATED WITH THE STANDARD SPLIT SPOON TESTS AS DESIGNATED IN ASTM D-1586. JUDGEMENT IS NEEDED IN THE USE OF THE BLOW COUNT DATA FOR THE 2" SAMPLER.

BLOWS/1' REFERS TO THE NUMBER OF HAMMER BLOWS REQUIRED TO ADVANCE A 2" SAMPLER (2" I.D. X 2 1/2 O.D.) ONE FOOT. THE SAMPLER IS 5 FEET LONG AND DRIVEN CONTINOUSLY 5 FEET WHERE POSSIABLE.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT	Jacksonville, FL			Lab No. 73/714	
AREA	Charlotte Harbor Maintenance				
BORING NO. CB-CHM-83-1	SAMPLE NO. 1	EL -23.5/-35.5		DATE 10 August 1983	

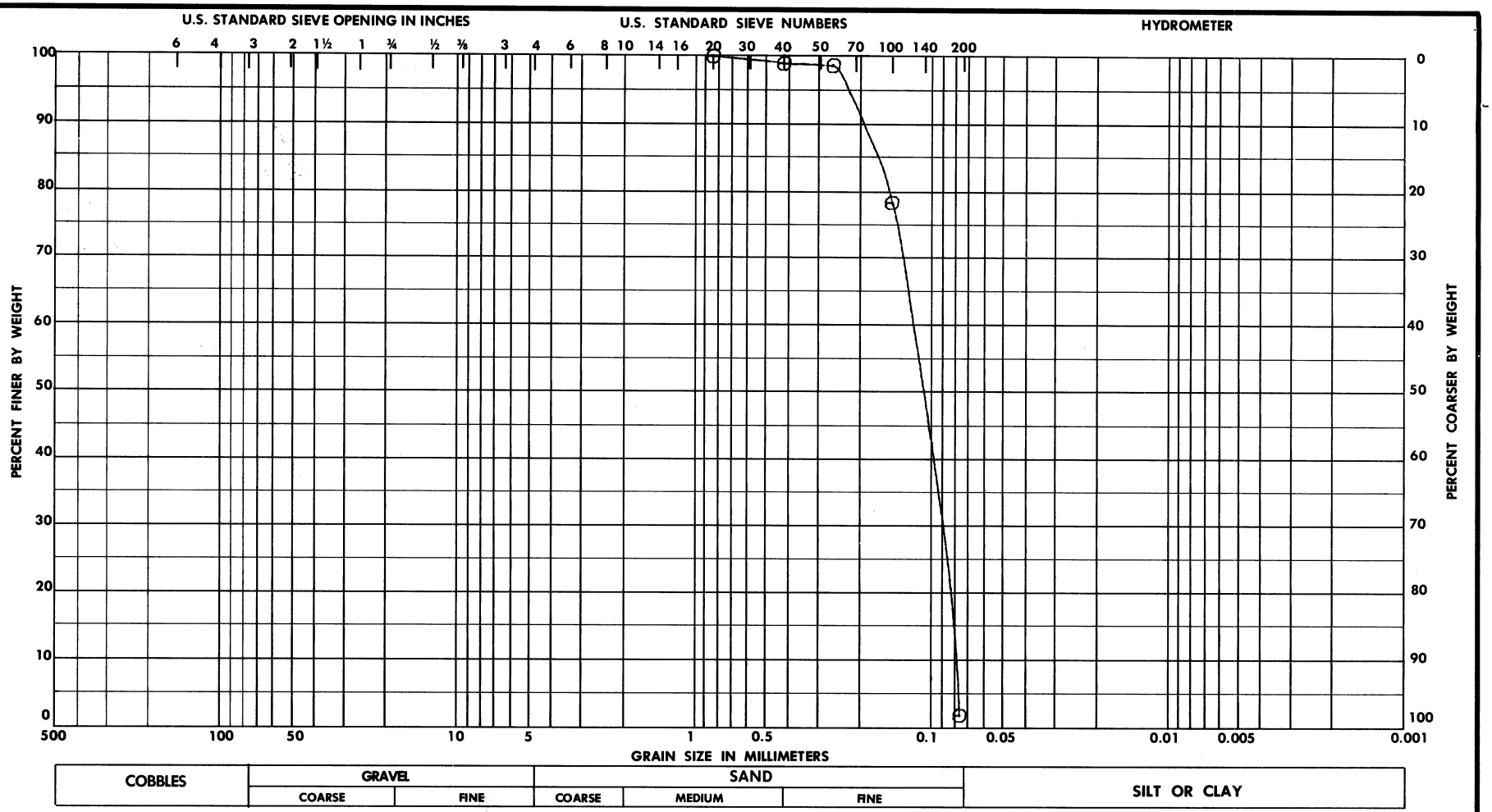
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-23.5/-35.5	POORLY GRADED SAND (SP)	16.6	NP	NP	NP
		LT.TAN WITH A TRACE OF SHELL				

GRADATION CURVES

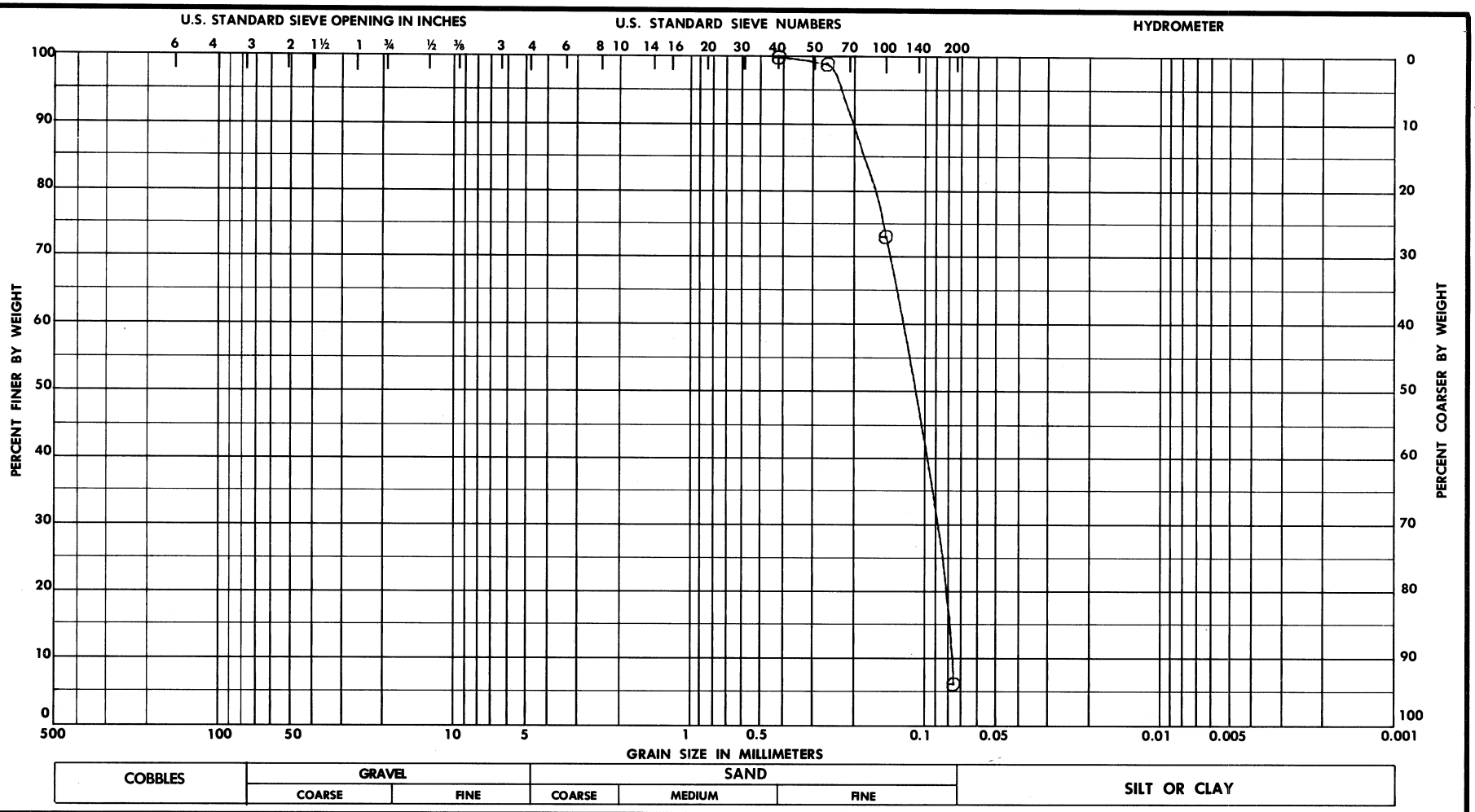
Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO.73/714
Boring No. CBCHM-83-1 SAMPLE NO. 1
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-32.8/-36.8	POORLY GRADED SILTY SAND	27.4	NP	NP	NP
		(SP-SM)				
		GRAY WITH A TRACE OF shell				

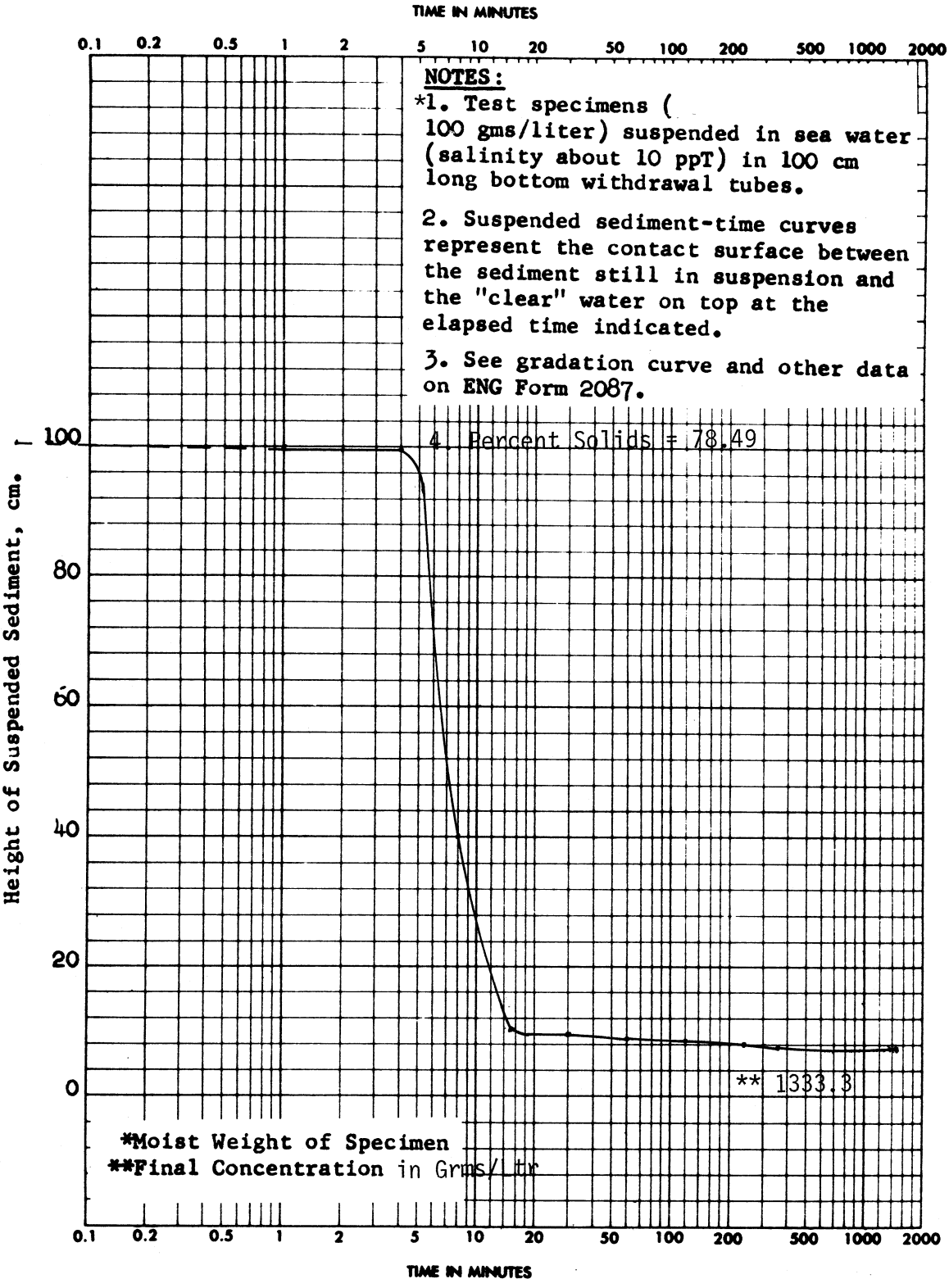
GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO.73/715
Boring No. CBCHM-83-3 SAMPLE NO. 1
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



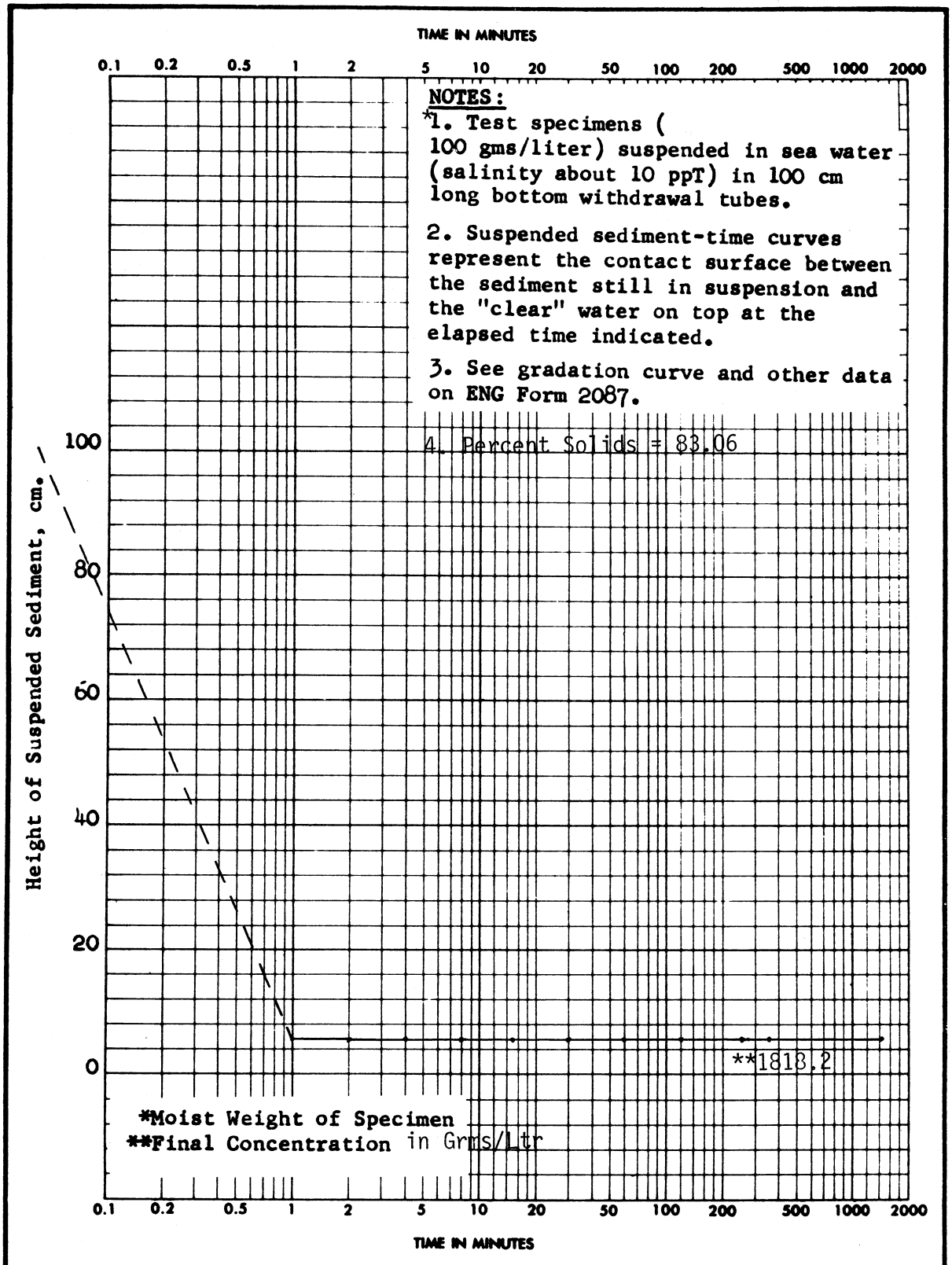
PROJECT	Jacksonville, FL			Lab No. 73/715
AREA	Charlotte Harbor Maintenance			
BORING NO. CB-CHM-83-3	SAMPLE NO. 1	EL -32.8/-36.8	DATE 10 August 1983	

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT	Jacksonville, FL			Lab No. 73/716
AREA	Charlotte Harbor Maintenance			
BORING NO. CB-CHM-83-5	SAMPLE NO. 1	EL	-27.0/-37.0	DATE 10 August 1983

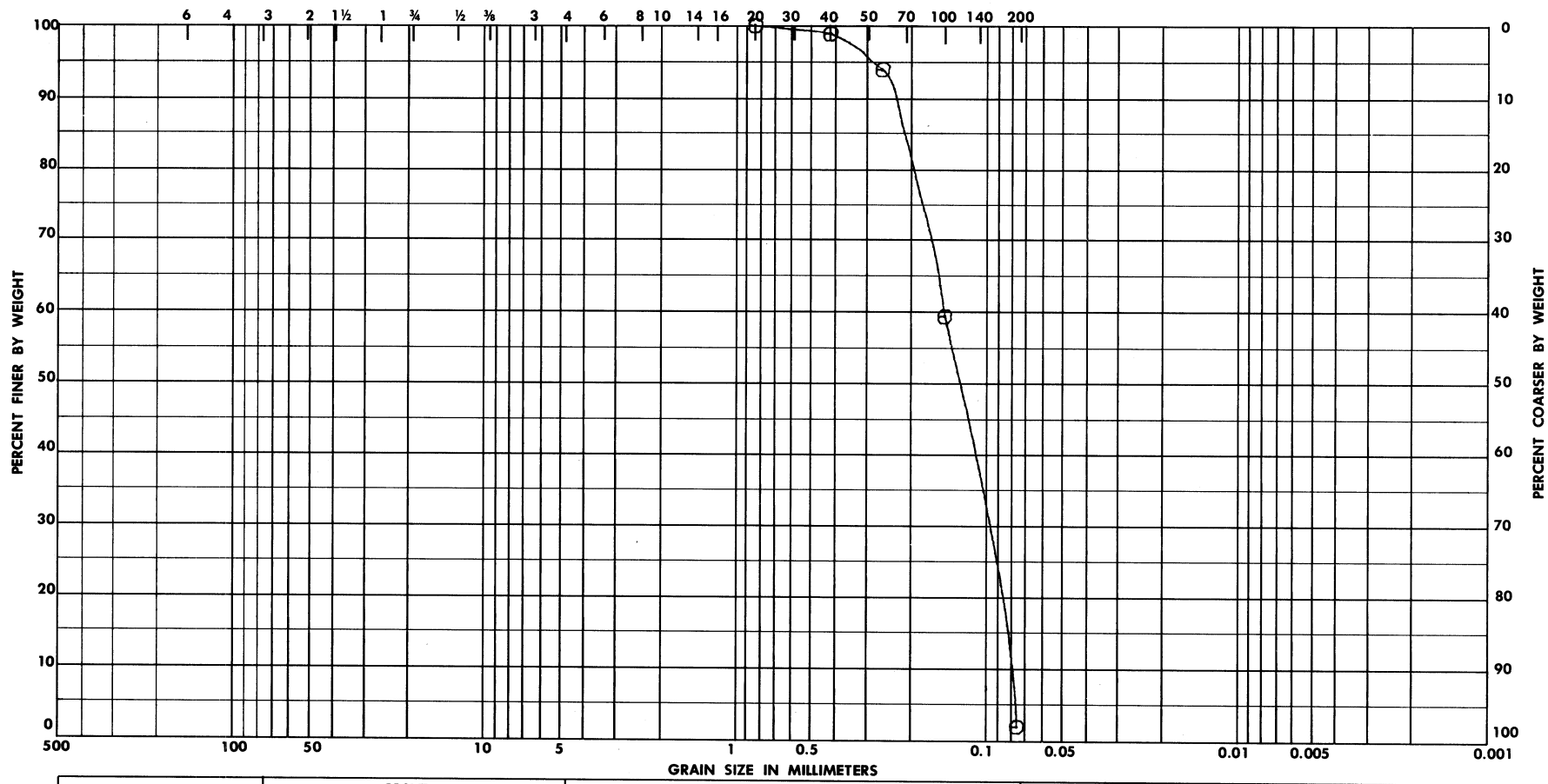
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-27.0/-37.0	VISUAL POORLY GRADED SAND (SP) LT.TAN	20.4	NP	NP	NP

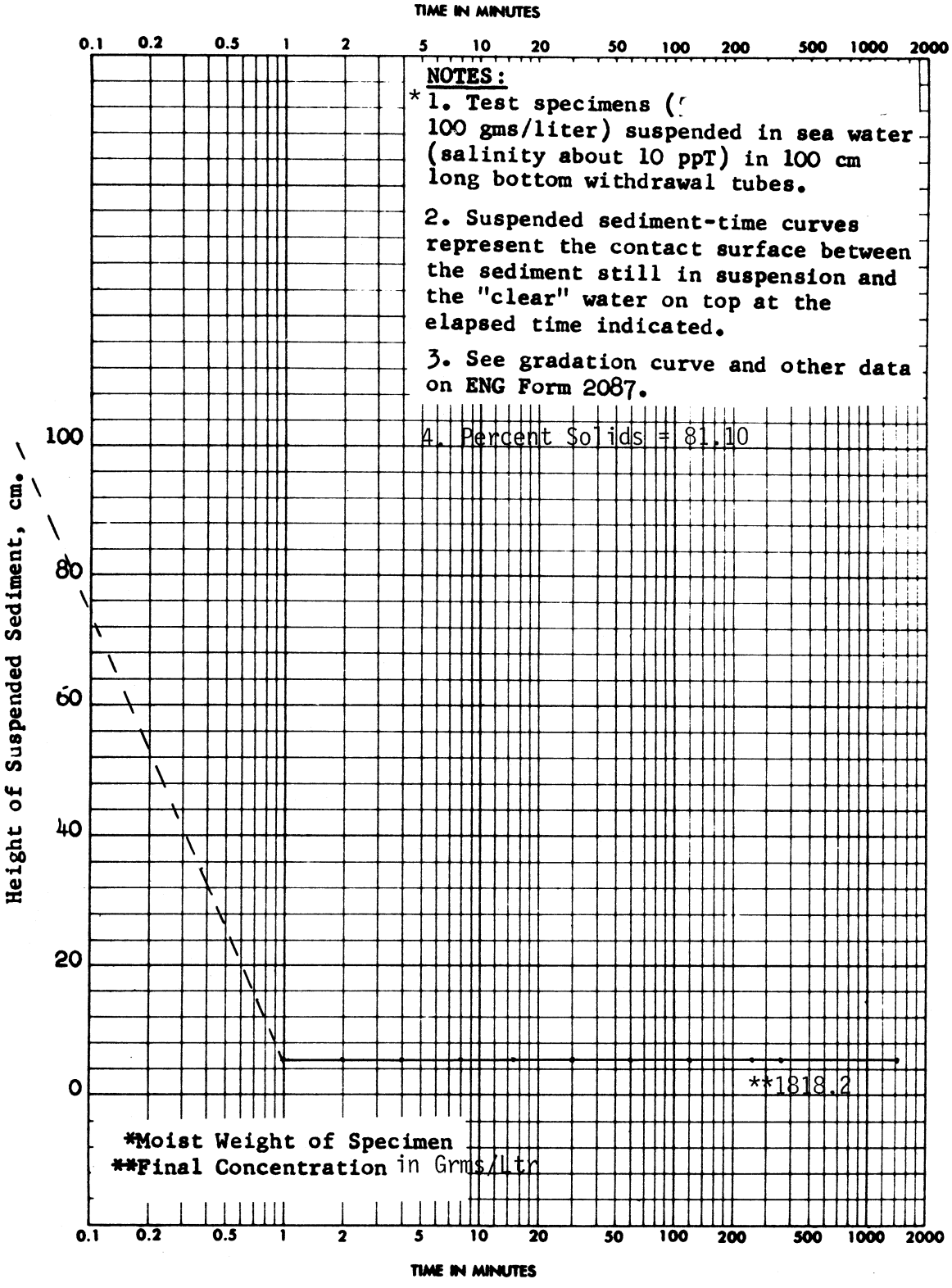
GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO.73/716
Boring No. CBCHM-83-5 SAMPLE NO. 1
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT	Jacksonville, FL			Lab No. 73/717
AREA	Charlotte Harbor Maintenance			
BORING NO.	CB-CHM-83-9	SAMPLE NO. 1	EL -29.0/-35.5	DATE 10 August 1983

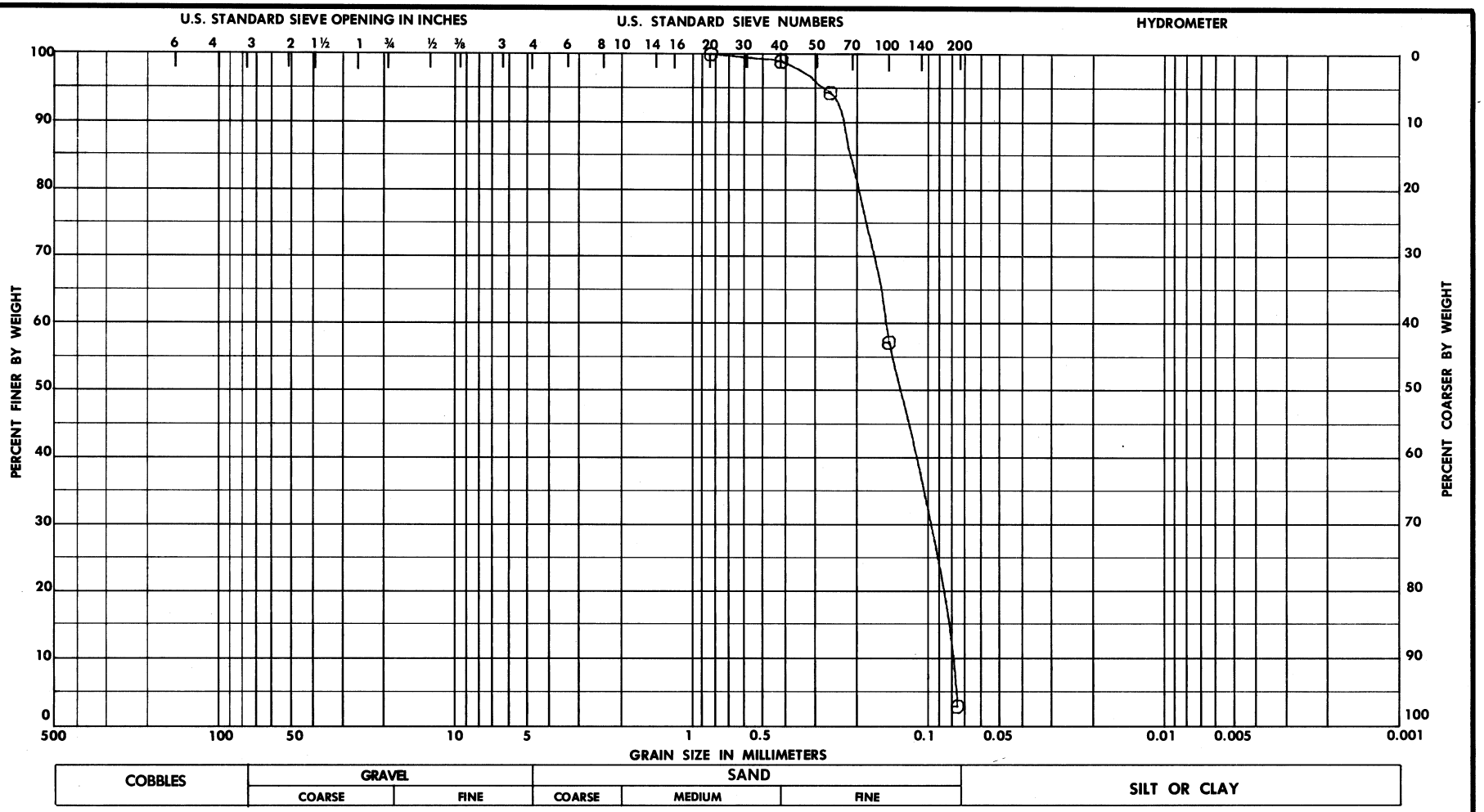
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-29.0/-35.5	POORLY GRADED SAND (SP)	23.6	NP	NP	NP
		LT.GRAY WITH A TRACE OF SHELL				

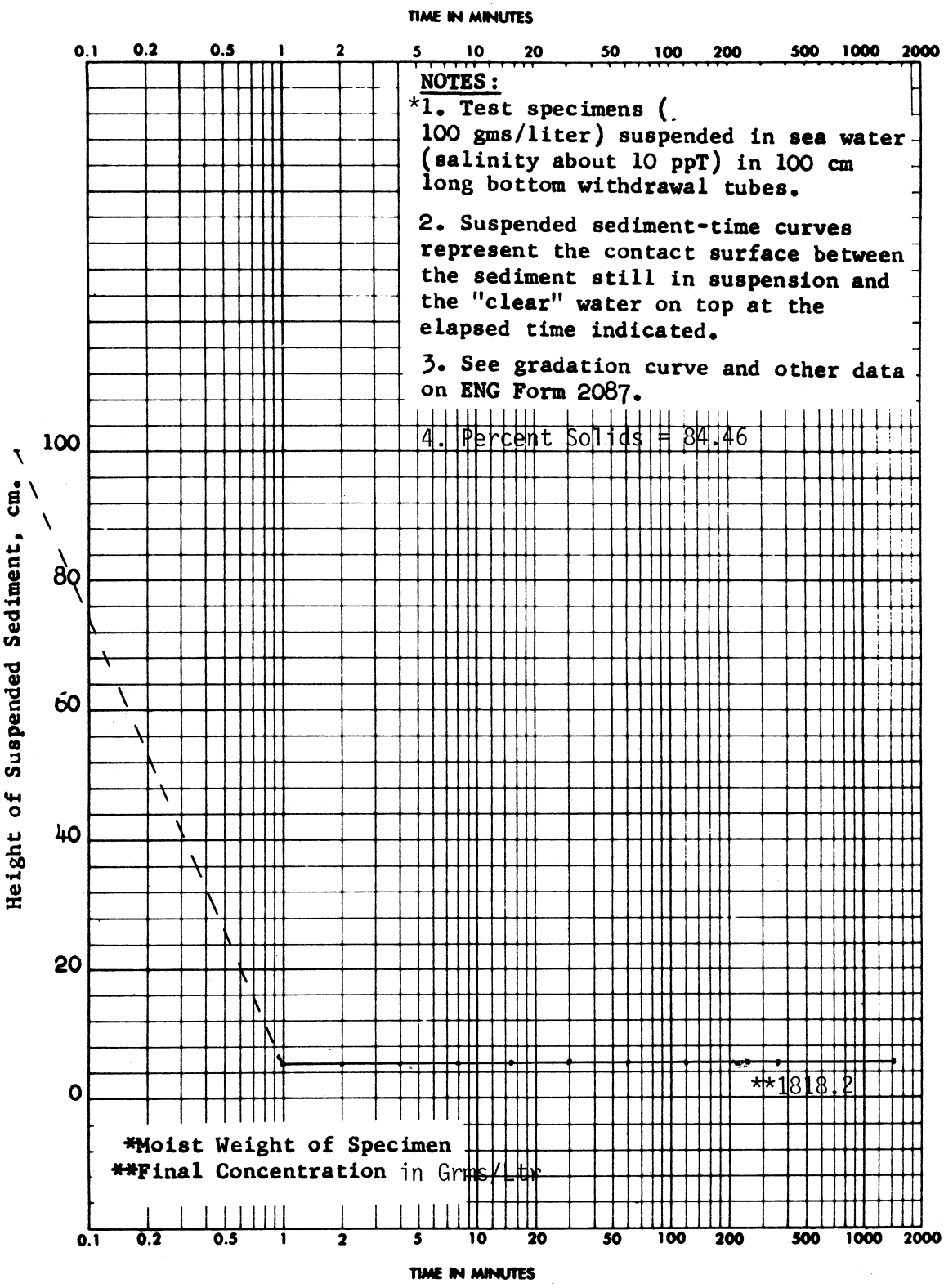
GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO.73/717
Boring No. CBCHM-83-9 SAMPLE NO. 1
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT	Jacksonville, FL			Lab. No. 73/718
AREA	Charlotte Harbor Maintenance			
BORING NO. CB-CHM-83-11	SAMPLE NO. 1	EL -10.0/-27.0		DATE 10 August 1983

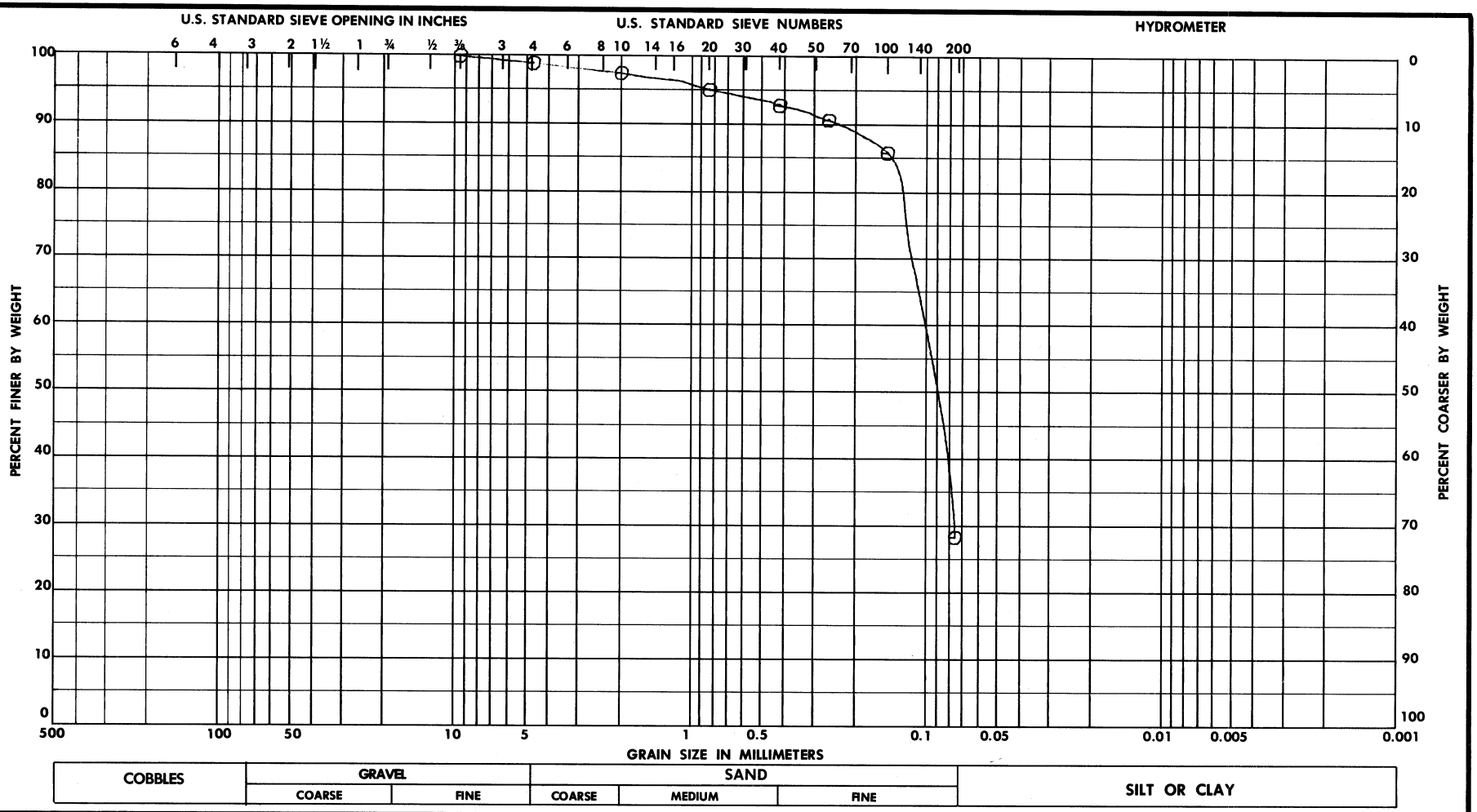
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
3	-31.0/-32.8	VISUAL SILTY SAND (SM) GRAY WITH A TRACE OF SHELL	30.7			

GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE

Area LAB NO.73/720

Boring No. CBCHM-83-11 SAMPLE NO. 3

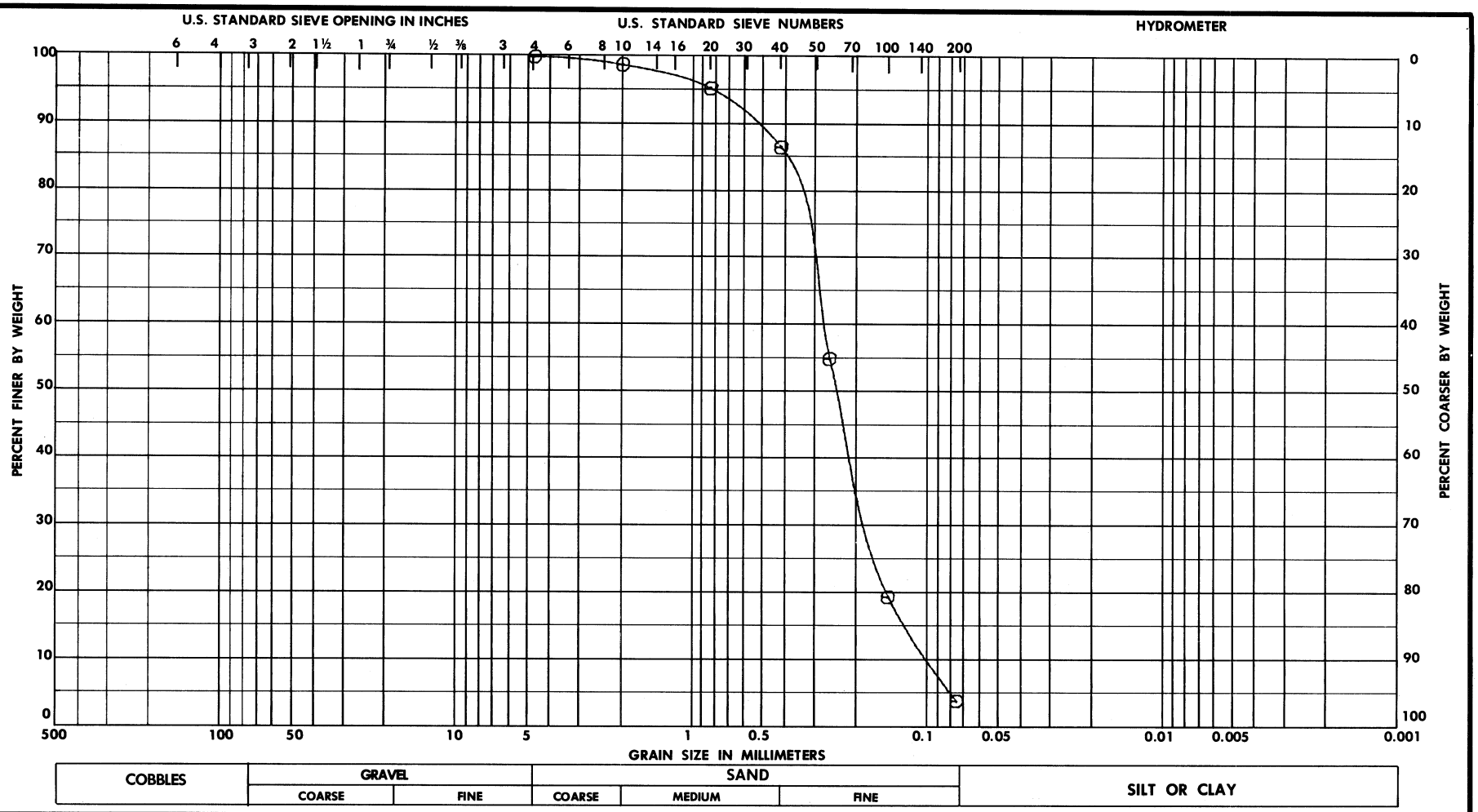
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth XXXXX	VISUAL Classification	Nat w %	LL	PL	PI
1	-10.0/-27.0	POORLY GRADED SAND (SP)	18.4	NP	NP	NP
		GRAY WITH A TRACE OF SHELL				

GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE

Area LAB NO.73/718

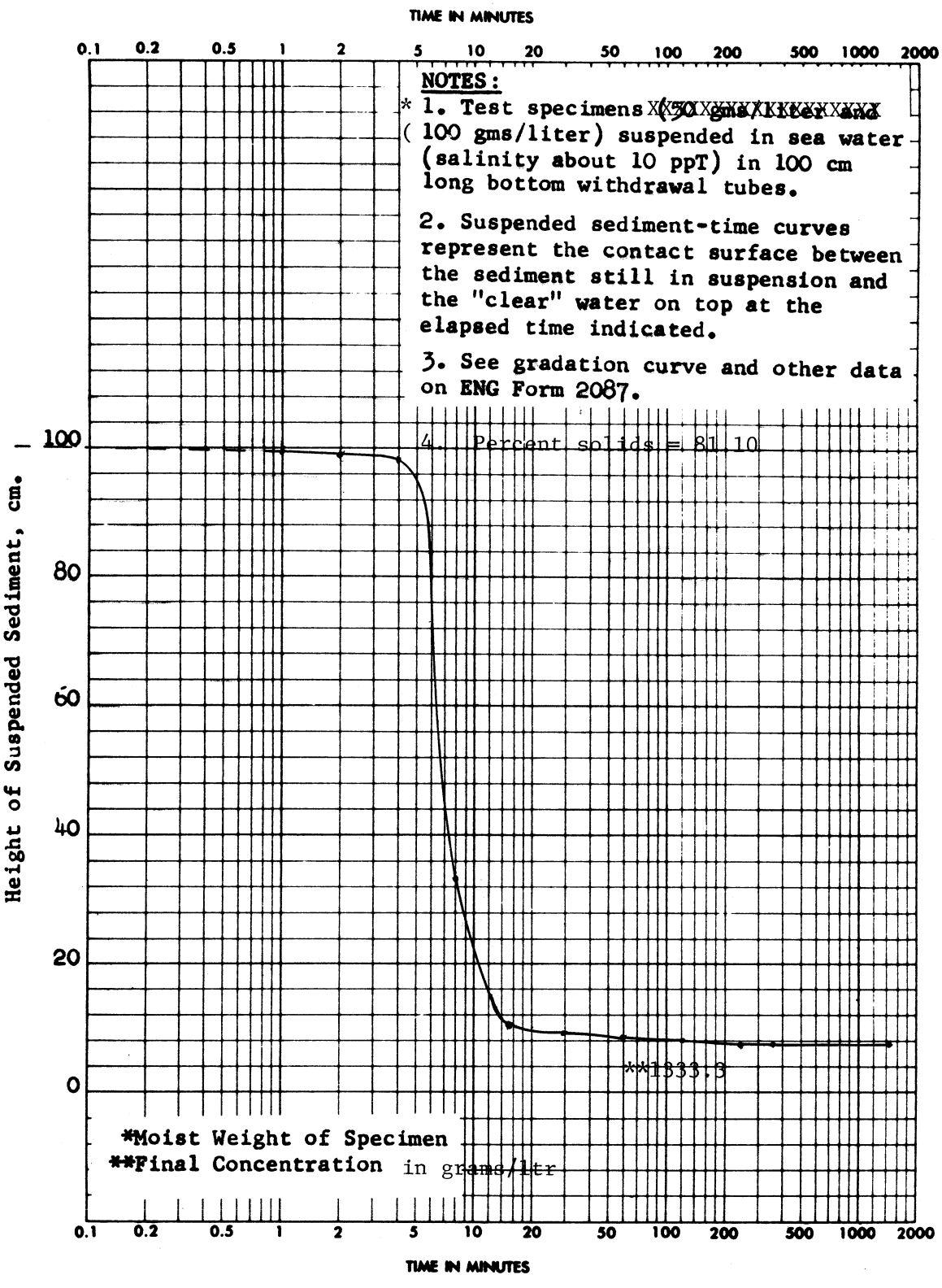
Boring No. CBCHM-83-11 SAMPLE NO. 1

Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT JACKSONVILLE, FLORIDA			Lab. No. 73/719
AREA Charlotte Harbor Maintenance			
BORING NO. CB-CHM-83-11	SAMPLE NO. 2	~~DEPTH~~ EL -27.0/-31.0	DATE 10 Aug 1983

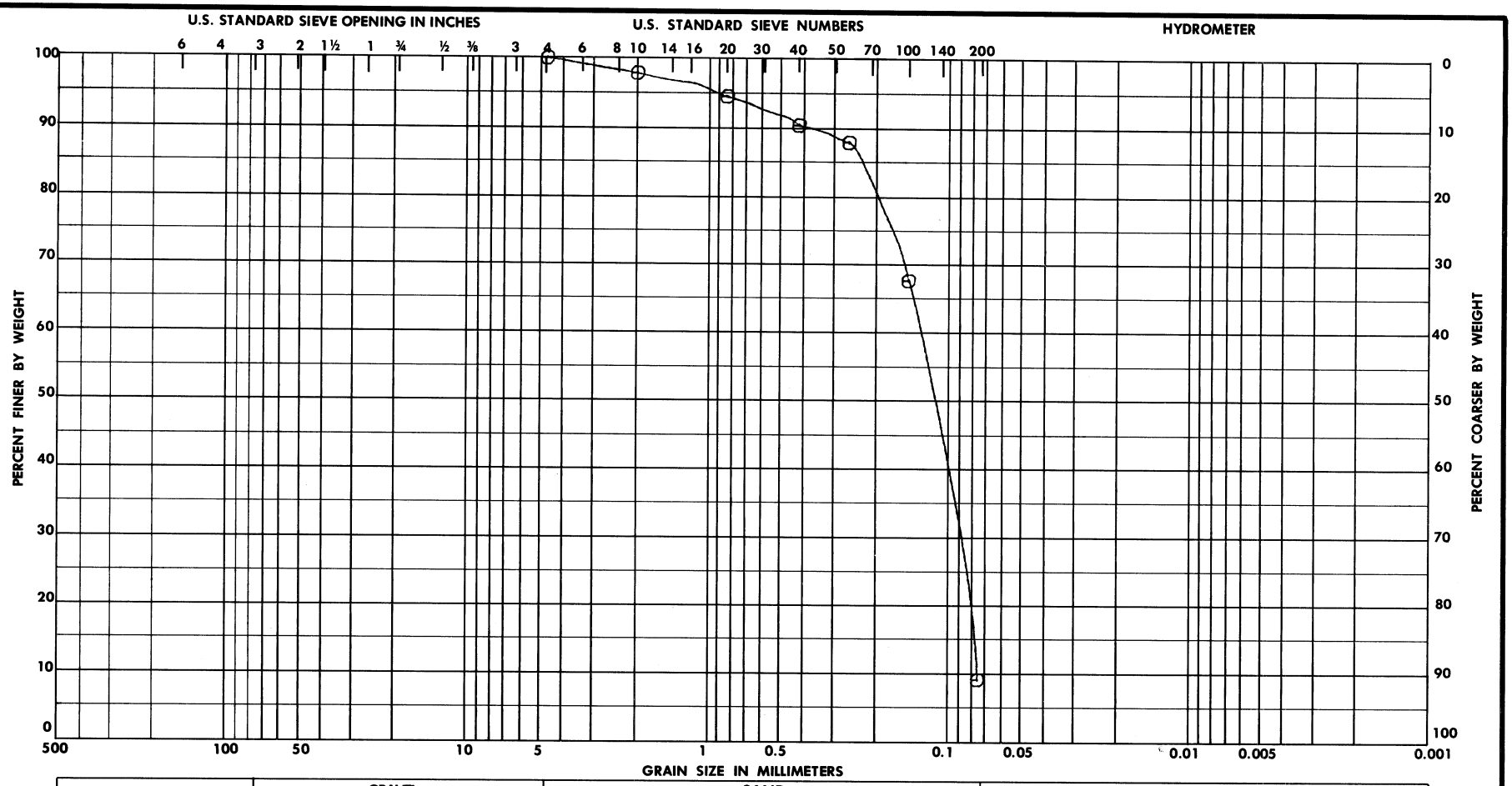
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth XXXXX	VISUAL Classification	Nat w %	LL	PL	PI
2	-27.0/-31.0	POORLY GRADED SILTY SAND	23.3	NP	NP	NP
		(SP-SM)				
		GRAY WITH A TRACE OF SHELL				

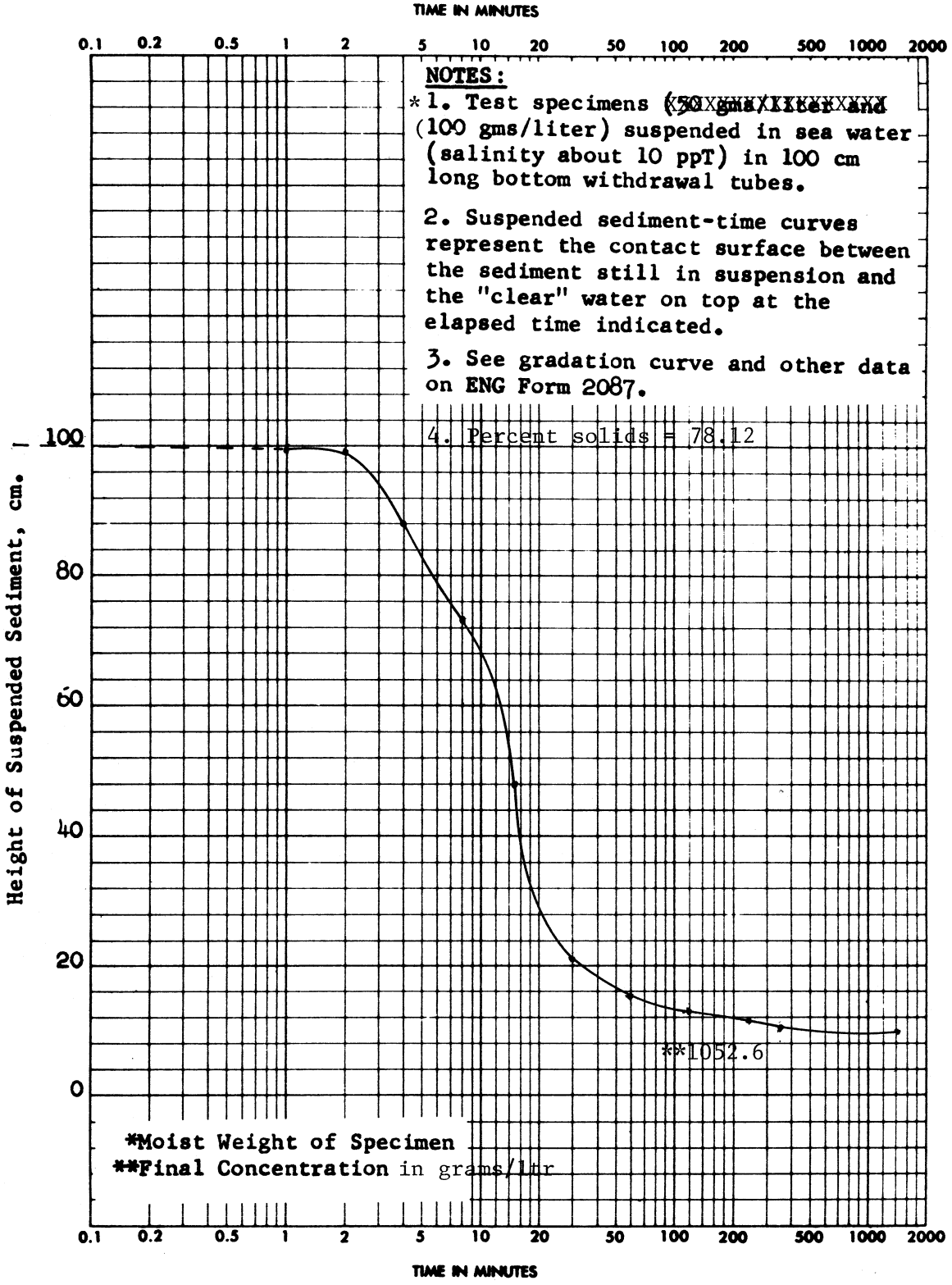
GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO.73/719
Boring No. CBCHM-83-11 SAMPLE NO. 2
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



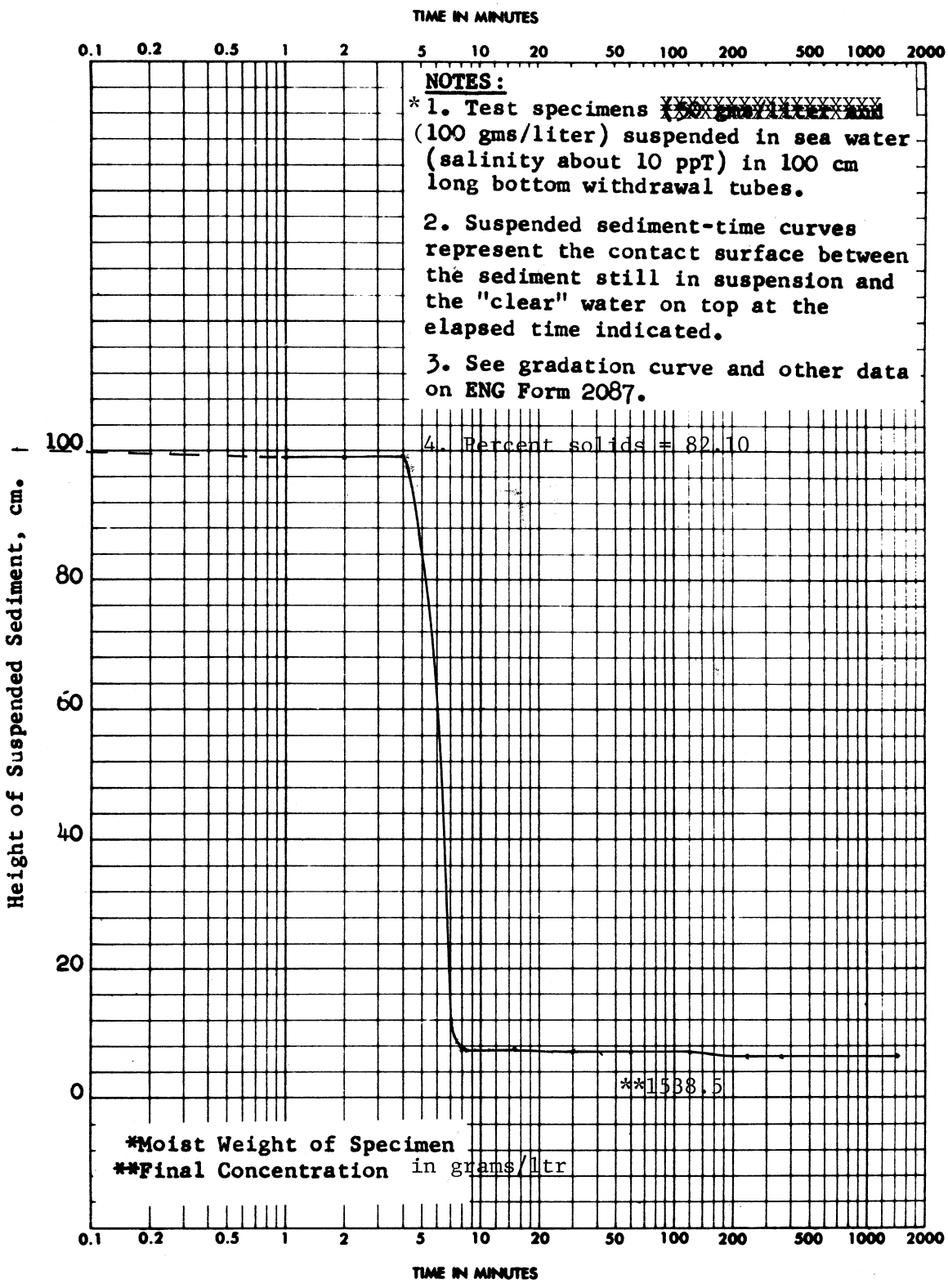
PROJECT	JACKSONVILLE, FLORIDA		Lab. No. 73/720
AREA	Charlotte Harbor Maintenance		
BORING NO. CB-CHM-83-11	SAMPLE NO. 3	DEPTH EL -31.0/-32.8	DATE 10 Aug 1983

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT	JACKSONVILLE, FLORIDA		Lab. No. 73/721	
AREA	Charlotte Harbor Maintenance			
BORING NO. CB-CHM-83-14	SAMPLE NO. 1	DEPTH EL -31.0/-34.0	DATE 10 Aug 1983	

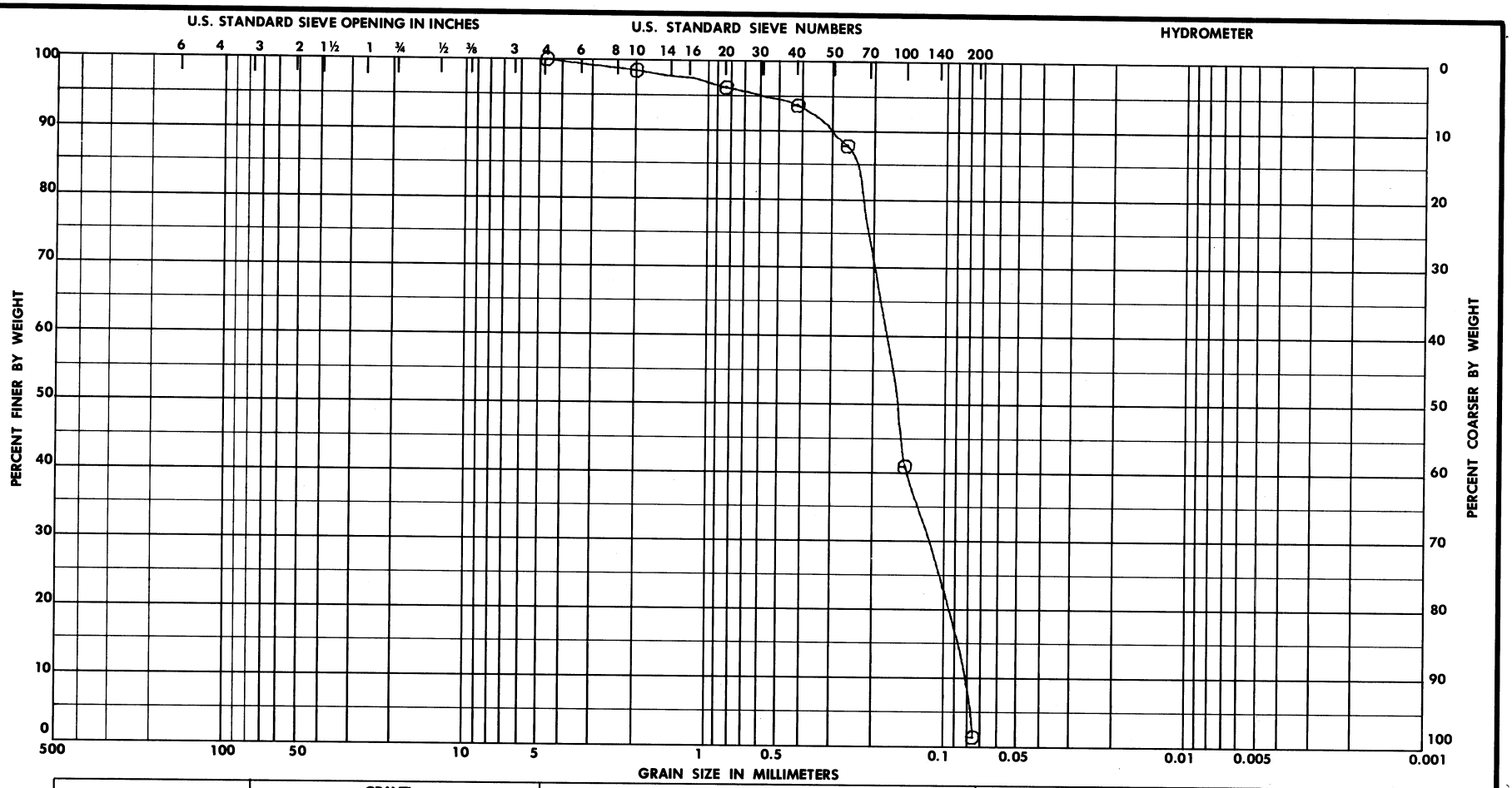
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-31.0/-34.0	POORLY GRADED SAND (SP)	21.8	NP	NP	NP
		LT.TAN WITH A TRACE OF SHELL				
		AND MICA				

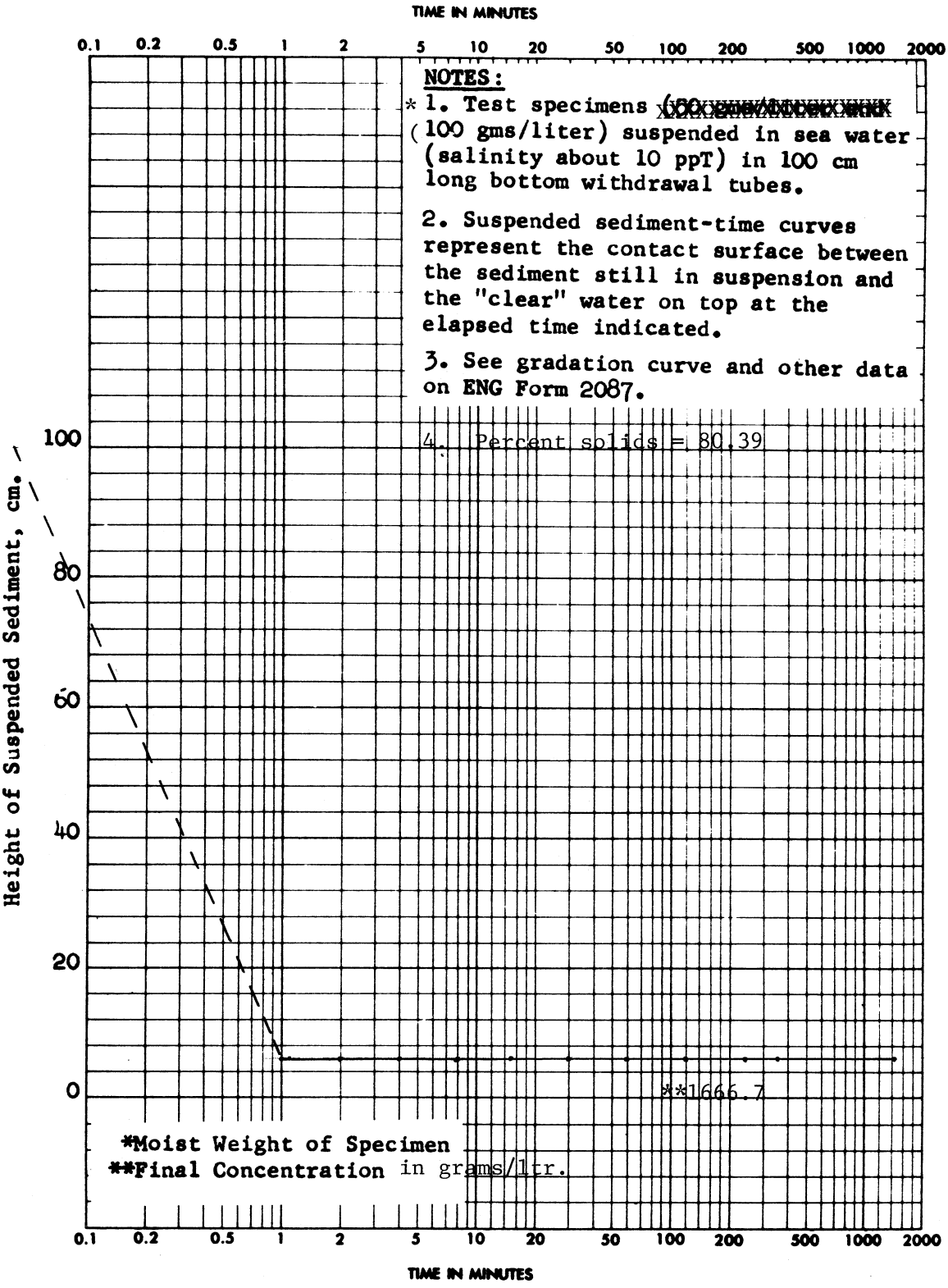
GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO.73/721
Boring No. CBCHM-83-14 SAMPLE NO. 1
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT	JACKSONVILLE, FLORIDA			Lab. No. 73/722
AREA	Charlotte Harbor Maintenance			
BORING NO. CB-CHM-83-15	SAMPLE NO. 1	DEPTH EL. -30.0/-35.0		DATE 10 Aug 1983

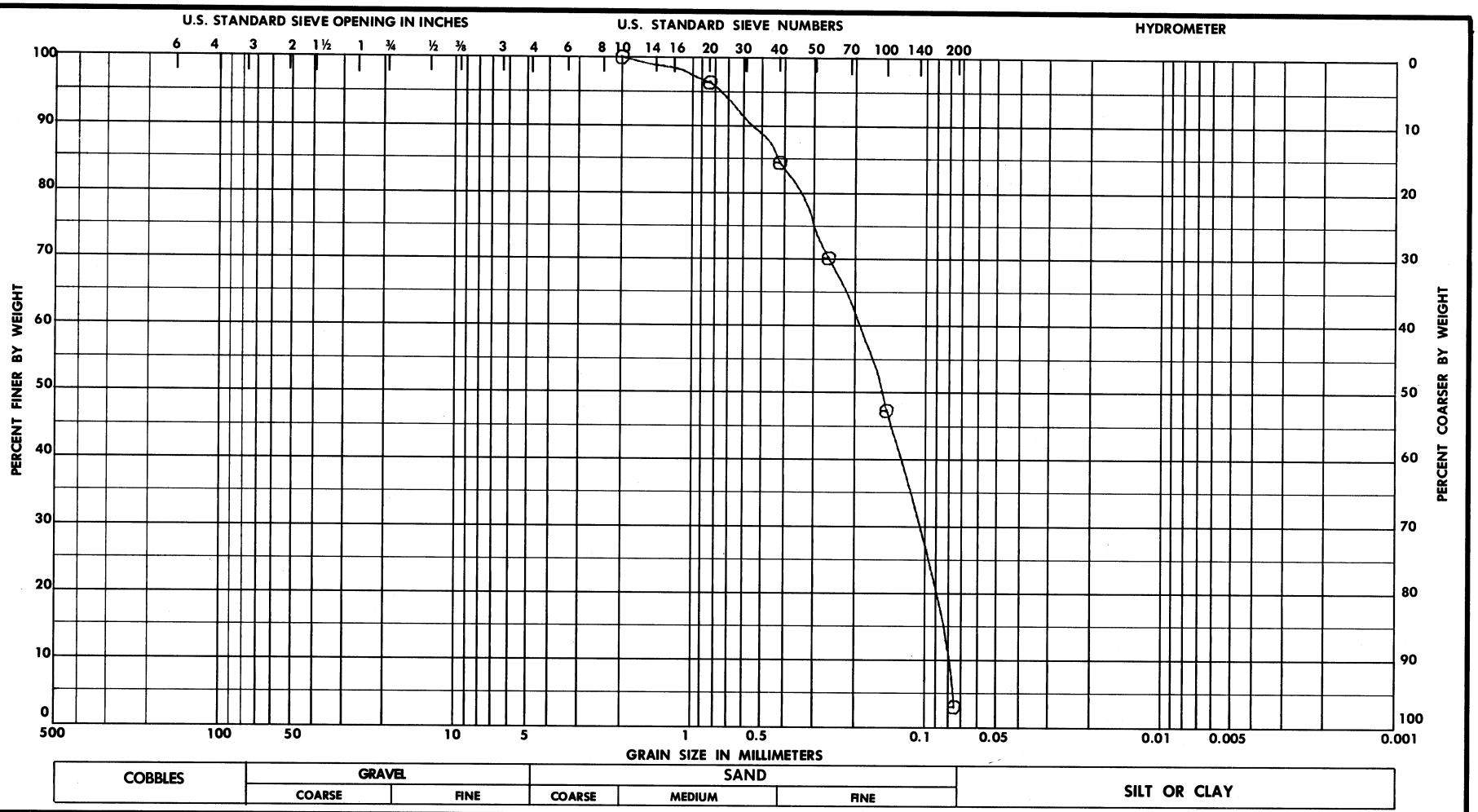
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or ~~Depth~~	VISUAL Classification	Nat w %	LL	PL	PI
1	-30.0/-35.0	POORLY GRADED SAND (SP)	24.4	NP	NP	NP
		LT. GRAY				

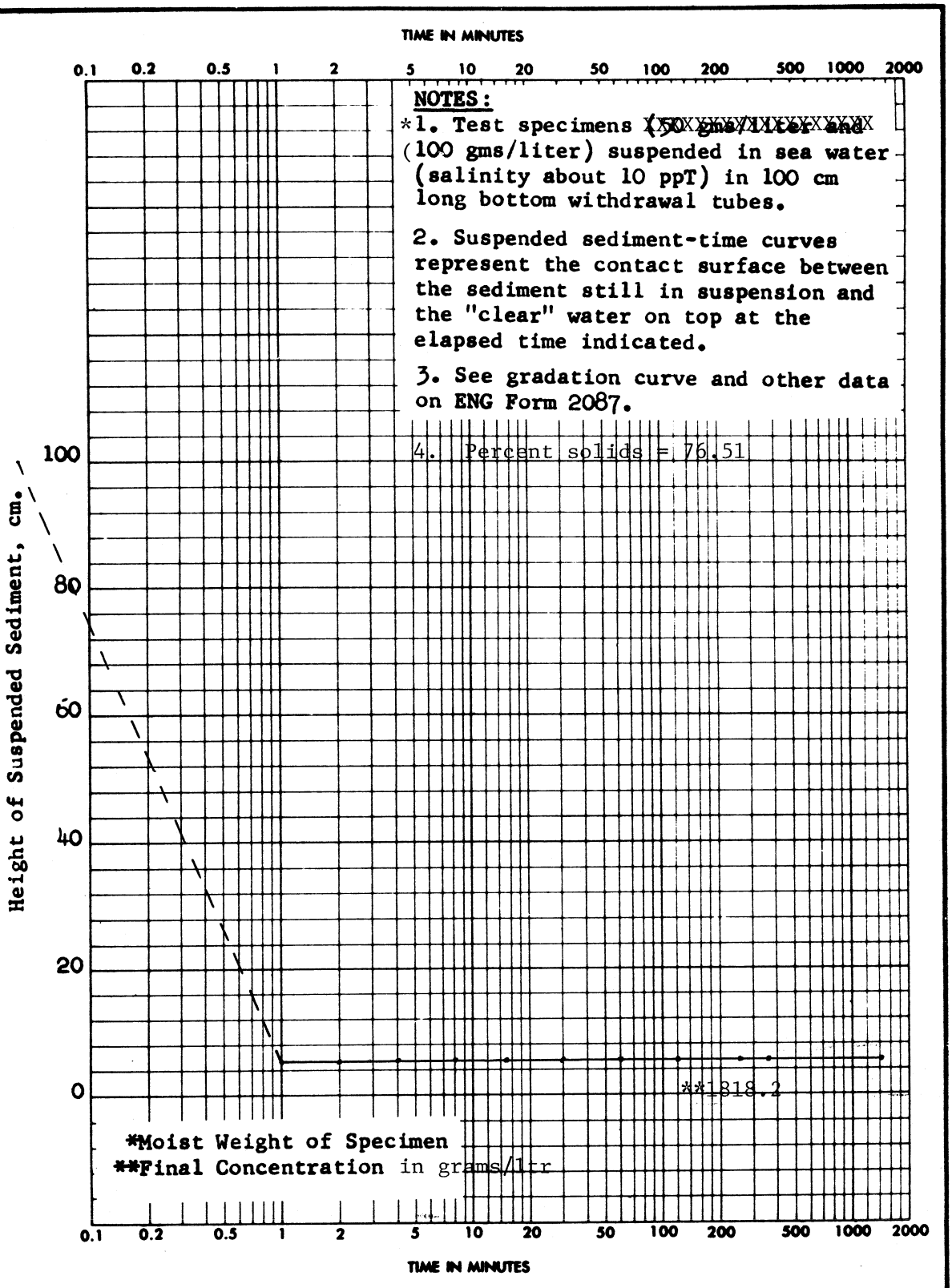
GRADATION CURVES

Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO. 73/722
Boring No. CBCHM-83-15 SAMPLE NO. 1
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT JACKSONVILLE, FLORIDA			Lab. No. 73/723
AREA Charlotte Harbor Maintenance			
BORING NO. CB-CHM-83-18	SAMPLE NO. 1	DEPTH EL -33.0/-33.8	DATE 10 Aug 1983

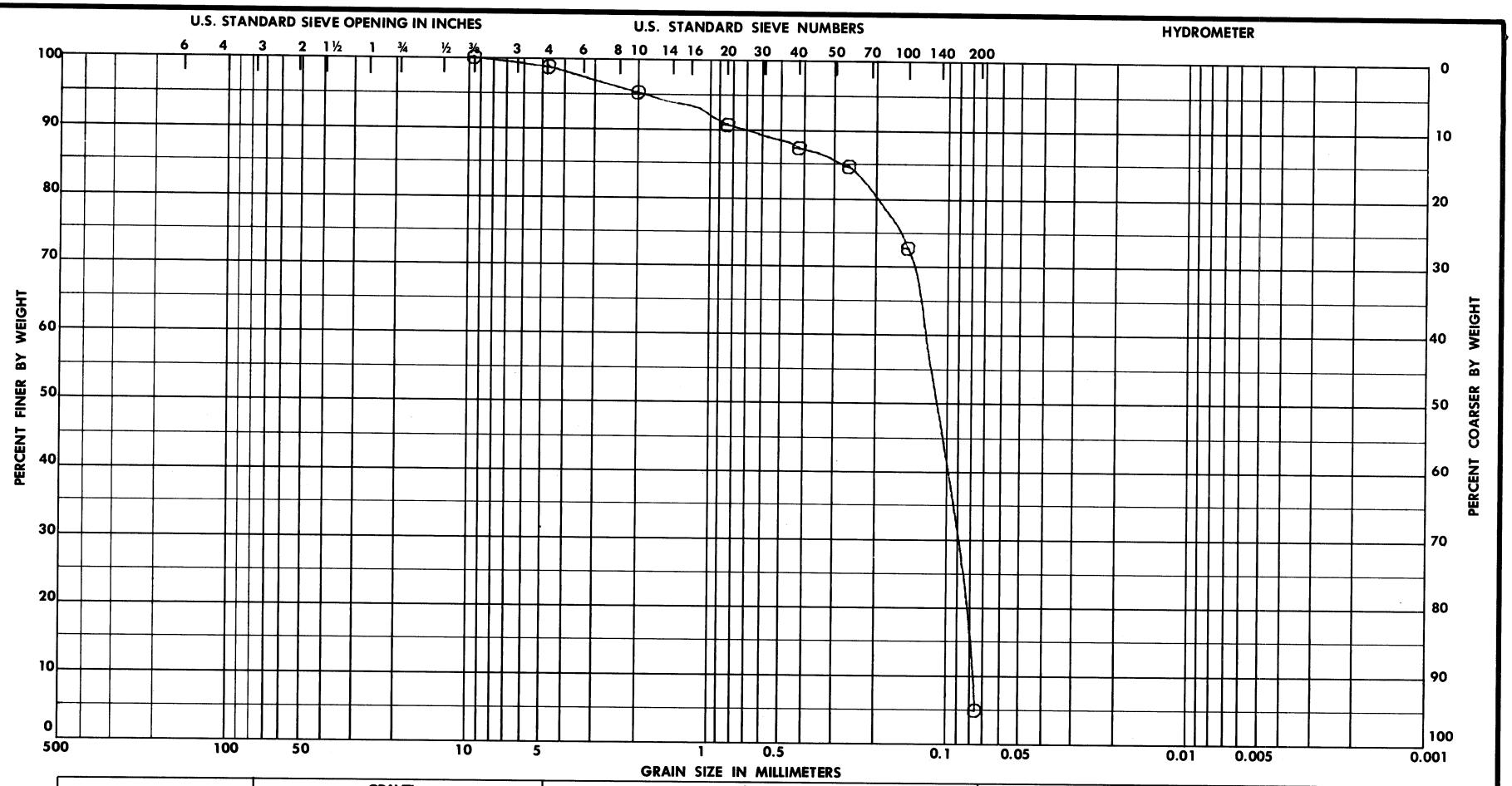
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3699

Req. No. RM-CW-83-0120



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-33.0/-33.8	POORLY GRADED SAND (SP)	28.0	NP	NP	NP
		GRAY WITH A TRACE OF SHELL				

GRADATION CURVES

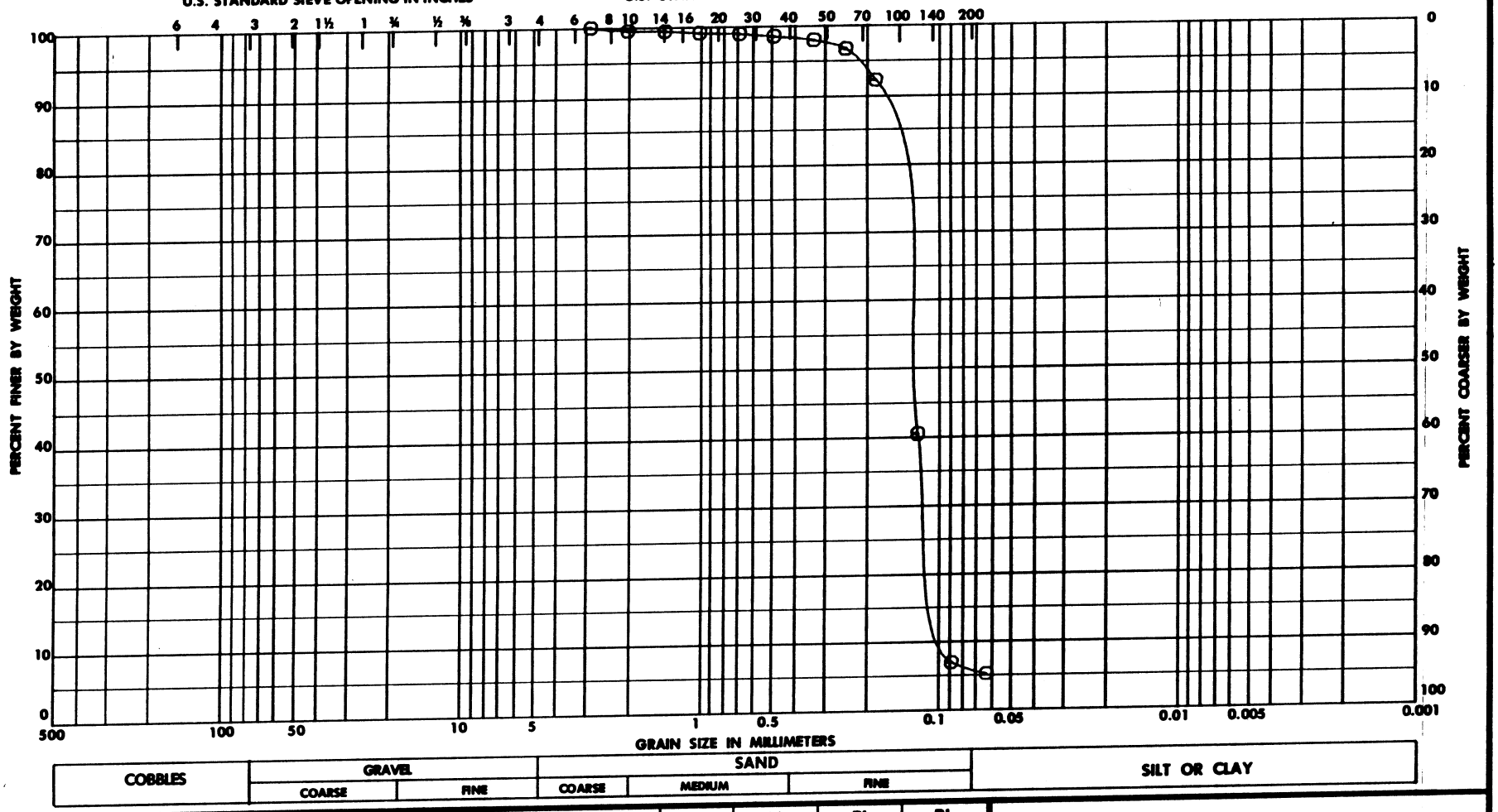
Project JACKSONVILLE FL.
CHARLOTTE HARBOR MAINTENANCE
Area LAB NO.73/723
Boring No. CBCHM-83-18 SAMPLE NO. 1
Date 08/09/83

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev of XXXXX	Visual Classification	Nat w %	LL	PL	PI
1	-31.0/-36.0	BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). WITH A TRACE OF SHELL. VIS. SHELL ≈ 3.0%	—	—	—	—

GRADATION CURVES

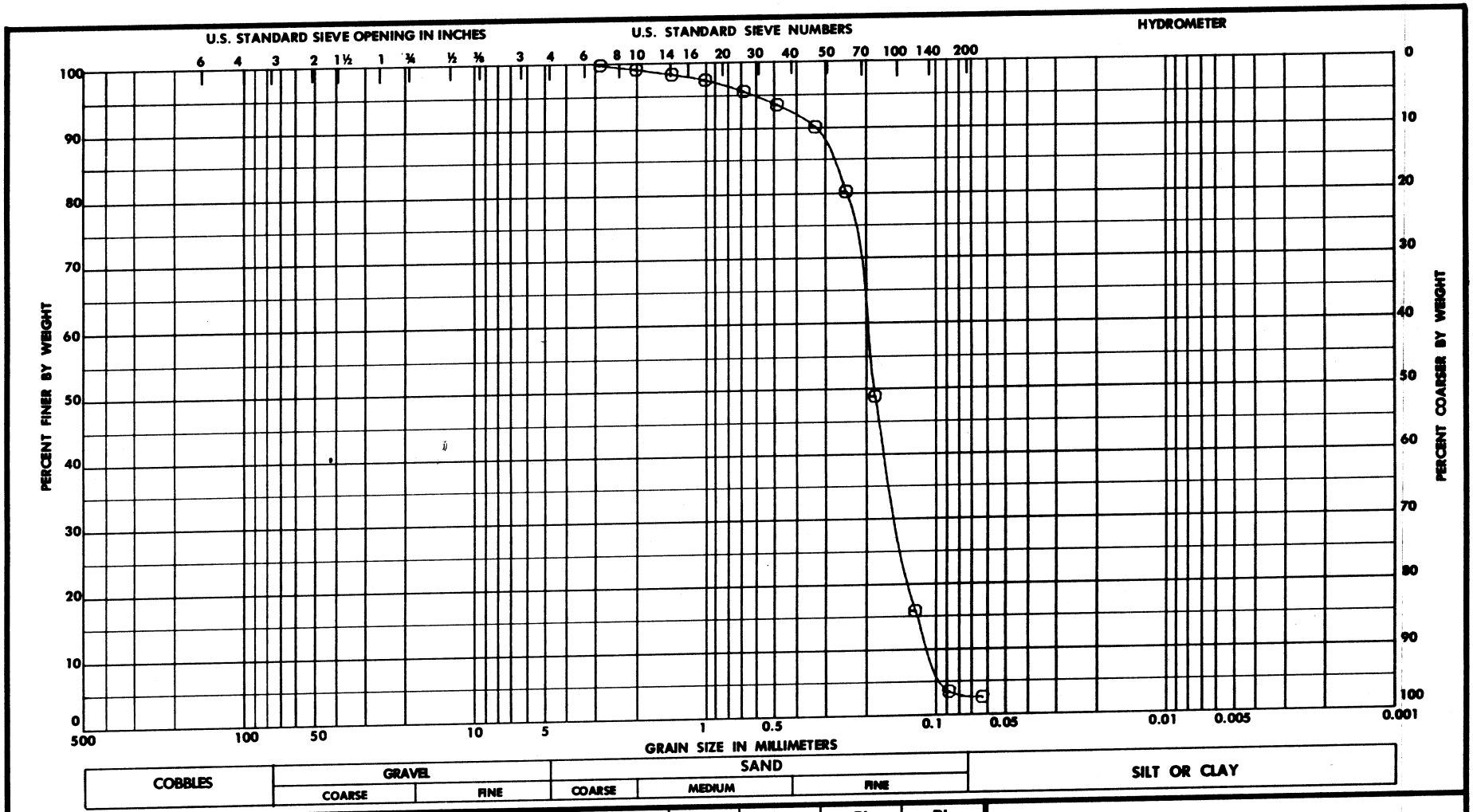
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4171
Boring No. CBCH90-1 SAM. NO.1
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-29.6/-34.6	BROWNISH GRAY POOR GRD SAND (SP). W/A LITTLE SHELL. VISUAL SHELL ≈ 14.0%	—	—	—	—

GRADATION CURVES

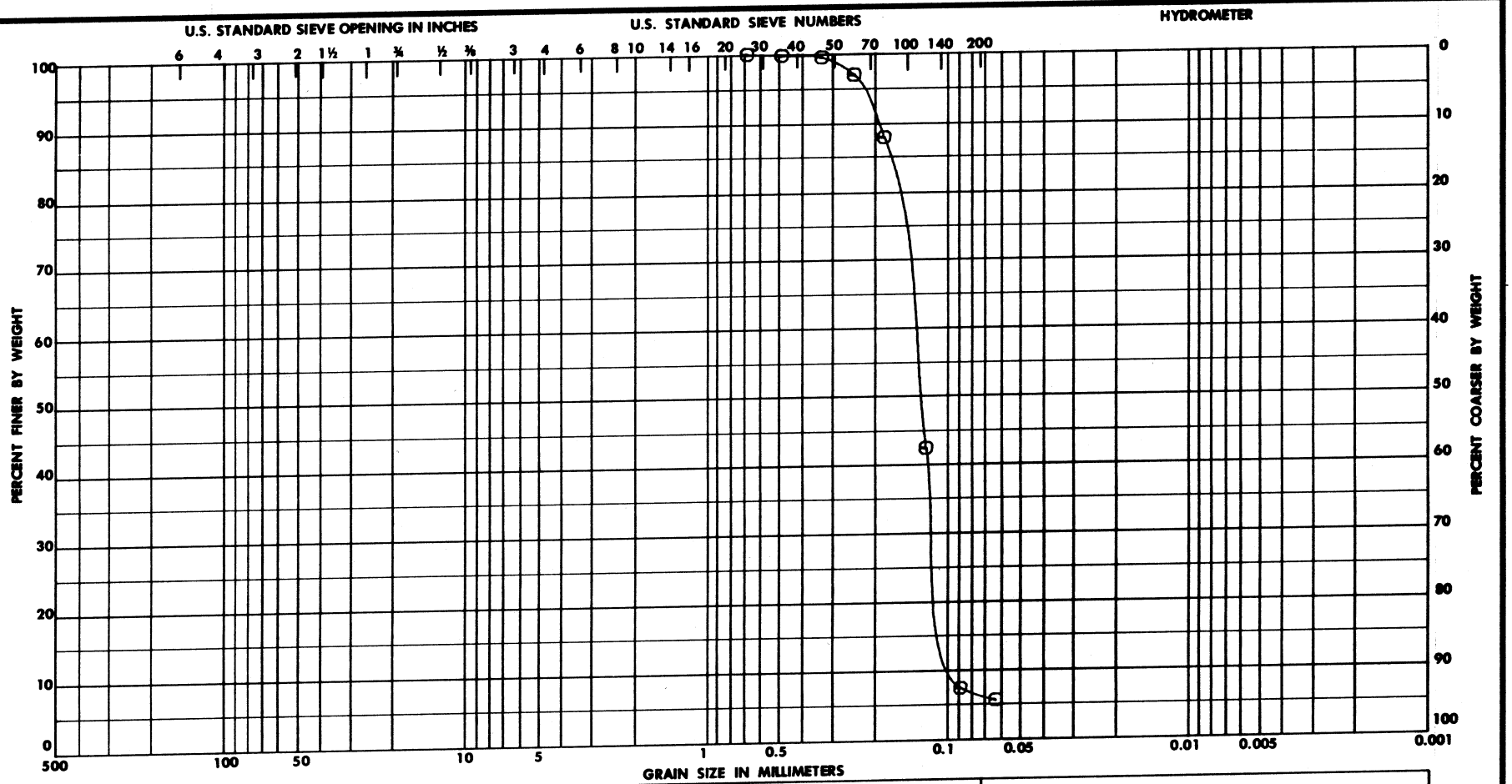
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4172
Boring No. CBCH90-2 SAM. NO.1
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev ~~of~~	VISUAL Classification	Nat w %	LL	PL	PI
1	-28.6/-33.6	BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). WITH A TRACE OF SHELL. VIS. SHELL = 4.0% SPECIFIC GRAVITY = 2.70	—	—	—	—

GRADATION CURVES

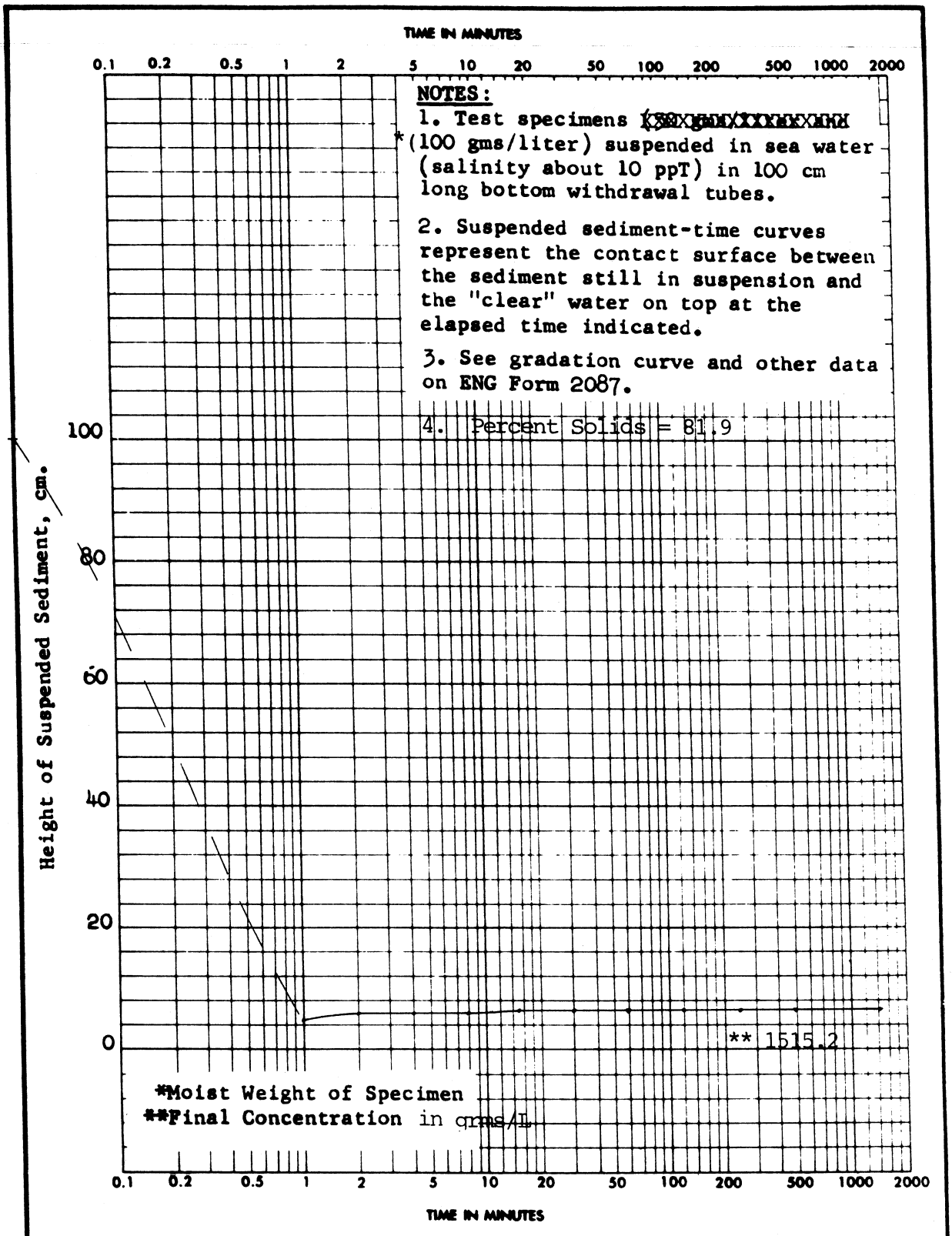
Project: JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area: LAB NO.73/4173 *
Boring No.: CBCH90-3 SAM. NO.1
Date: 05/16/90

*See Sedimentation Rate Time Curve on SAD Form 3023.

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT	Charlotte Harbor			
AREA		Lab. No. 73/4173		
BORING NO. CBCH90-3	SAMPLE NO. 1	DEPTH EL	-28.6 / -33.6	DATE 18 May 1990

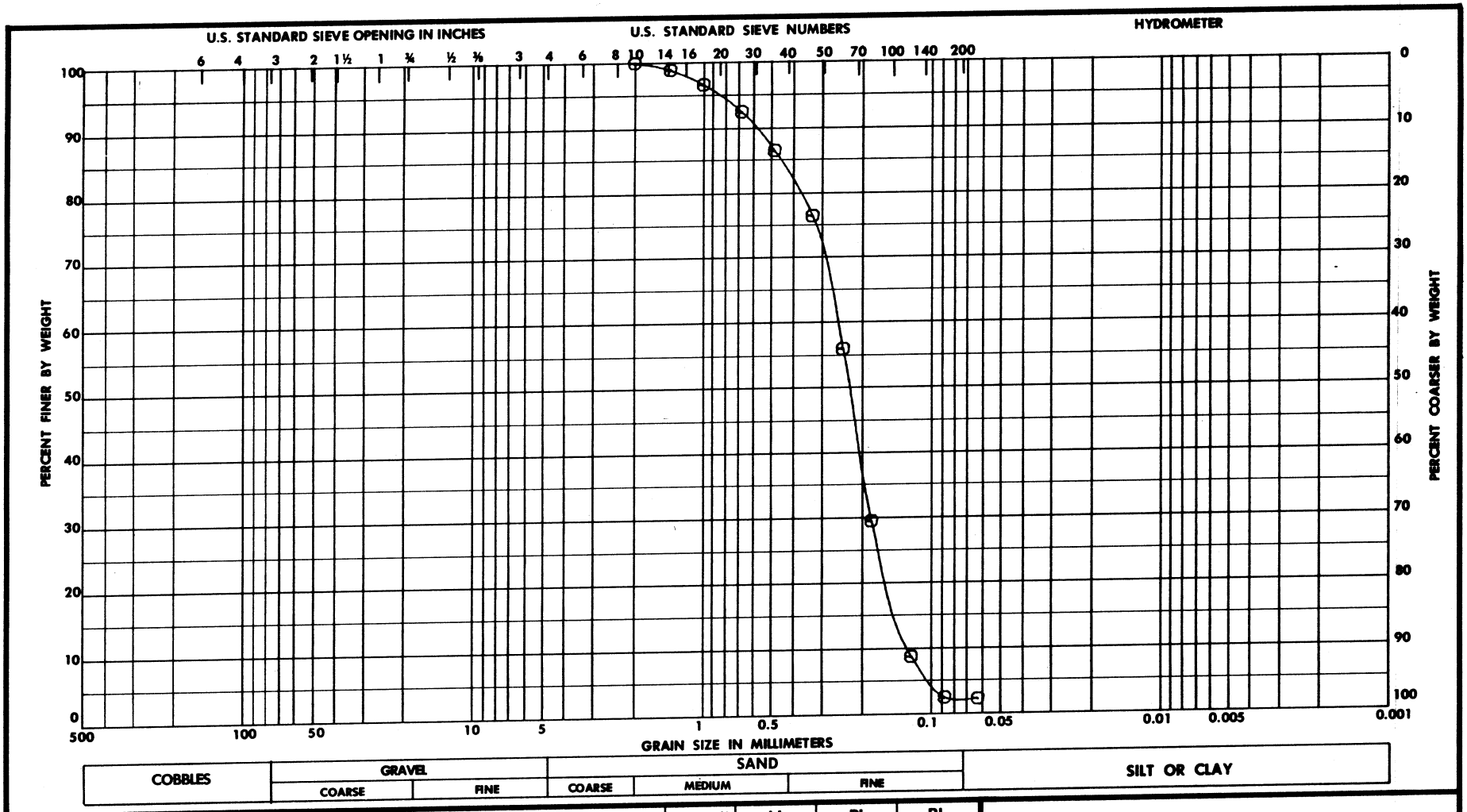
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-18.0/-23.0	BROWN POOR GRD SAND (SP). WITH	—	—	—	—
		SOME SHELL.				
		VISUAL SHELL ≈ 30.0				

GRADATION CURVES

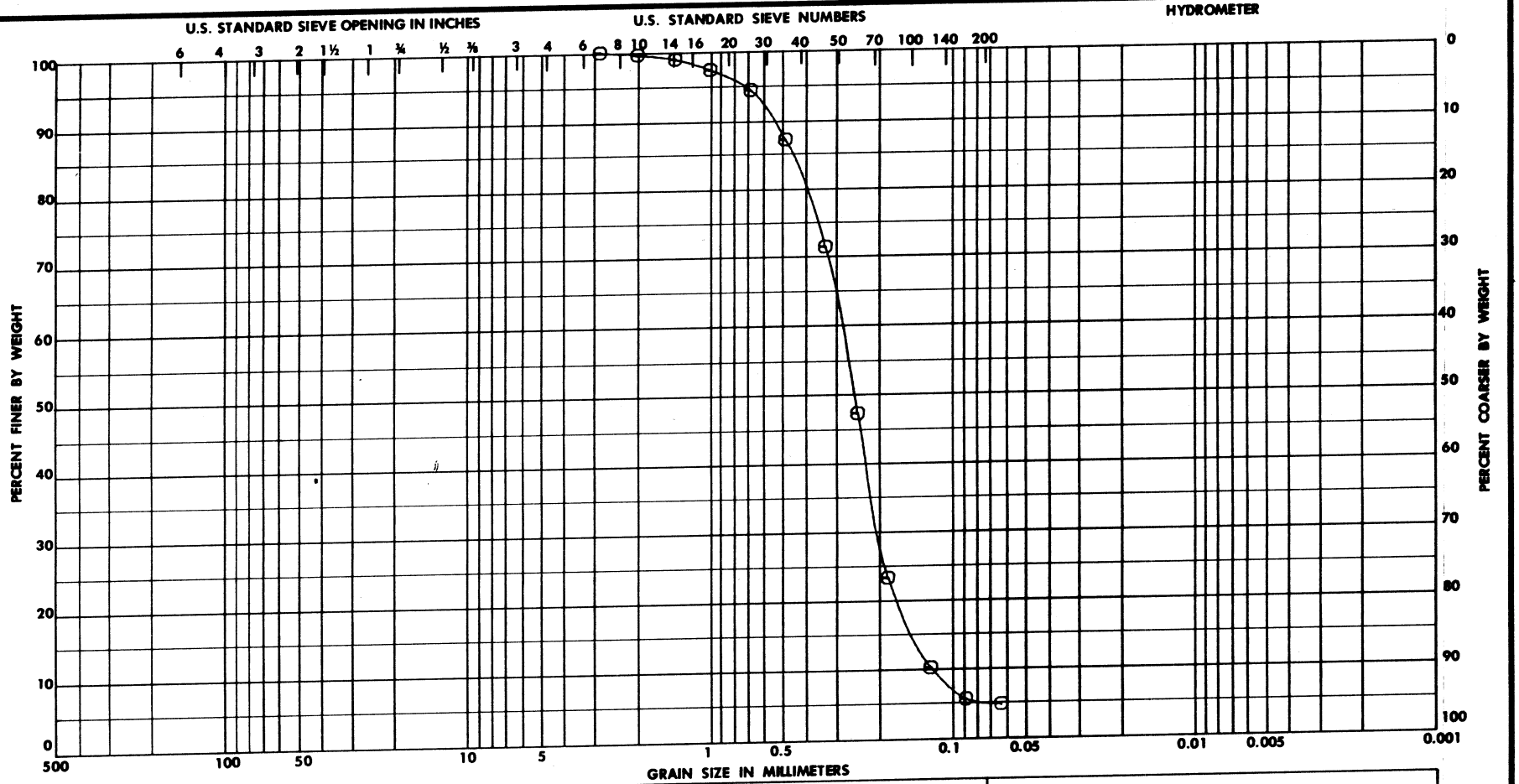
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4174
Boring No. CBCH90-4 SAM. NO.1
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev ~~XXXXX~~	Classification	Nat w %	LL	PL	PI
2	-23.0/-28.0	BROWNISH GRAY POOR GRD SAND	—	—	—	—
		(SP). WITH SOME SHELL.				
		VISUAL SHELL ≈ 31.0%				

GRADATION CURVES

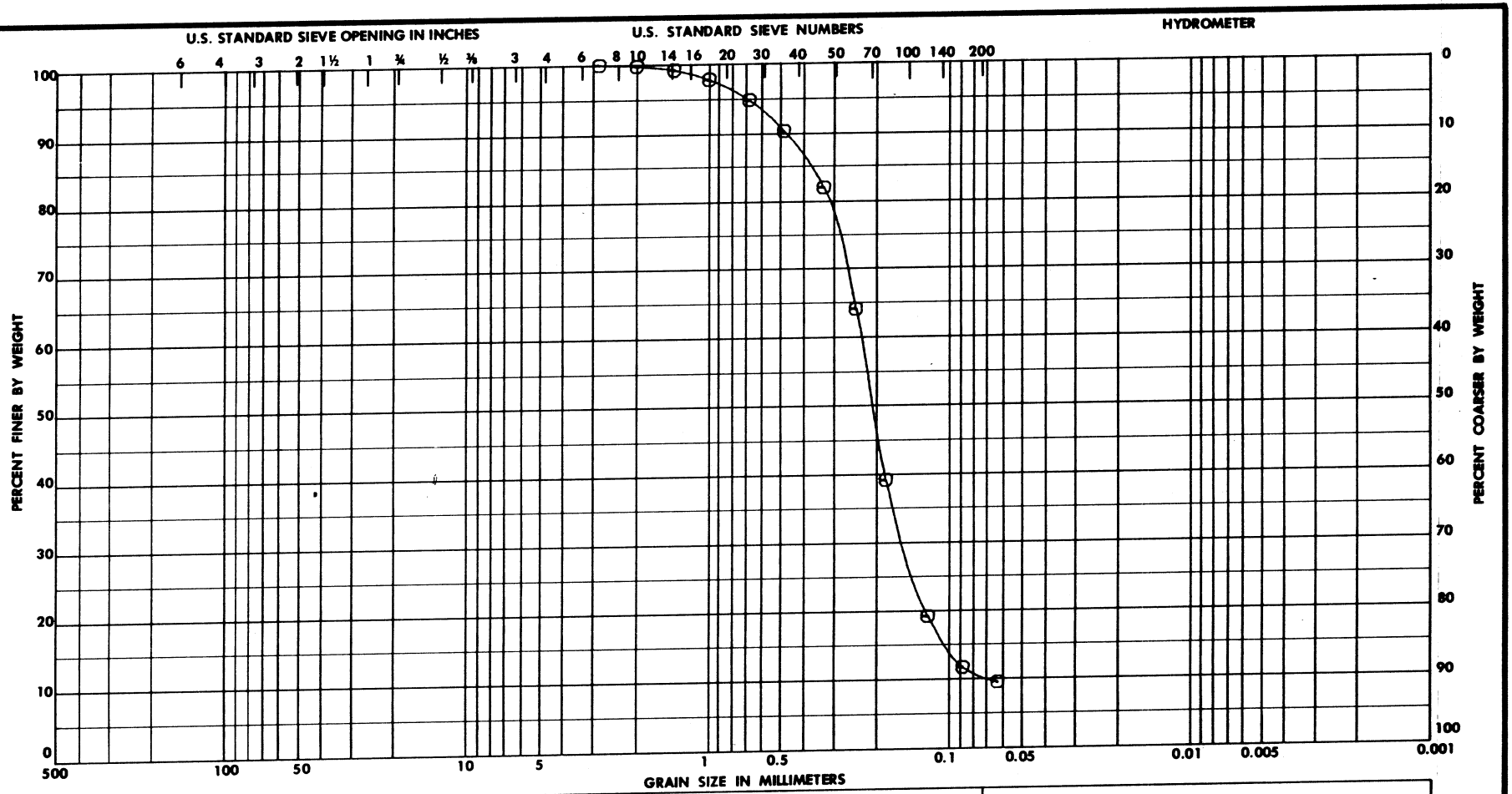
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4175
Boring No. CBCH90-4 SAM. NO.2
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
3	-28.0/-33.0	VISUAL BROWNISH GRAY POOR GRD SILTY	—	—	—	—
		SAND (SP-SM). WITH SOME SHELL.				
		VISUAL SHELL = 26.0%				
		SPECIFIC GRAVITY = 2.70				

GRADATION CURVES

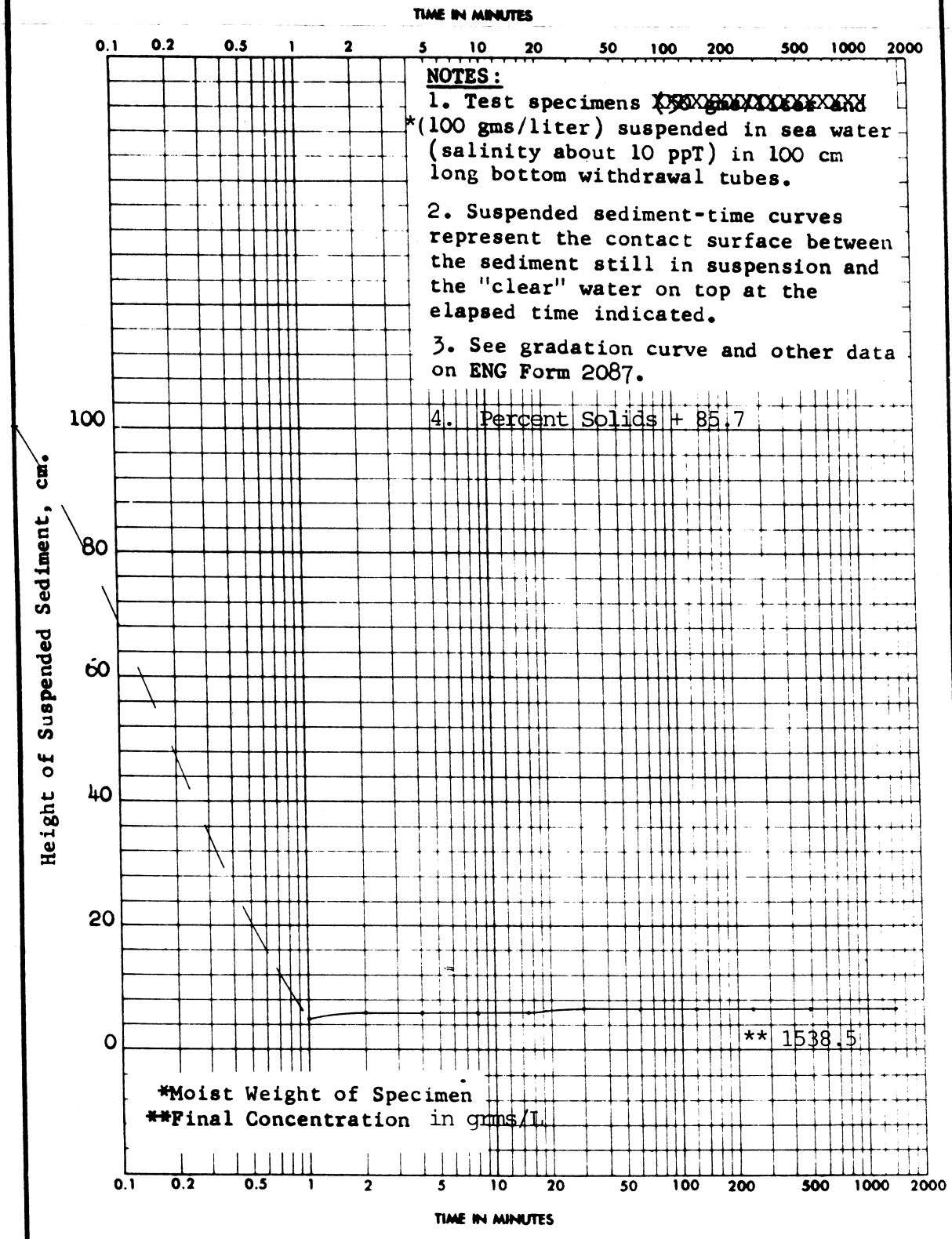
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4176 *
Boring No. CBCH90-4 SAM. NO.3
Date 05/16/90

ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT Charlotte Harbor

AREA

Lab. No. 73/4176

BORING NO. CBCH90-4	SAMPLE NO. 3	~~DEPTH~~ EL -28.0/-33.0	DATE 18 May 1990

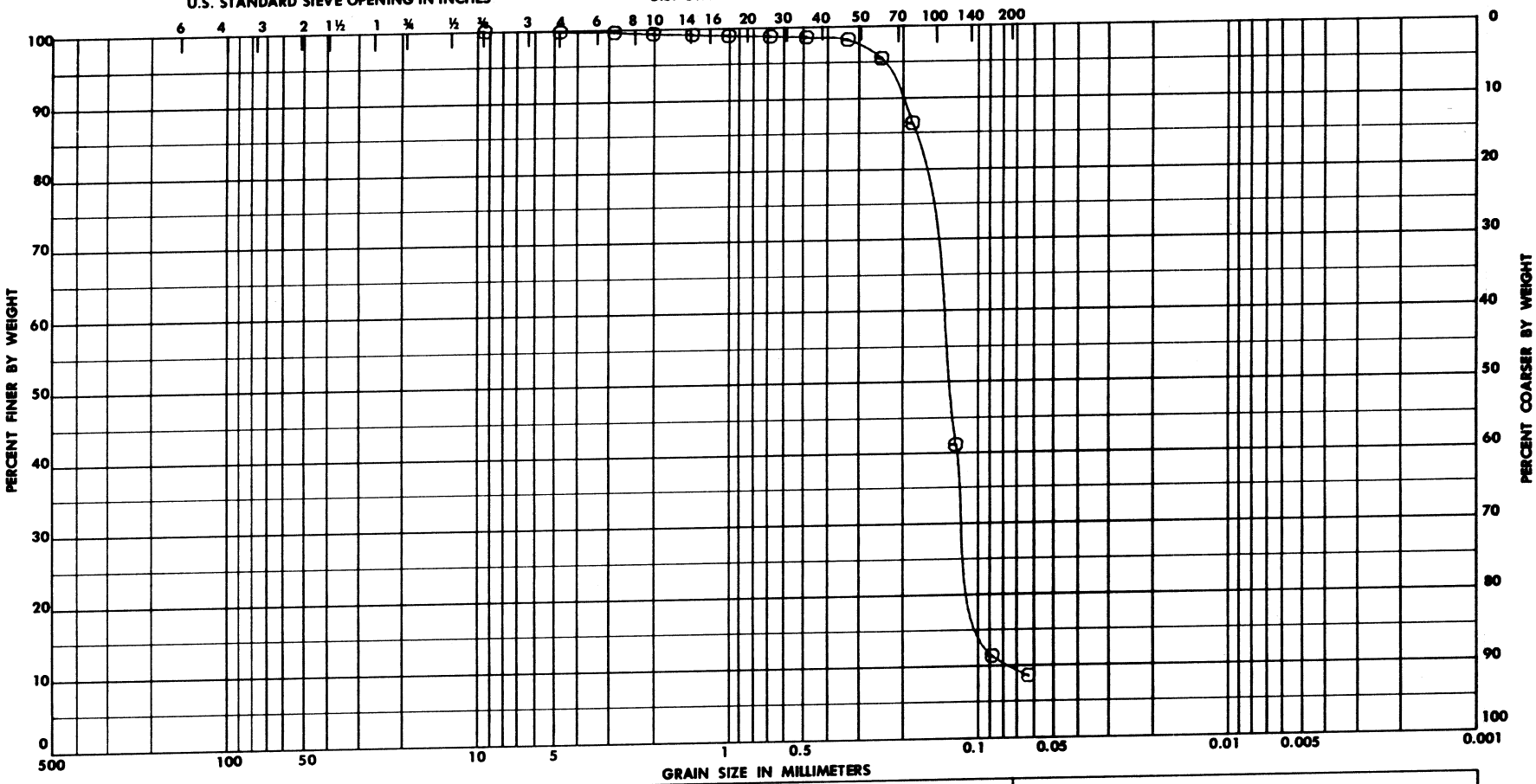
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
4	-33.0/-36.0	VISUAL BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). W/A TRACE OF SAND AND GRAVEL SIZE SHELL. VISUAL SHELL = 4.0%	—	—	—	—

GRADATION CURVES

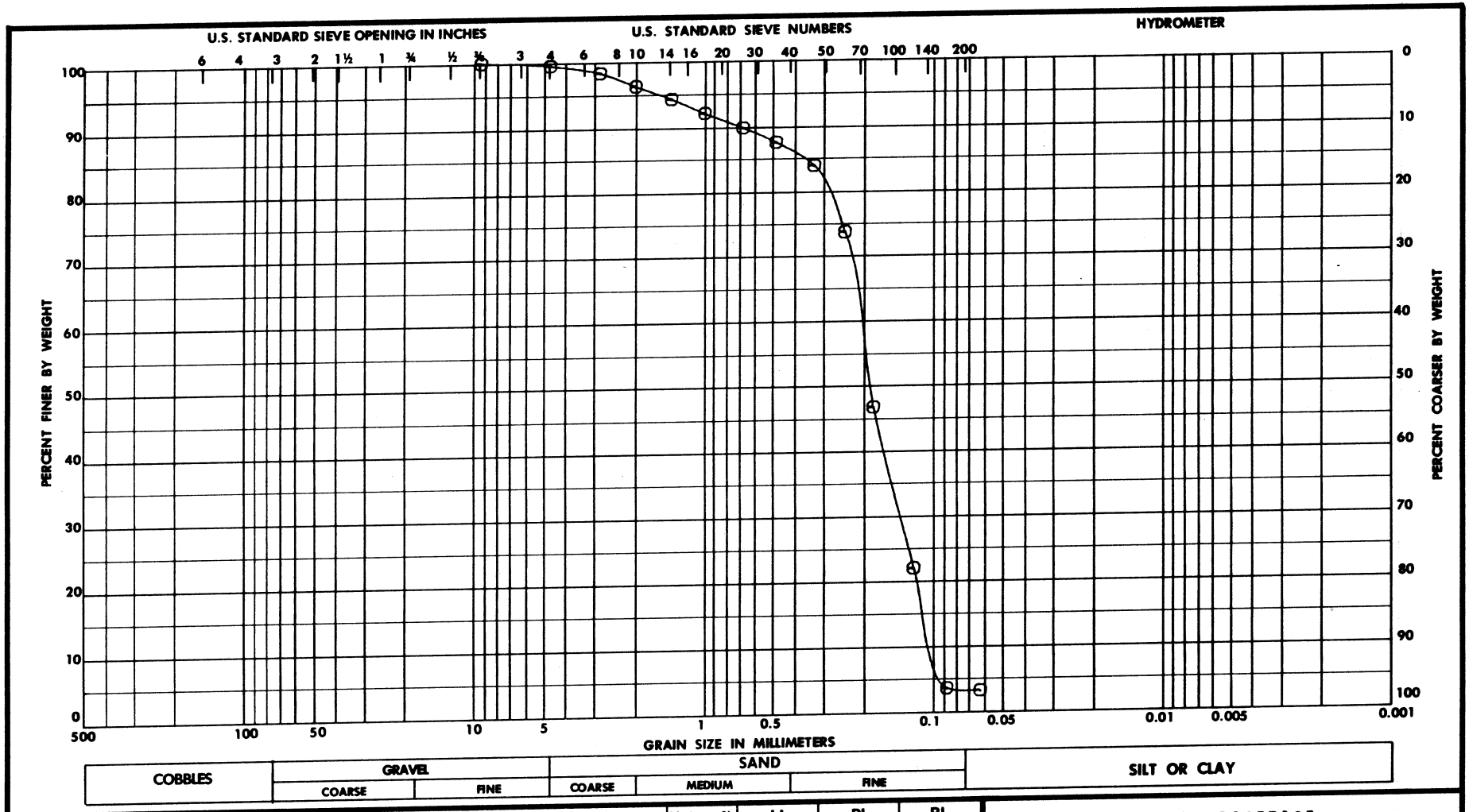
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4177
Boring No. CBCH90-4 SAM. NO.4
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-28.2/-33.2	BROWNISH GRAY POOR GRD SAND (SP). W/A LITTLE SAND & GRAVEL SIZE SHELL. VIS. SHELL≈ 17.0% SPECIFIC GRAVITY ≈ 2.69	—	—	—	—

GRADATION CURVES

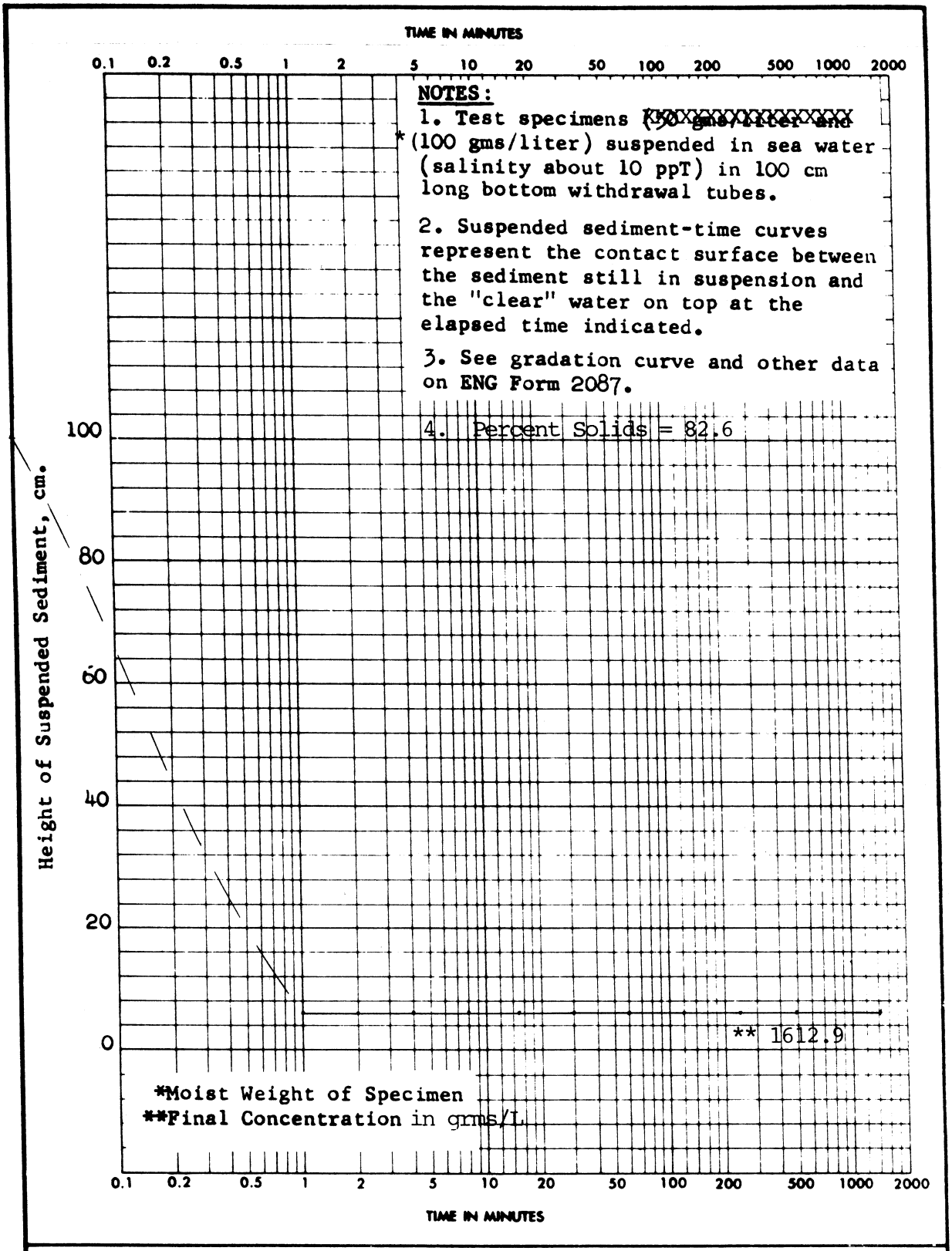
Project: JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area: LAB NO.73/4178 *
Boring No.: CBCH90-5 SAM. NO.1
Date: 05/16/90

* See Sedimentation Rate Time Curve on SAD Form 3023.

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-90-131
Work Order No. 6123



PROJECT Charlotte Harbor			
AREA		Lab. No. 73/4178	
BORING NO. CBCH90-5	SAMPLE NO. 1	EL -28.2/-33.2	DATE 18 May 1990

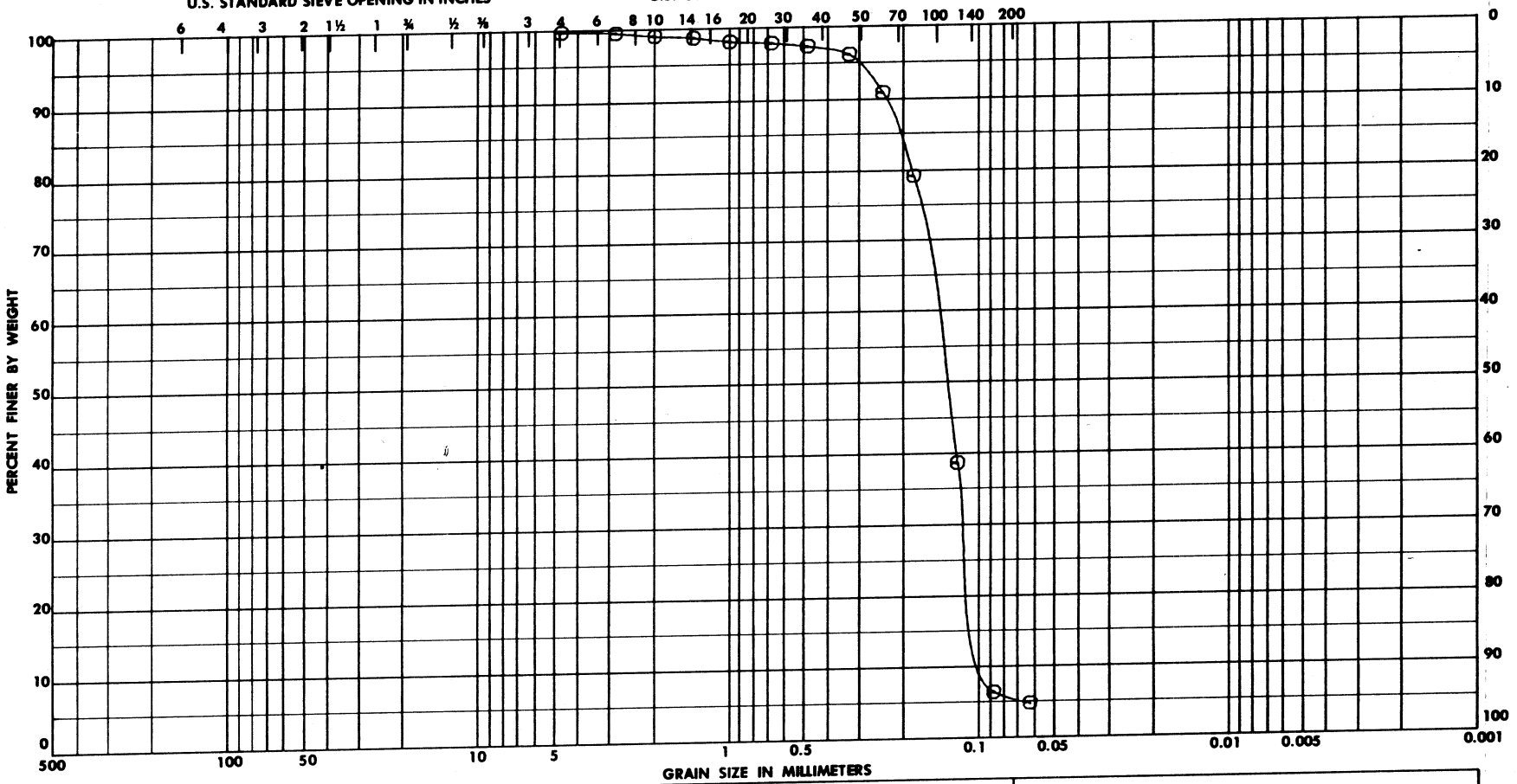
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or ~~Depth~~	Classification	Nat w %	LL	PL	PI
2	-33.2/-36.2	VISUAL BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). WITH A TRACE OF SHELL. VIS. SHELL = 6.0%	—	—	—	—

GRADATION CURVES

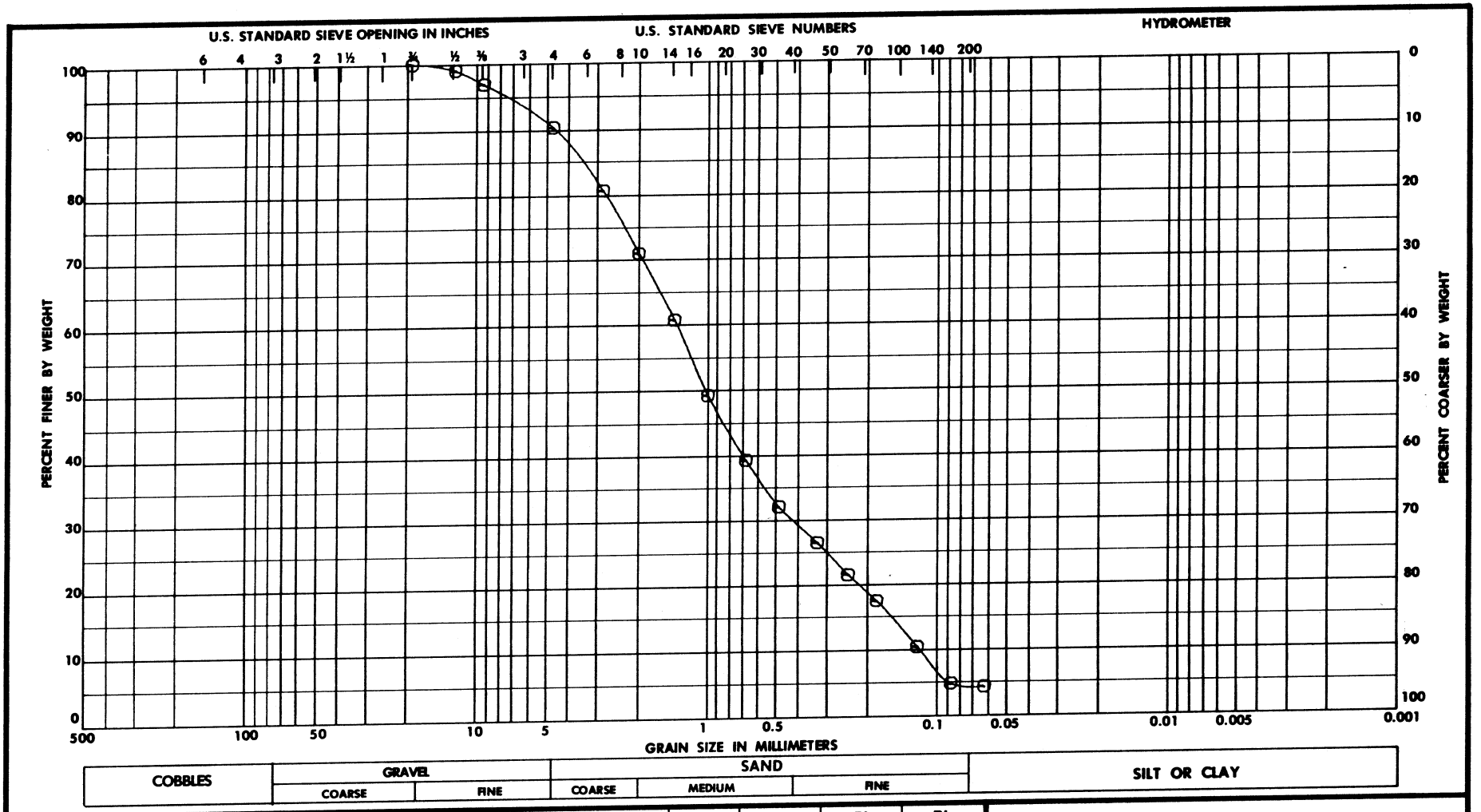
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4179
Boring No. CBCH90-5 SAM. NO.2
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or ~~XXXXX~~	Classification	Nat w %	LL	PL	PI
1	-21.0/-22.0	BROWNISH GRAY POOR GRD SAND & GRAVEL SIZE SHELL (SP). W/ SOME SAND. VIS. SHELL= 75.0% SPECIFIC GRAVITY = 2.77	—	—	—	—

GRADATION CURVES

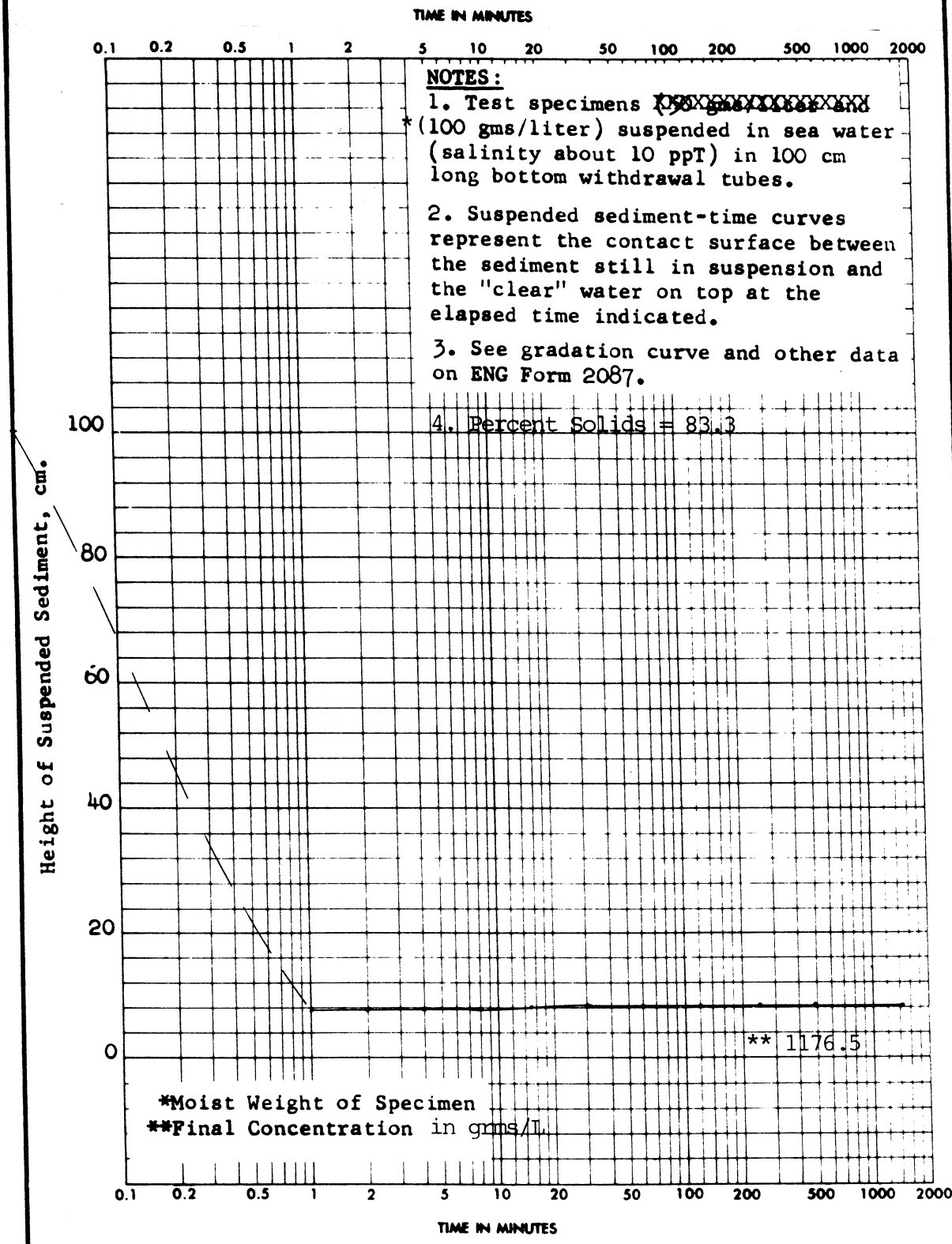
Project: JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area: LAB NO.73/4180 *
Boring No.: CBCH90-10 SAM. NO.1
Date: 05/16/90

* See Sedimentation Rate Time Curve on SAD Form 3023.

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT Charlotte Harbor			
AREA		Lab. No. 73/4180	
BORING NO. CBCH10-1	SAMPLE NO. 1	EL -21.0/-22.0	DATE 18 May 1990

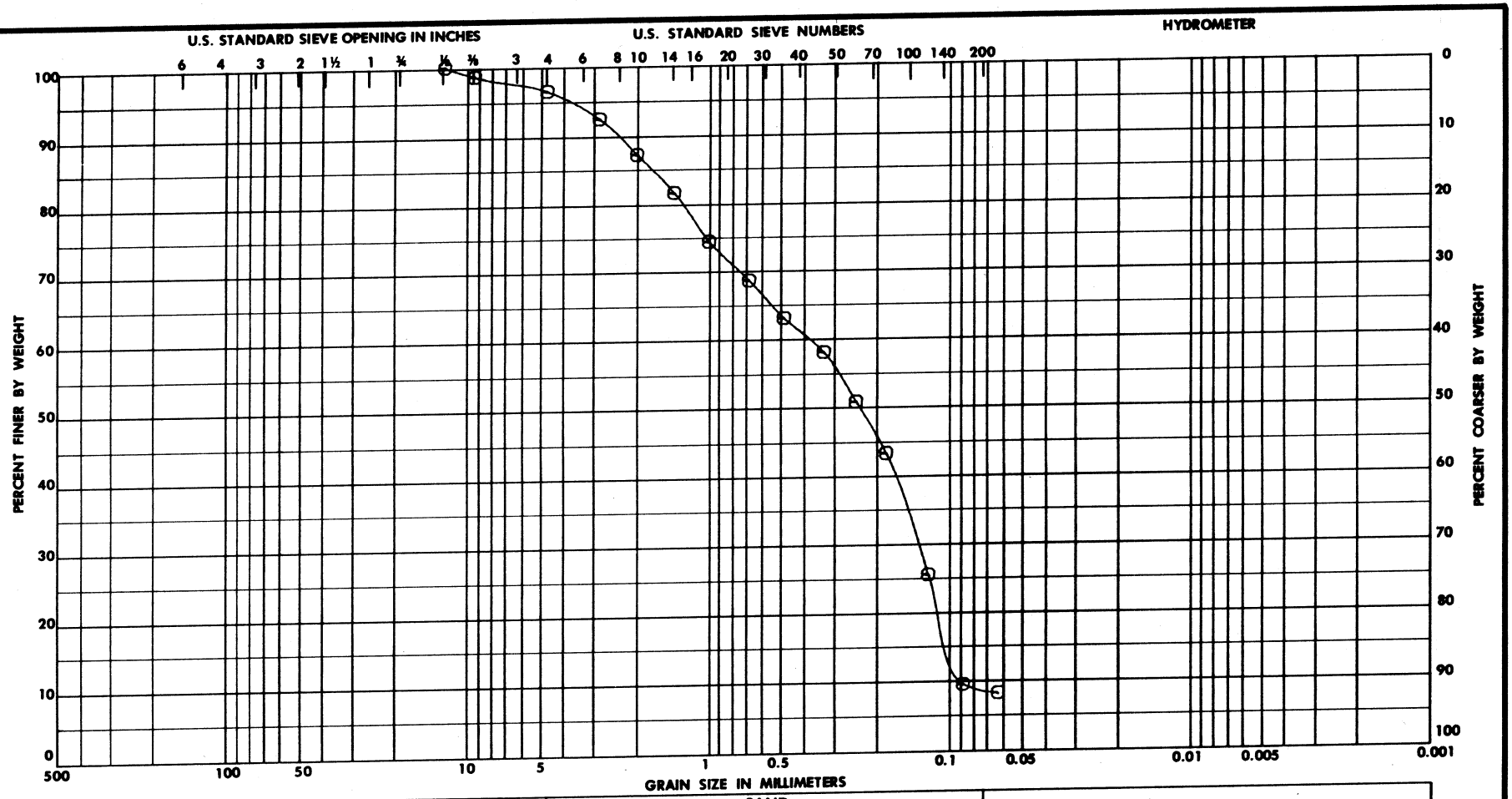
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2	-22.0/-26.0	VISUAL BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). SHELLY. SAND AND GRAVEL SIZES. VISUAL SHELL = 45.0%	—	—	—	—

GRADATION CURVES

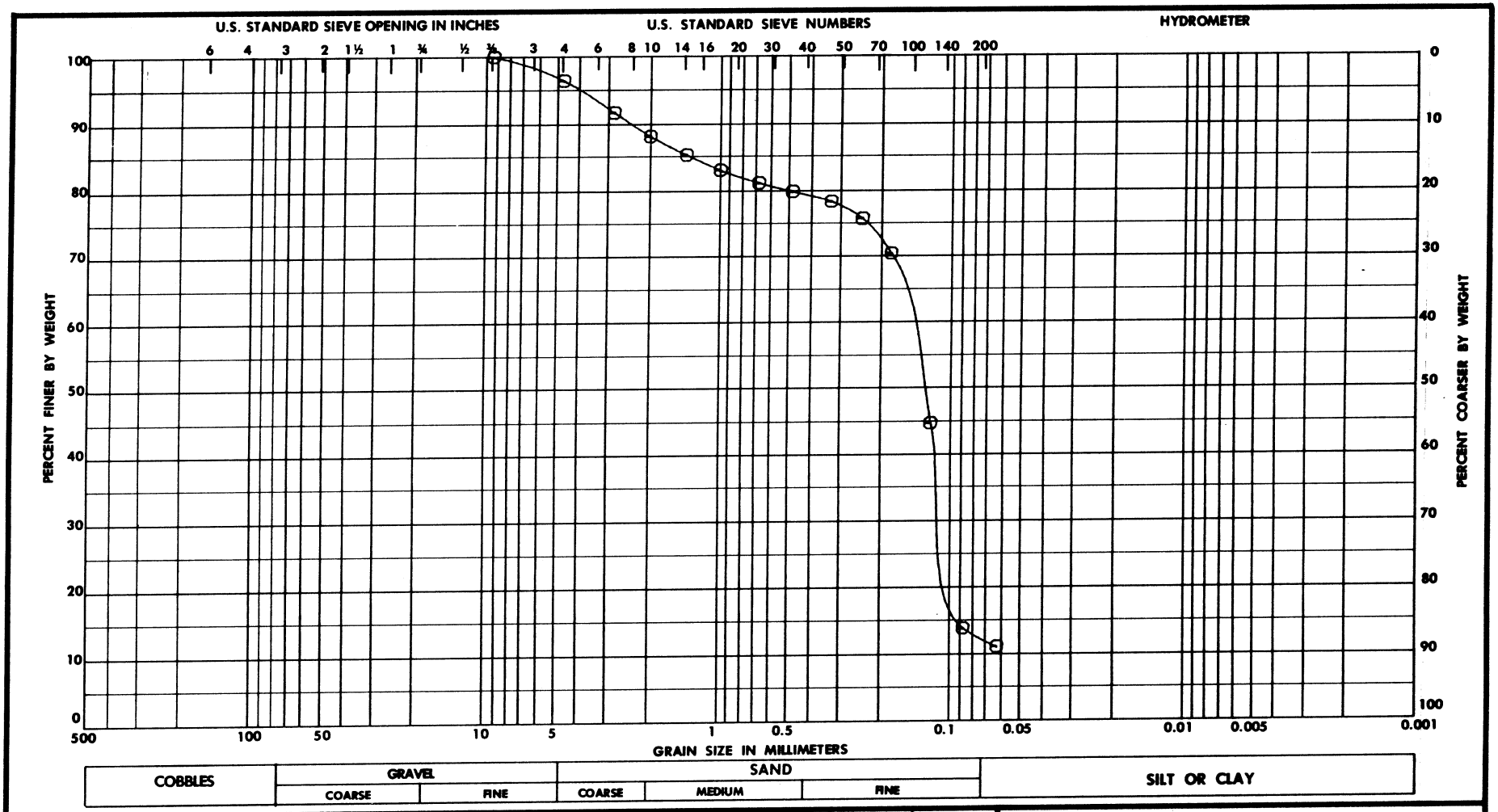
Project: JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area: LAB NO. 73/4181
Boring No.: CBCH90-10 SAM. NO. 2
Date: 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Visual Classification	Nat w %	LL	PL	PI
3	-26.0/-31.0	BROWNISH GRAY SILTY SAND (SM)	—	—	—	—
		WITH SOME SAND & GRAVEL SIZE				
		SHELL. VIS. SHELL = 22.0%				
		SPECIFIC GRAVITY = 2.70				

GRADATION CURVES

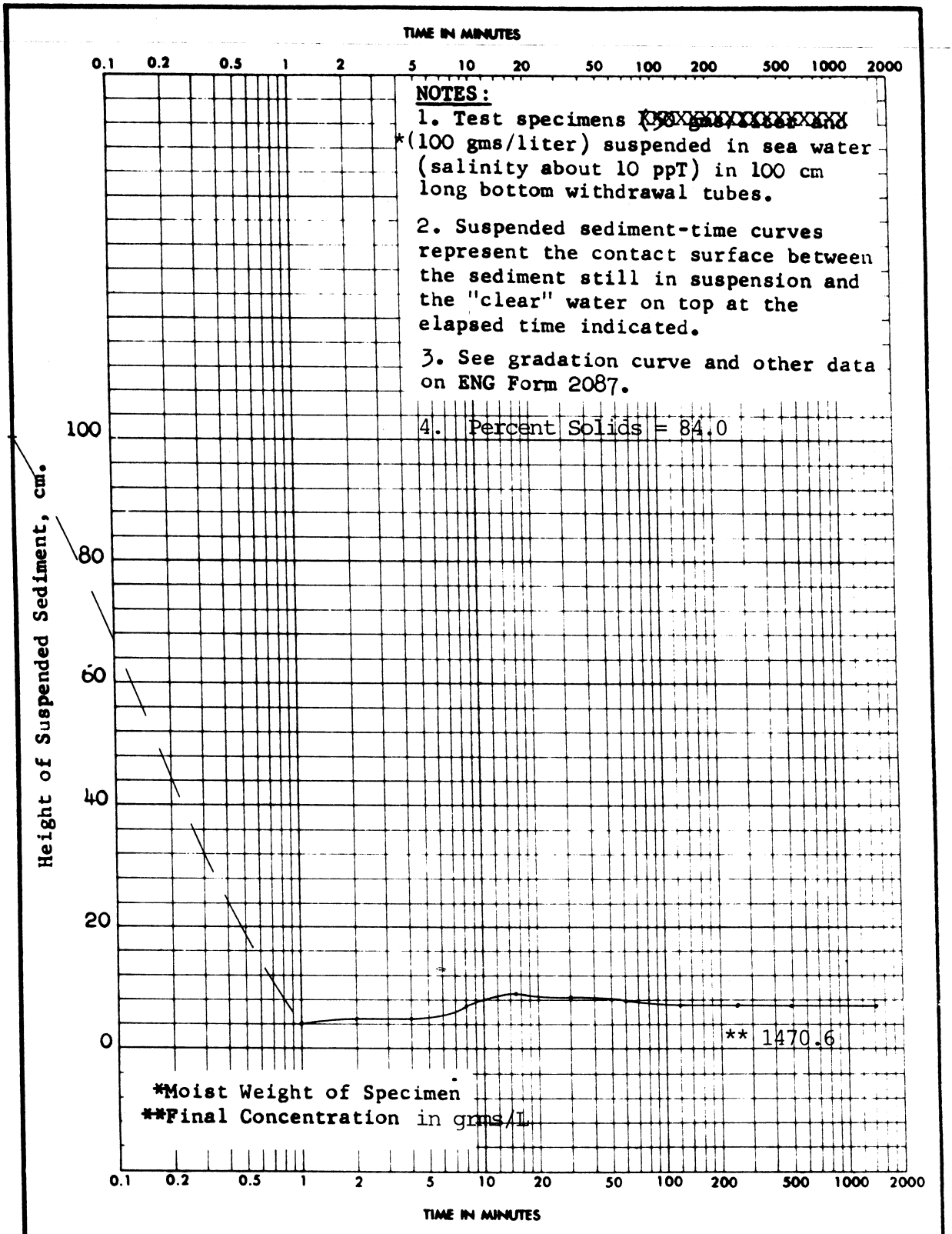
Project: JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area: LAB NO.73/4182 *
Boring No.: CBCH90-10 SAM. NO.3
Date: 05/16/90

ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT Charlotte Harbor			
AREA		Lab. No. 73/4182	
BORING NO. CBCH90-10	SAMPLE NO. 3	EL -26.0/-31.0	DATE 18 May 1990

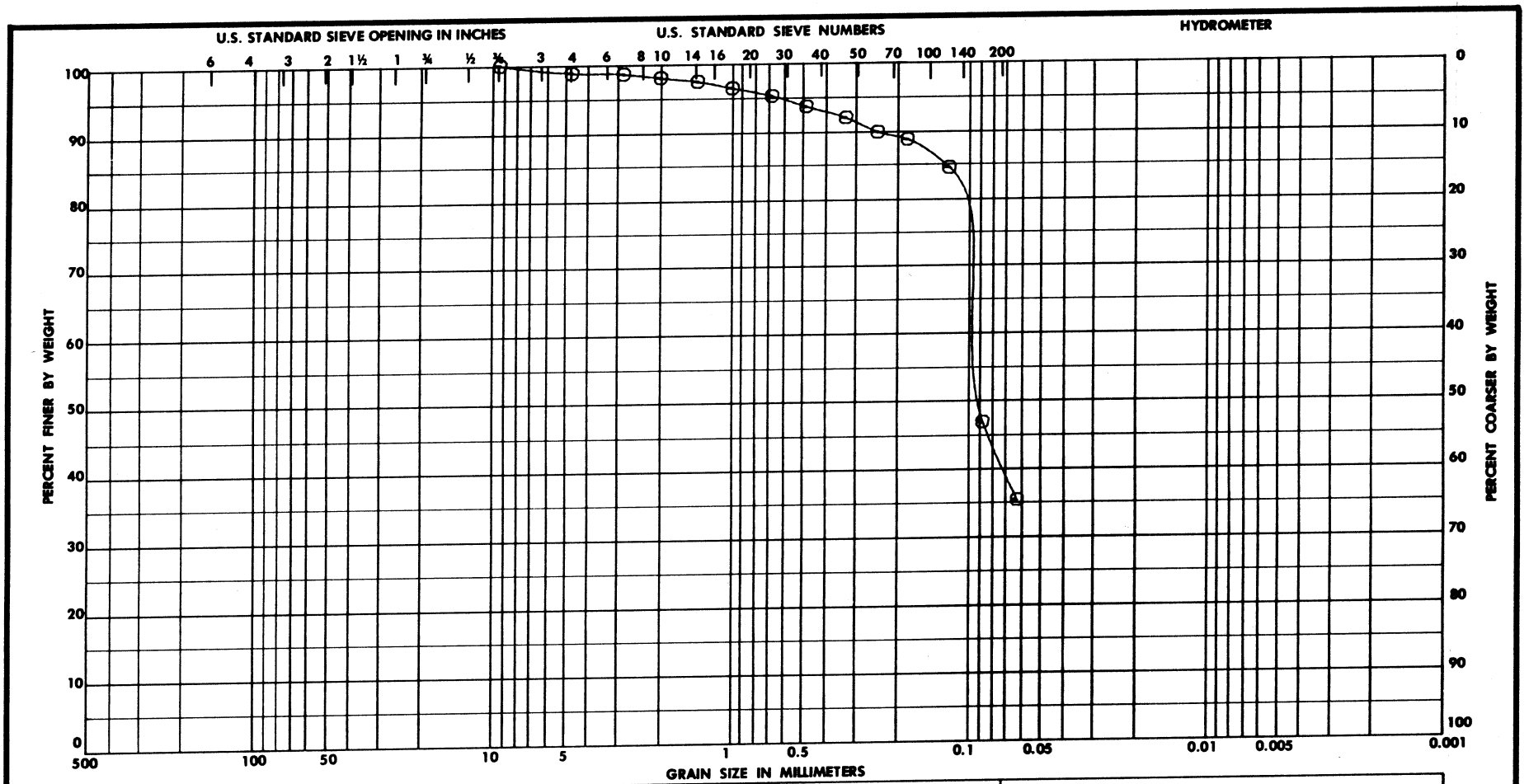
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or ~~Depth~~	VISUAL Classification	Nat w %	LL	PL	PI
4	-31.0/-36.0	GREENISH GRAY SILTY SAND (SM)	—	—	—	—
		SLIGHTLY PLASTIC W/A TRACE OF				
		SAND & GRAVEL SIZE SHELL.				
		VISUAL SHELL ≈ 7.0%				

GRADATION CURVES

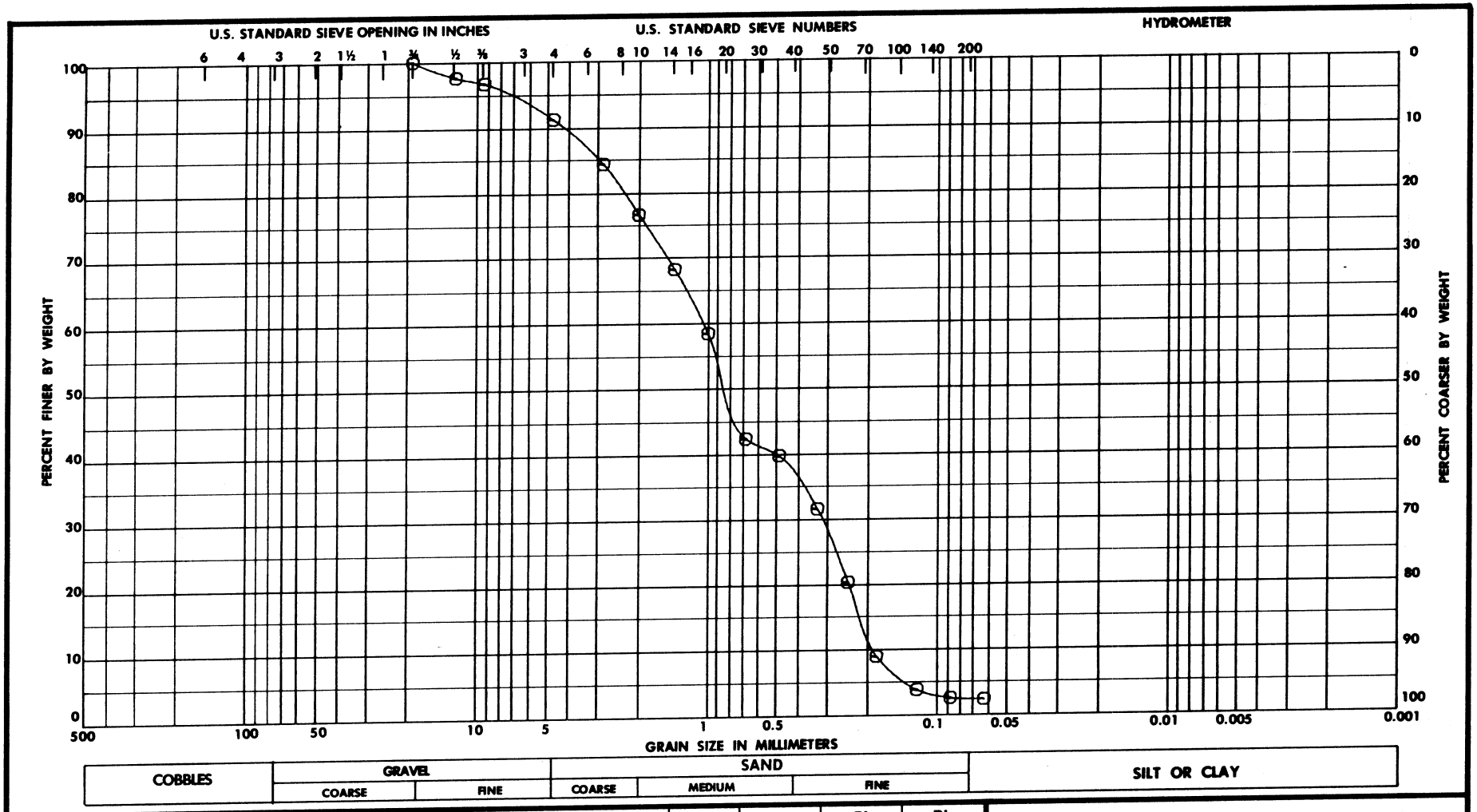
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4183
Boring No. CBCH90-10 SAM. NO.4
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-26.5/-31.5	BROWNISH TAN POOR GRD SAND & GRAVEL SIZE SHELL (SP). WITH SOME SAND. VIS. SHELL= 65.0% SPECIFIC GRAVITY = 2.74	—	—	—	—

GRADATION CURVES

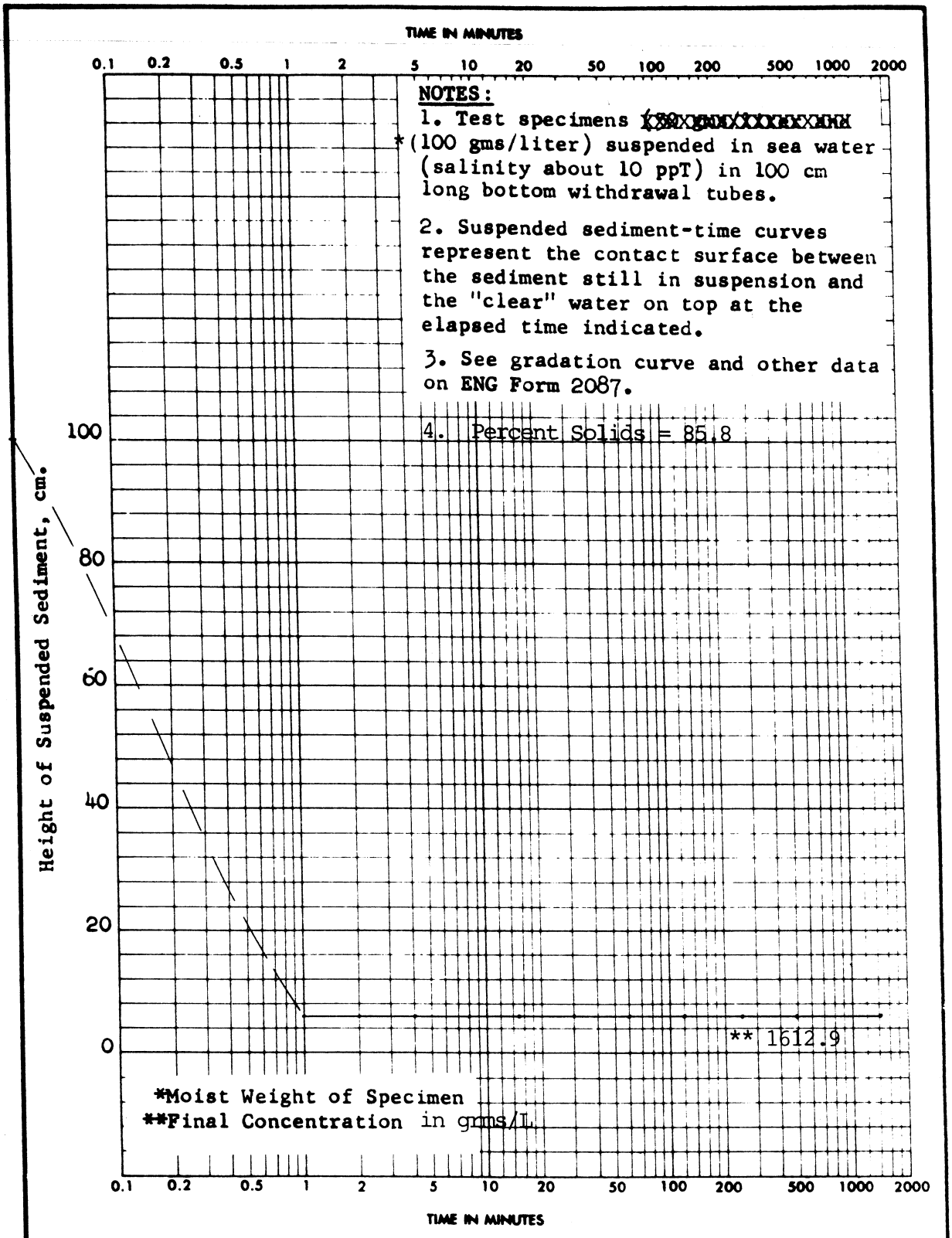
Project: JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area: LAB NO. 73/4184 *
Boring No.: CBCH90-11 SAM. NO. 1
Date: 05/16/90

ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT Charlotte Harbor			
AREA		Lab. No. 73/4184	
BORING NO. CBCH90-11	SAMPLE NO. 1	EL -26.5/-31.5	DATE 18 May 1990

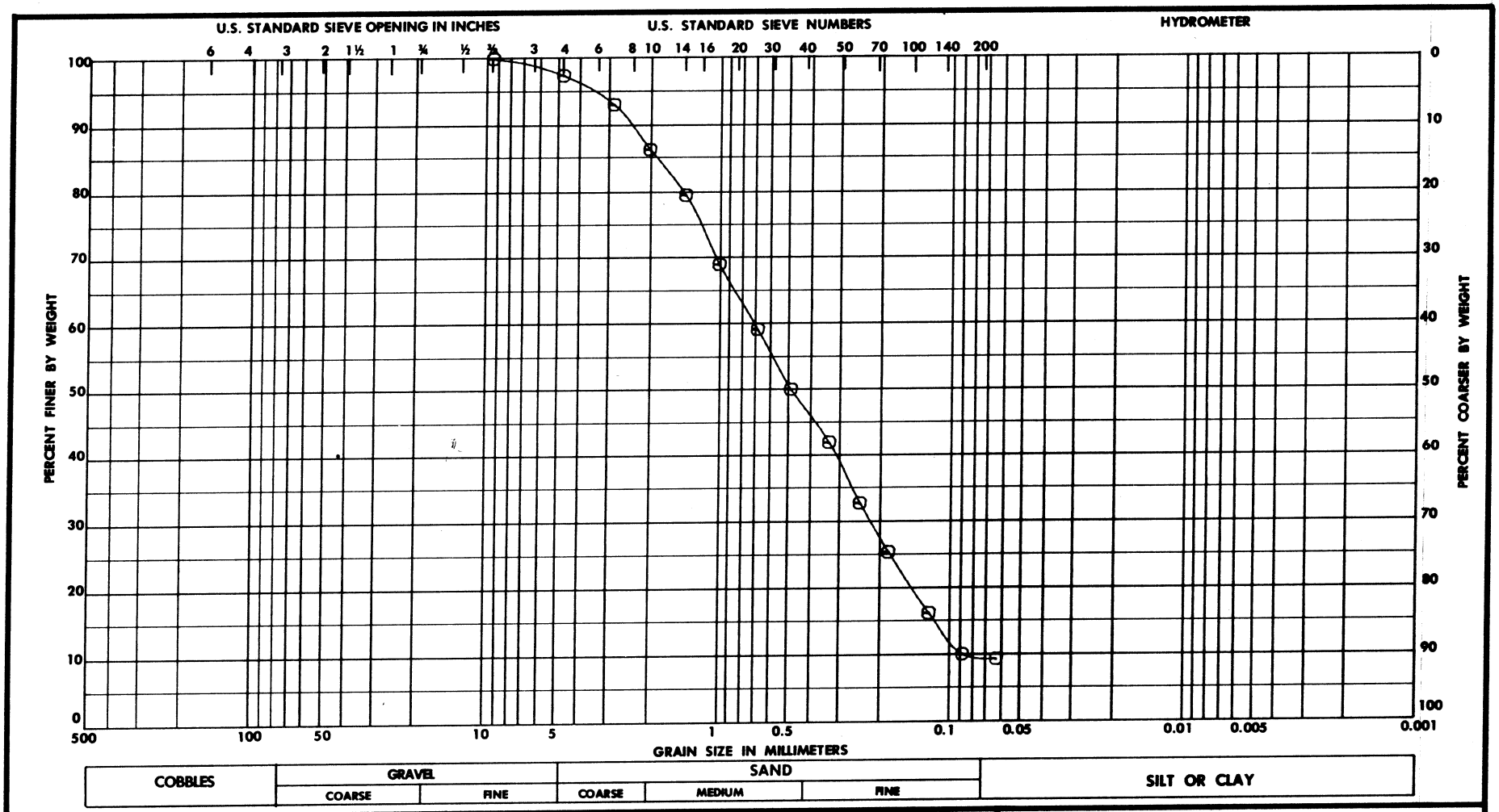
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2	-31.5/-34.0	VISUAL BROWNISH GRAY POOR GRD SILTY SAND AND GRAVEL SIZE SHELL (SP-SM). WITH SOME SAND. VISUAL SHELL = 58.0%	—	—	—	—

GRADATION CURVES

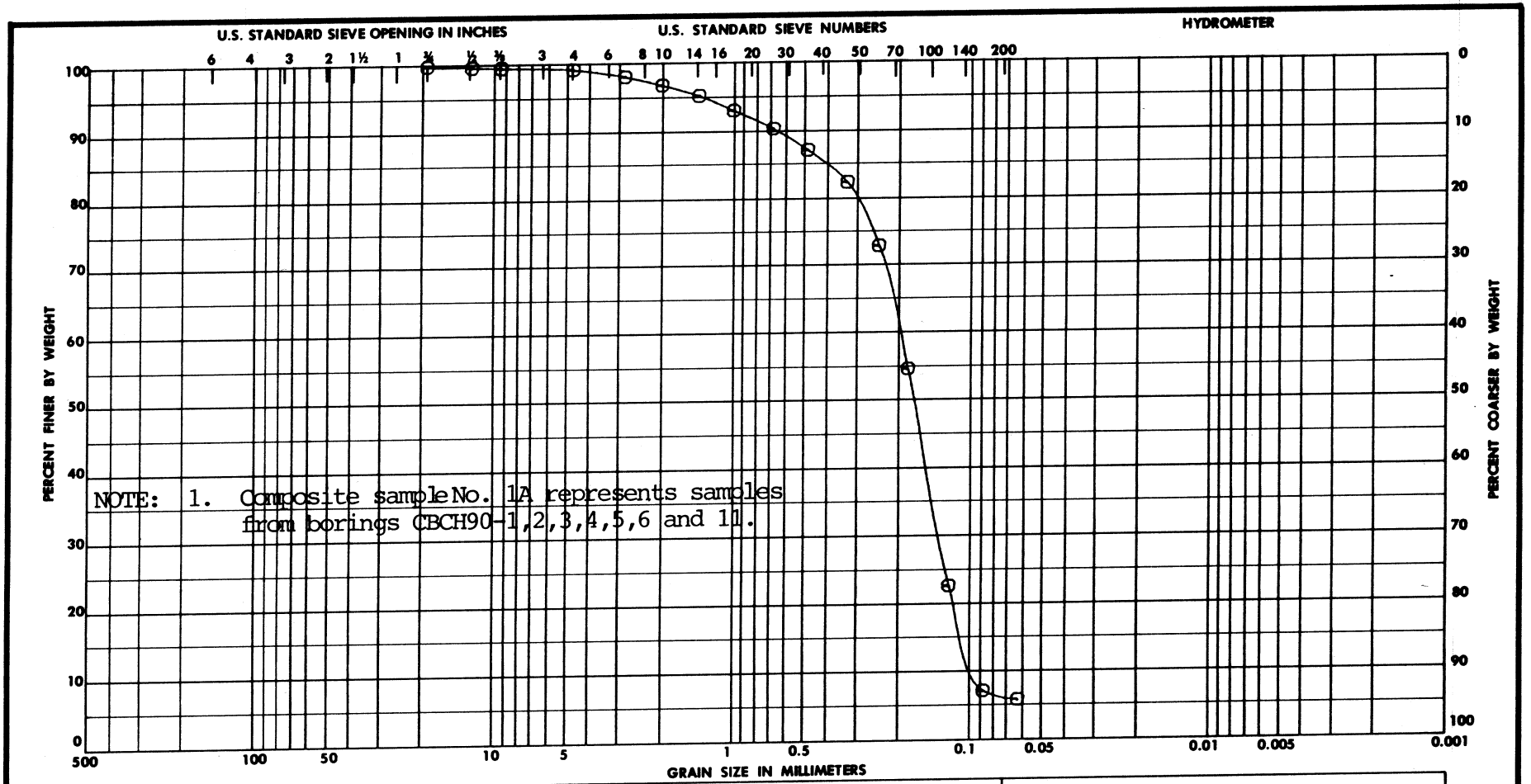
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185
Boring No. CBCH90-11 SAM. NO.2
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1A	---	VISUAL BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). WITH SOME SAND AND GRAVEL SIZE SHELL. VISUAL SHELL = 21.0%	—	—	—	—

GRADATION CURVES

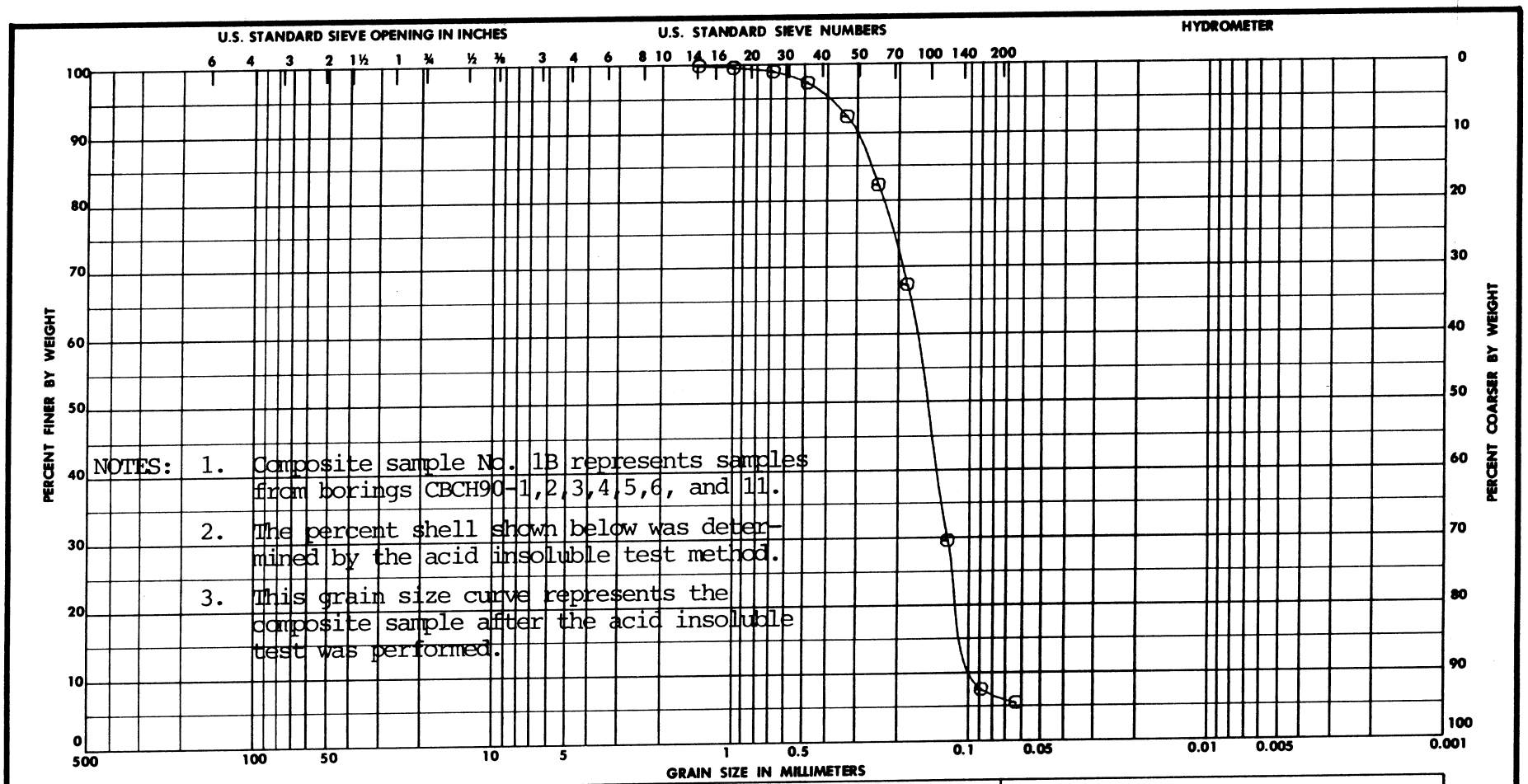
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185A
Boring No. COMPOSITE SAM. NO.1A
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev ~~datum~~	VISUAL Classification	Nat w %	LL	PL	PI
1B	---	POOR GRD SILTY SAND (SP-SM)	—	—	—	—
		PERCENT SHELL = 17.1				

GRADATION CURVES

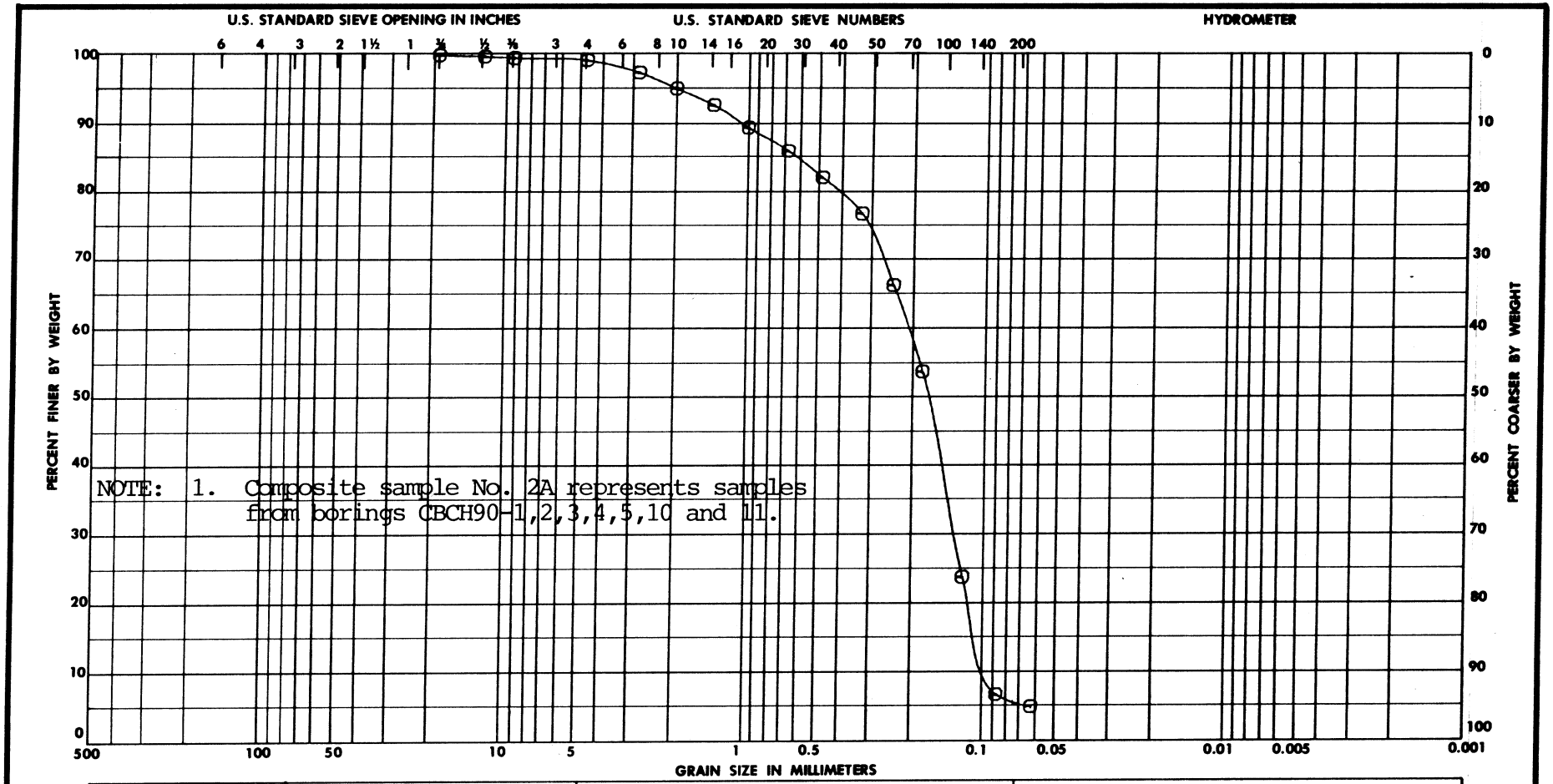
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185B
Boring No. COMPOSITE SAM. NO.1B
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2A	---	VISUAL POOR GRD SILTY SAND (SP-SM).	—	—	—	—
		WITH SOME SAND & GRAVEL SIZE				
		SHELL.				
		VISUAL SHELL = 25.0%				

GRADATION CURVES

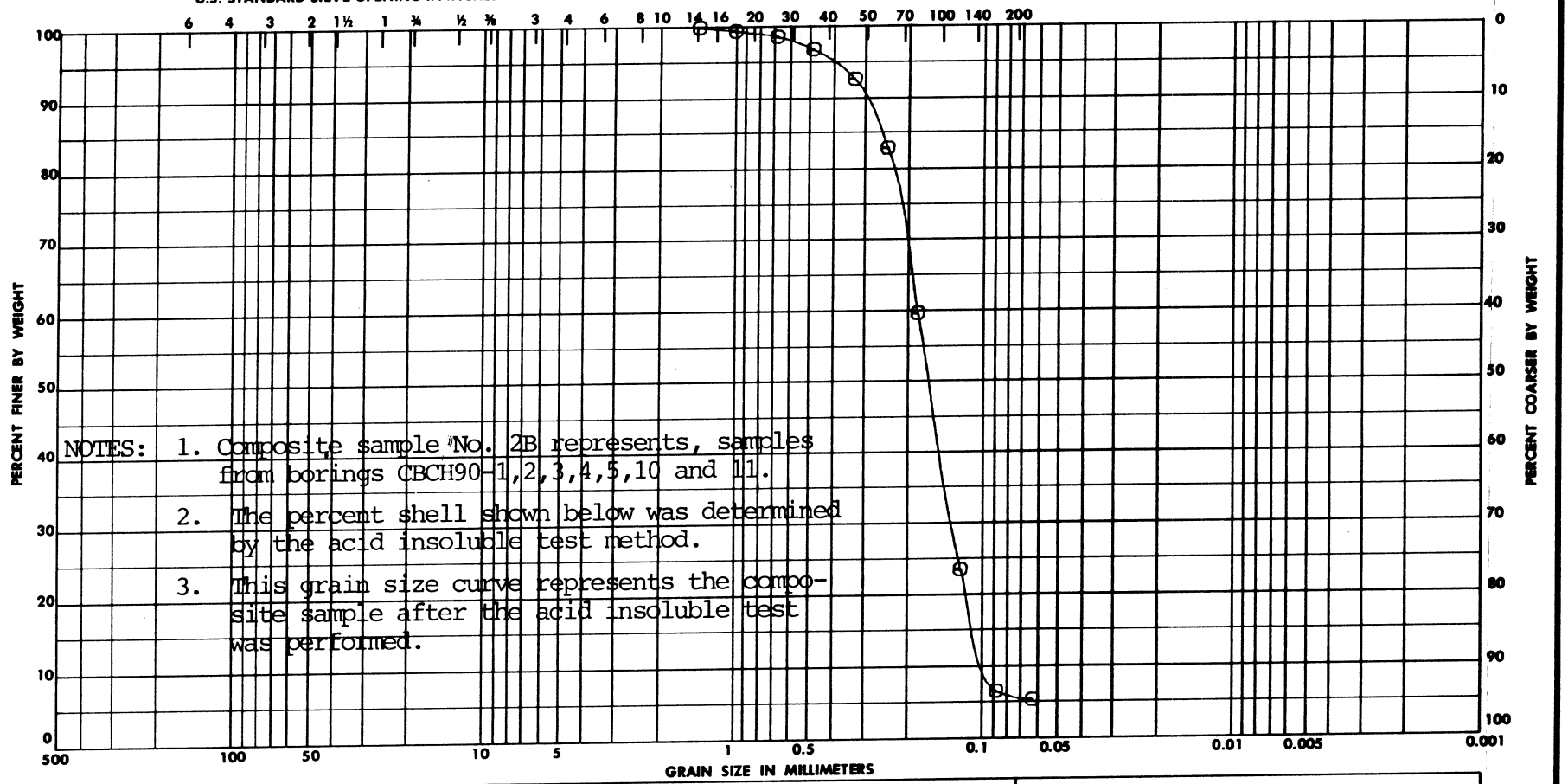
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185C
Boring No. COMPOSITE SAM. NO.2A
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2B	---	VISUAL POOR GRD SILTY SAND (SP-SM)	—	—	—	—
		PERCENT SHELL = 21.1%				

GRADATION CURVES

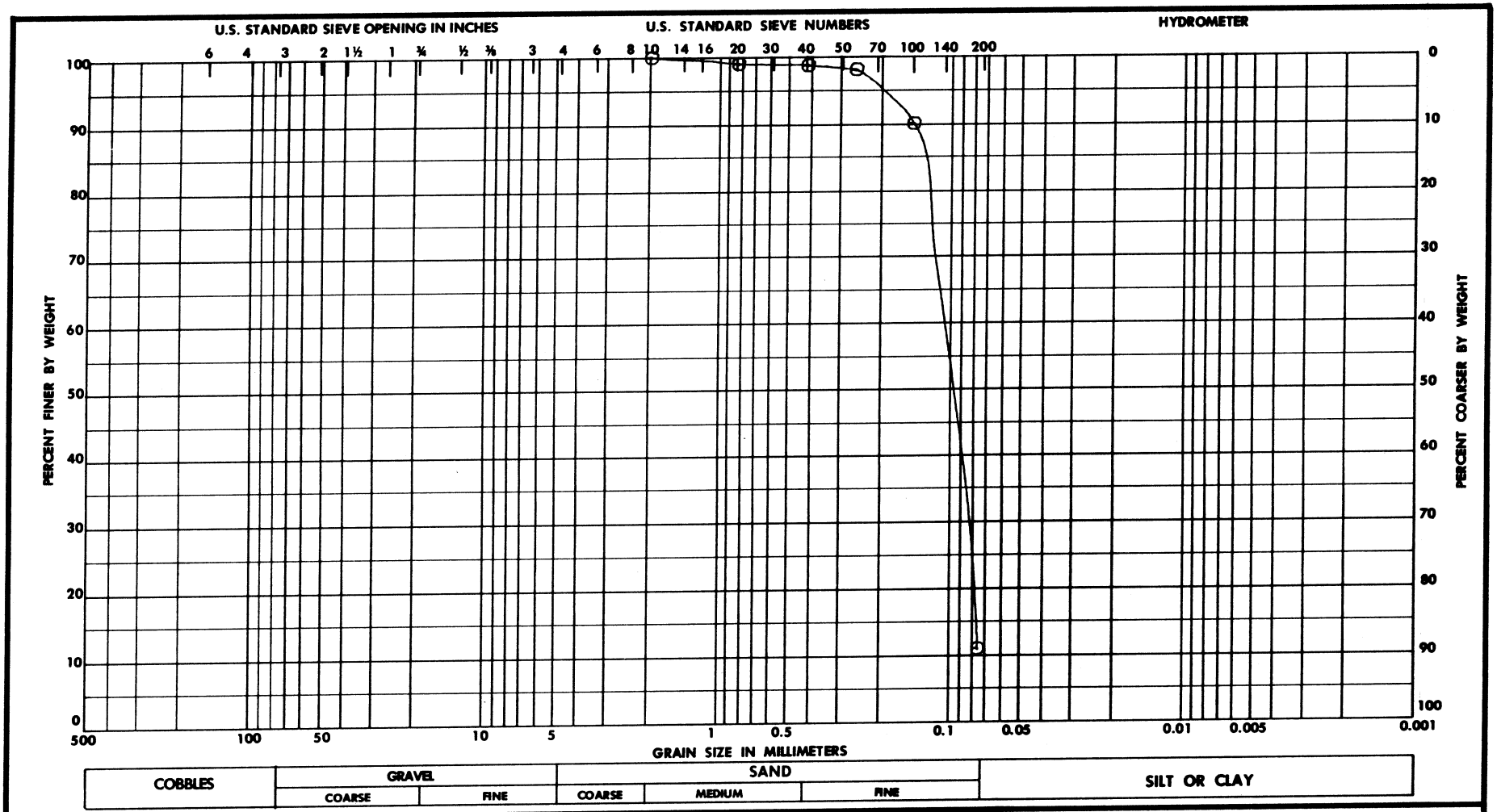
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185D
Boring No. COMPOSITE SAM. NO.2B
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev ~~of Zero~~	VISUAL Classification	Nat w %	LL	PL	PI
1	-32.3/-35.3	POOR GRD SILTY SAND (SP-SM)	--	--	--	--
		GREENISH GRAY. WITH A TRACE				
		OF SHELL.				
		SPECIFIC GRAVITY = 2.67				

GRADATION CURVES

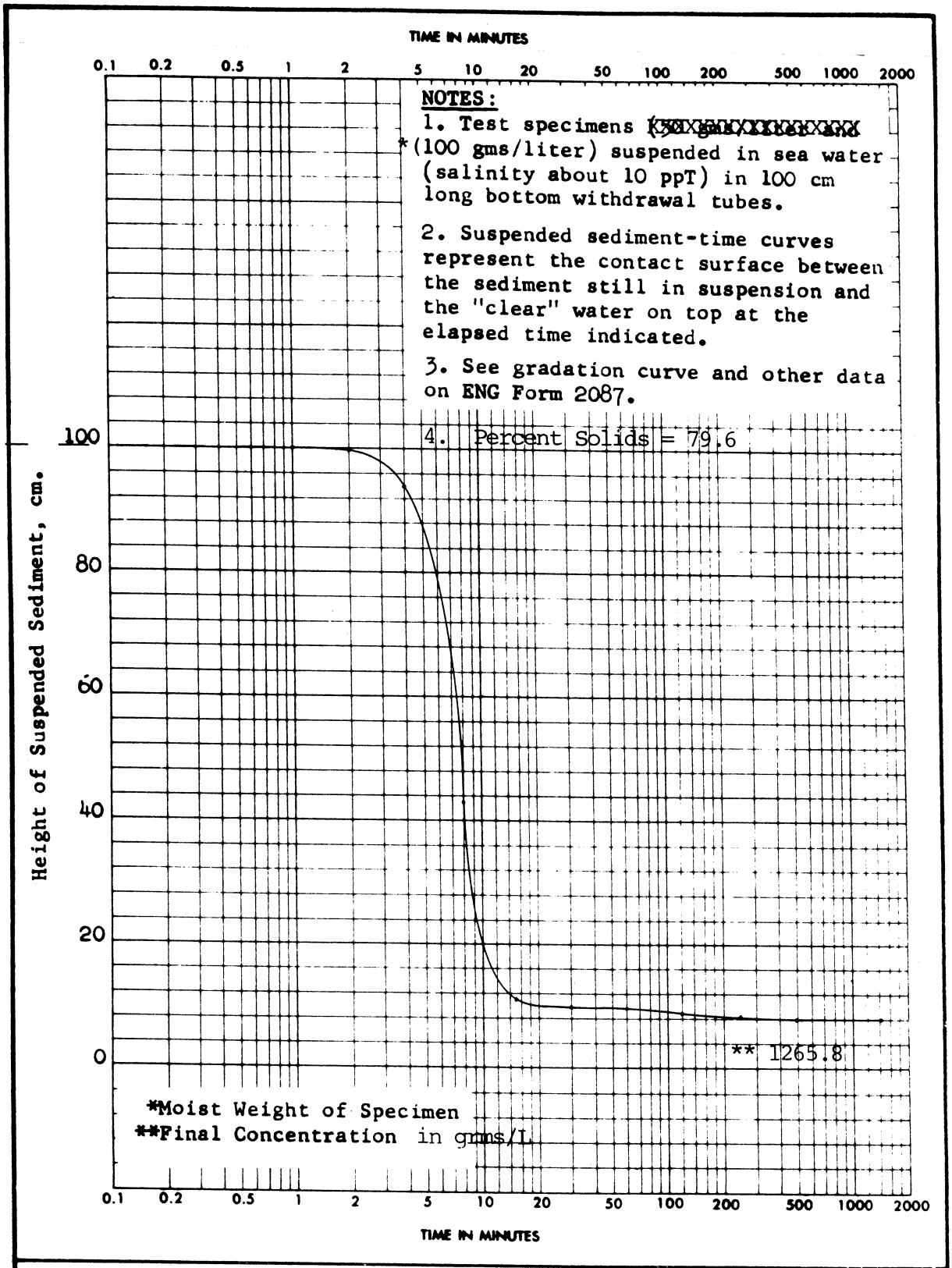
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4186 *
Boring No. CBCH90-6 .SAMPLE 1
Date 05/17/90

*See Sedimentation Rate Time Curve on SAD Form 3023.

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT Charlotte Harbor			
AREA		Lab. No. 73/4186	
BORING NO. CBCH90-6	SAMPLE NO. 1	EL -32.3/-35.3	DATE 18 May 1990

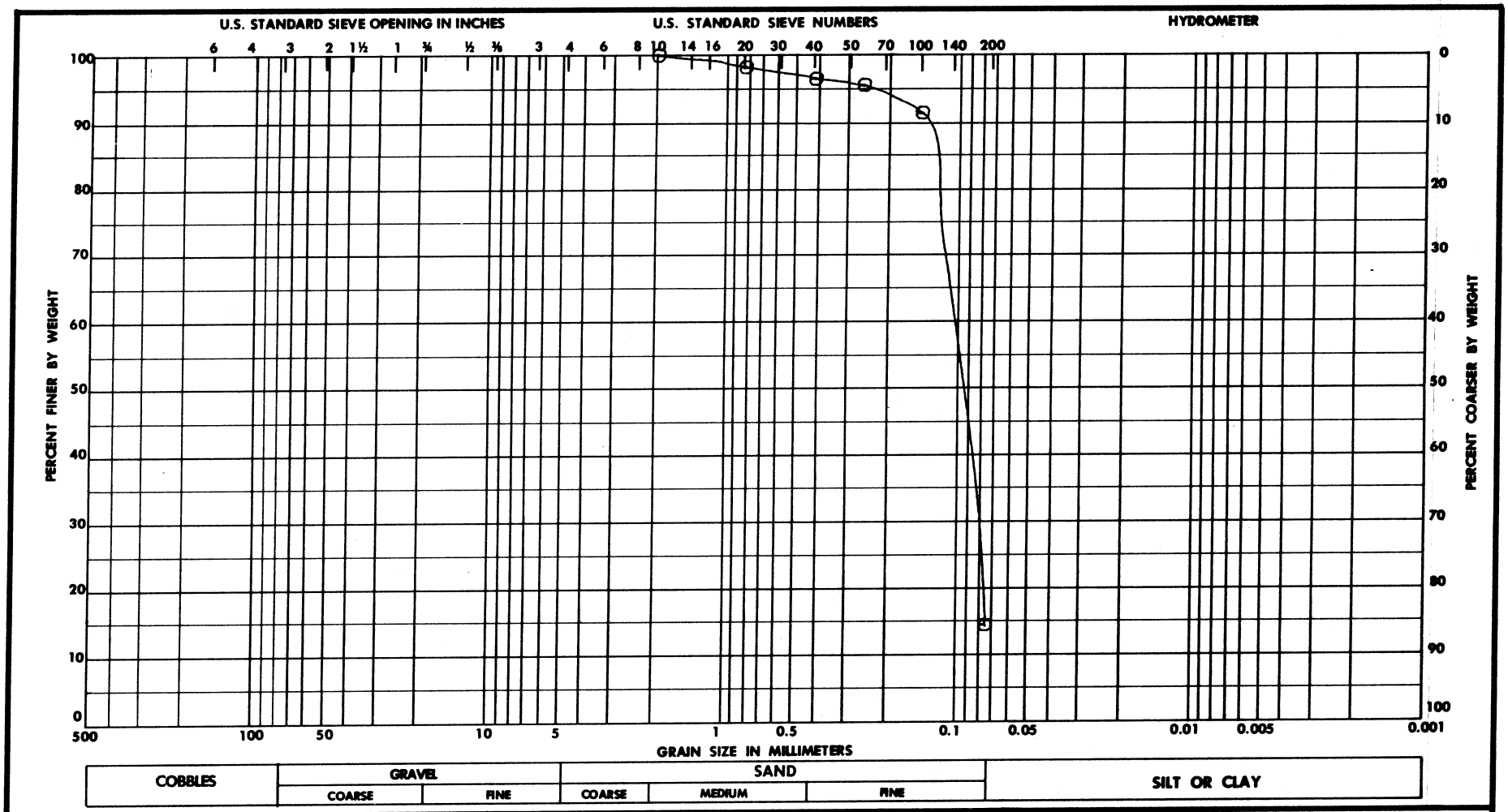
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev of ~~Drill~~	VISUAL Classification	Nat w %	LL	PL	PI
1	-30.8/-34.8	SILTY SAND (SM)	--	--	--	--
		GREENISH GRAY. WITH A TRACE				
		OF SHELL.				
		SPECIFIC GRAVITY = 2.68				

GRADATION CURVES

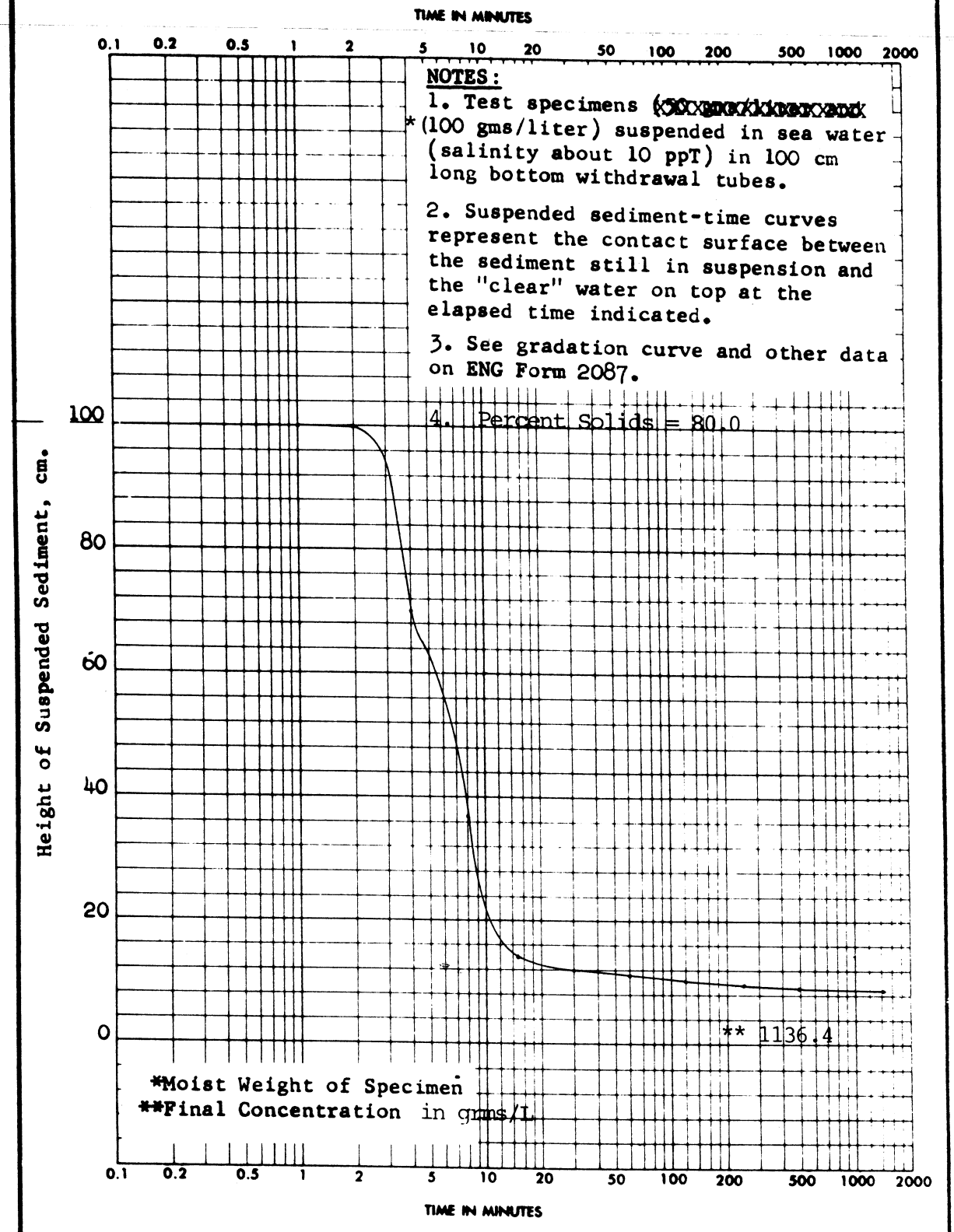
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4187 *
Boring No. CBCH90-7 . SAMPLE 1
Date 05/17/90

ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT Charlotte Harbor

AREA

Lab. No. 73/4187

BORING NO. CBCH90-7	SAMPLE NO. 1	EL -30.8/-34.8	DATE 18 May 1990

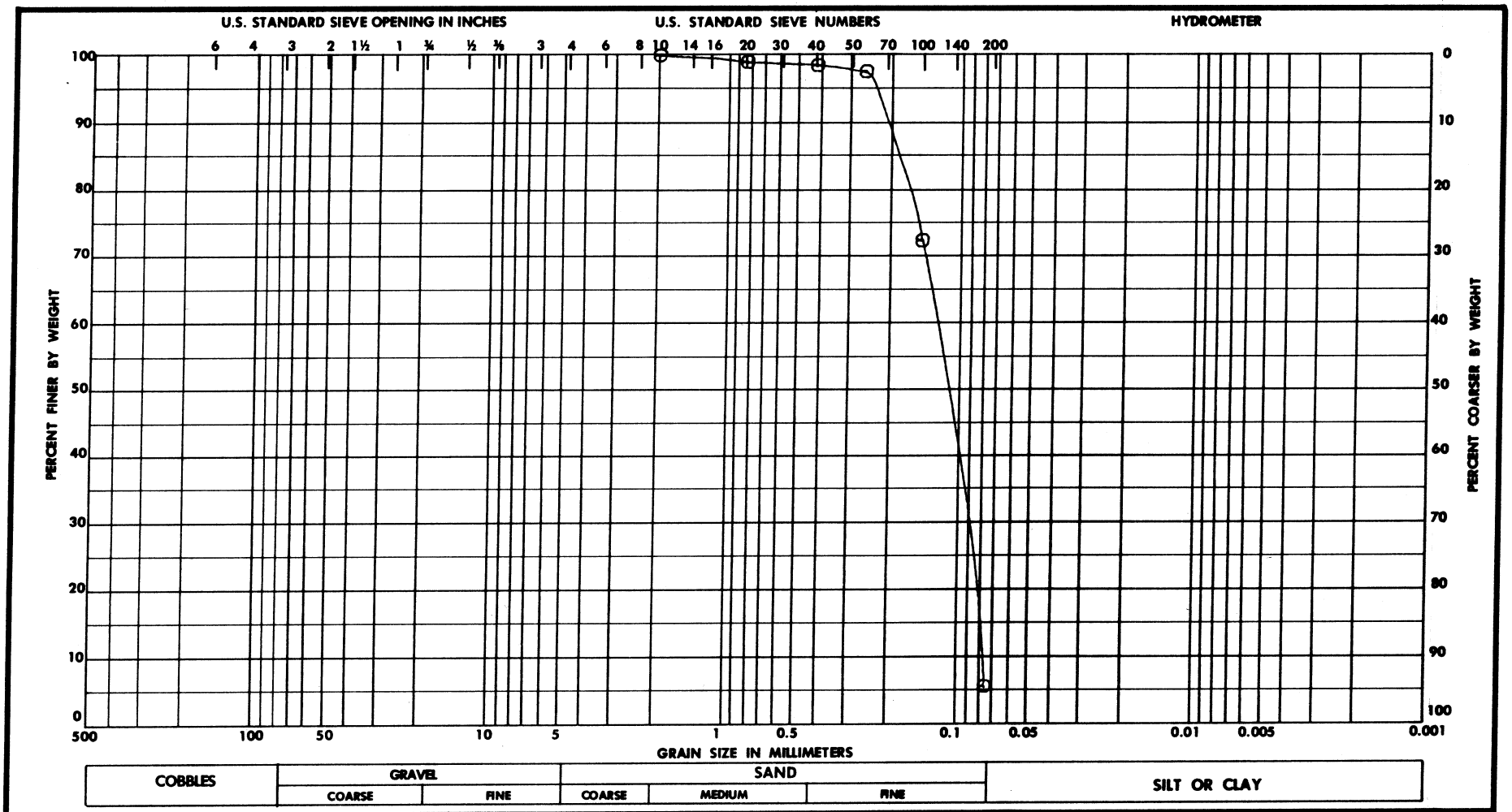
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-32.2/-34.2	POOR GRD SILTY SAND (SP-SM)	--	--	--	--
		GREENISH GRAY. W/A TRACE OF				
		SHELL.				
		SPECIFIC GRAVITY = 2.70				

GRADATION CURVES

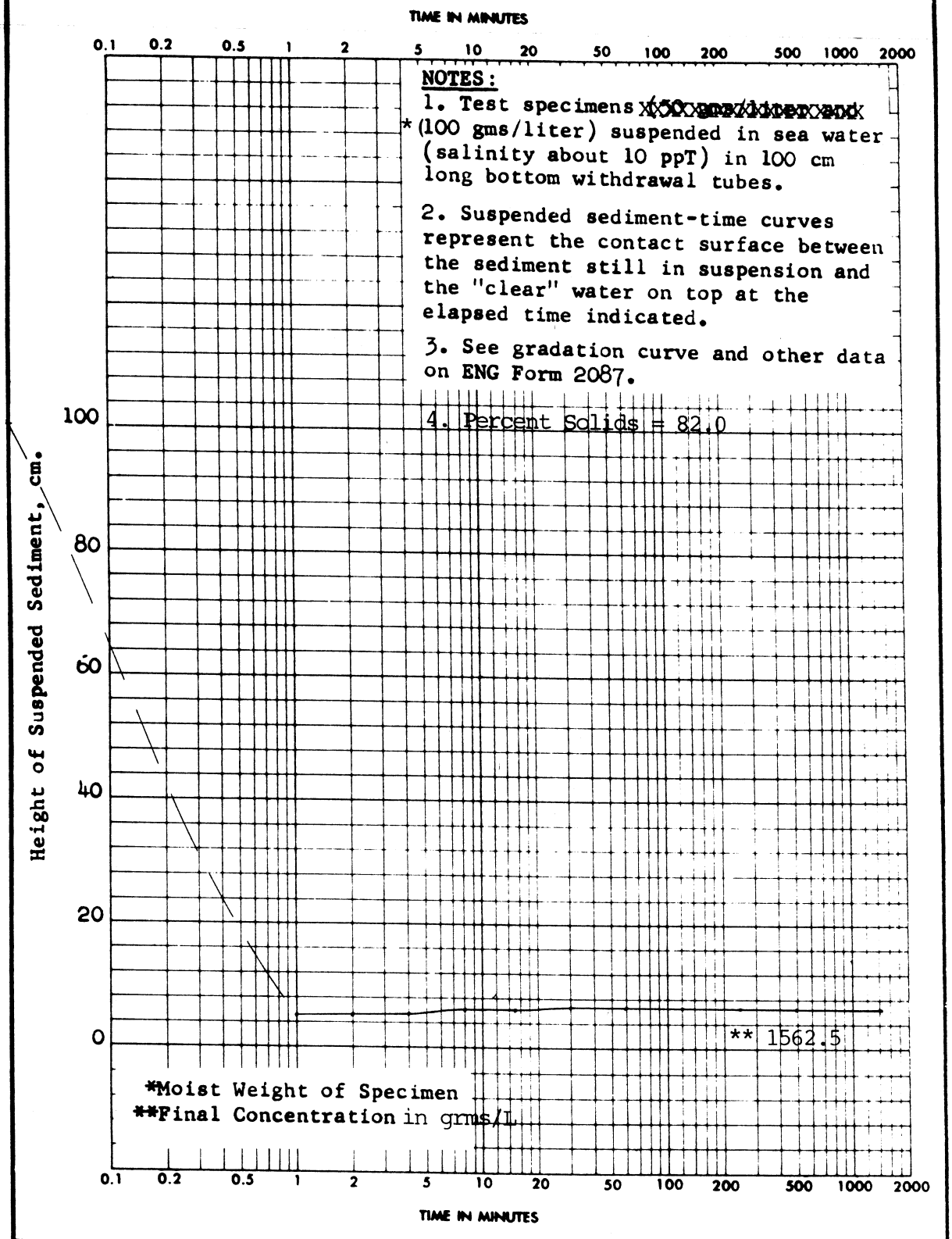
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4188 *
Boring No. CBCH90-8 . SAMPLE 1
Date 05/17/90

ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT Charlotte Harbor			
AREA		Lab. No. 73/4188	
BORING NO. CBCH90-8	SAMPLE NO. 1	EL -32.2/-34.7	DATE 18 May 1990

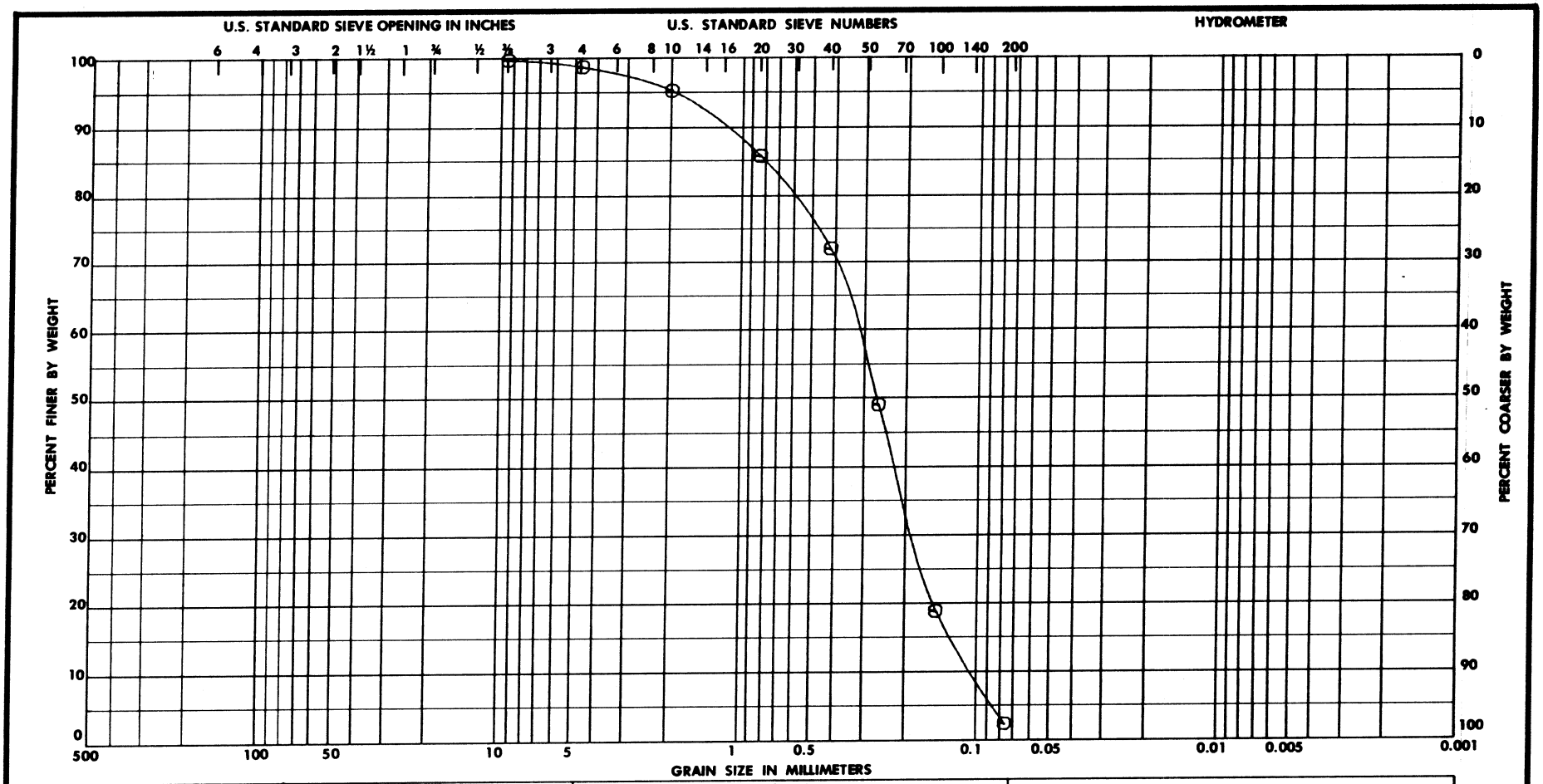
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-29.6/-31.6	POORLY GRADED SAND (SP)	--	--	--	--
		BROWNISH GRAY. WITH SOME SAND				
		AND GRAVEL SIZE SHELL.				
		SPECIFIC GRAVITY = 2.70				

GRADATION CURVES

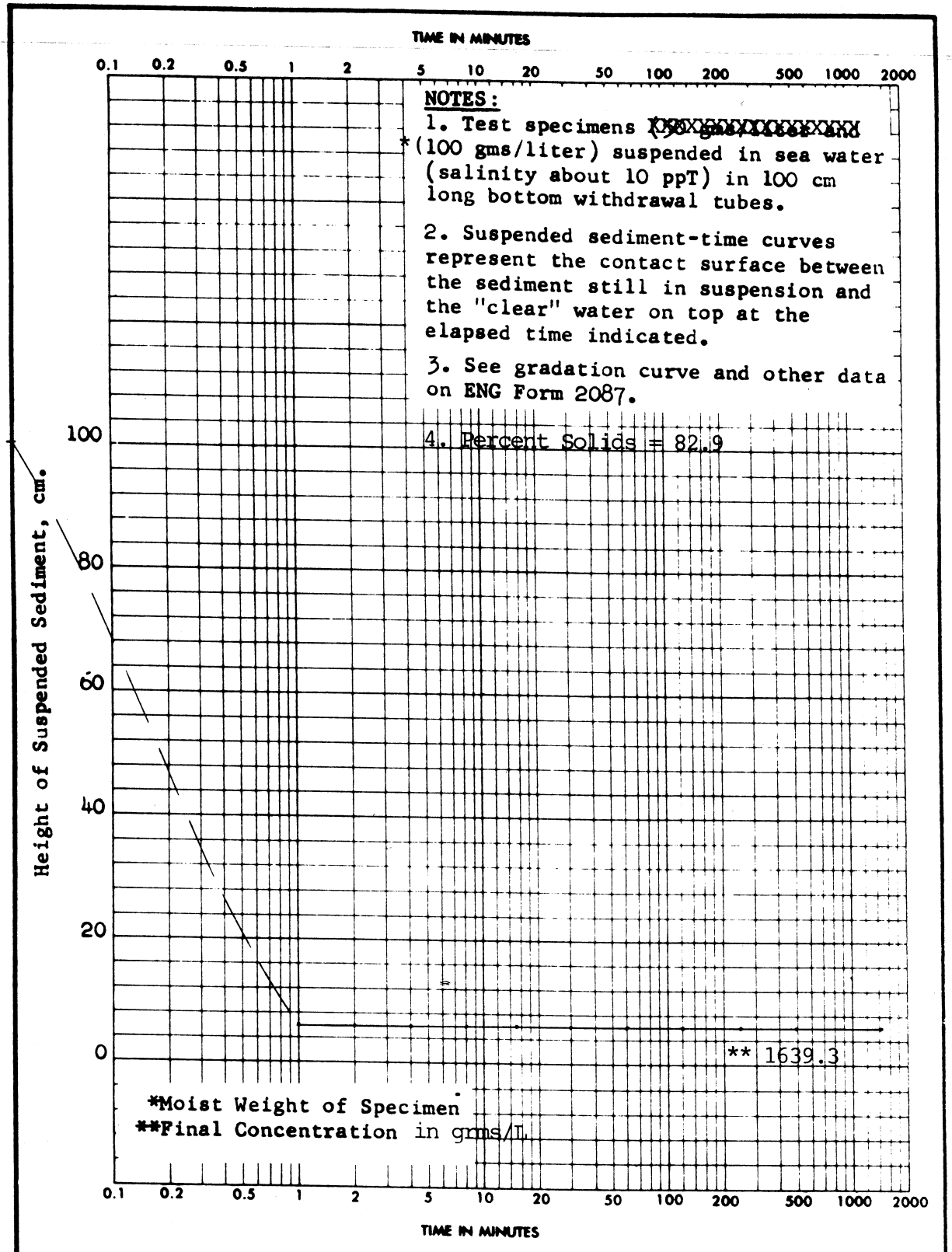
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4189 *
Boring No. CBCH90-9 .SAMPLE 1
Date 05/17/90

ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-90-0131
Work Order No. 6123



PROJECT	Charlotte Harbor			
AREA		Lab. No. 73/4189		
BORING NO. CBCH90-9	SAMPLE NO. 1	~~DEPTH~~ EL -29.6/-31.6	DATE 18 May 1990	

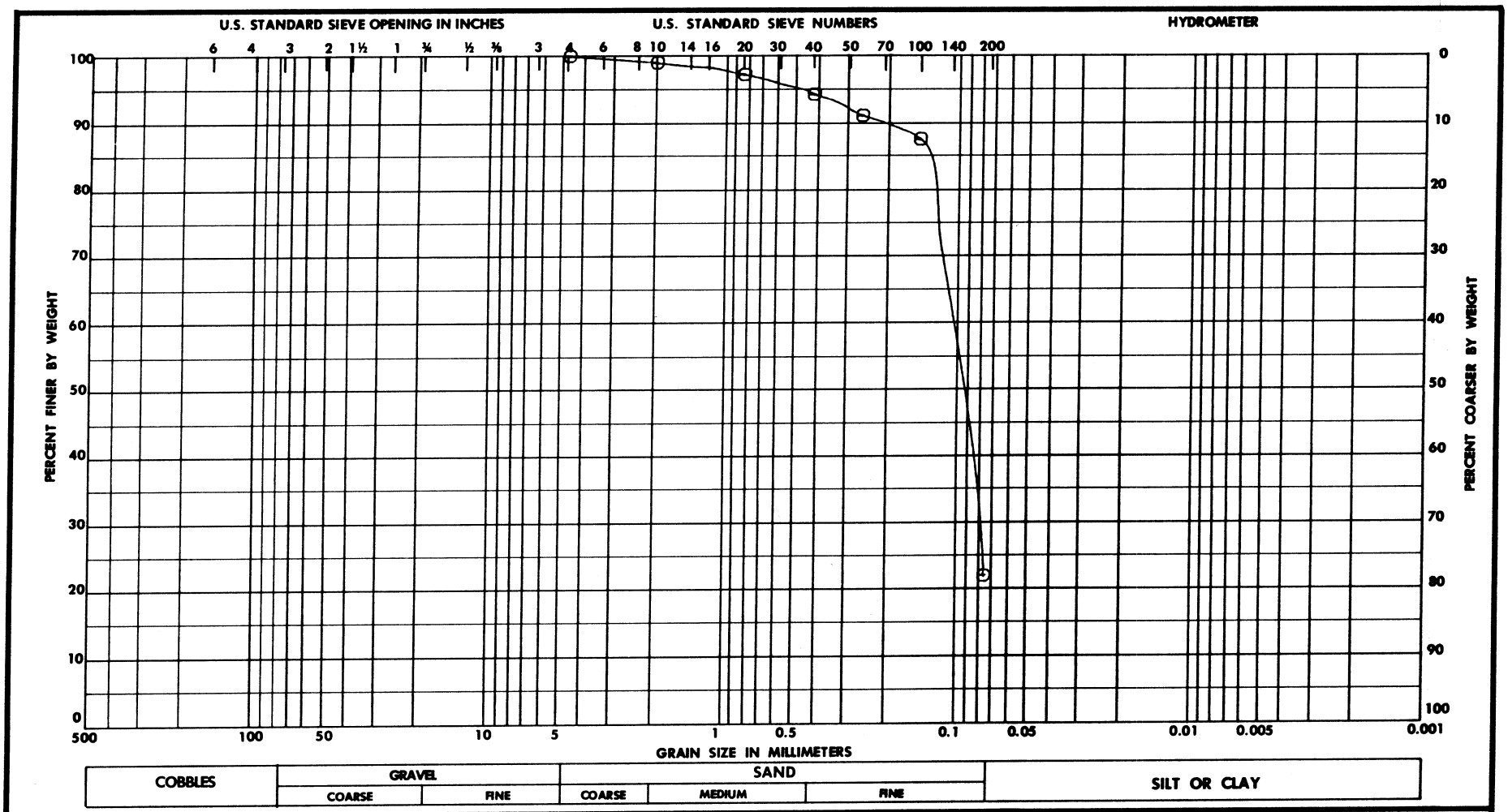
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
2	-31.6/-34.6	SILTY SAND (SM)	--	--	--	--
		GREENISH GRAY. SLIGHTLY PLAS-				
		TIC. WITH A TRACE OF SHELL.				
		SPECIFIC GRAVITY = 2.68				

GRADATION CURVES

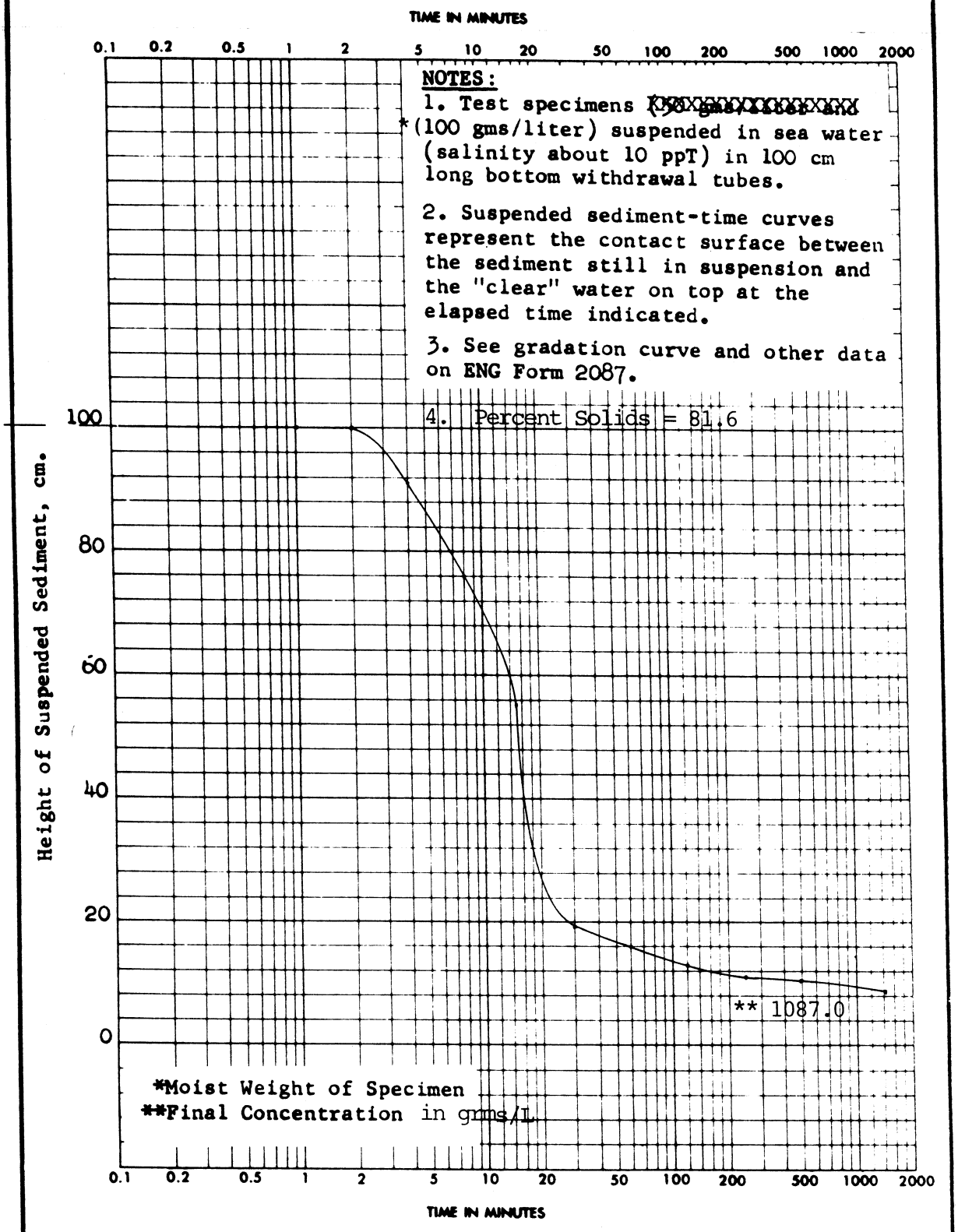
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4190 *
Boring No. CBCH90-9 . SAMPLE 2
Date 05/17/90

ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-90-0131
Work Order No. 6123



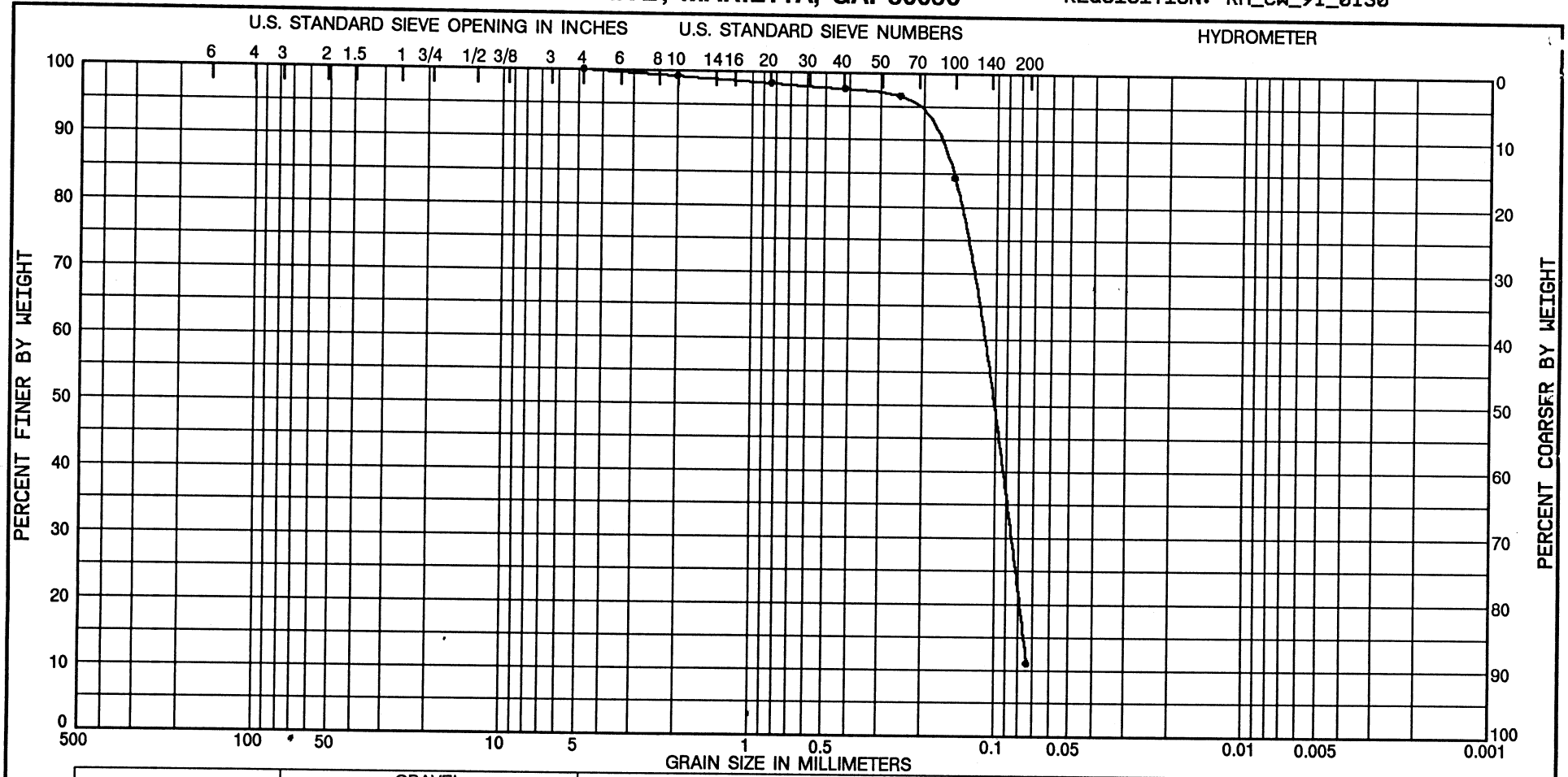
PROJECT Charlotte Harbor			
AREA		Lab. No. 73/4190	
BORING NO. CBCH90-9	SAMPLE NO. 2	~~DEPTH~~ EL -31.6/-34.6	DATE 18 May 1990

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Visual Classification	Nat w%	LL	PL	PI
1	-29.4/-34.4	Gray poorly graded silty sand (SP-SM), with a trace of shell and mica.	–	–	–	–

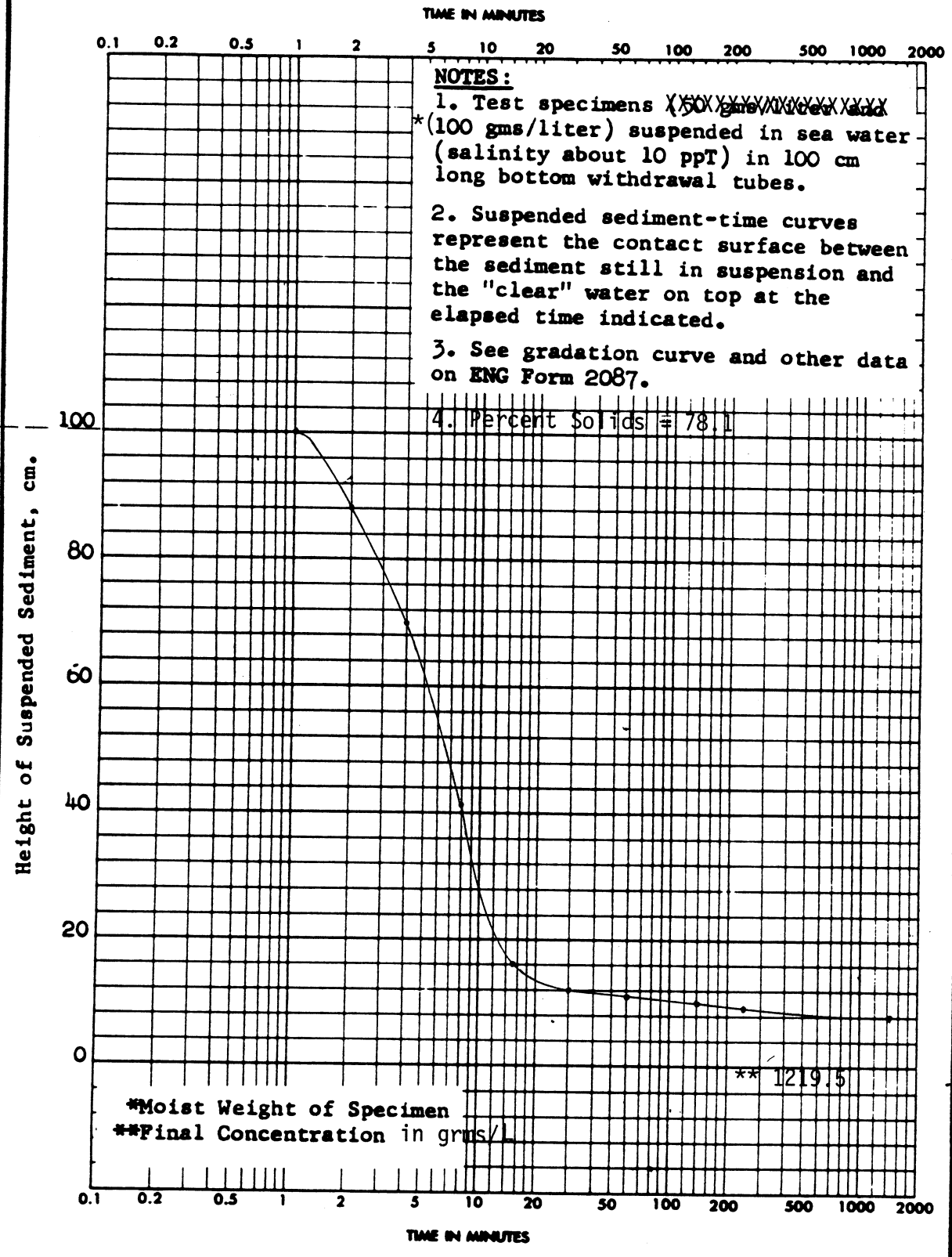
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4605
Boring No. CB-CH91-1
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



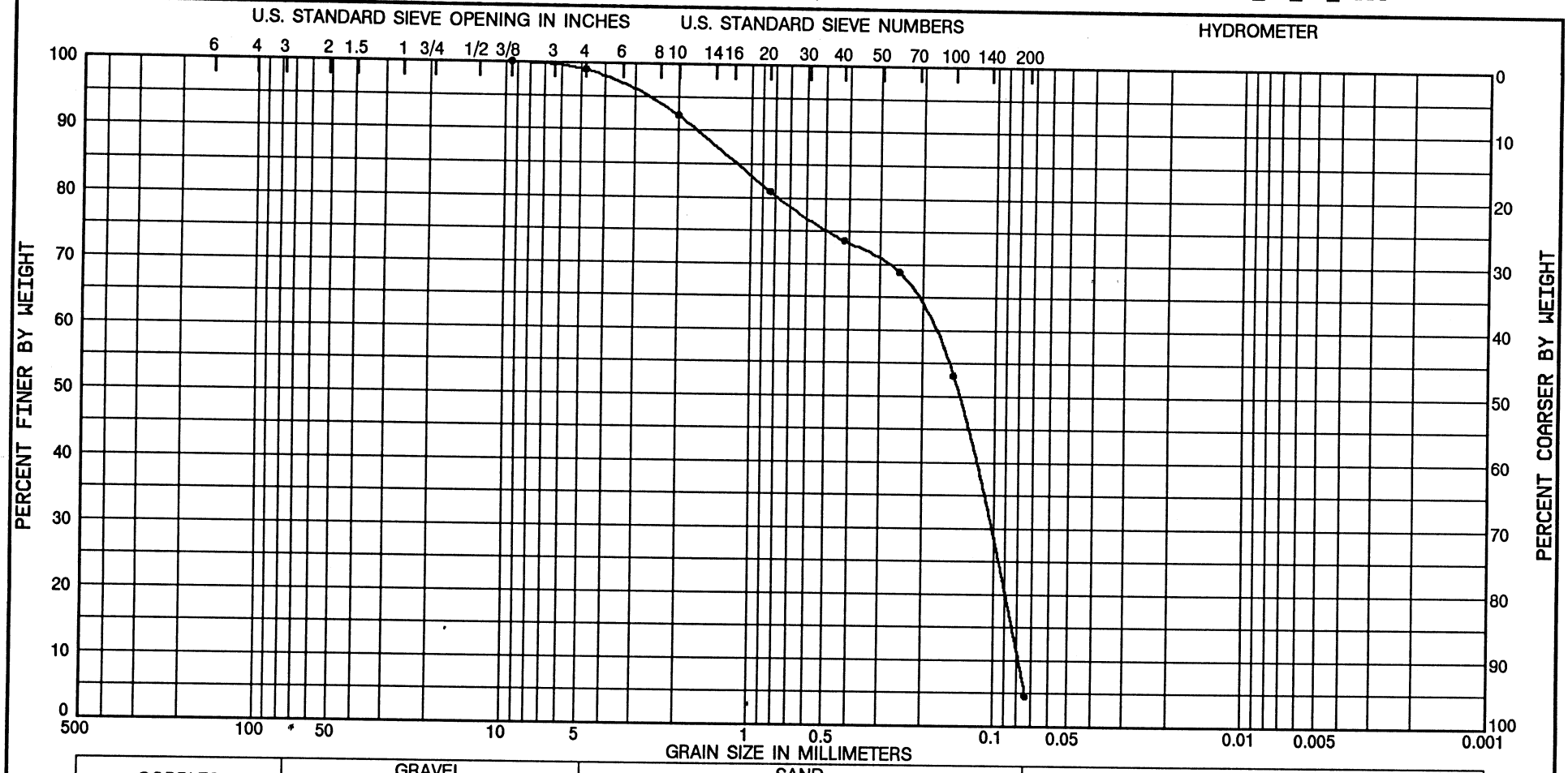
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4605	
BORING NO. CB-CH91-1	SAMPLE NO. 1	DEPTH EL -29.4/-34.4	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-29.9/-34.9	Gray poorly graded sand (SP), with a little sand & gravel size shell and with a trace of wood fragments & mica.	–	–	–	–

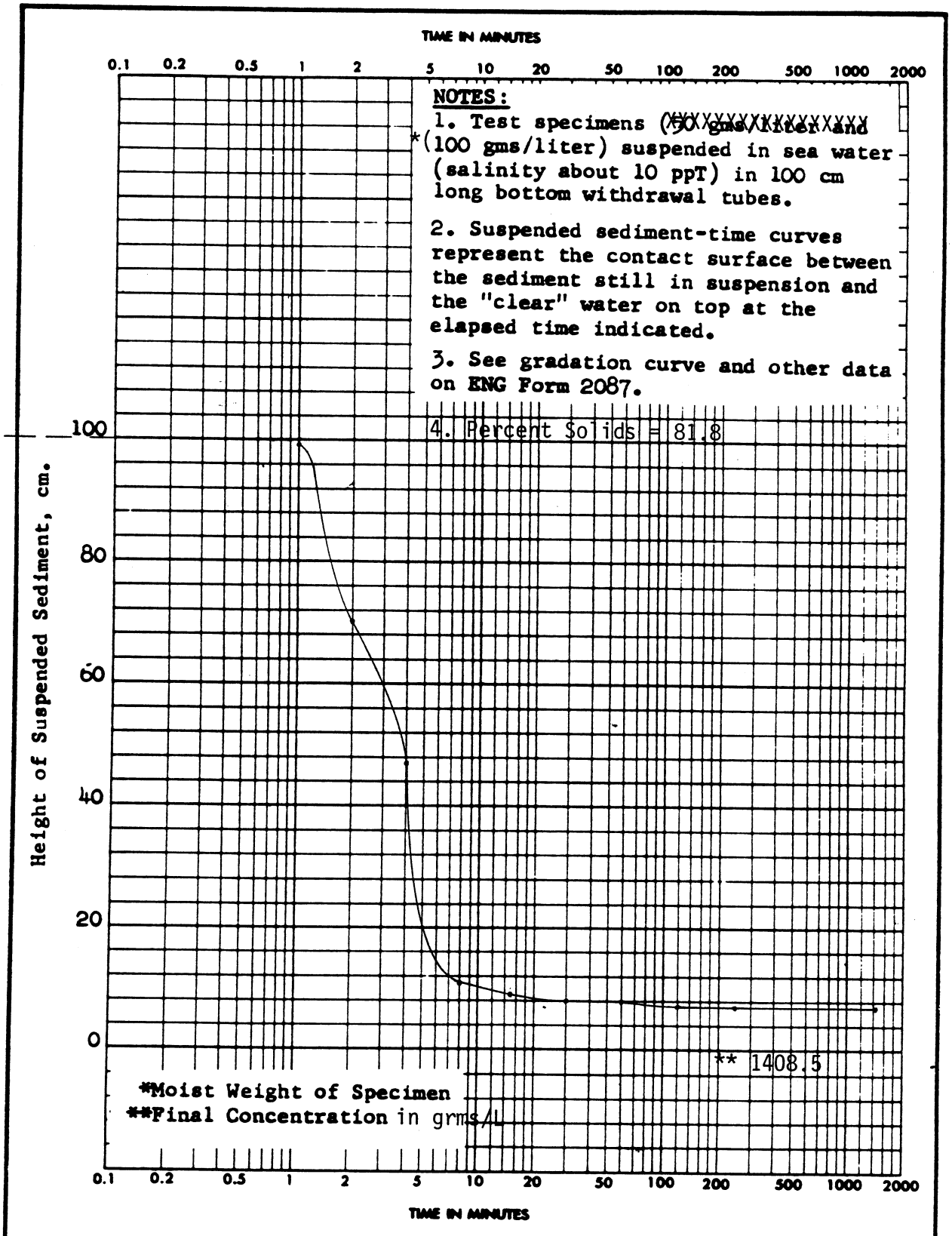
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4606
Boring No. CB-CH91-2
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



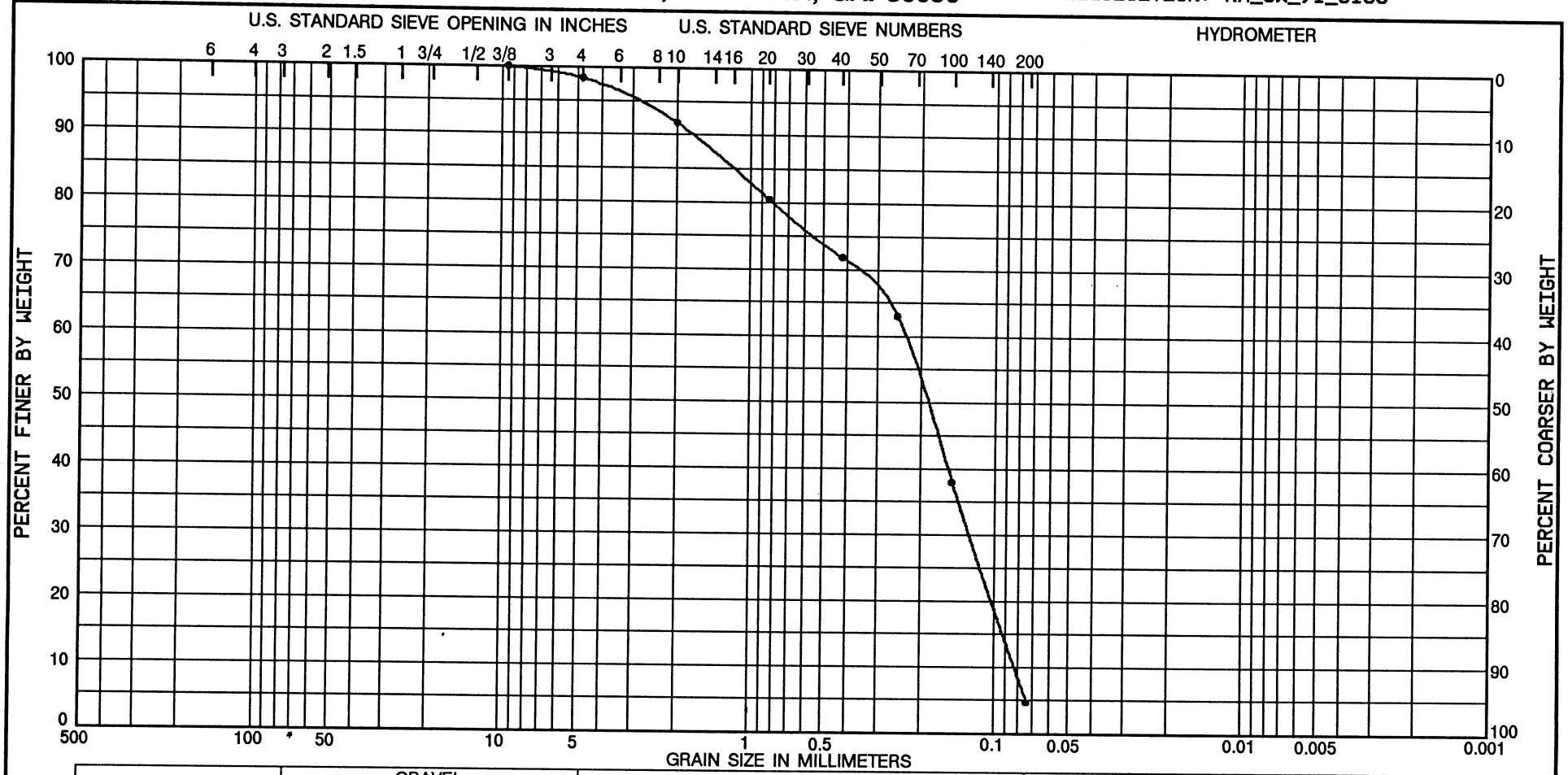
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4606	
BORING NO. CB-CH91-2	SAMPLE NO. 1	DEPTH EL -29.9/-34.9	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-30.9/-35.4	Gray poorly graded sand (SP), with a trace of sand & gravel size shell and with a trace of mica.	--	--	--	--

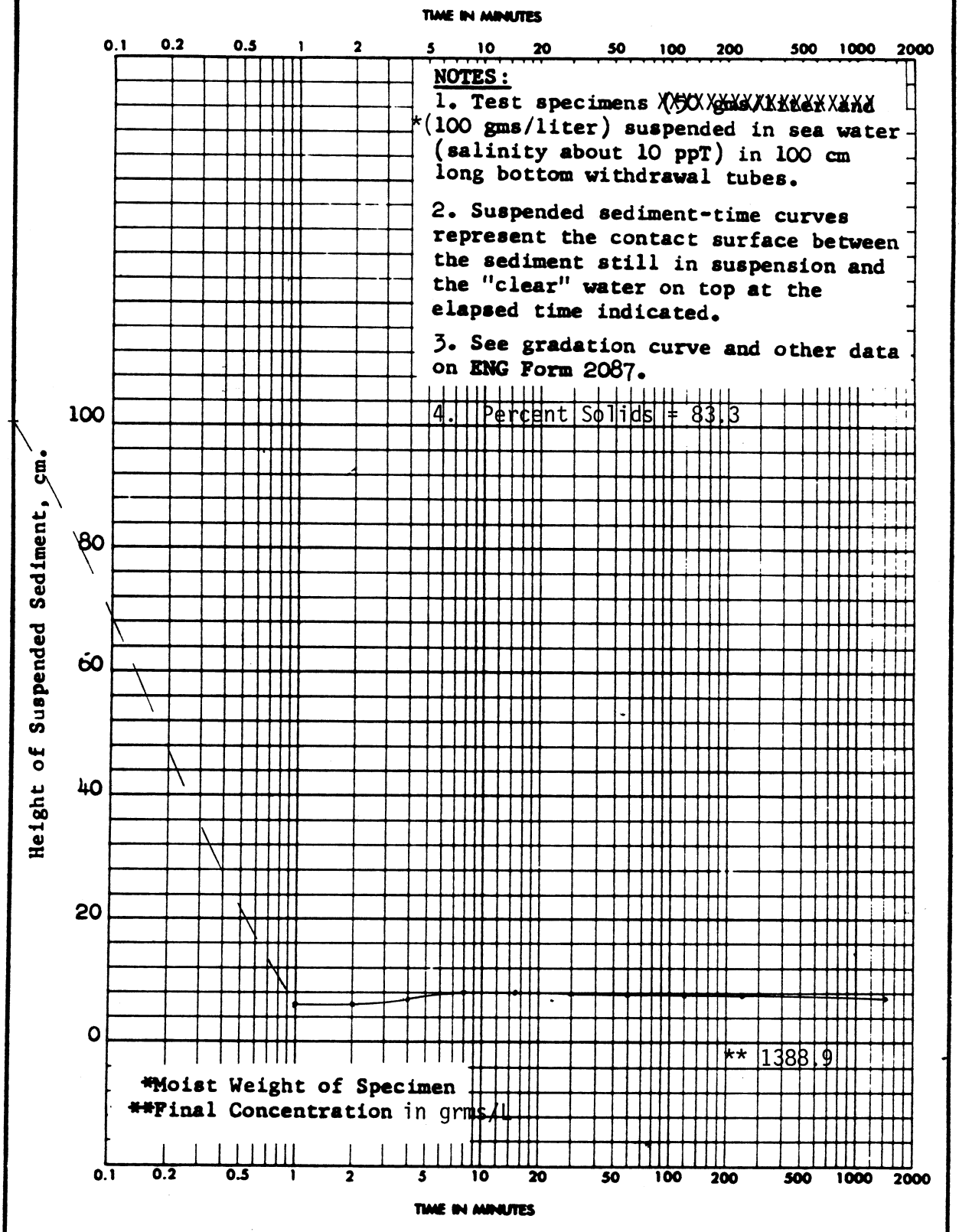
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4607
Boring No. CB-CH91-3
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



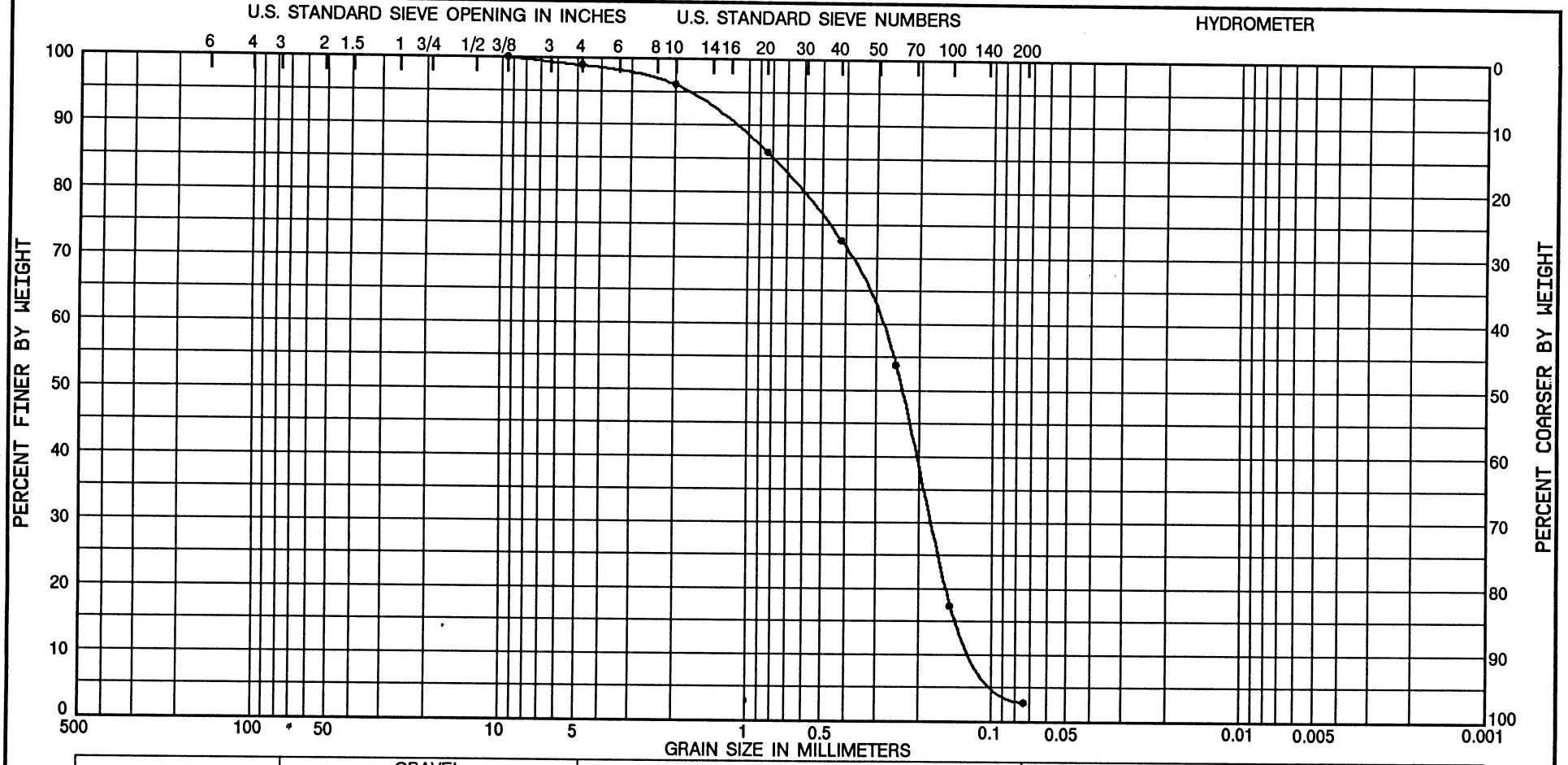
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4607	
BORING NO. CB-CH91-3	SAMPLE NO. 1	EL -30.9/-35.4	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-30.4/-35.4	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of wood fragments and mica.	--	--	--	--

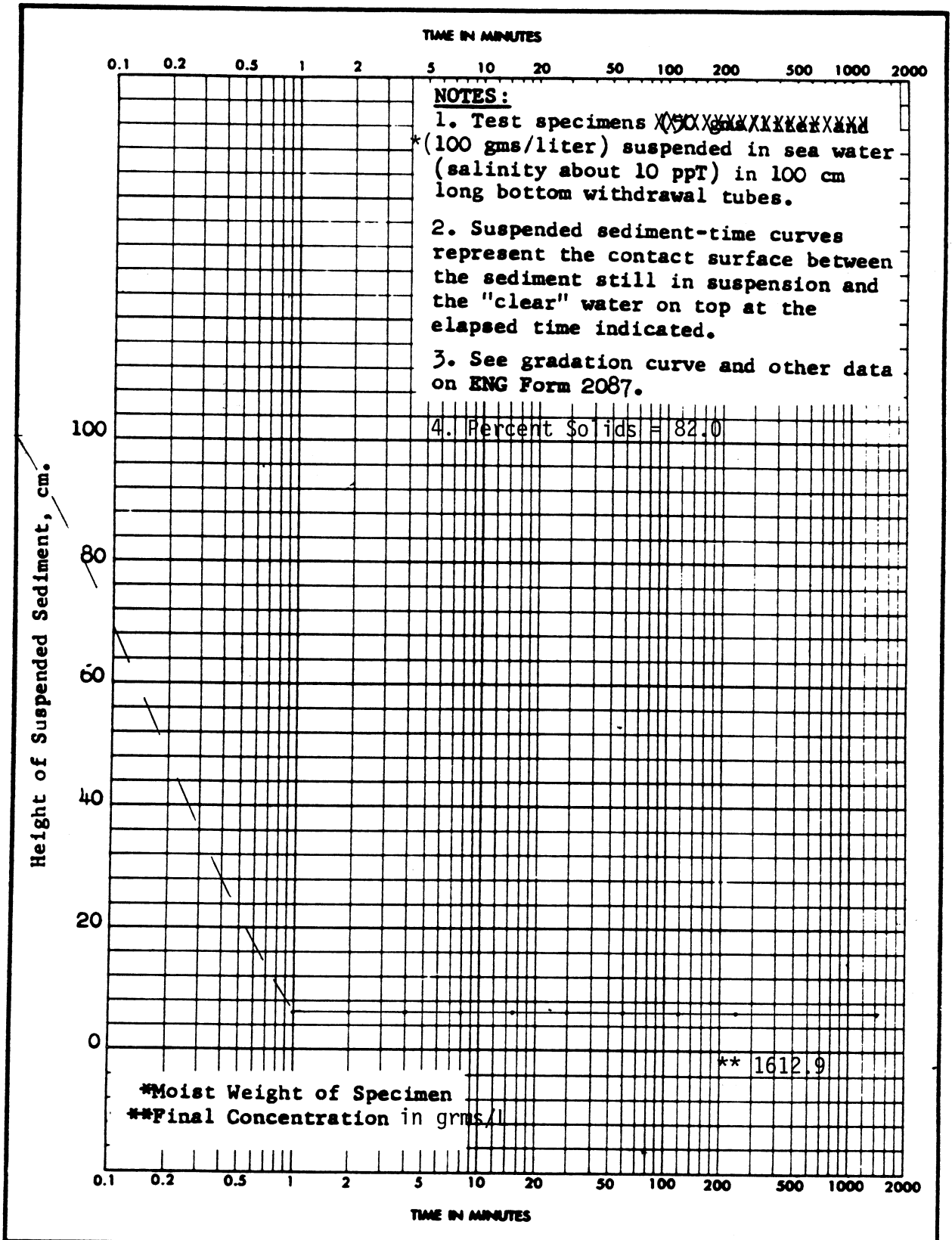
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4608
Boring No. CB-CH91-4
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



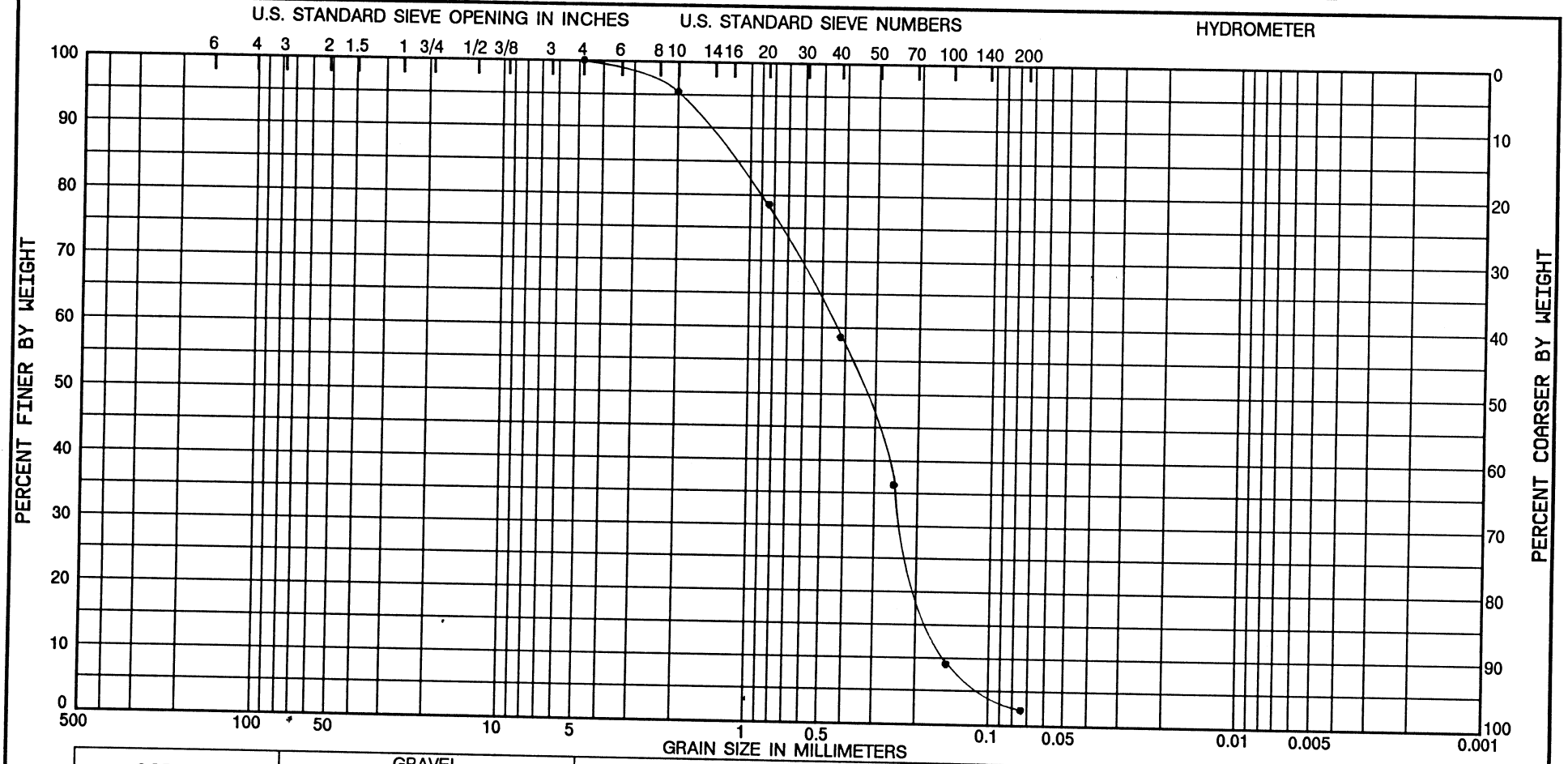
PROJECT Charlotte Harbor Maintenance Dredging				
AREA		Lab. No. 73/4608		
BORING NO. CB-CH91-4	SAMPLE NO. 1	EL -30.4/-35.4	DATE 26 July 1991	

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-31.2/-36.2	Tannish gray poorly graded sand (SP), shelly, with a trace of mica.	--	--	--	--

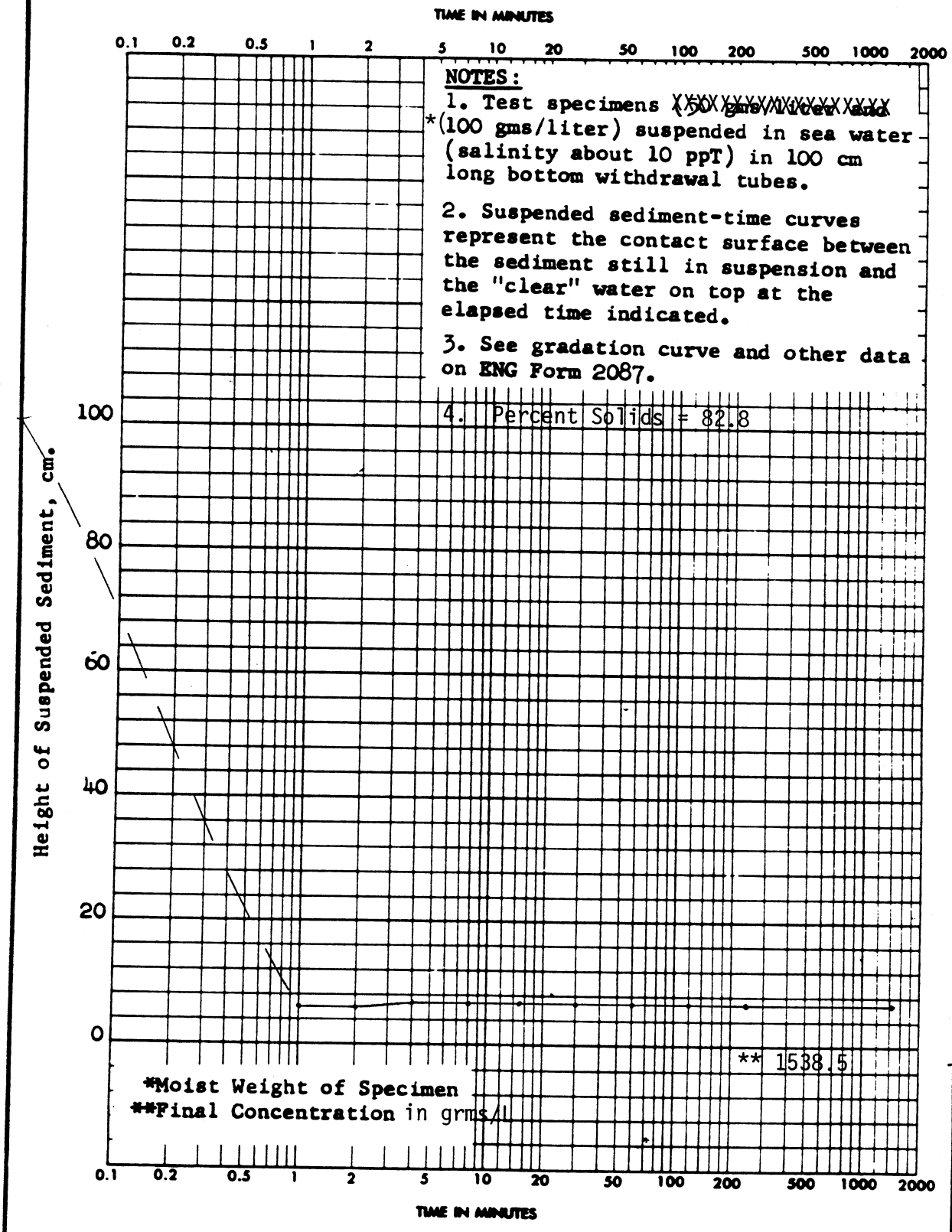
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4609
Boring No. CB-CH91-5
Date 07/25/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-01-0130
Work Order No. 6442



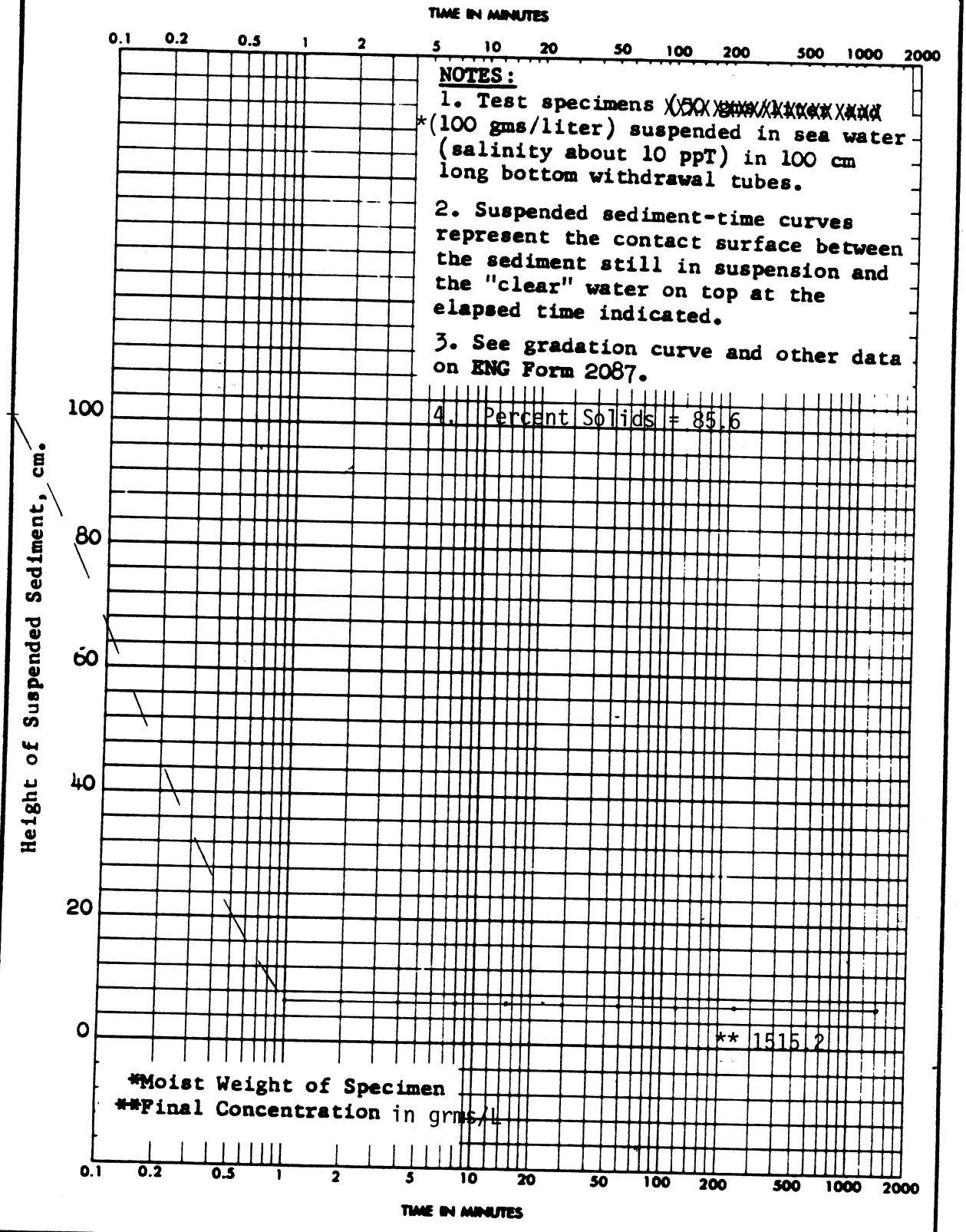
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4609	
BORING NO. CB-CH91-5	SAMPLE NO. 1	EL -31.2/-36.2	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No.RM-CW-91-0130
Work Order No. 6442



PROJECT Charlotte Harbor Maintenance Dredging

AREA

Lab. No. 73/4610

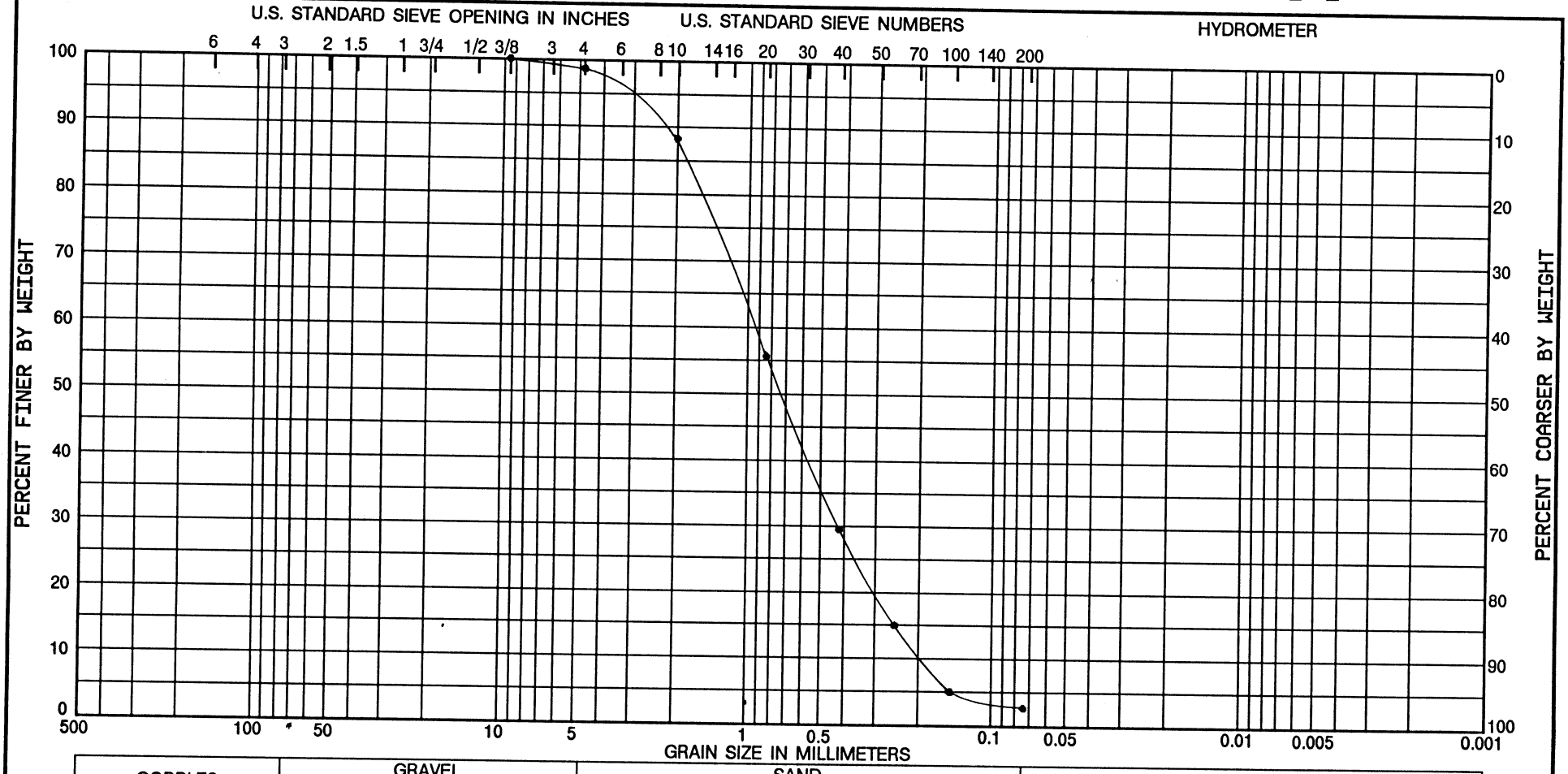
BORING NO. CB-CH91-6	SAMPLE NO. 1	DEPTH EL -23.7/-25.7	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-23.7/-25.7	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of mica.	–	–	–	–

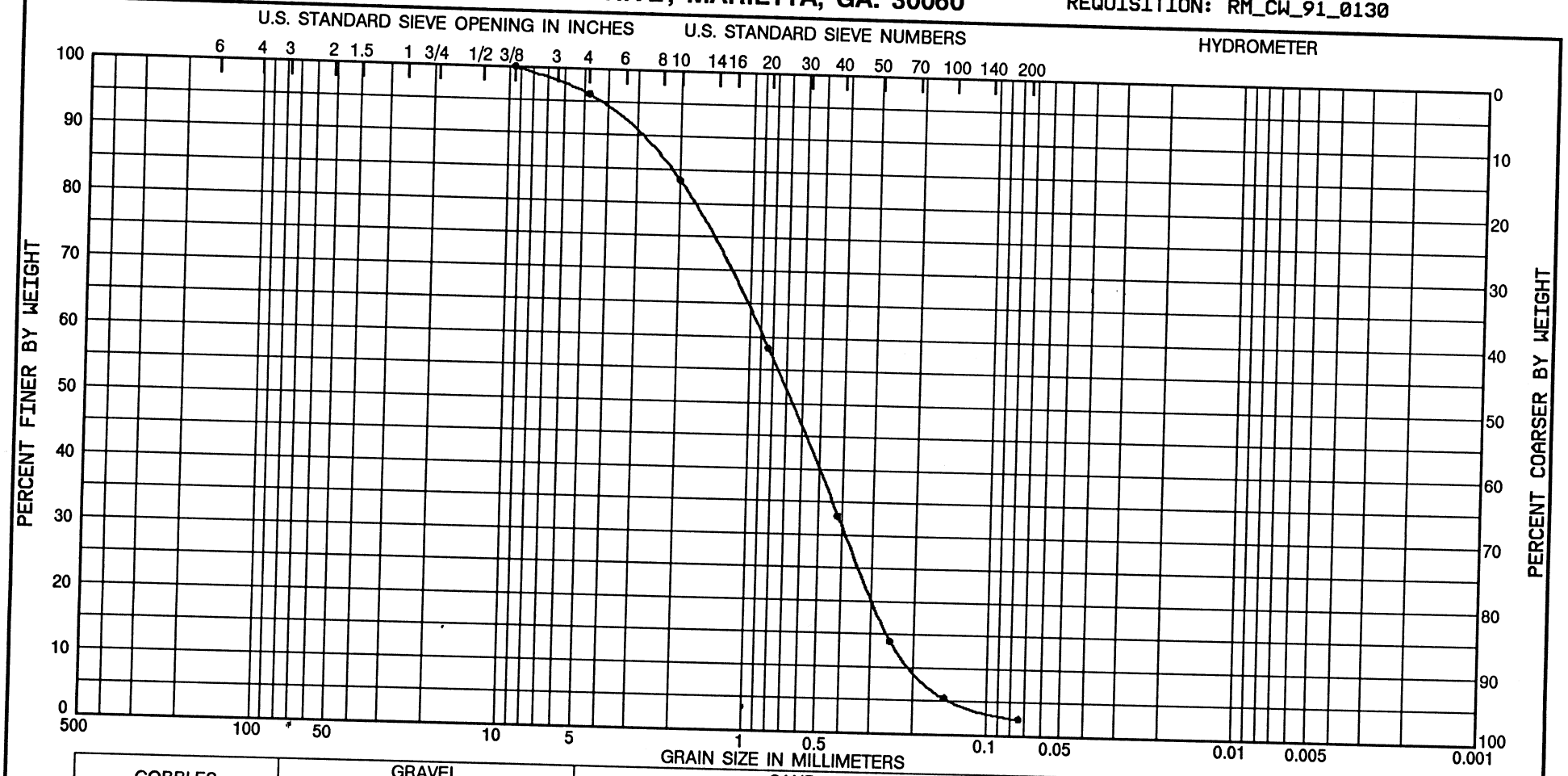
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4610
Boring No. CB-CH91-6
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
2	-25.7/-28.7	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of mica.	--	--	--	--

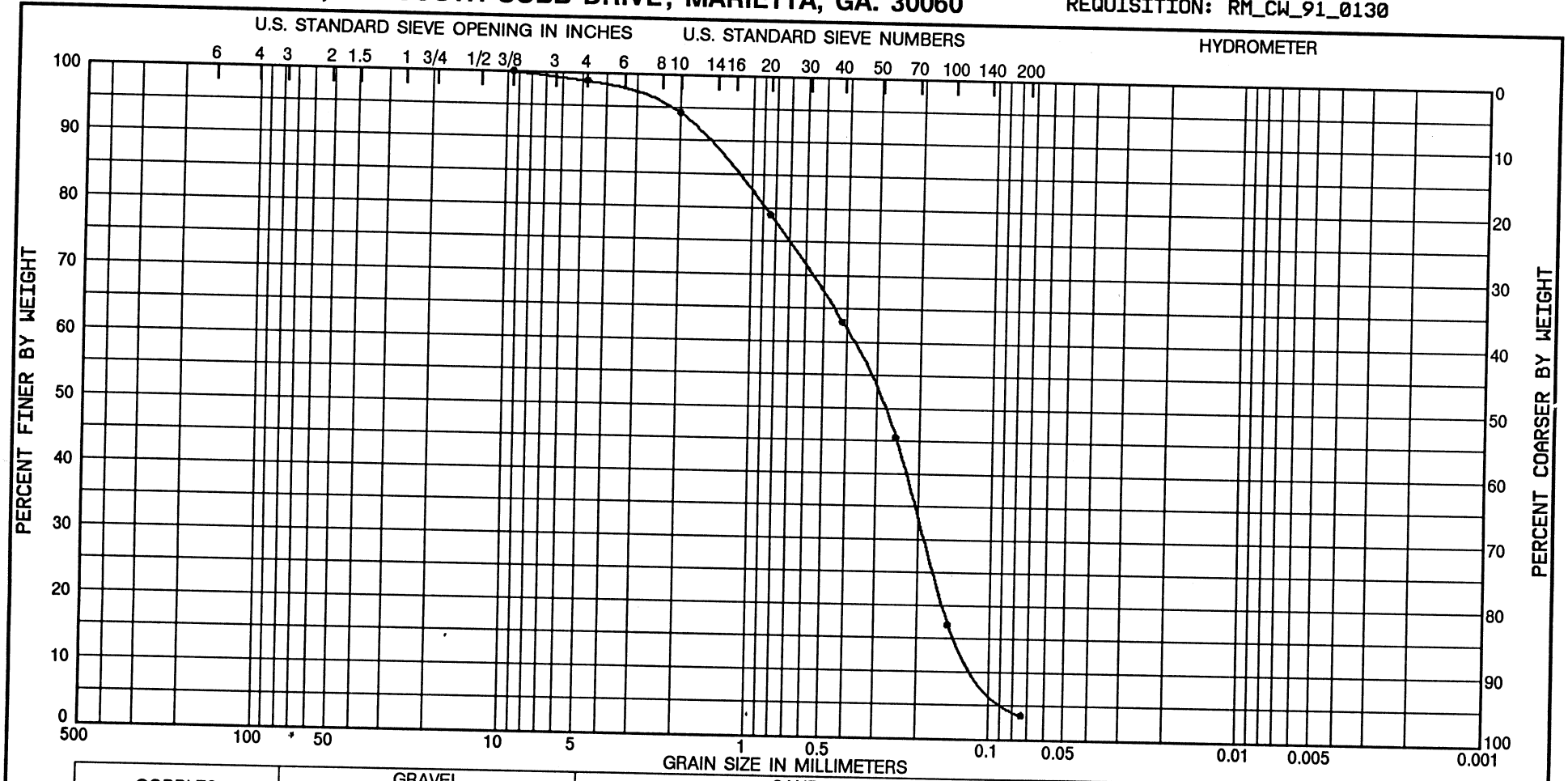
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4611
Boring No. CB-CH91-6
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
4	-33.7/-35.7	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of mica.	--	--	--	--

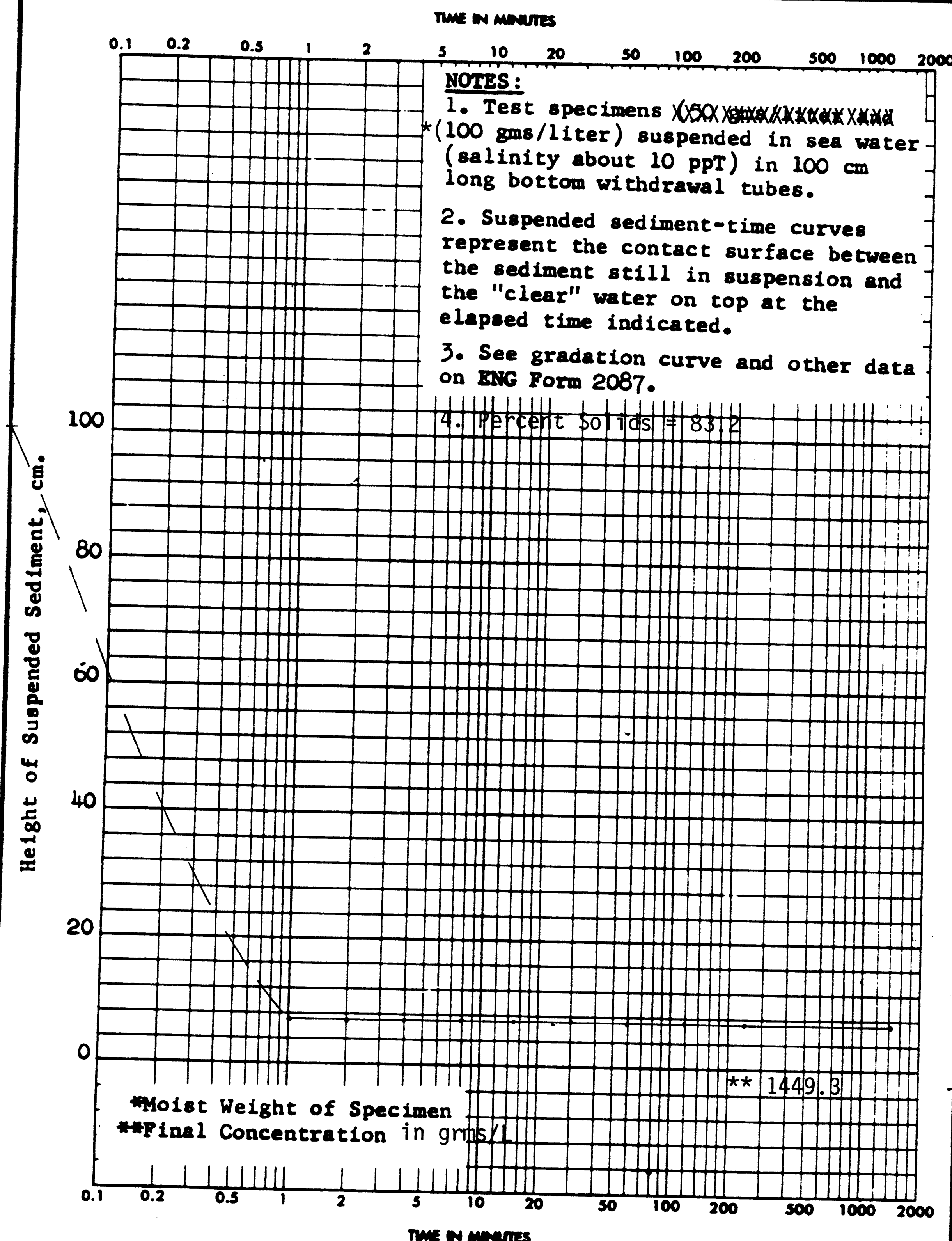
GRADATION CURVES

Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4612
Boring No. CB-CH91-6
Date 07/24/91

See Sedimentation Rate Time Curve on SAD Form 3023.

Reqn. No. RM-CW-91-0130
Work Order No. 6442

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060



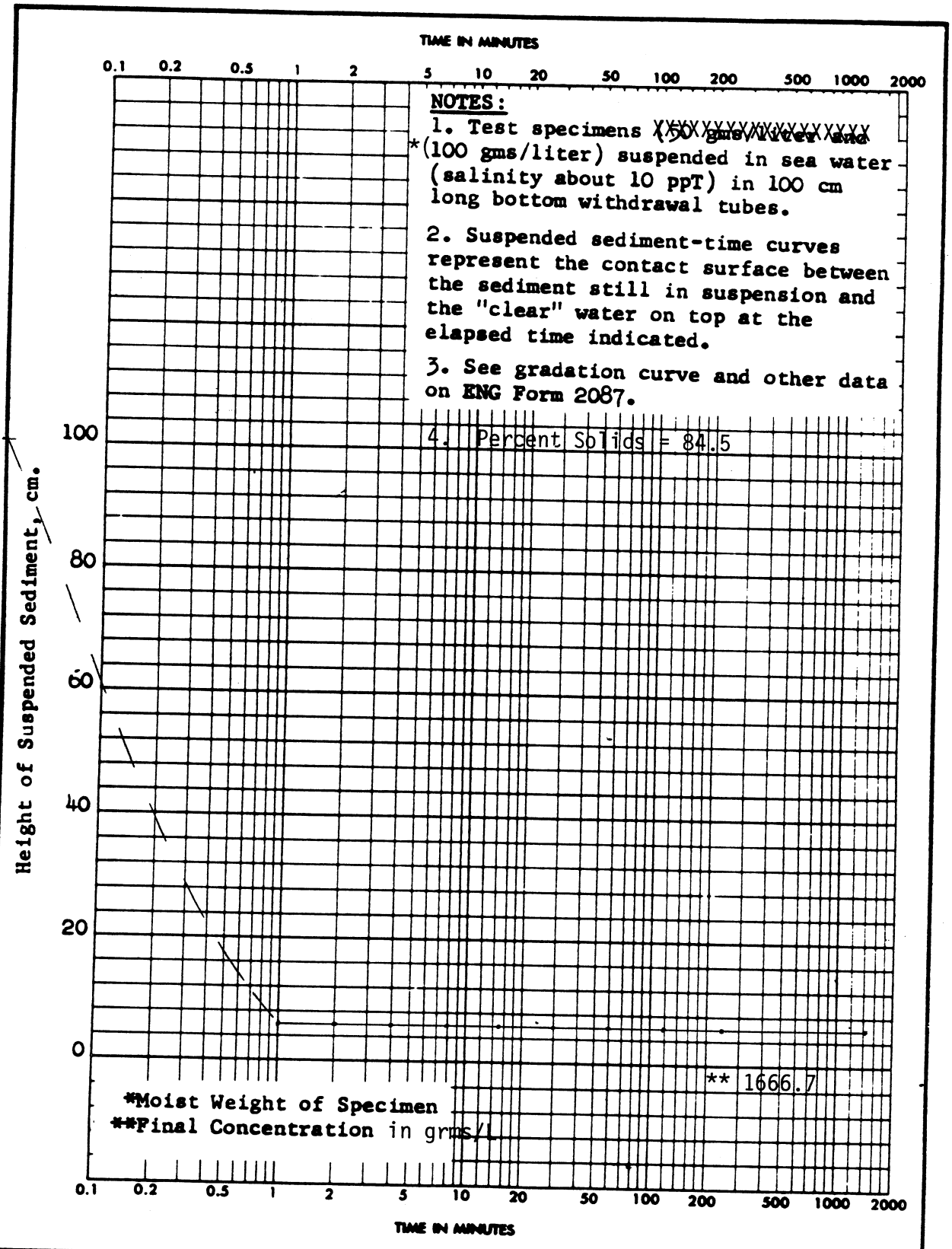
PROJECT	Charlotte Harbor Maintenance Dredging				
AREA			Lab. No. 73/4611		
BORING NO. CB-CH91-6	SAMPLE NO.	2	EL -25.7/-28.7	DATE	26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



PROJECT Charlotte Harbor Maintenance Dredging

AREA

Lab. No. 73/4612

BORING NO. CB-CH91-6 | SAMPLE NO. 4 | EL -33.7/-35.7 | DATE 26 July 1991

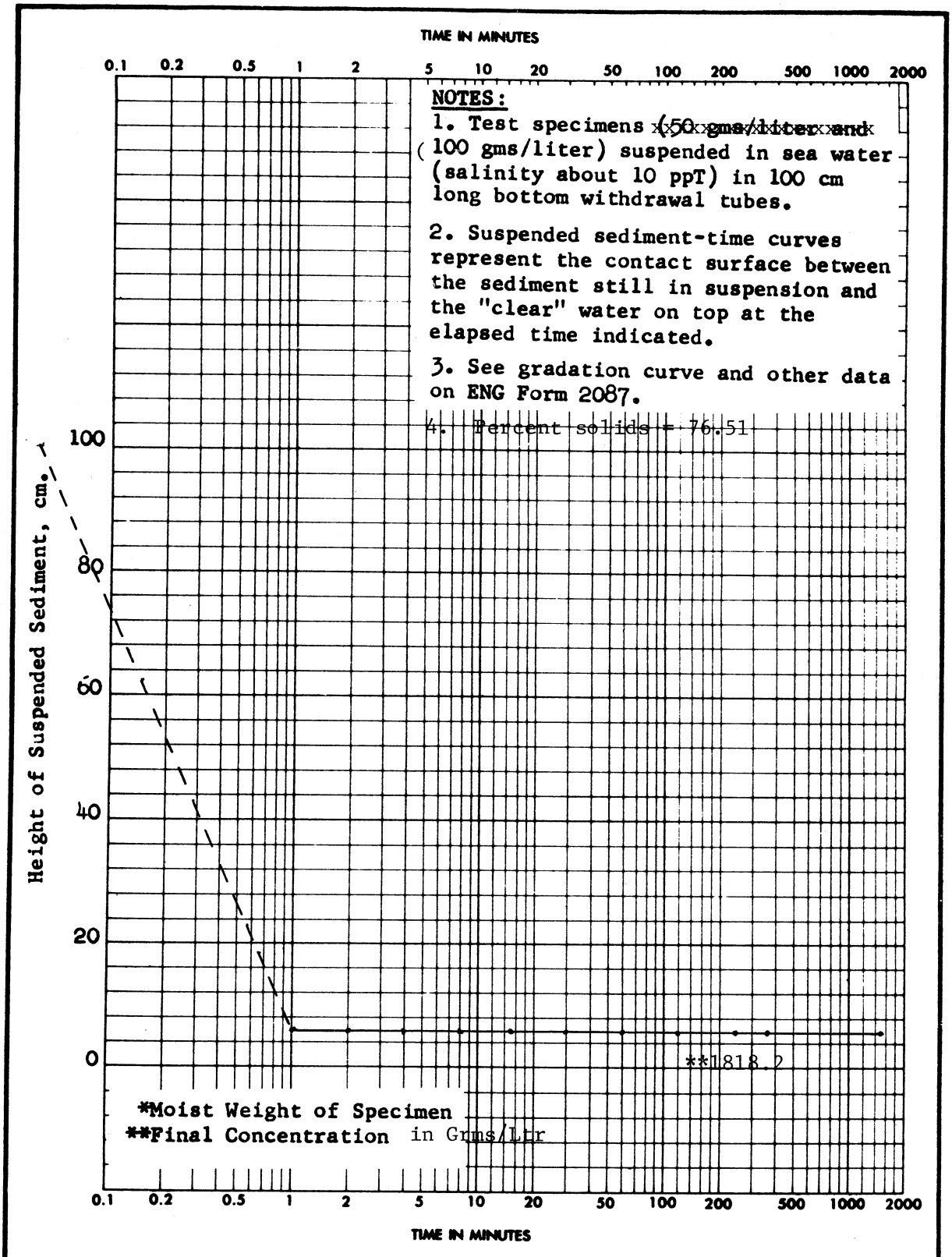
SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

CORRECTED COPY: L. Number corrected 16 August 198[illegible]

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



PROJECT	JACKSONVILLE DISTRICT		Lab No. 73/723	
AREA	Charlotte Harbor Maintenance			
BORING NO.	CB-CHM-83-18	SAMPLE NO. 1	~~DEPTH~~ EL -33.0/-33.8	DATE 16 Aug 1983

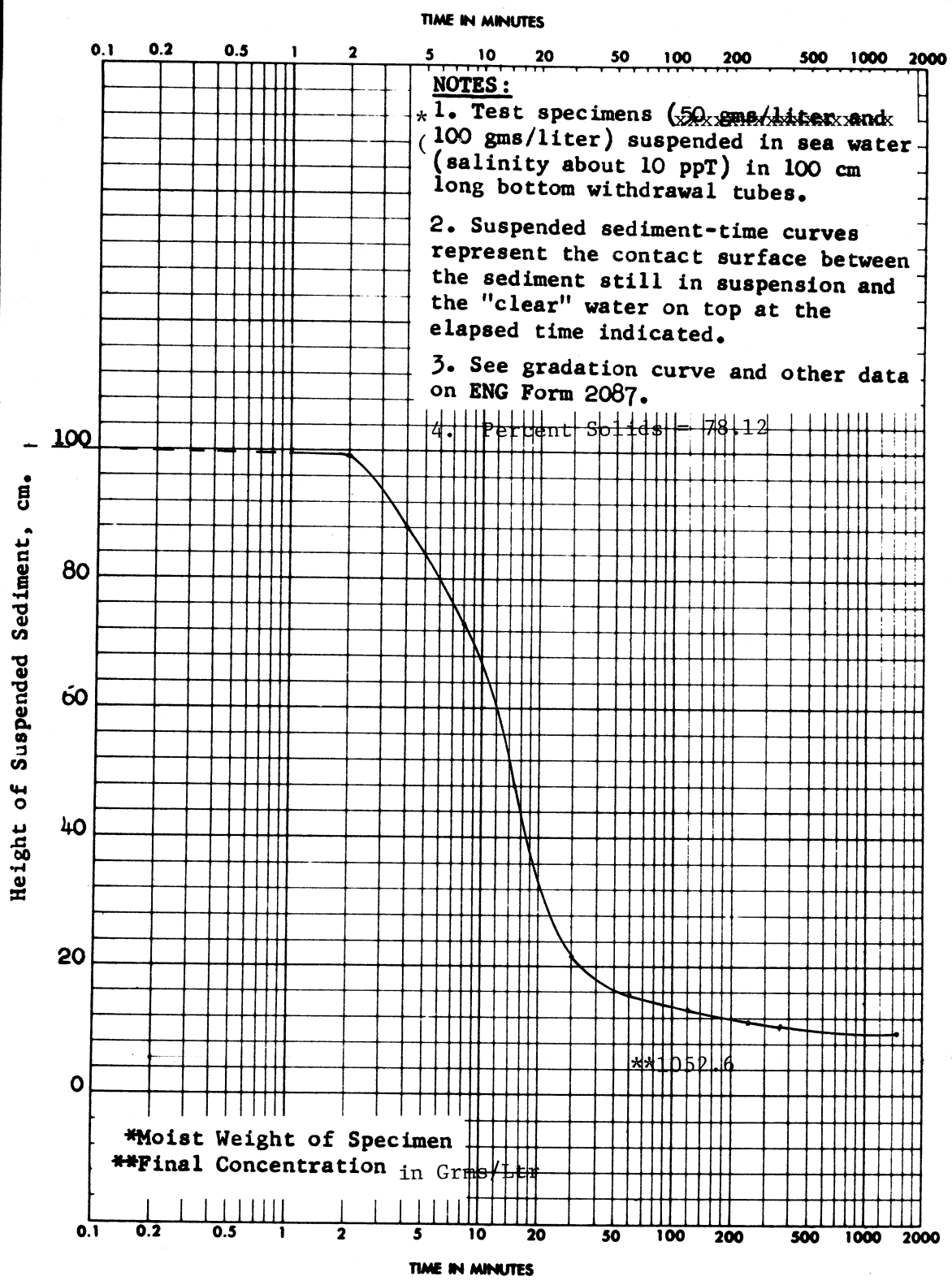
SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

CORRECTED COPY: b Number corrected 16 August 1

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061

Reqn. No. RM-CW-83-0120
Work Order No. 3699



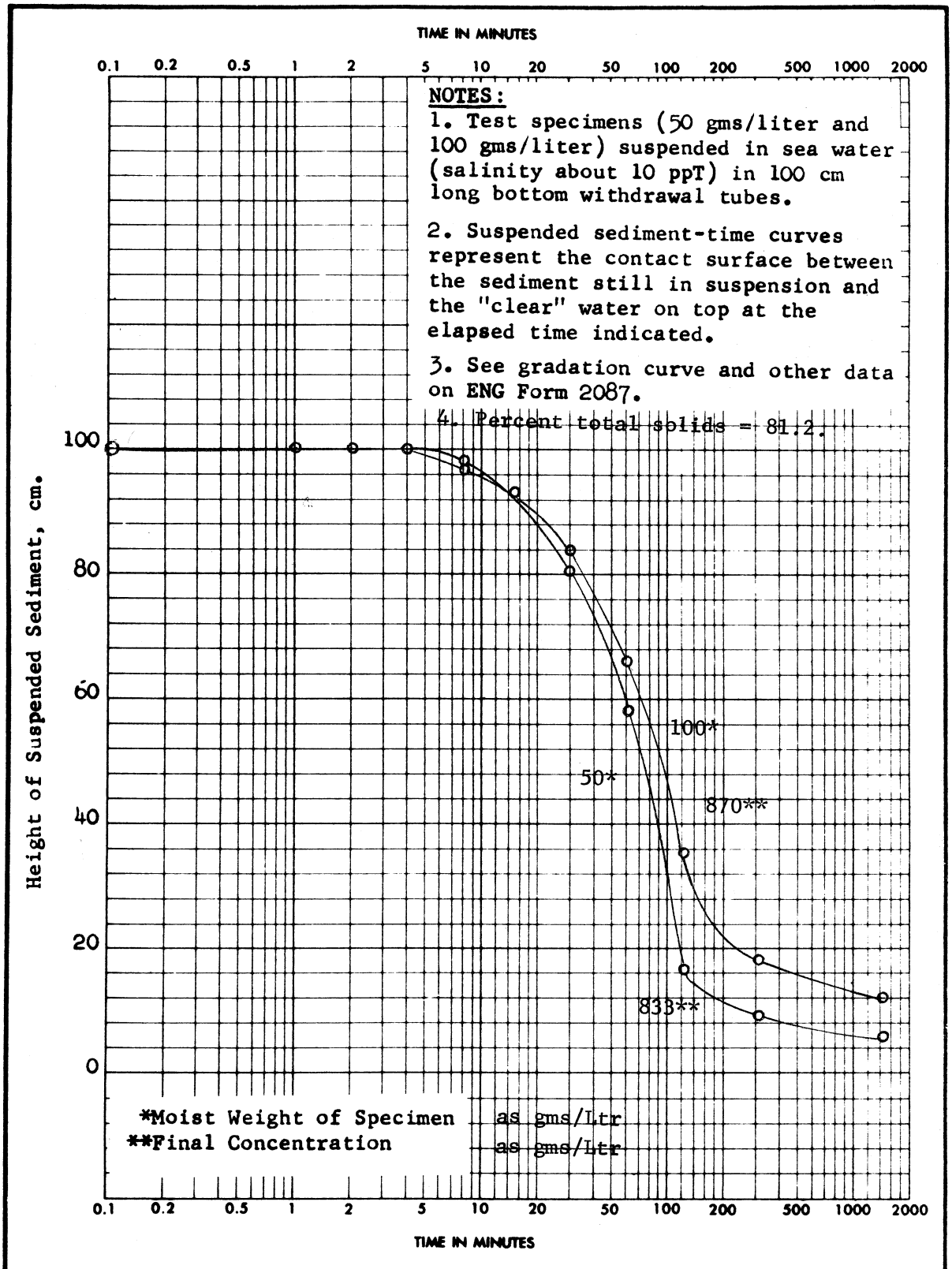
PROJECT	Jacksonville District		Lab No. 73/720	
AREA	Charlotte Harbor Maintenance			
BORING NO.	CB-CHM-83-11	SAMPLE NO. 3	DEPTH EL -31.0/-32.8	DATE 16 Aug 1983

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

Ref Reqn GM 80-19
Reqn. No. 08-123-ENG-0036-80
Work Order No.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061



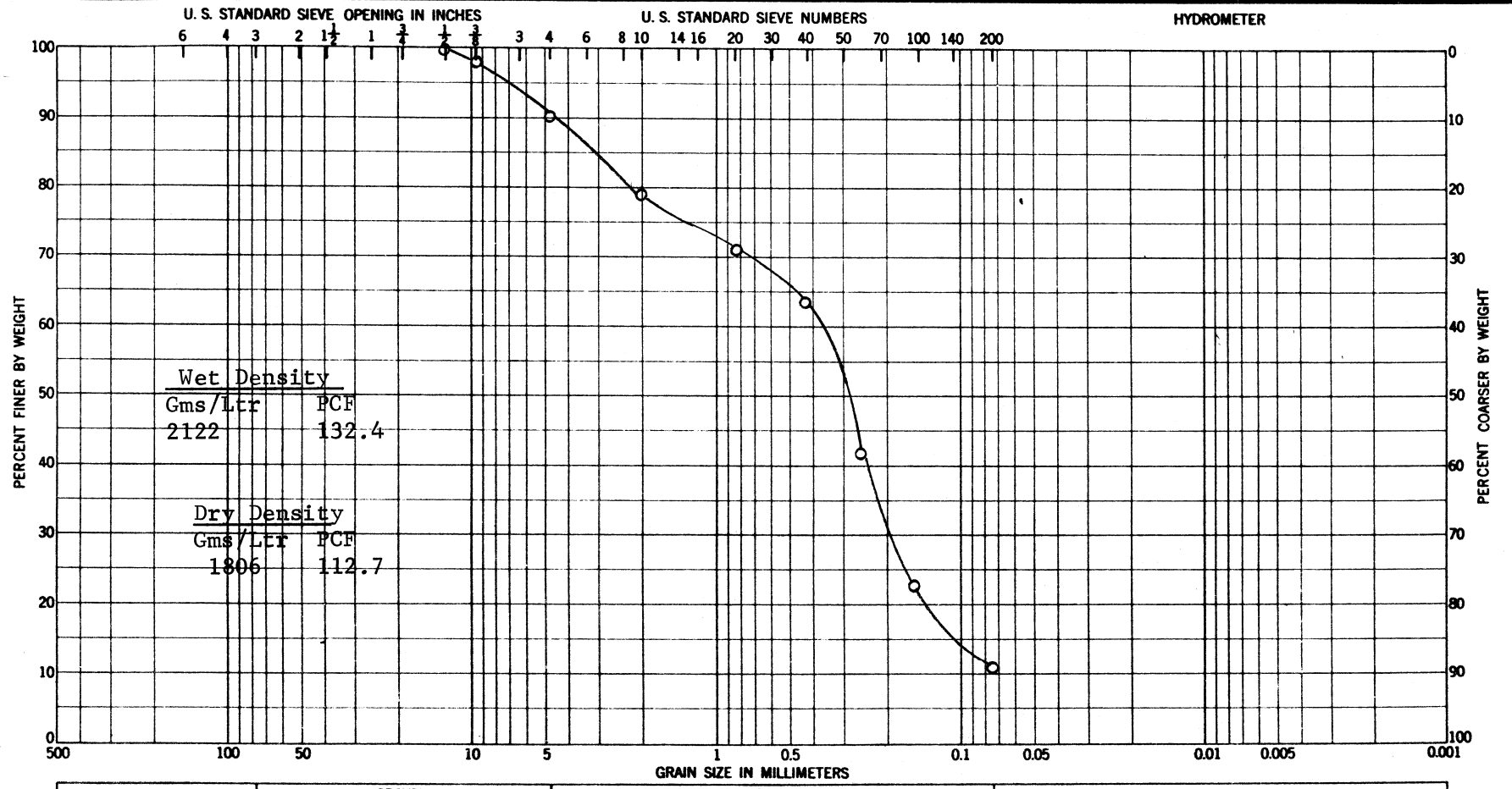
PROJECT	JACKSONVILLE DISTRICT, C		Harbor Maintenance	
AREA	--	Lab No. 73/9397		
BORING NO. CB-CH-M1	SAMPLE NO. 1	DEPTH Elx 23.0-23.3'	DATE 26 Nov 1979	

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

WORK ORDER NO. 2072
Req. No. 08-123-ENG-0036-80
Ref Reqn GM 80-19



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	25.0/25.3'	Light gray poorly graded silty sand (SP-SM) with some shell and a trace of gravel size shell. Specific Gravity = 2.72.	17.4	-	-	-

GRADATION CURVES

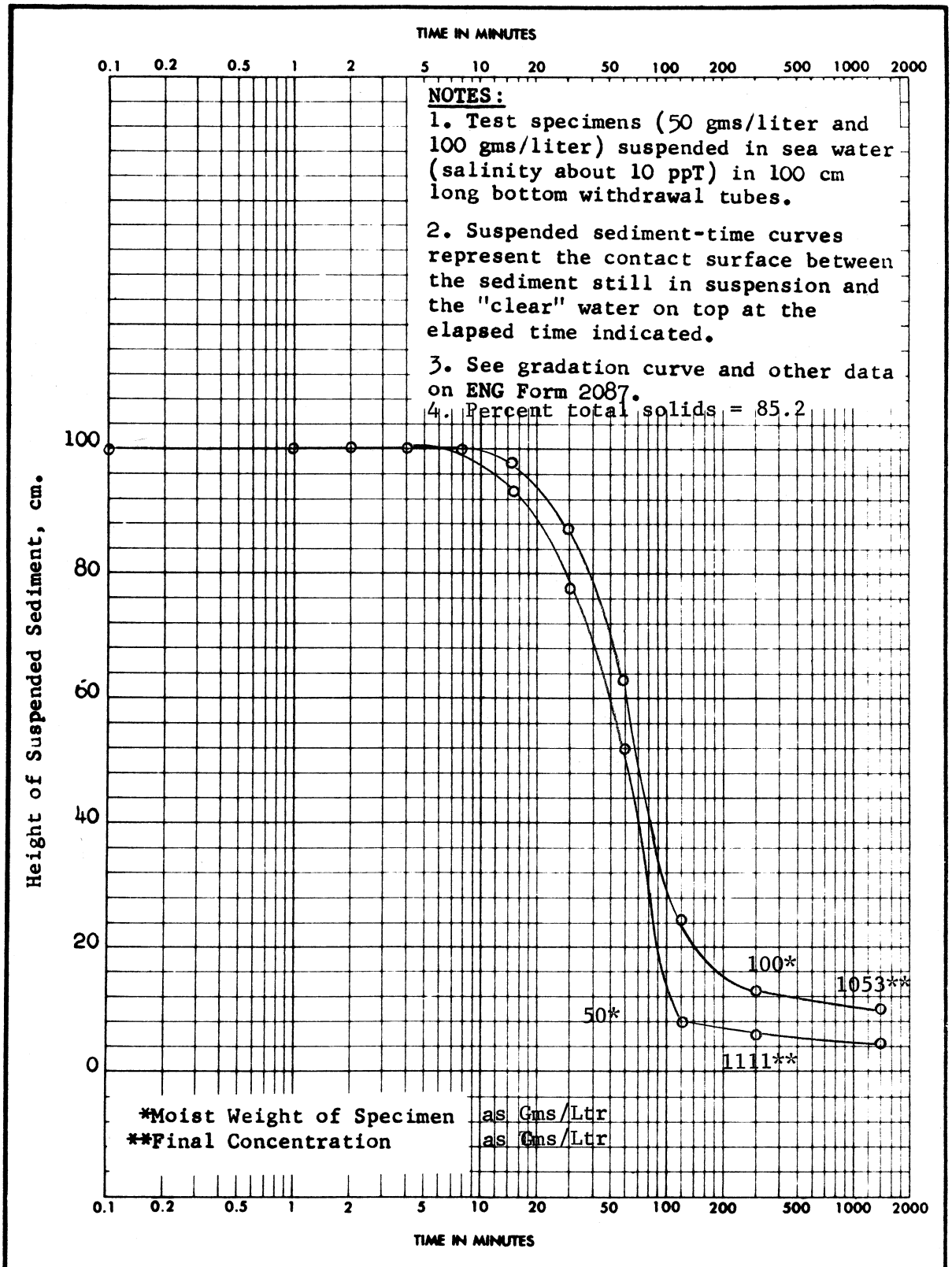
JACKSONVILLE DISTRICT
Project Charlotte Harbor Maintenance
Lab No. 73/9398
Area -
Boring No. CB-CH-M2, Sample No. 1
Date 26 November 1979

ENG FORM 1 MAY 63 2087

Ref Reqn GM 80-19

Reqn. No. 08-123-ENG-0036-80
Work Order No. 2072

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061



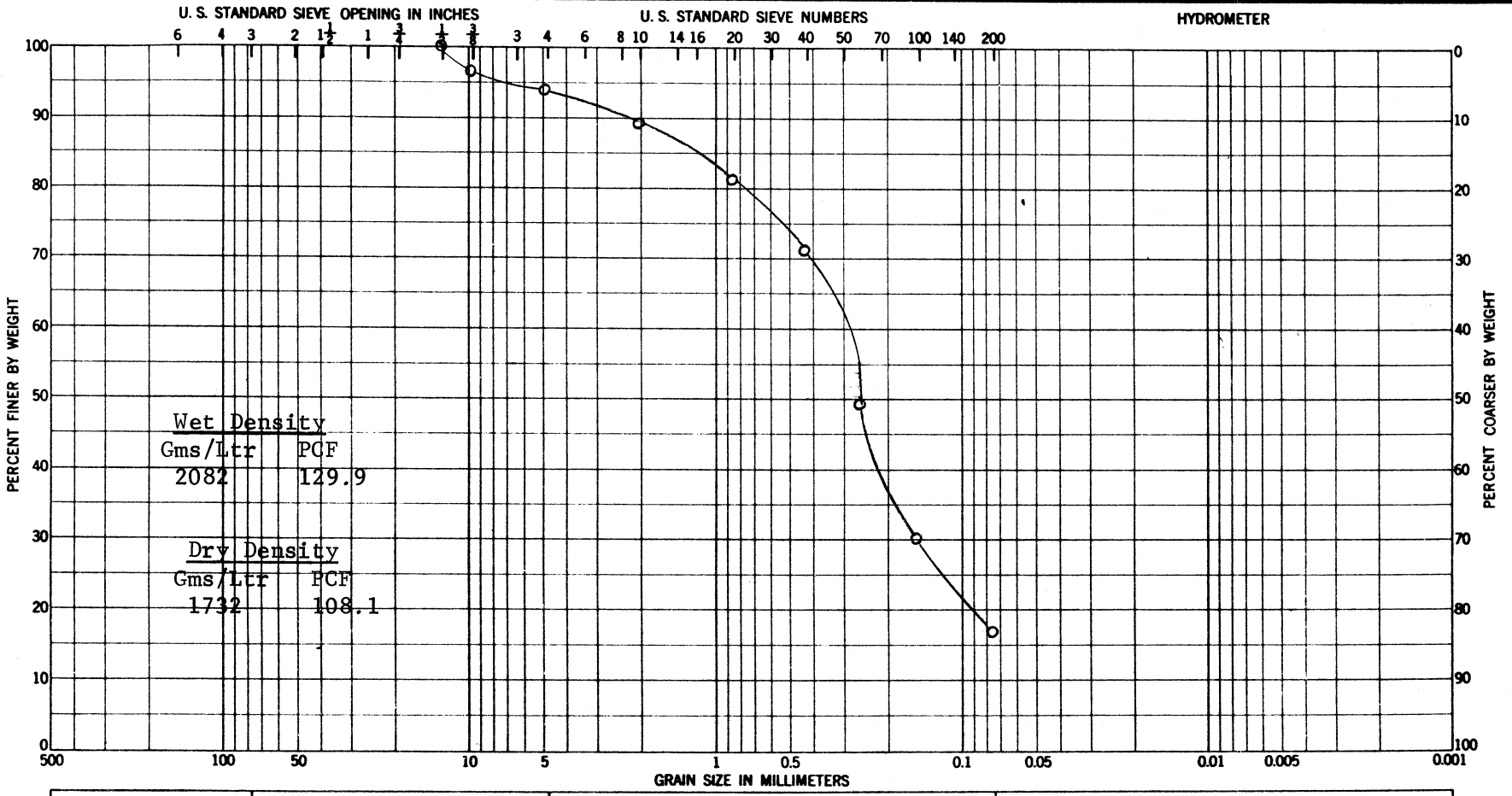
PROJECT	JACKSONVILLE DISTRICT, C		Harbor Maintenance	
AREA	-- Lab No. 73/9398			
BORING NO.	CB-CH-M2	SAMPLE NO. 1	DEPTH 25.0-25.3'	DATE 26 Nov 1979

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

WORK ORDER NO. 2072
Req. No. 08-123-ENG-0036-80
Ref Reqn GM 80-19



Sample No.	~~Elev~~or Depth	Classification	Nat w %	LL	PL	PI
1	34.0/34.3'	Tan clayey sand (SC) with a little shell and a trace of gravel size shell.	20.2	-	-	-
		Specific Gravity = 2.71				

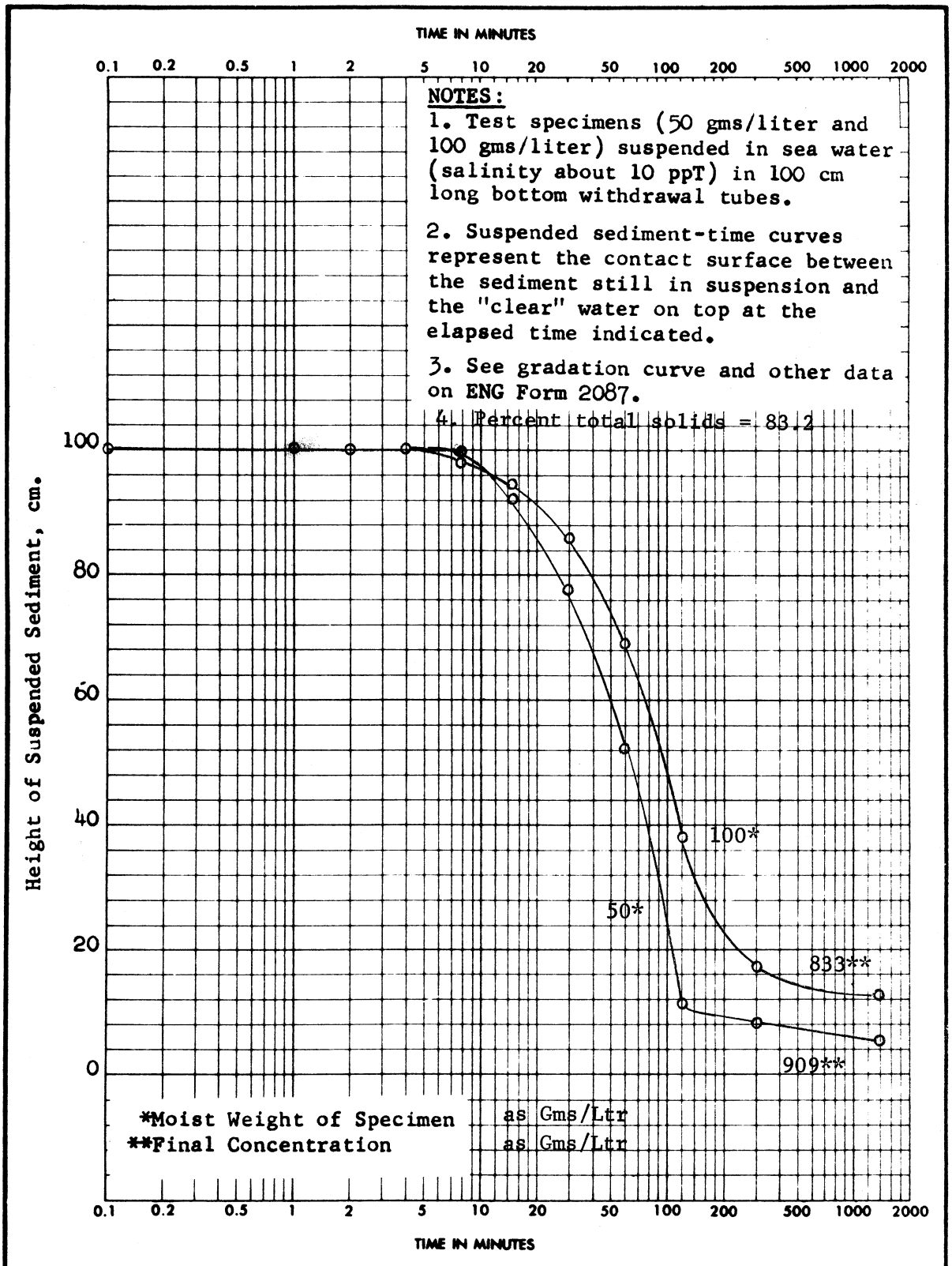
GRADATION CURVES

JACKSONVILLE DISTRICT
Project Charlotte Harbor Maintenance
Lab No. 73/9399
Area -
Boring No. CB-CH-M3, Sample No. 1
Date 26 November 1979

ENG FORM 1 MAY 63 2087

Ref Reqn GM 80-19
Reqn. No. 08-123-ENG-0036-80
Work Order No. 2072

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061



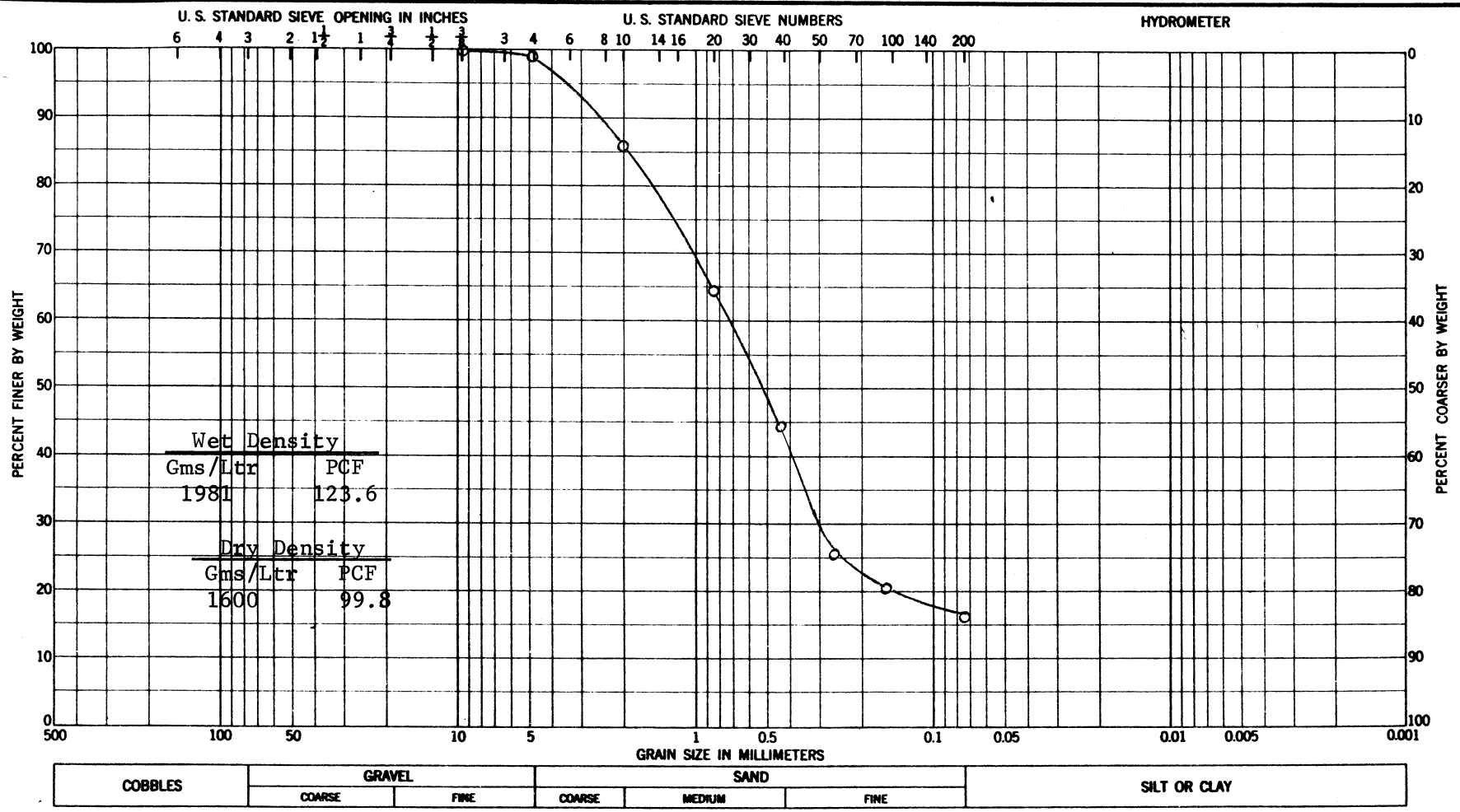
PROJECT JACKSONVILLE DISTRICT, C		Harbor Maintenance	
AREA --	Lab No. 73/9399		
BORING NO. CB-CH-M3	SAMPLE NO. 1	DEPTH EL 34.0-34.3'	DATE 26 Nov 1979

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30061

WORK ORDER NO. 2072
Req. No. 08-123-ENG-0036-80
Ref Reqn GM 80-19



Sample No.	Depth	Classification	Nat w %	LL	PL	PI
4	40.0-40.3'	Gray and tan shelly clayey sand (SC) with a trace of gravel size shell.	23.8	-	-	-
		Specific Gravity = 2.74				

GRADATION CURVES

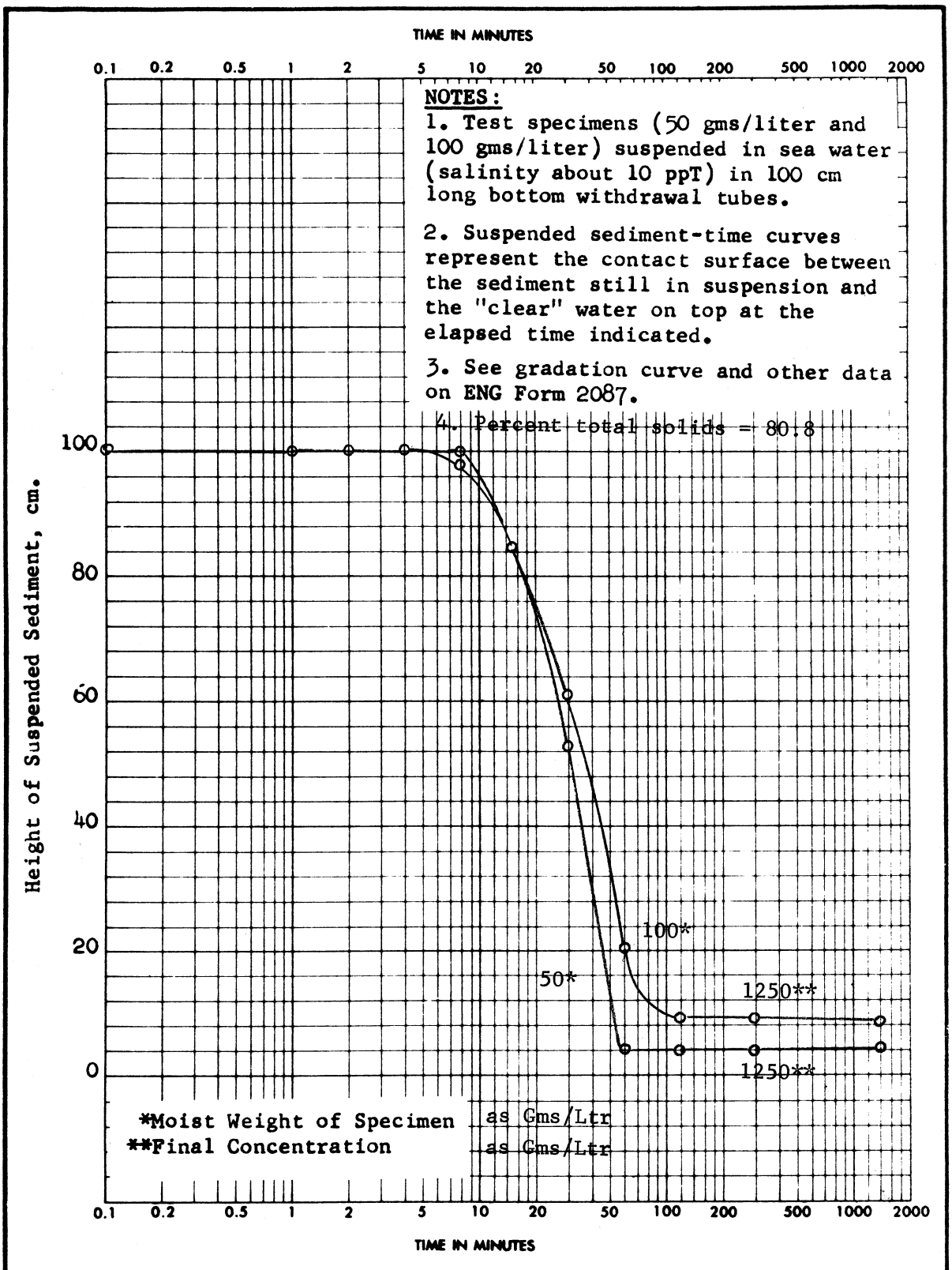
Project: JACKSONVILLE DISTRICT
Charlotte Harbor Maintenance
Lab No. 73/9400
Area -
Boring No. CB-CH-M3, Sample No. 4
Date 26 November 1979

ENG FORM 1 MAY 63 2087

Ref Reqn GM 80-19

Reqn. No. 08-123-ENG-0036-80
Work Order No. 2072

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30061



PROJECT JACKSONVILLE DISTRICT, Harbor Maintenance			
AREA -- Lab No. 73/9400			
BORING NO. CB-CH-M3	SAMPLE NO. 4	DEPTH EL 40.0-40.3'	DATE 26 Nov 1979

SUSPENDED SEDIMENT-TIME CURVES (TRANSLUCENT)

SAD Form 3023
26 Oct 72

Department of the Army, So. Atlantic Division Laboratory, Corps of Engineers, 611 So. Cobb Dr., Marietta, Ga. 30060

VISUAL CLASSIFICATION AND FIELD MOISTURE CONTENT OF SOIL SAMPLES

District: Jacksonville	Project: Jacksonville, FL Charlotte Harbor Maintenance	Requisition No.: RM-CW-83-0120
Date Received: 7 July 1983		Work Order No.: 3699
Location:		Date Reported: 10 August 1983
Description: Jar Samples of Disturbed Soil		

Lab No.	Hole No.	Sample No.	Elev.	% Moist	Visual Classification and/or Remarks
73/ 714	CB-CHM 83-1	1	-23.5/-35.5	16.6	Lt. tan poorly graded sand (SP) with a trace of shell.
715	CB-CHM 83-3	1	-32.8/-36.8	27.4	Gray poorly graded silty sand (SP-SM) with a trace of mica.
716	CB-CHM 83-5	1	-27.0/-37.0	20.4	Lt. tan poorly graded sand (SP).
717	CB-CHM 83-9	1	-29.0/-35.5	23.6	Lt. gray poorly graded sand (SP) with a trace of shell.
718	CB-CHM 83-11	1	-10.0/-27.0	18.4	Gray poorly graded sand (SP) with a trace of shell.
719		2	-27.0/-31.0	23.3	Gray poorly graded silty sand (SP-SM) with a trace of shell.
720		3	-31.0/-32.8	30.7	Gray silty sand (SM) with a trace of shell.
721	CB-CHM 83-14	1	-31.0/-34.0	21.8	Lt. tan poorly graded sand (SP) with a trace of shell and mica.
722	CB-CHM 83-15	1	-30.0/-35.0	24.4	Lt. gray poorly graded sand (SP).
723	CB-CHM 83-18	1	-33.0/-33.8	28.0	Gray poorly graded sand (SP) with a trace of shell.
					*See gradation curve and other data on ENG Form 2087.

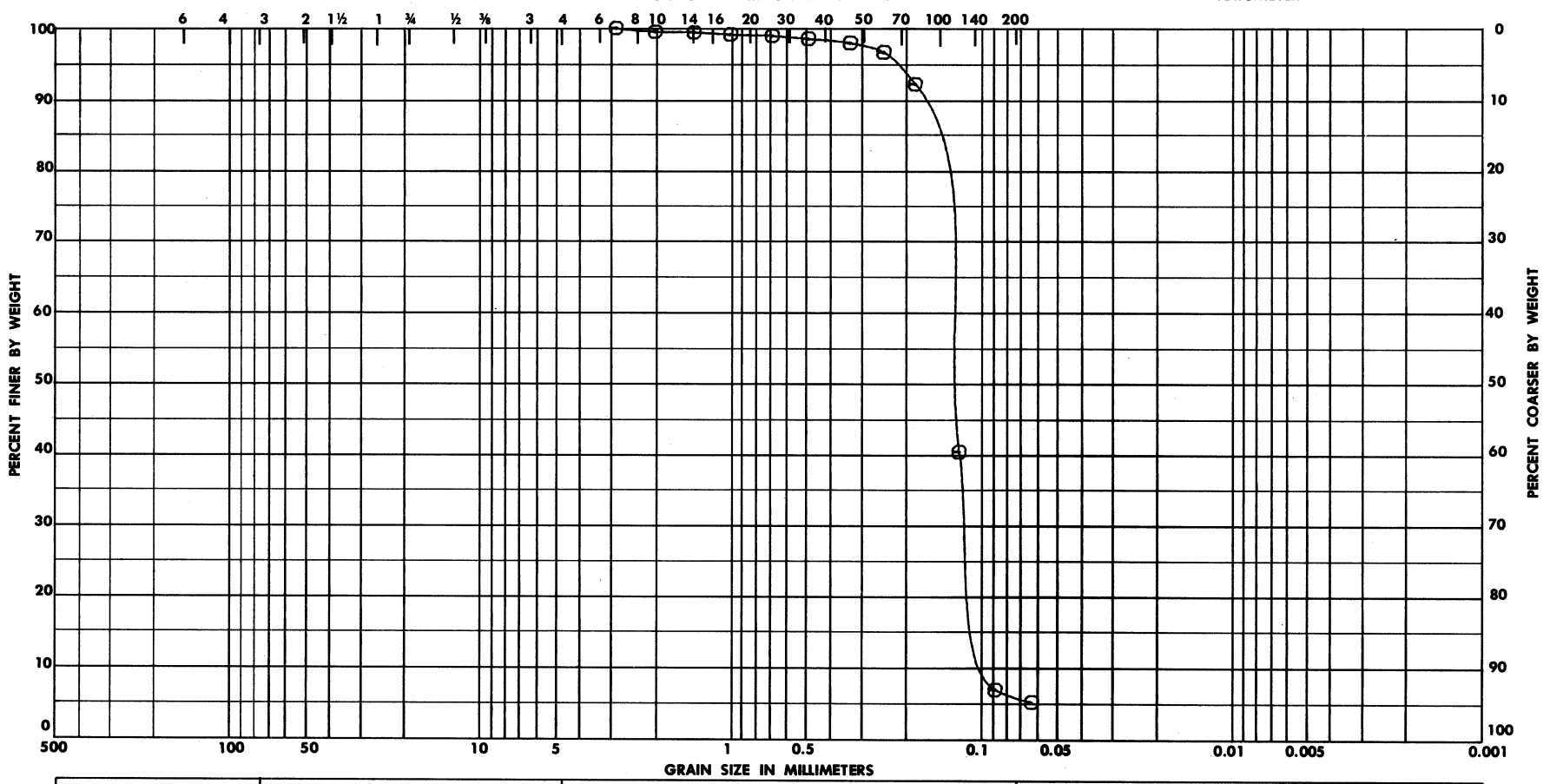
SAD Form 2012
10 Mar 71

Tested by ES, CZ Checked by ES Sheet 1

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Visual Classification	Nat w %	LL	PL	PI
1	-31.0/-36.0	BROWNISH GRAY POOR GRD SILTY SAND (SP-SM), WITH A TRACE OF SHELL. VIS. SHELL = 3.0%	—	—	—	—

GRADATION CURVES

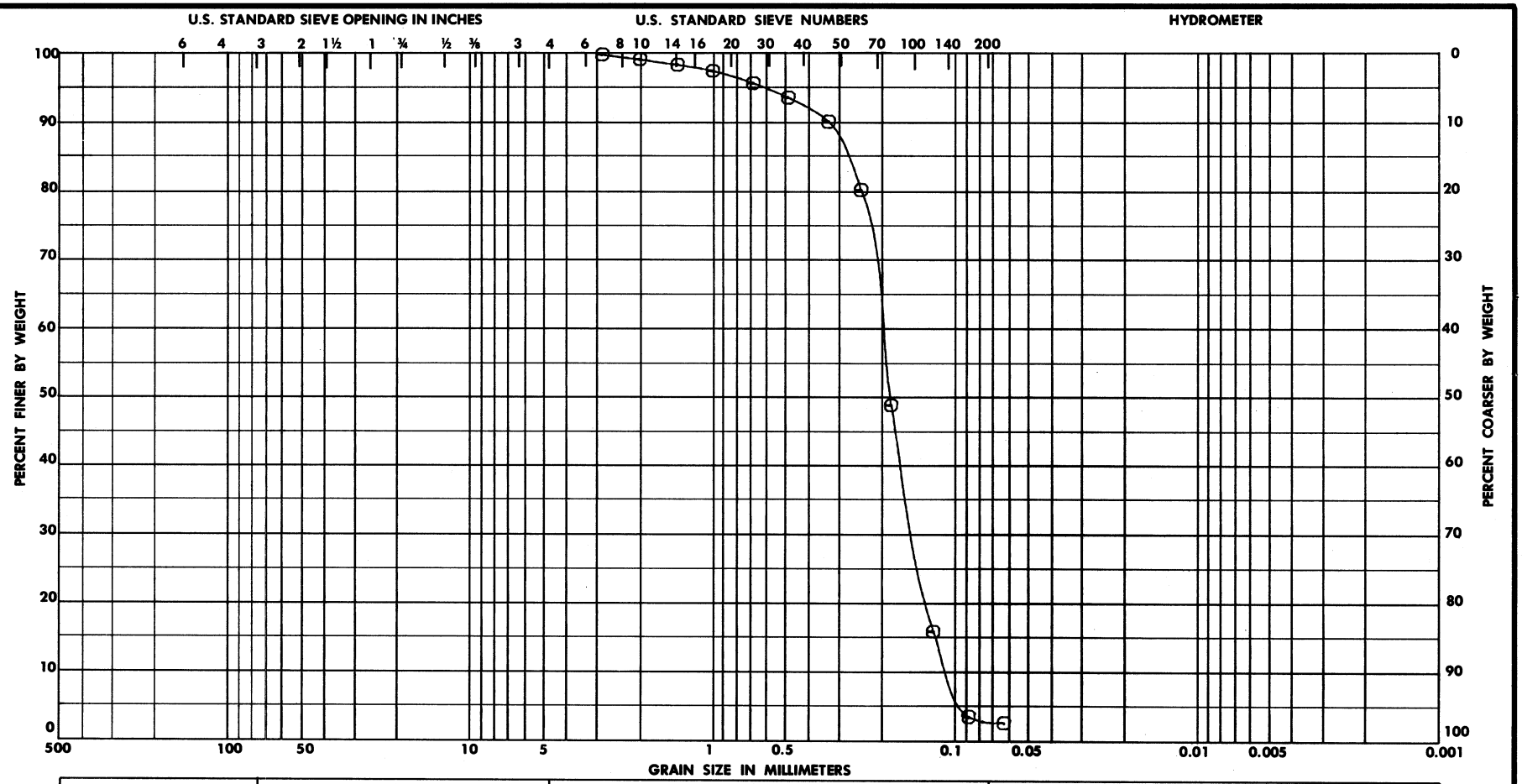
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4171
Boring No. CBCH90-1 SAM. NO.1
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-29.6/-34.6	BROWNISH GRAY POOR GRD SAND	—	—	—	—
		(SP). W/A LITTLE SHELL.				
		VISUAL SHELL ≈ 14.0%				

GRADATION CURVES

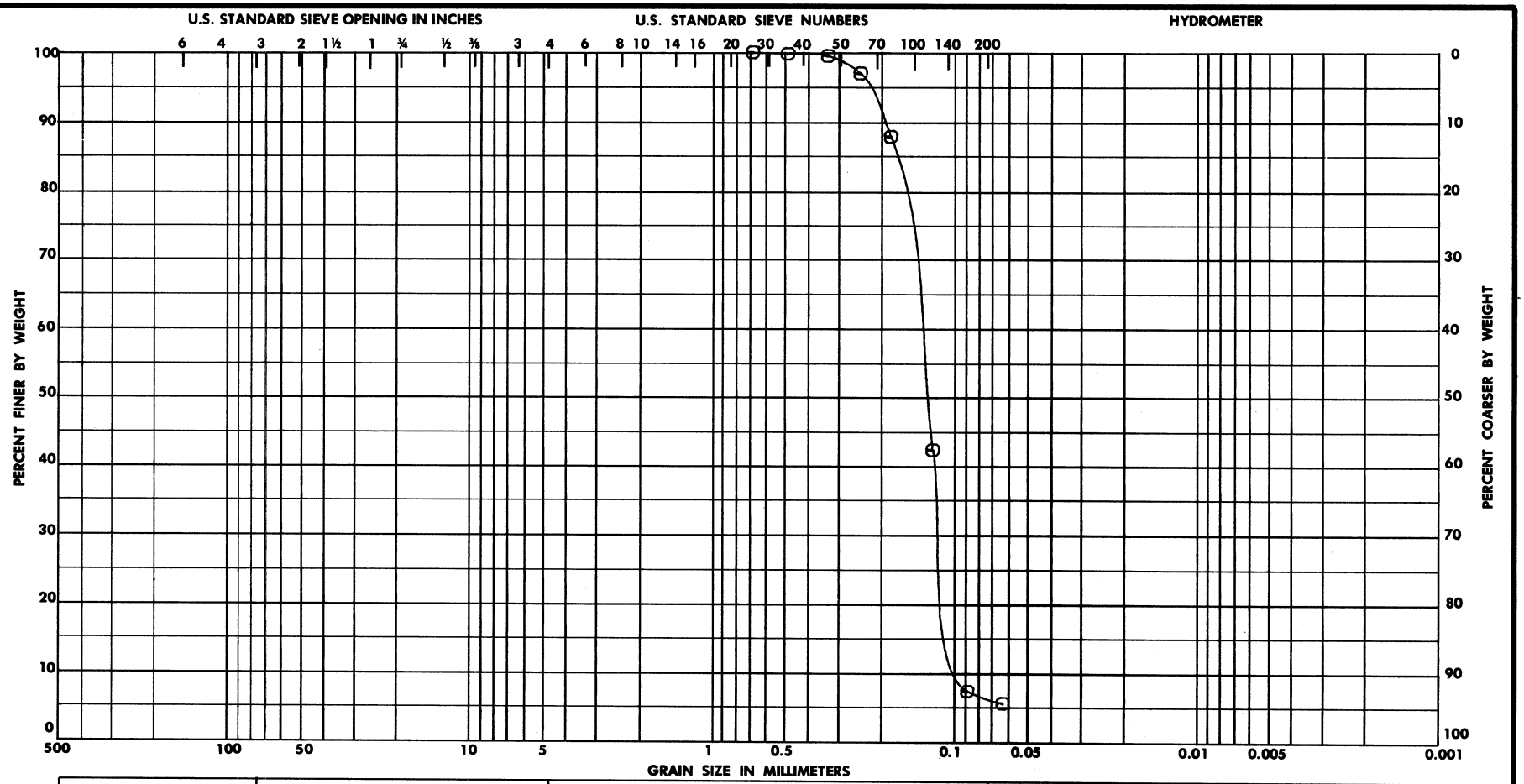
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4172
Boring No. CBCH90-2 SAM. NO.1
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-28.6/-33.6	BROWNISH GRAY POOR GRD SILTY	—	—	—	—
		SAND (SP-SM). WITH A TRACE OF				
		SHELL. VIS. SHELL ≈ 4.0%				
		SPECIFIC GRAVITY ≈ 2.70				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4173 *
Boring No. CBCH90-3 SAM. NO.1
Date 05/16/90

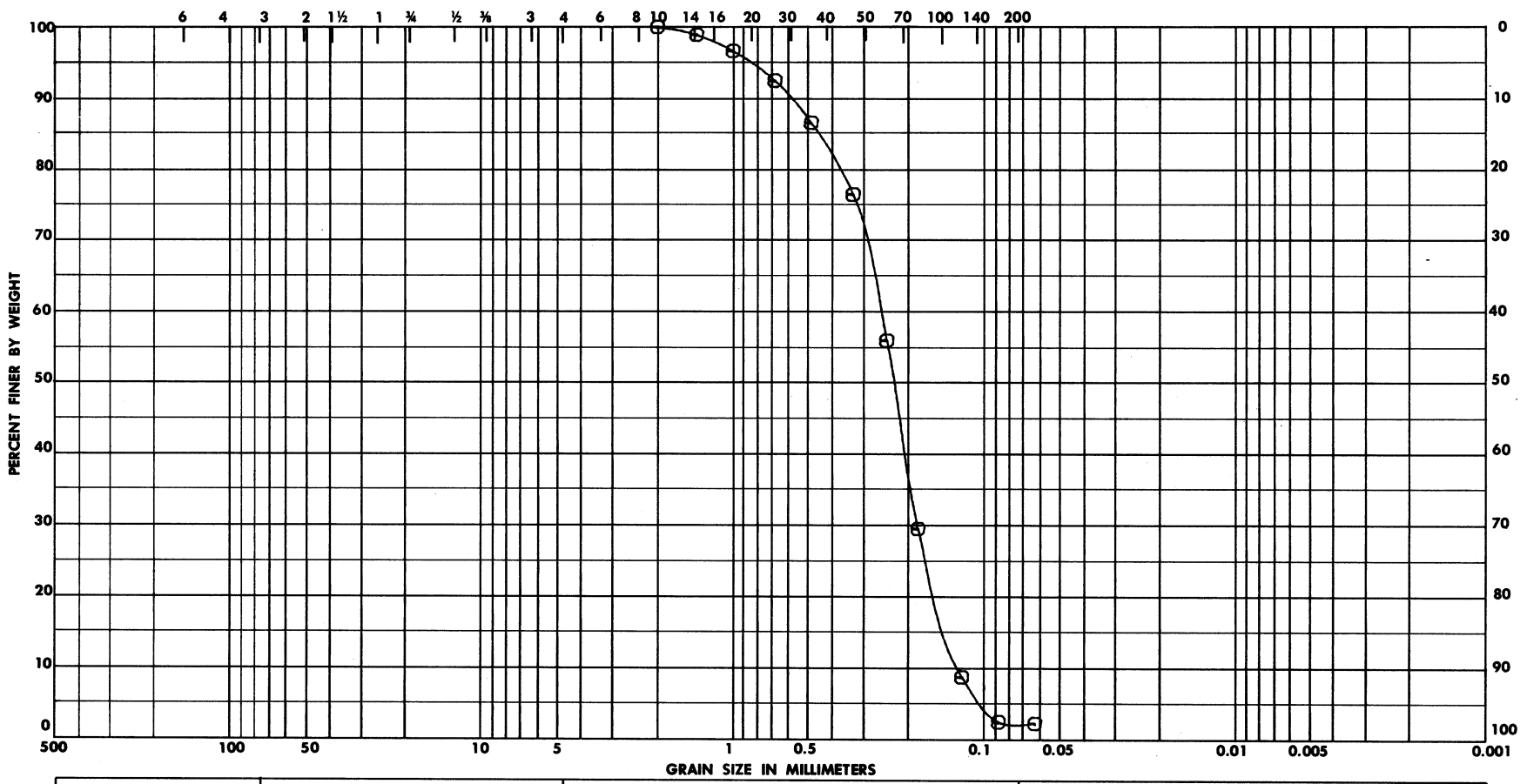
ENG FORM 1 MAY 63 2087

*See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-18.0/-23.0	BROWN POOR GRD SAND (SP). WITH	—	—	—	—
		SOME SHELL.				
		VISUAL SHELL ≈ 30.0				

GRADATION CURVES

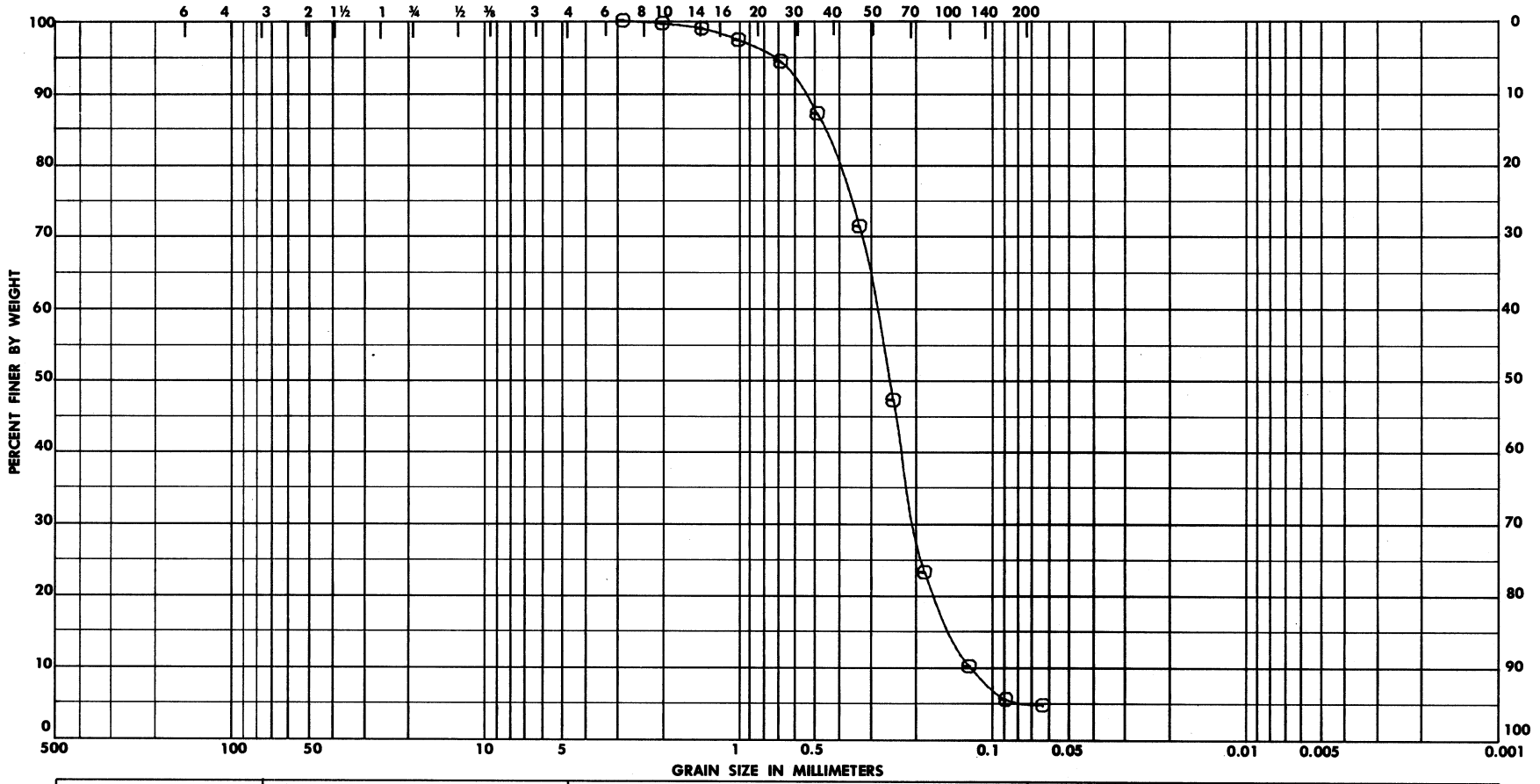
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4174
Boring No. CBCH90-4 SAM. NO.1
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2	-23.0/-28.0	BROWNISH GRAY POOR GRD SAND	—	—	—	—
		(SP). WITH SOME SHELL.				
		VISUAL SHELL = 31.0%				

GRADATION CURVES

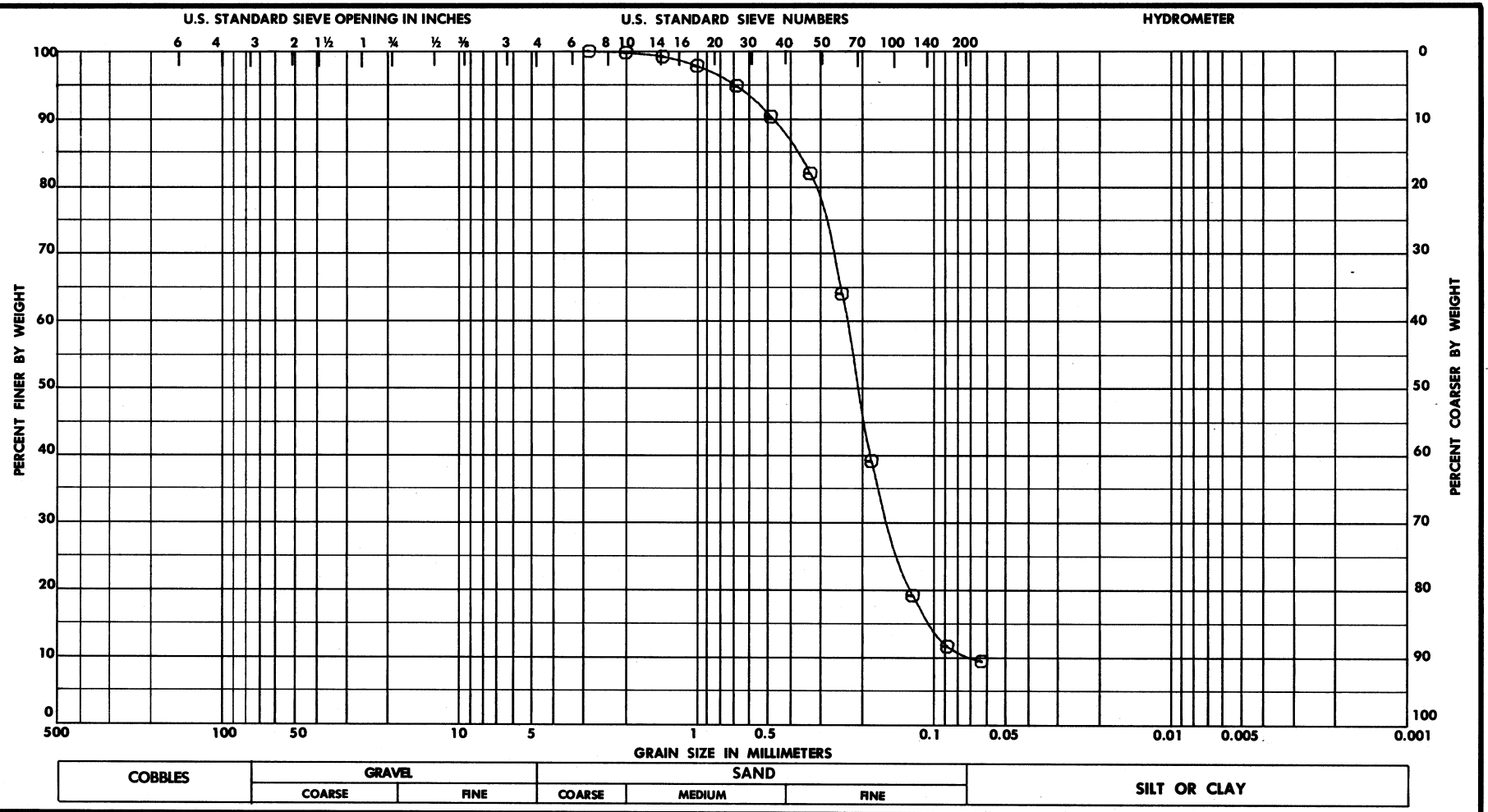
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4175
Boring No. CBCH90-4 SAM. NO.2
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Visual Classification	Nat w %	LL	PL	PI
3	-28.0/-33.0	BROWNISH GRAY POOR GRD SILTY	—	—	—	—
		SAND (SP-SM). WITH SOME SHELL.				
		VISUAL SHELL ≈ 26.0%				
		SPECIFIC GRAVITY ≈ 2.70				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4176 *
Boring No. CBCH90-4 SAM. NO.3
Date 05/16/90

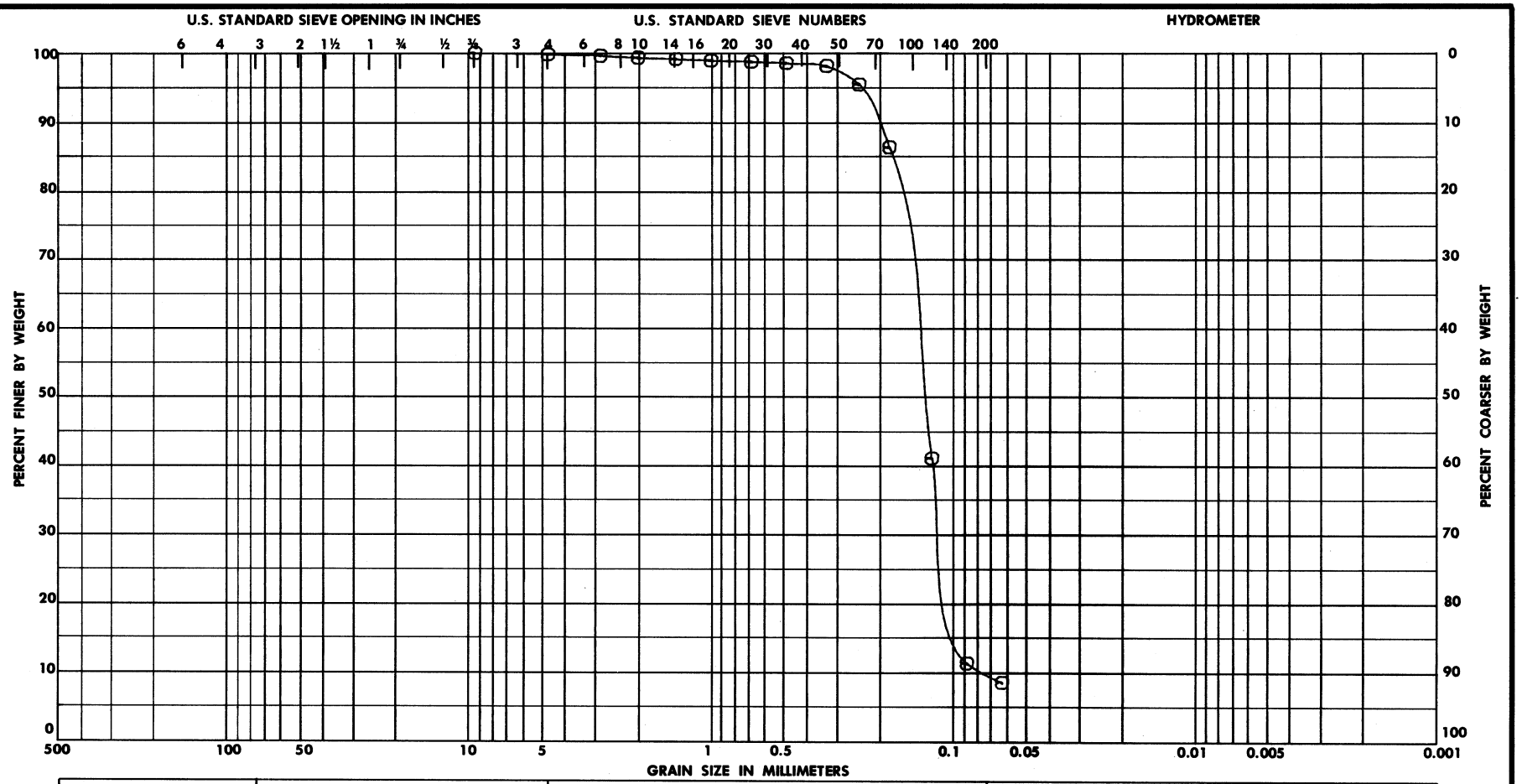
ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
4	-33.0/-36.0	VISUAL BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). W/A TRACE OF SAND AND GRAVEL SIZE SHELL. VISUAL SHELL = 4.0%	—	—	—	—

GRADATION CURVES

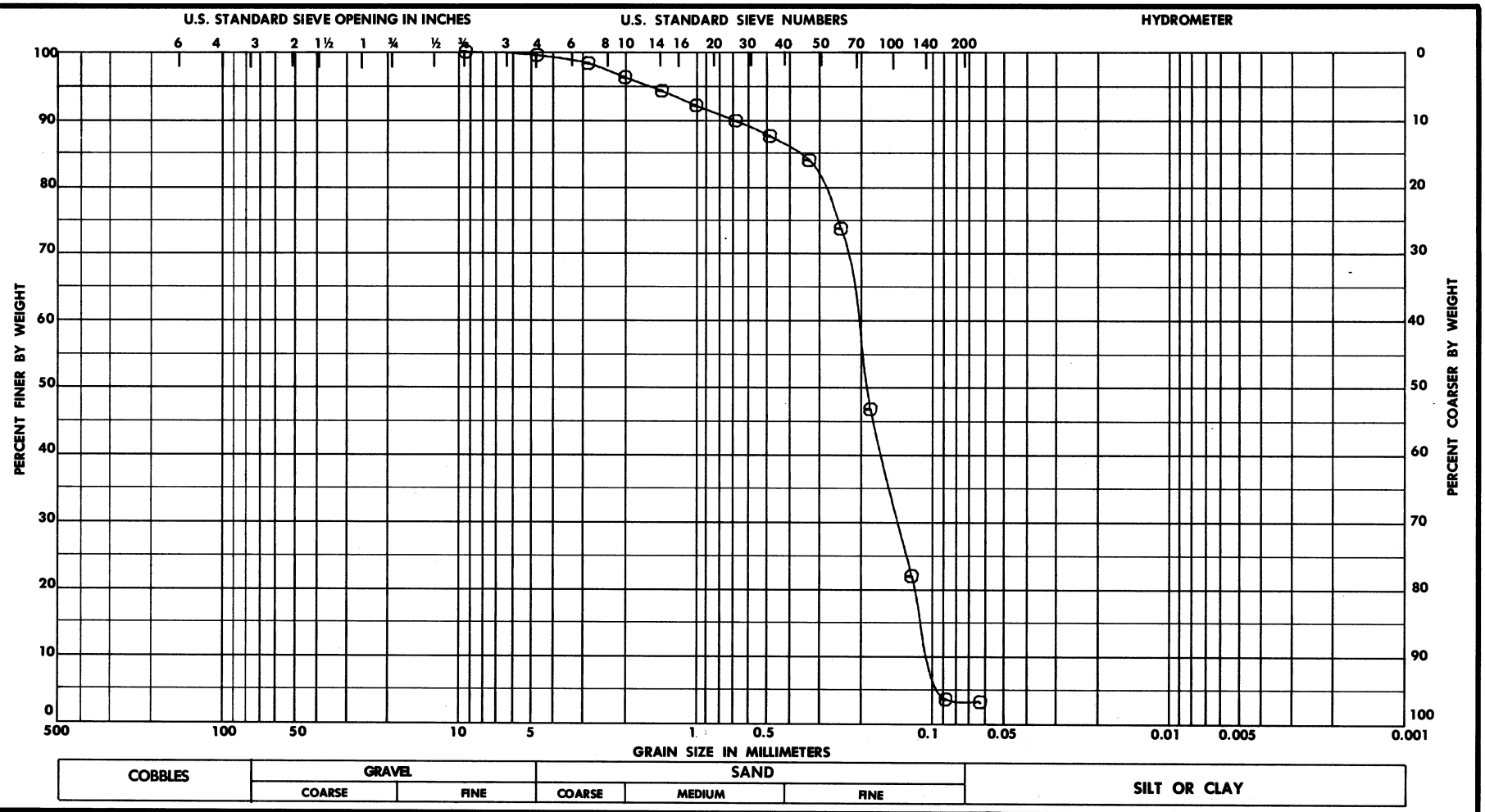
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4177
Boring No. CBCH90-4 SAM. NO.4
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or ~~Depth~~	Classification	Nat w %	LL	PL	PI
1	-28.2/-33.2	BROWNISH GRAY POOR GRD SAND	—	—	—	—
		(SP). W/A LITTLE SAND & GRAVEL				
		SIZE SHELL. VIS. SHELL≈ 17.0%				
		SPECIFIC GRAVITY ≈ 2.69				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4178 *
Boring No. CBCH90-5 SAM. NO.1
Date 05/16/90

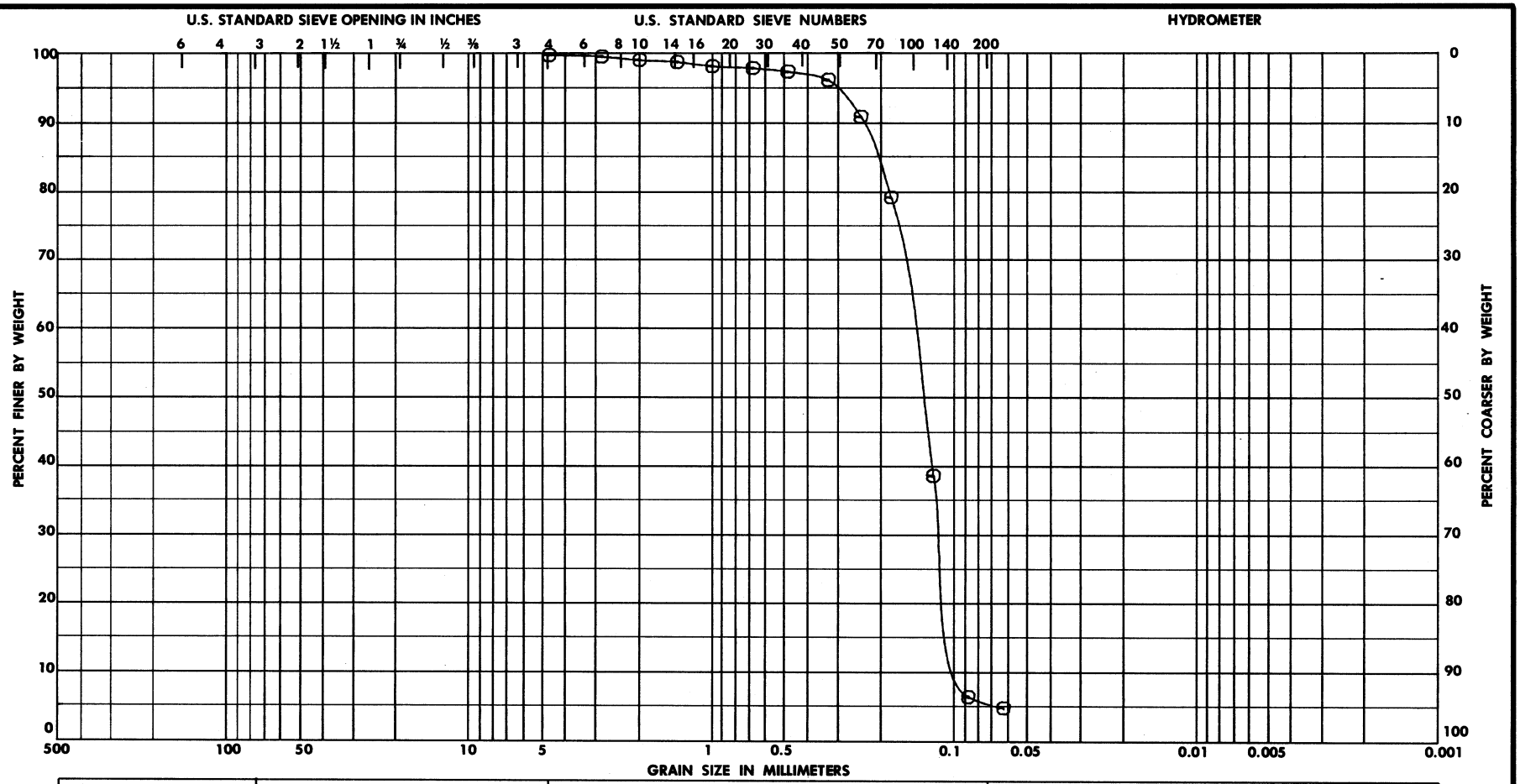
ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2	-33.2/-36.2	VISUAL BROWNISH GRAY POOR GRD SILTY SAND (SP-SM). WITH A TRACE OF SHELL. VIS. SHELL ≈ 6.0%	—	—	—	—

GRADATION CURVES

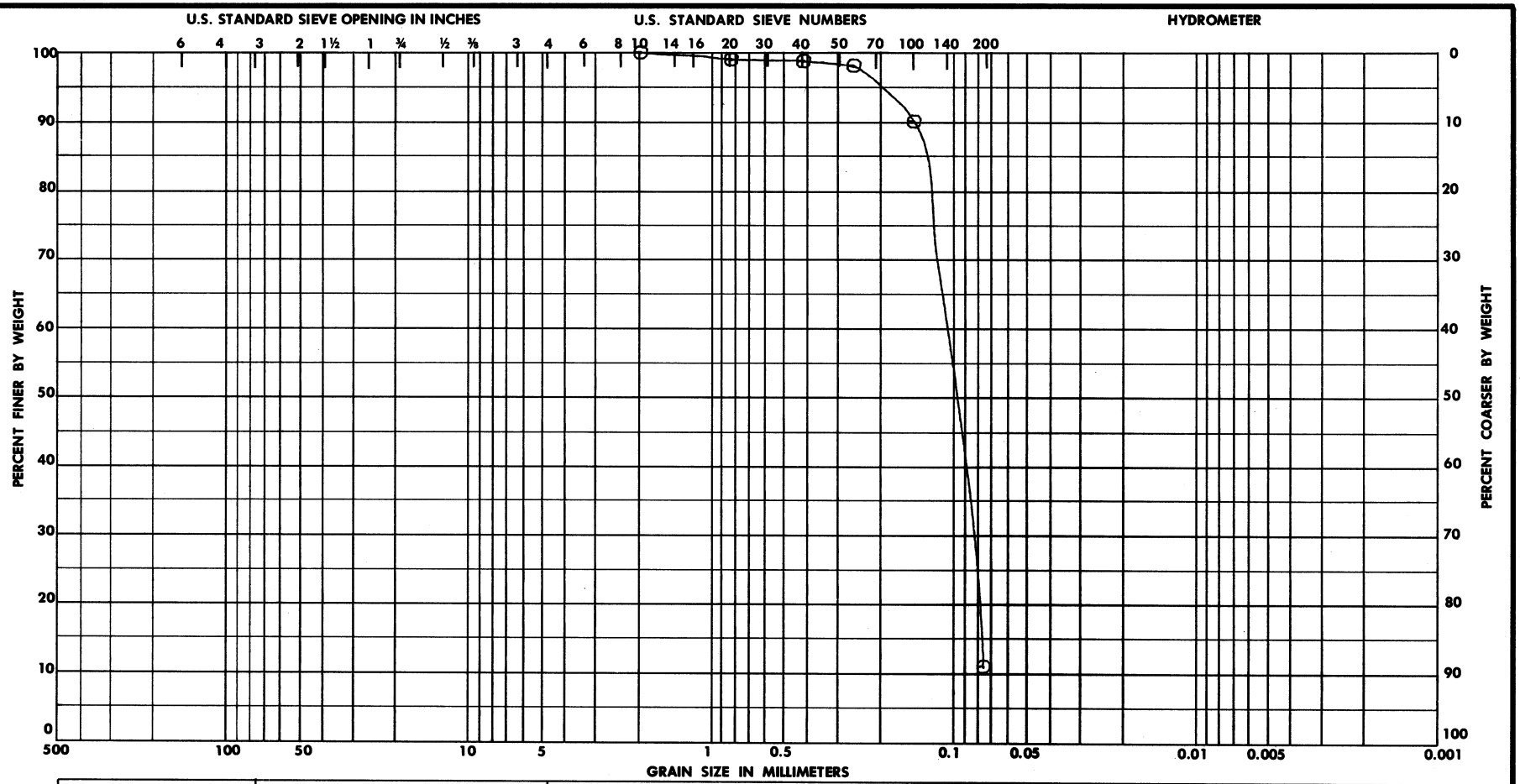
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4179
Boring No. CBCH90-5 SAM. NO.2
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev ~~of Datum~~	VISUAL Classification	Nat w %	LL	PL	PI
1	-32.3/-35.3	POOR GRD SILTY SAND (SP-SM)	--	--	--	--
		GREENISH GRAY. WITH A TRACE				
		OF SHELL.				
		SPECIFIC GRAVITY = 2.67				

GRADATION CURVES

Project JACKSONVILLE DISTRICT

CHARLOTTE HARBOR

Area LAB NO. 73/4186 *

Boring No. CBCH90-6 . SAMPLE 1

Date 05/17/90

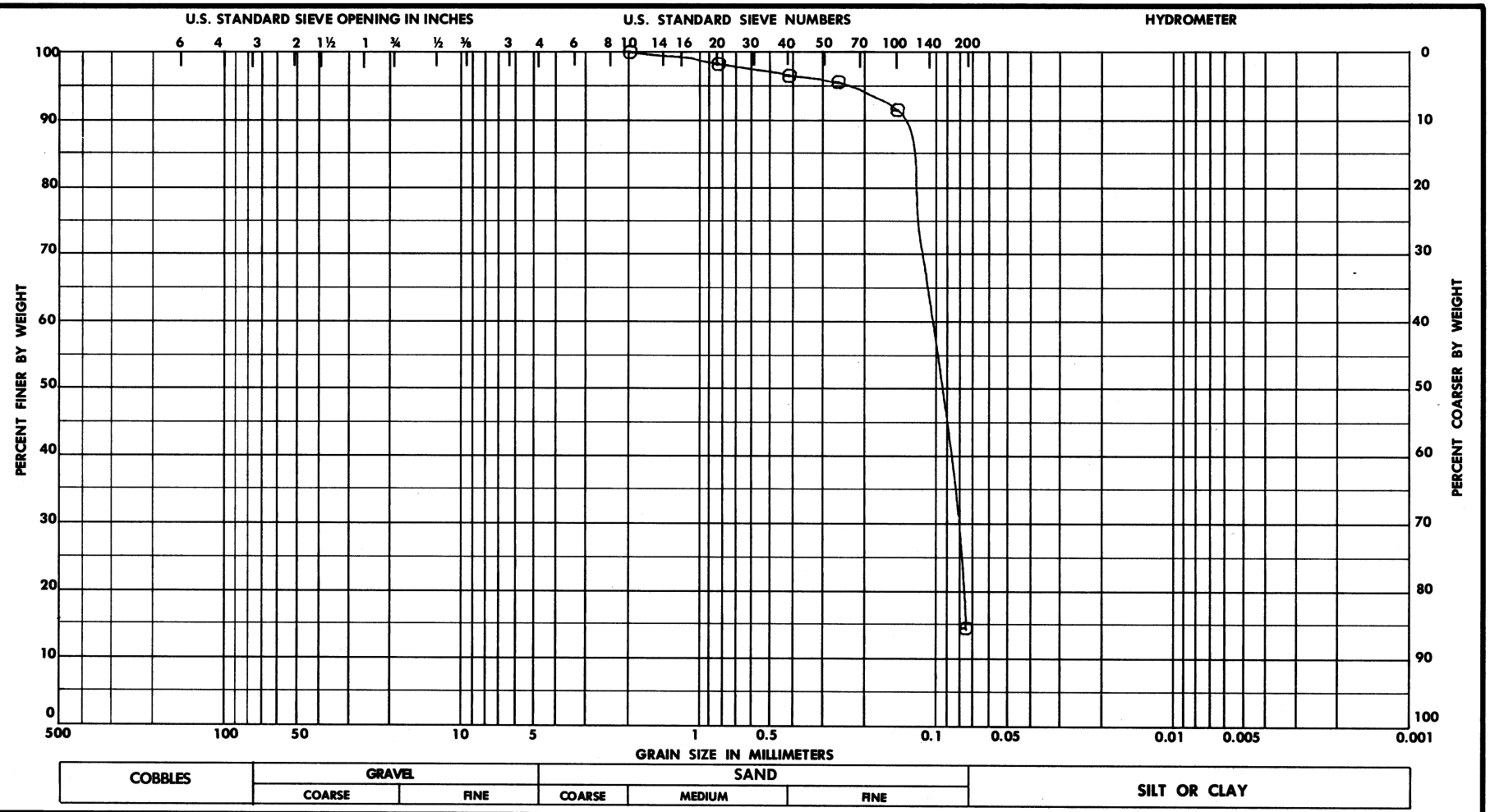
ENG FORM 1 MAY 63 2087

*See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1	-30.8/-34.8	SILTY SAND (SM)	--	--	--	--
		GREENISH GRAY. WITH A TRACE				
		OF SHELL.				
		SPECIFIC GRAVITY = 2.68				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4187 *
Boring No. CBCH90-7 . SAMPLE 1
Date 05/17/90

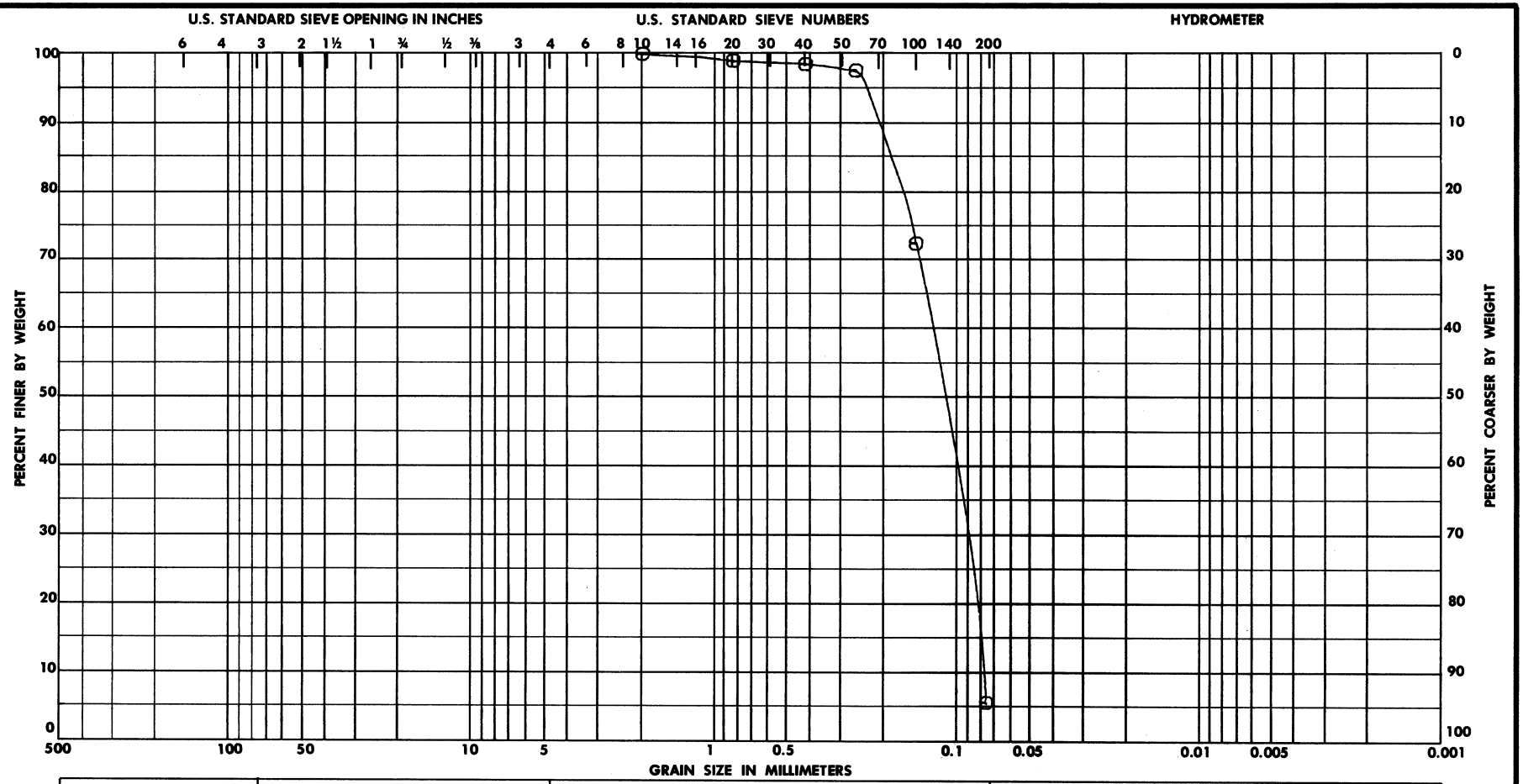
ENG FORM 1 MAY 63 **2087**

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or ~~Depth~~	VISUAL Classification	Nat w %	LL	PL	PI
1	-32.2/-34.2	POOR GRD SILTY SAND (SP-SM)	--	--	--	--
		GREENISH GRAY. W/A TRACE OF				
		SHELL.				
		SPECIFIC GRAVITY = 2.70				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4188 *
Boring No. CBCH90-8 . SAMPLE 1
Date 05/17/90

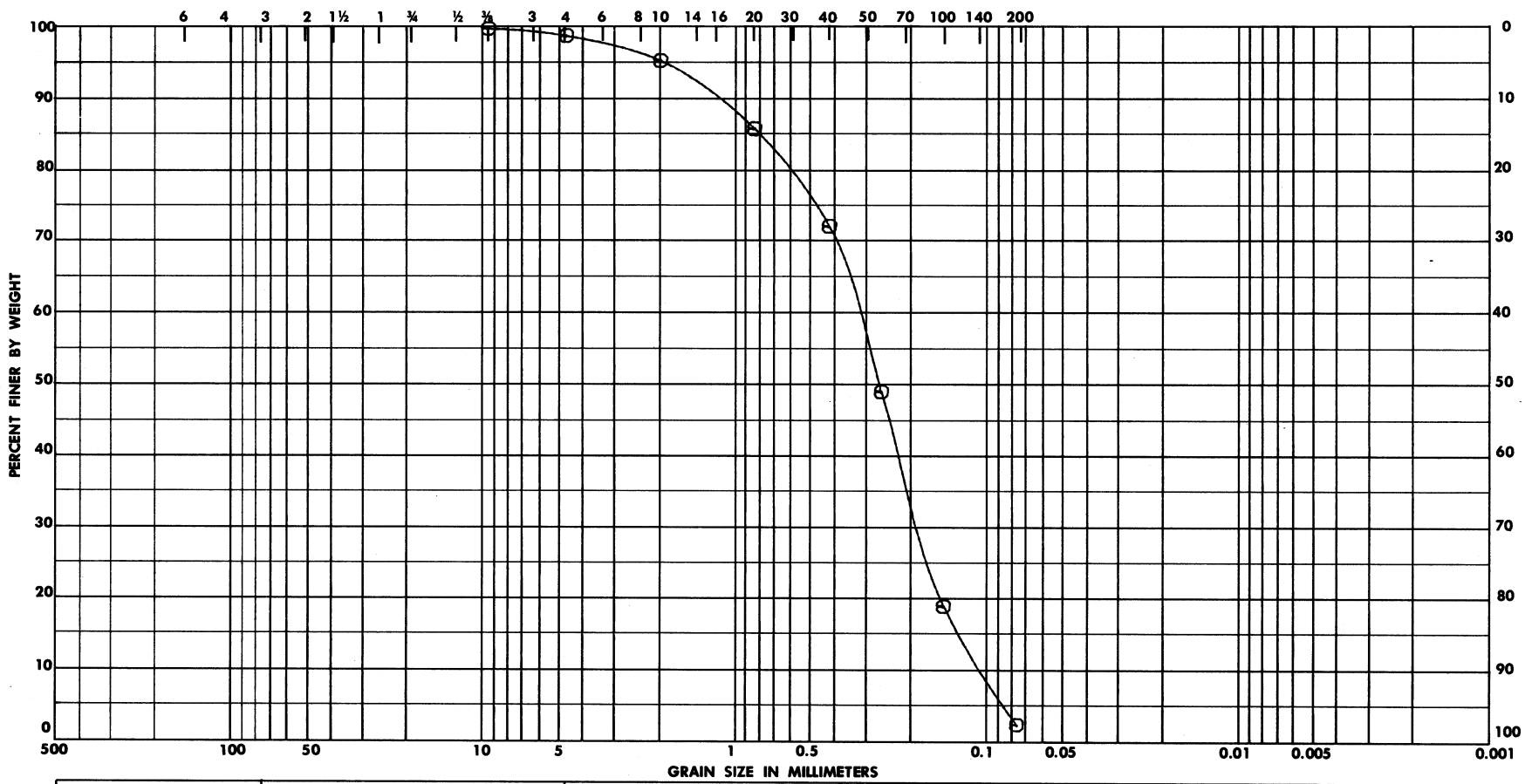
ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-29.6/-31.6	POORLY GRADED SAND (SP)	--	--	--	--
		BROWNISH GRAY. WITH SOME SAND				
		AND GRAVEL SIZE SHELL.				
		SPECIFIC GRAVITY = 2.70				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4189 *
Boring No. CBCH90-9 . SAMPLE 1
Date 05/17/90

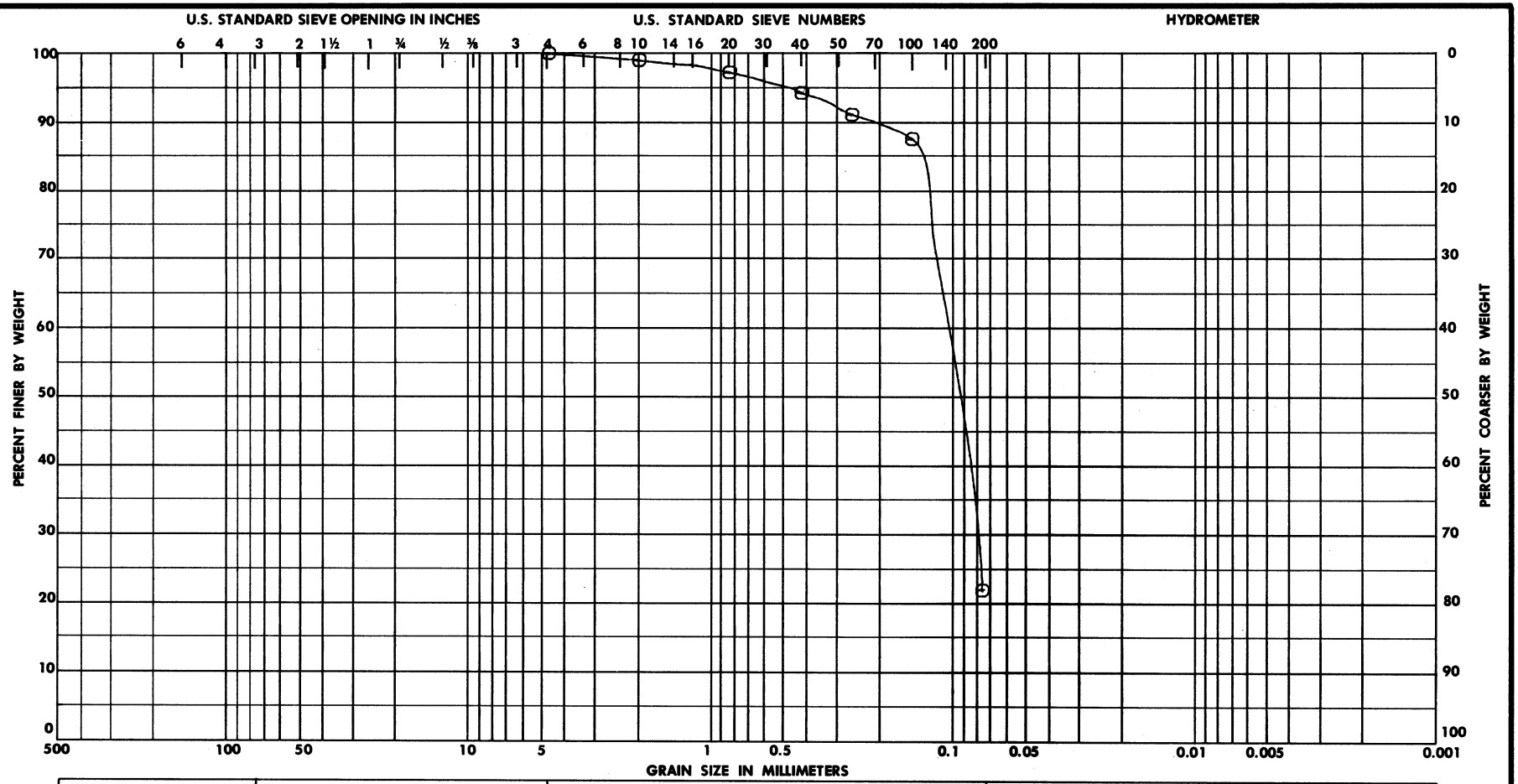
ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or ~~Depth~~	VISUAL Classification	Nat w %	LL	PL	PI
2	-31.6/-34.6	SILTY SAND (SM)	--	--	--	--
		GREENISH GRAY. SLIGHTLY PLAS-				
		TIC. WITH A TRACE OF SHELL.				
		SPECIFIC GRAVITY ≈ 2.68				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO. 73/4190 *
Boring No. CBCH90-9 , SAMPLE 2
Date 05/17/90

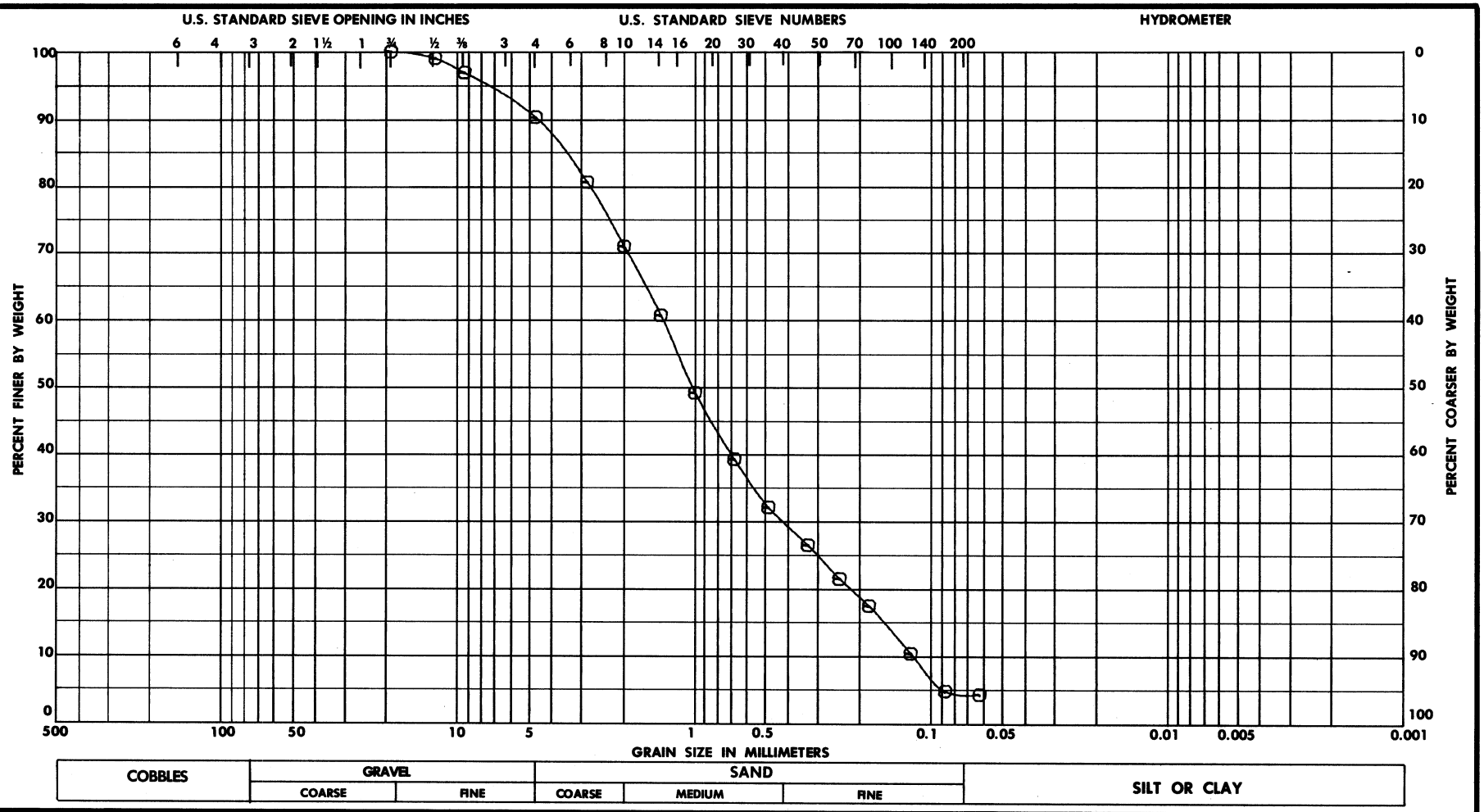
ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-21.0/-22.0	BROWNISH GRAY POOR GRD SAND	—	—	—	—
		& GRAVEL SIZE SHELL (SP).W/				
		SOME SAND. VIS.SHELL= 75.0%				
		SPECIFIC GRAVITY = 2.77				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4180 *
Boring No. CBCH90-10 SAM. NO.1
Date 05/16/90

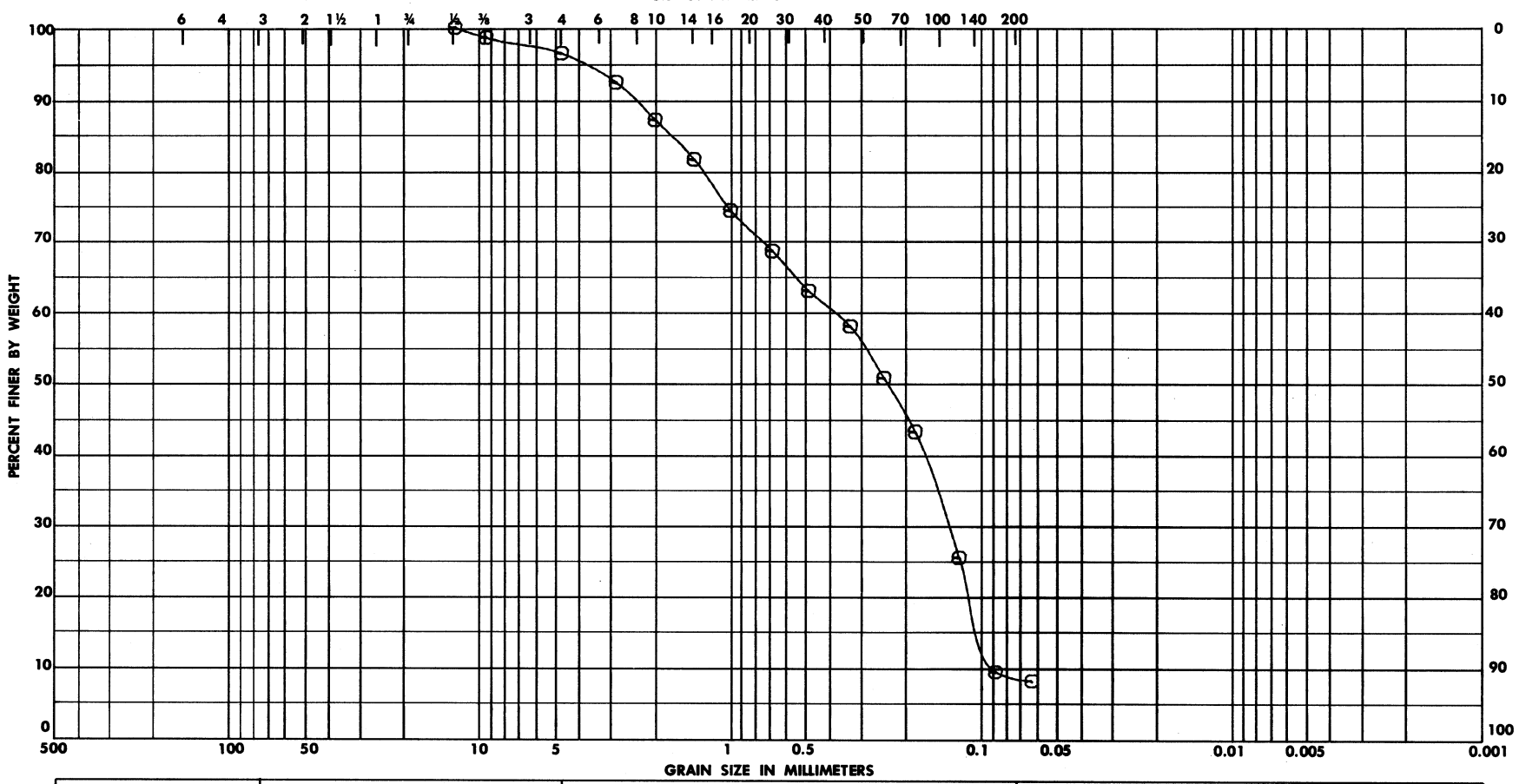
ENG FORM 1 MAY 63 **2087**

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
2	-22.0/-26.0	BROWNISH GRAY POOR GRD SILTY	—	—	—	—
		SAND (SP-SM). SHELLY. SAND AND				
		GRAVEL SIZES.				
		VISUAL SHELL = 45.0%				

GRADATION CURVES

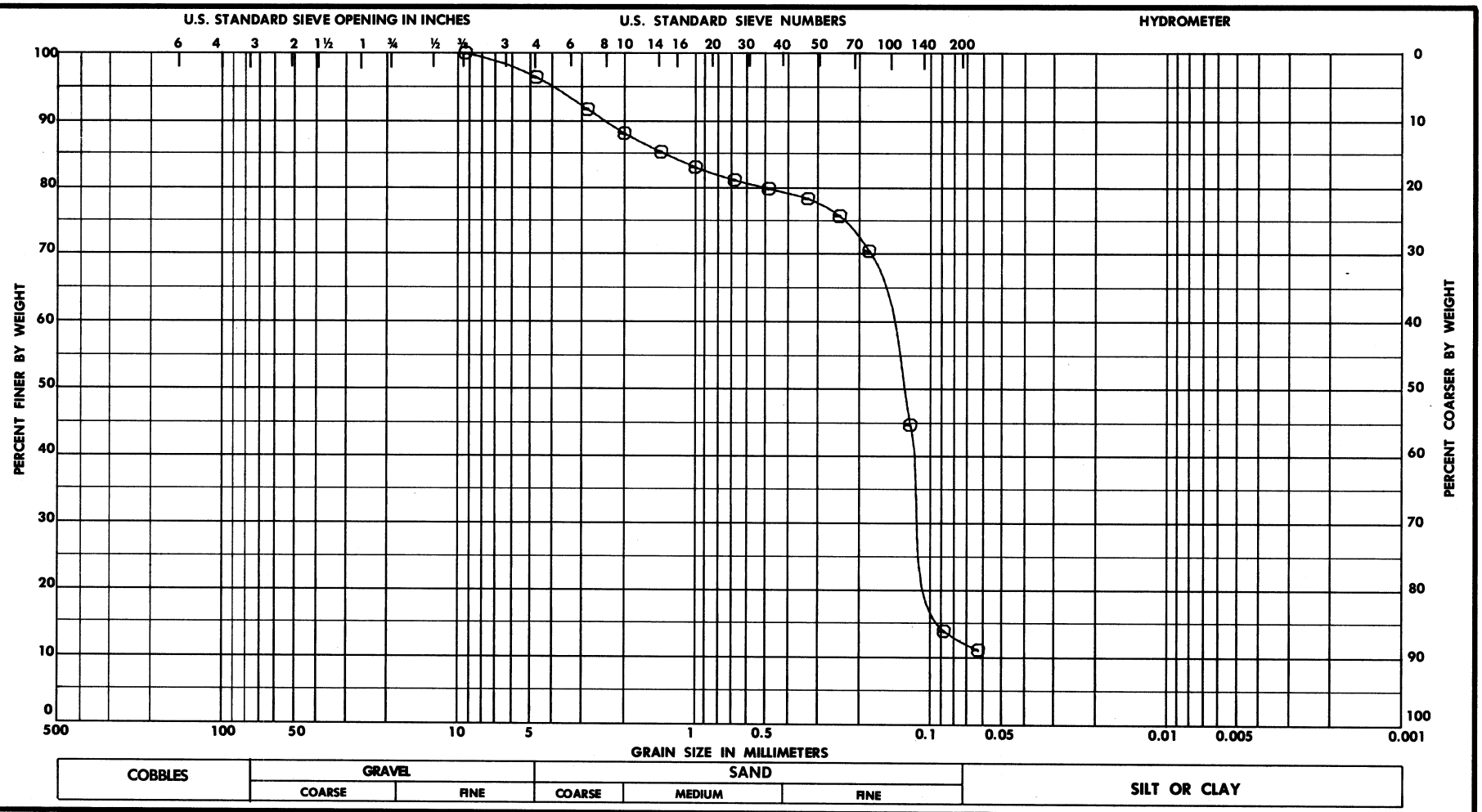
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4181
Boring No. CBCH90-10 SAM. NO.2
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or ~~Depth~~	VISUAL Classification	Nat w %	LL	PL	PI
3	-26.0/-31.0	BROWNISH GRAY SILTY SAND (SM)	—	—	—	—
		WITH SOME SAND & GRAVEL SIZE				
		SHELL. VIS. SHELL ≈ 22.0%				
		SPECIFIC GRAVITY ≈ 2.70				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4182 *
Boring No. CBCH90-10 SAM. NO.3
Date 05/16/90

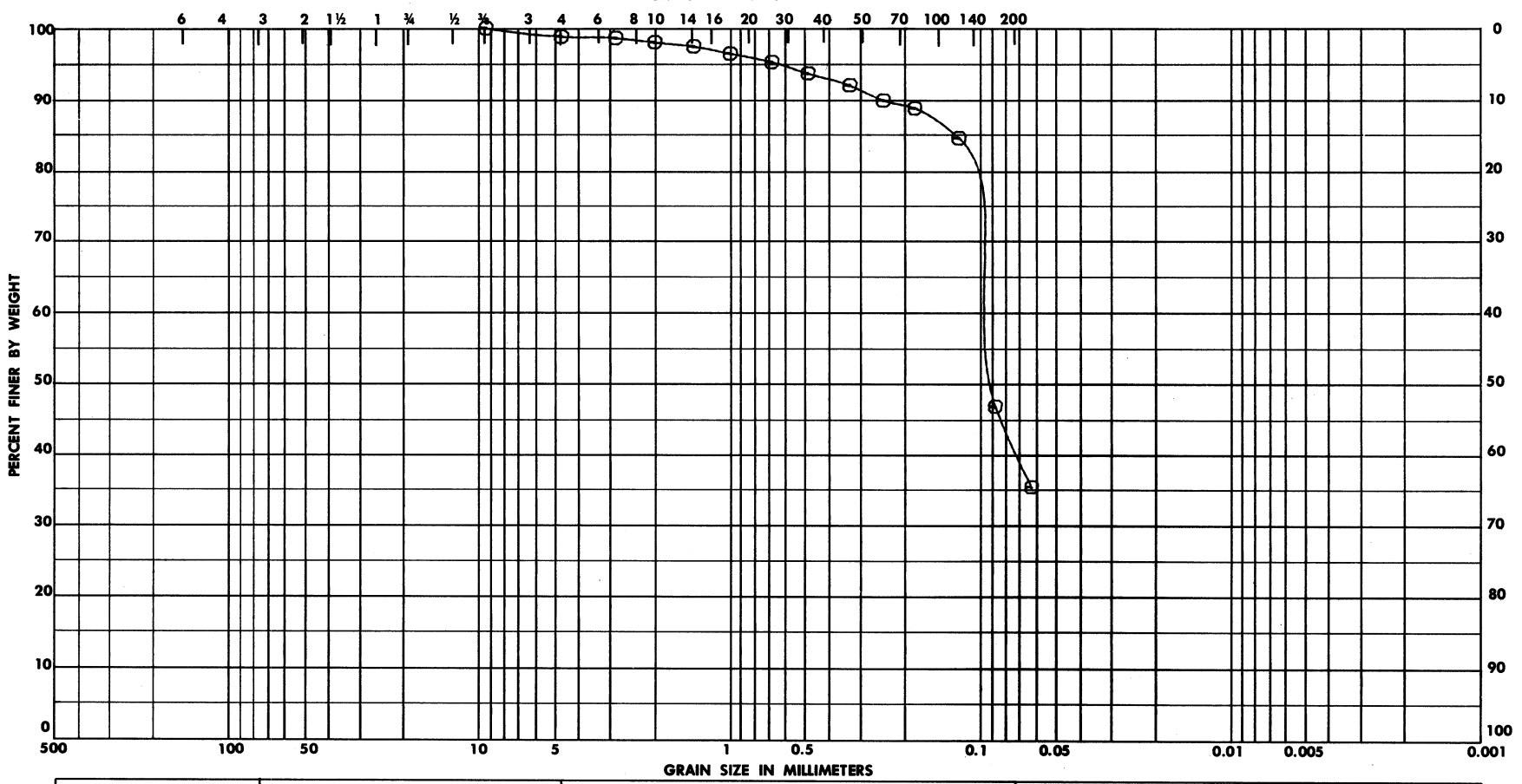
ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
4	-31.0/-36.0	VISUAL GREENISH GRAY SILTY SAND (SM)	—	—	—	—
		SLIGHTLY PLASTIC W/A TRACE OF				
		SAND & GRAVEL SIZE SHELL.				
		VISUAL SHELL ≈ 7.0%				

GRADATION CURVES

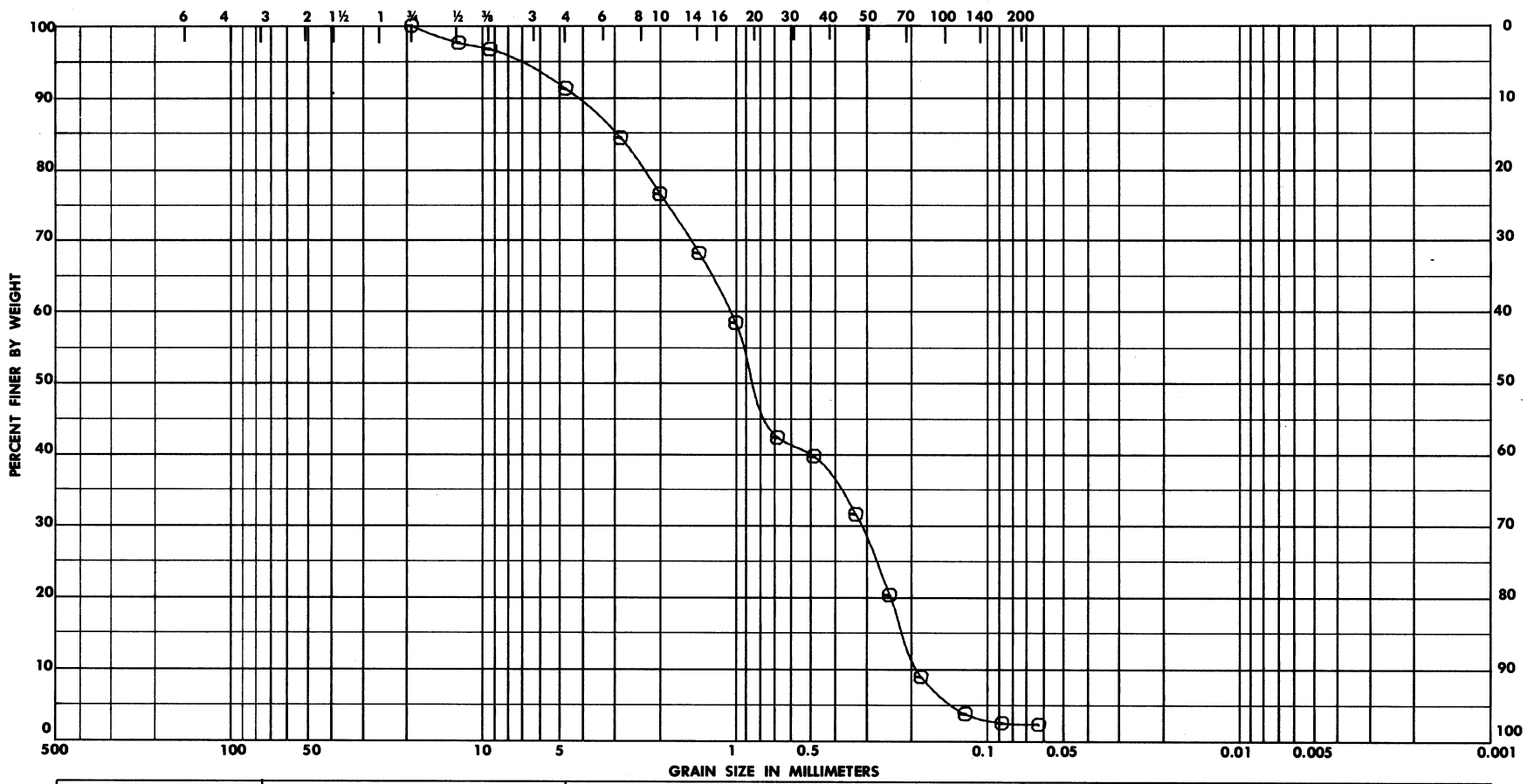
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4183
Boring No. CBCH90-10 SAM. NO.4
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
1	-26.5/-31.5	BROWNISH TAN POOR GRD SAND &	—	—	—	—
		GRAVEL SIZE SHELL (SP). WITH				
		SOME SAND. VIS. SHELL= 65.0%				
		SPECIFIC GRAVITY = 2.74				

GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4184 *
Boring No. CBCH90-11 SAM. NO.1
Date 05/16/90

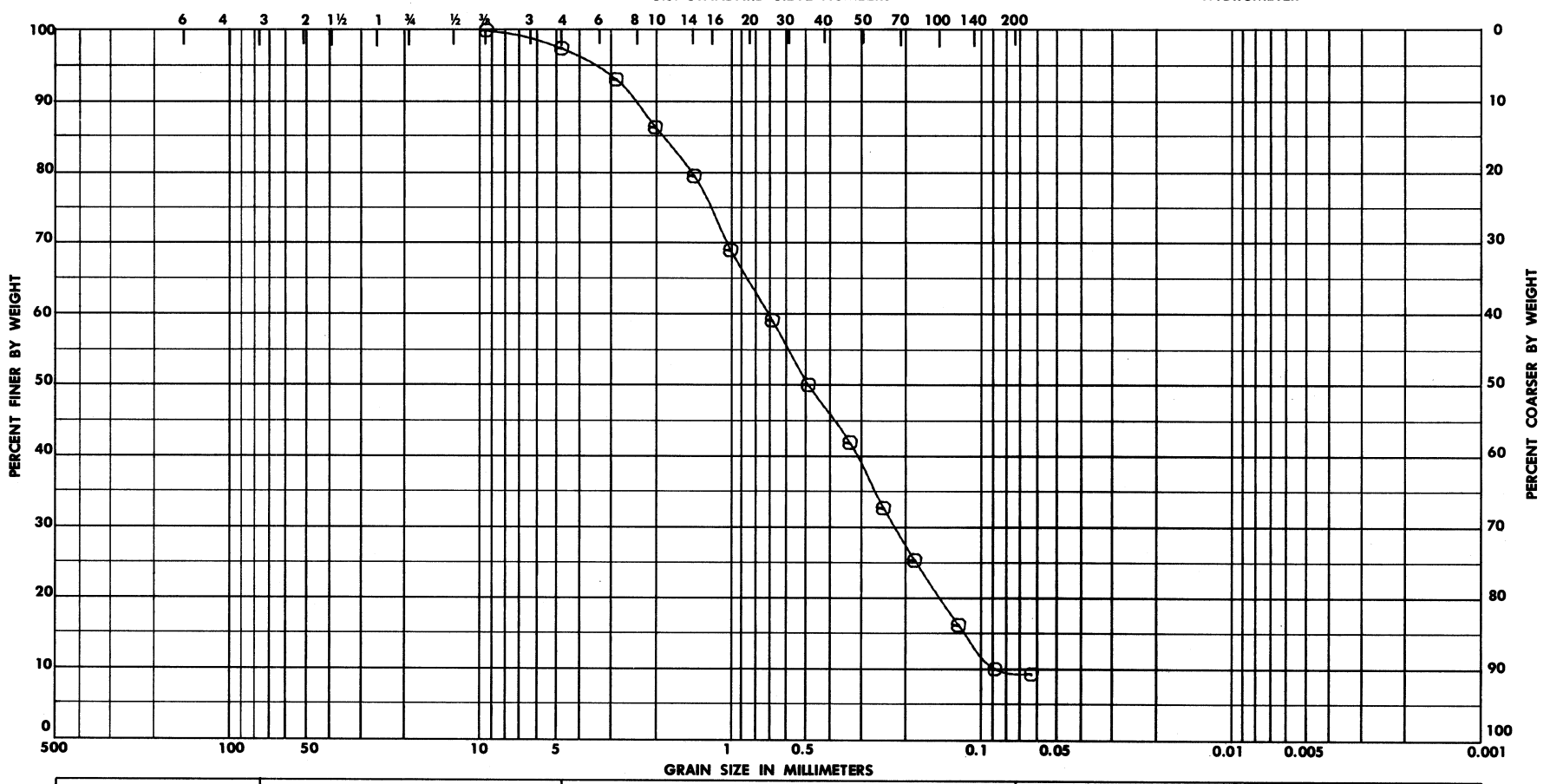
ENG FORM 1 MAY 63 2087

* See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2	-31.5/-34.0	VISUAL BROWNISH GRAY POOR GRD SILTY SAND AND GRAVEL SIZE SHELL (SP-SM). WITH SOME SAND. VISUAL SHELL = 58.0%	—	—	—	—

GRADATION CURVES

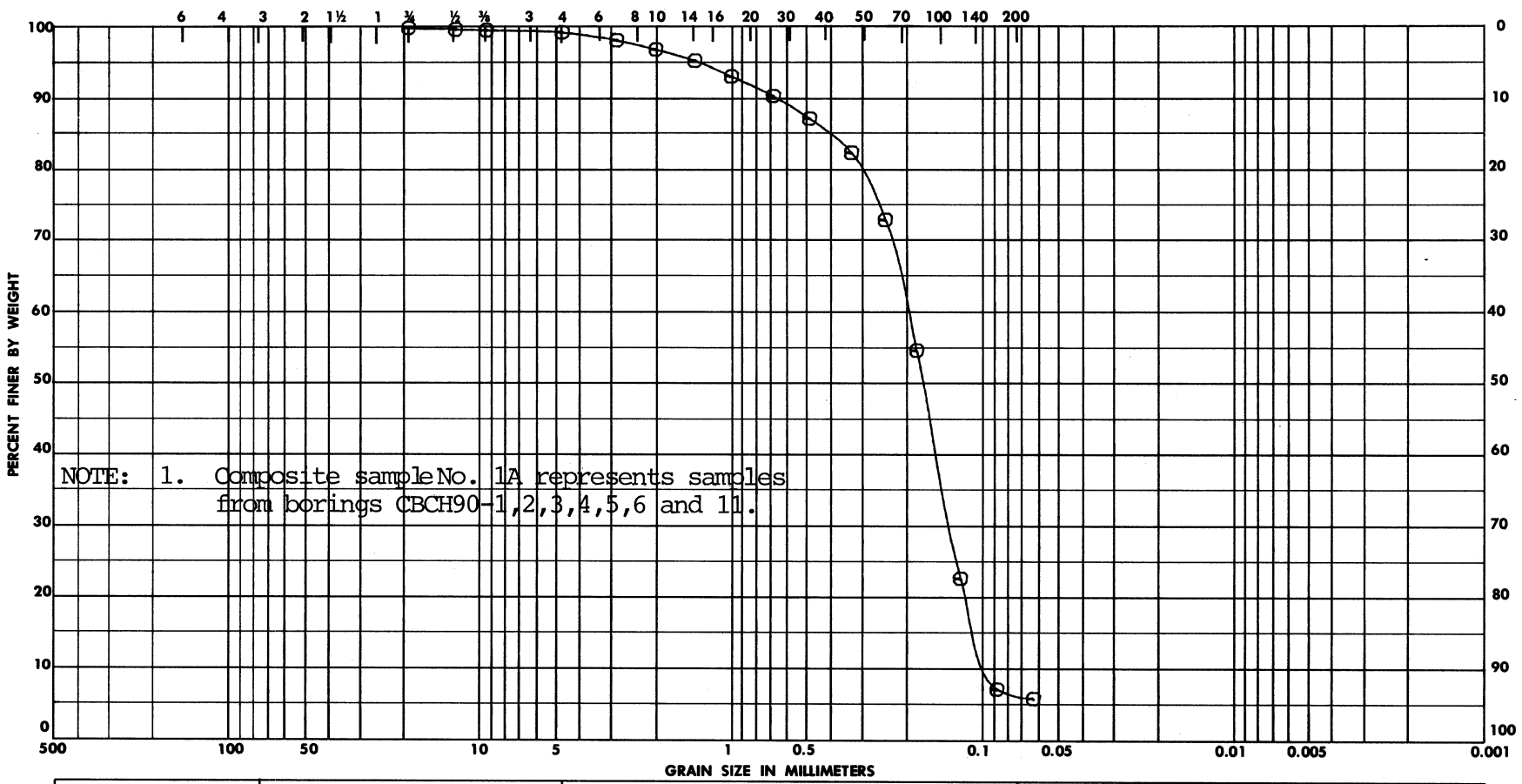
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185
Boring No. CBCH90-11 SAM. NO.2
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1A	---	BROWNISH GRAY POOR GRD SILTY	—	—	—	—
		SAND (SP-SM). WITH SOME SAND				
		AND GRAVEL SIZE SHELL.				
		VISUAL SHELL = 21.0%				

GRADATION CURVES

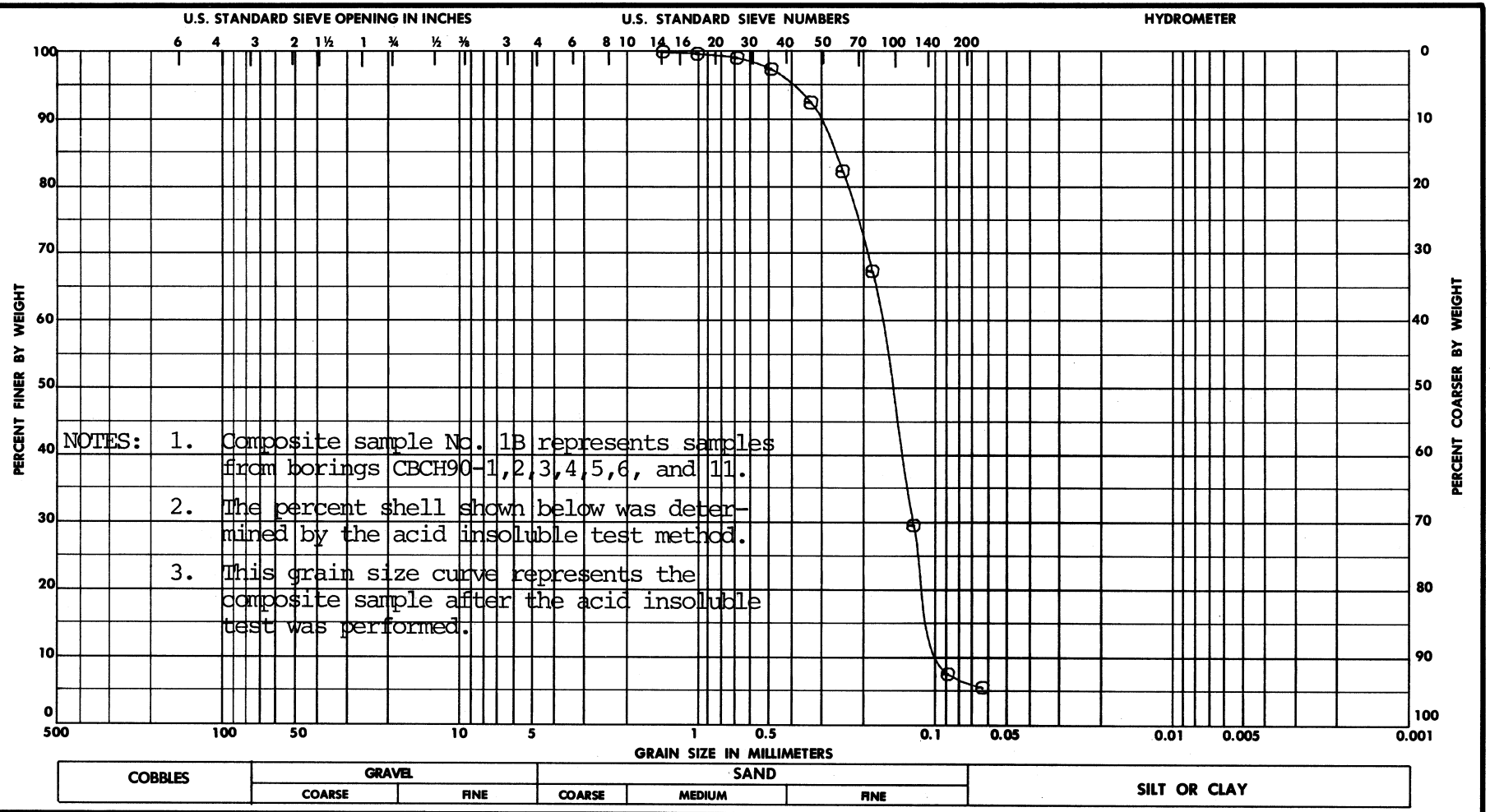
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185A
Boring No. COMPOSITE SAM. NO.1A
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	VISUAL Classification	Nat w %	LL	PL	PI
1B	---	POOR GRD SILTY SAND (SP-SM)	—	—	—	—
		PERCENT SHELL = 17.1				

GRADATION CURVES

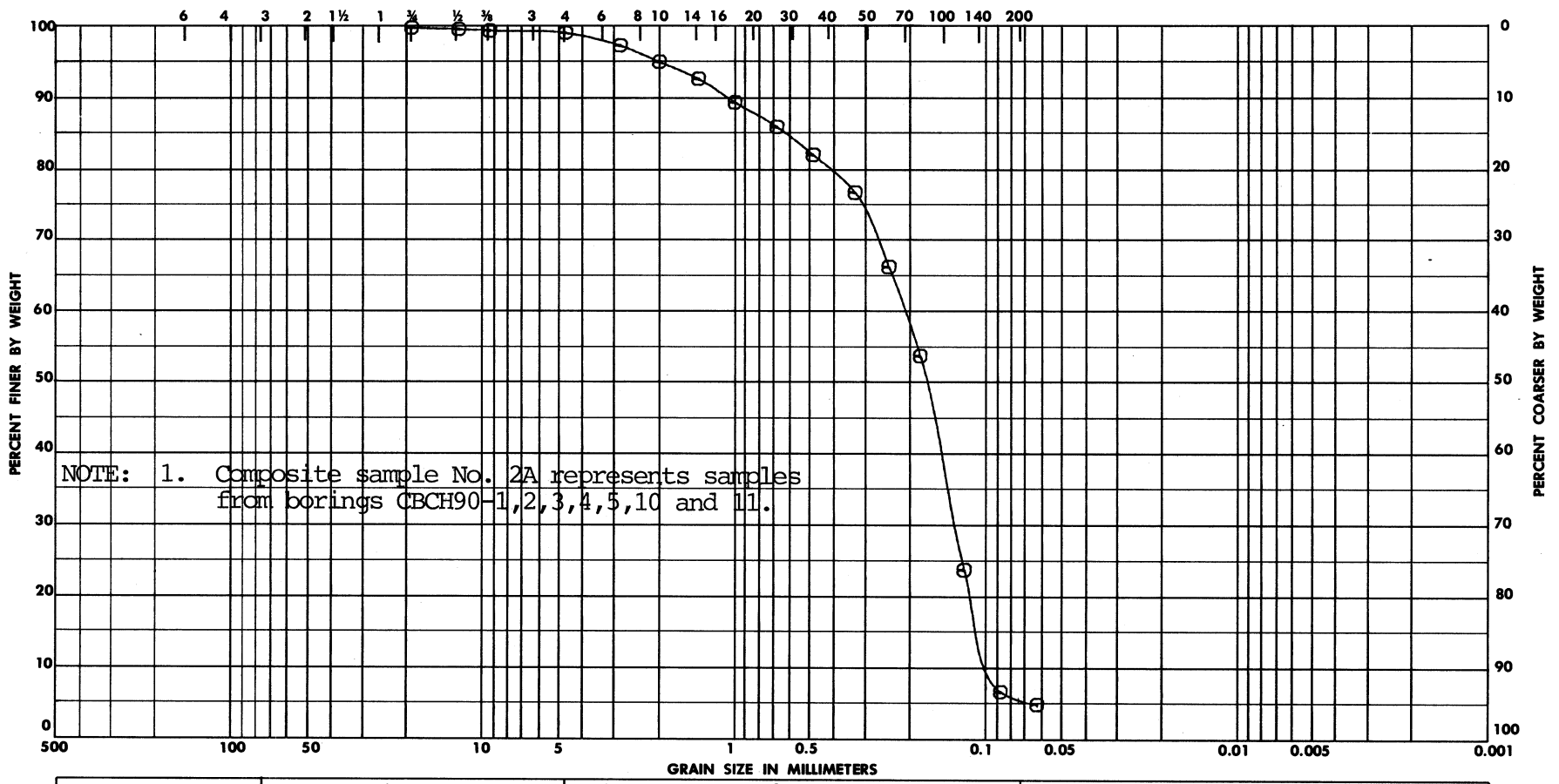
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185B
Boring No. COMPOSITE SAM. NO.1B
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2A	---	VISUAL POOR GRD SILTY SAND (SP-SM).	—	—	—	—
		WITH SOME SAND & GRAVEL SIZE				
		SHELL.				
		VISUAL SHELL = 25.0%				

GRADATION CURVES

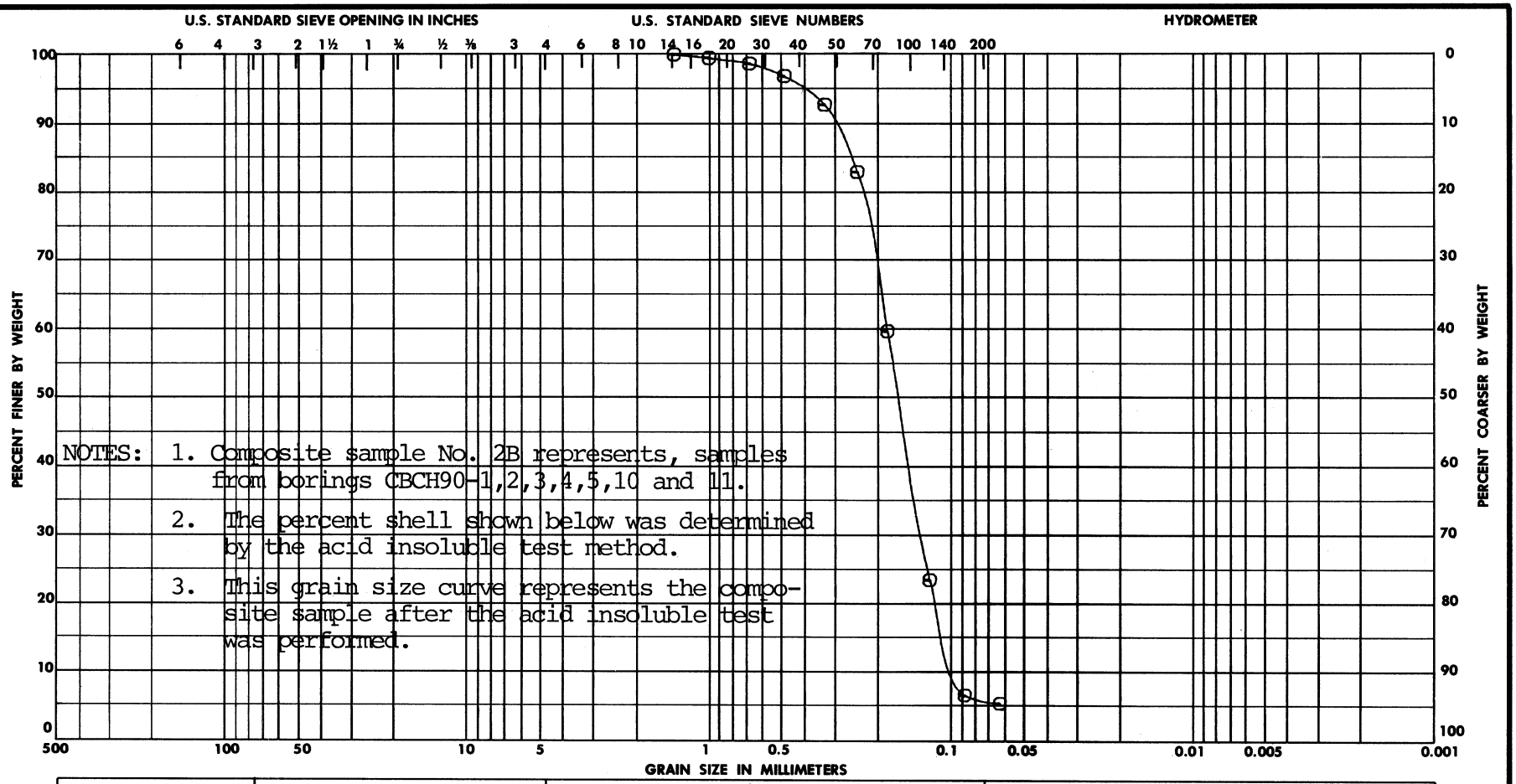
Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185C
Boring No. COMPOSITE SAM. NO.2A
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 6123

Req. No. RM-CW-90-0131



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2B	---	VISUAL POOR GRD SILTY SAND (SP-SM)	—	—	—	—
		PERCENT SHELL = 21.1%				

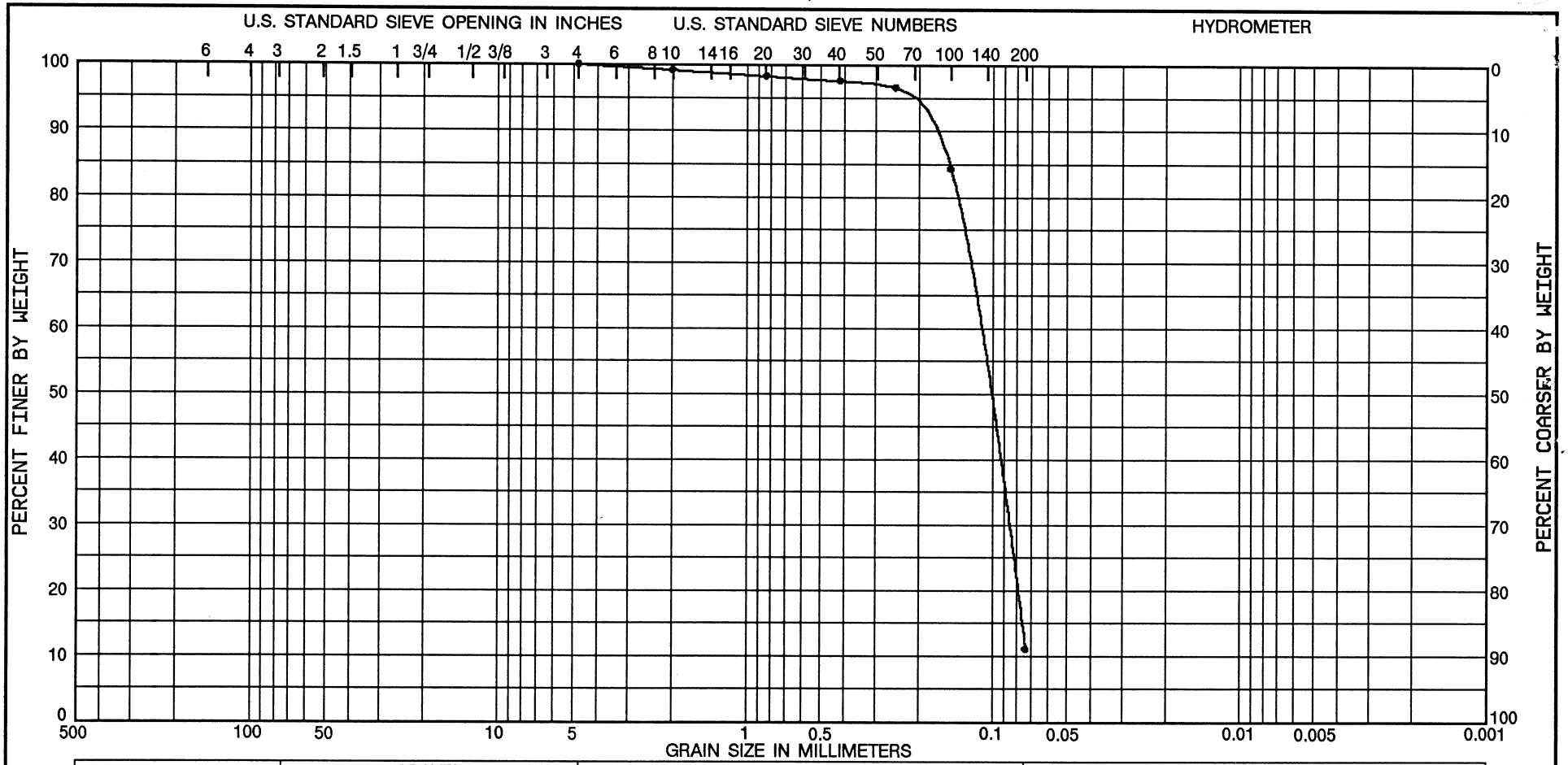
GRADATION CURVES

Project JACKSONVILLE DISTRICT
CHARLOTTE HARBOR
Area LAB NO.73/4185D
Boring No. COMPOSITE SAM. NO.2B
Date 05/16/90

ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Visual Classification	Nat w%	LL	PL	PI
1	-29.4/-34.4	Gray poorly graded silty sand (SP-SM),	--	--	--	--
		with a trace of shell and mica.				

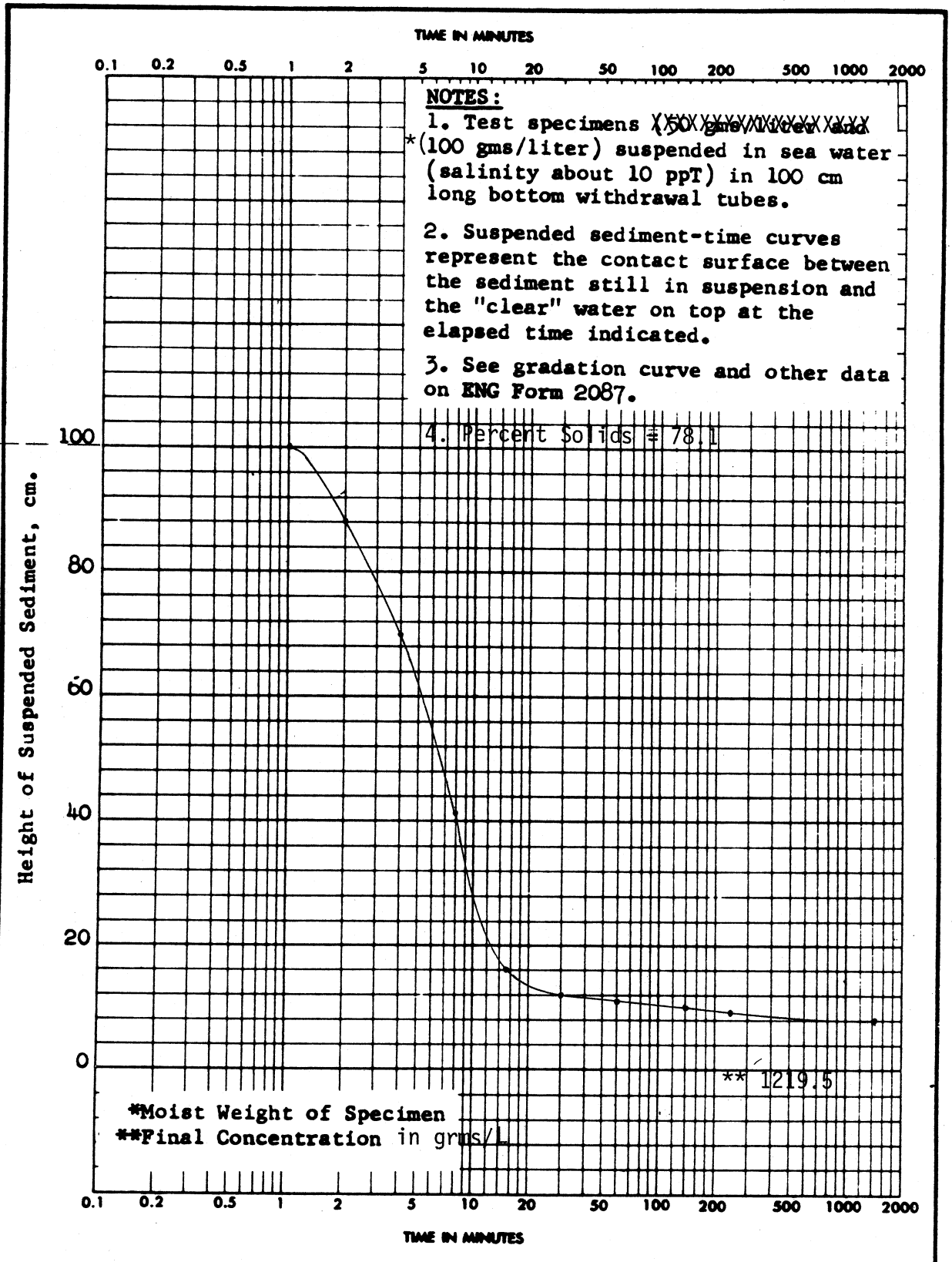
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4605
Boring No. CB-CH91-1
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



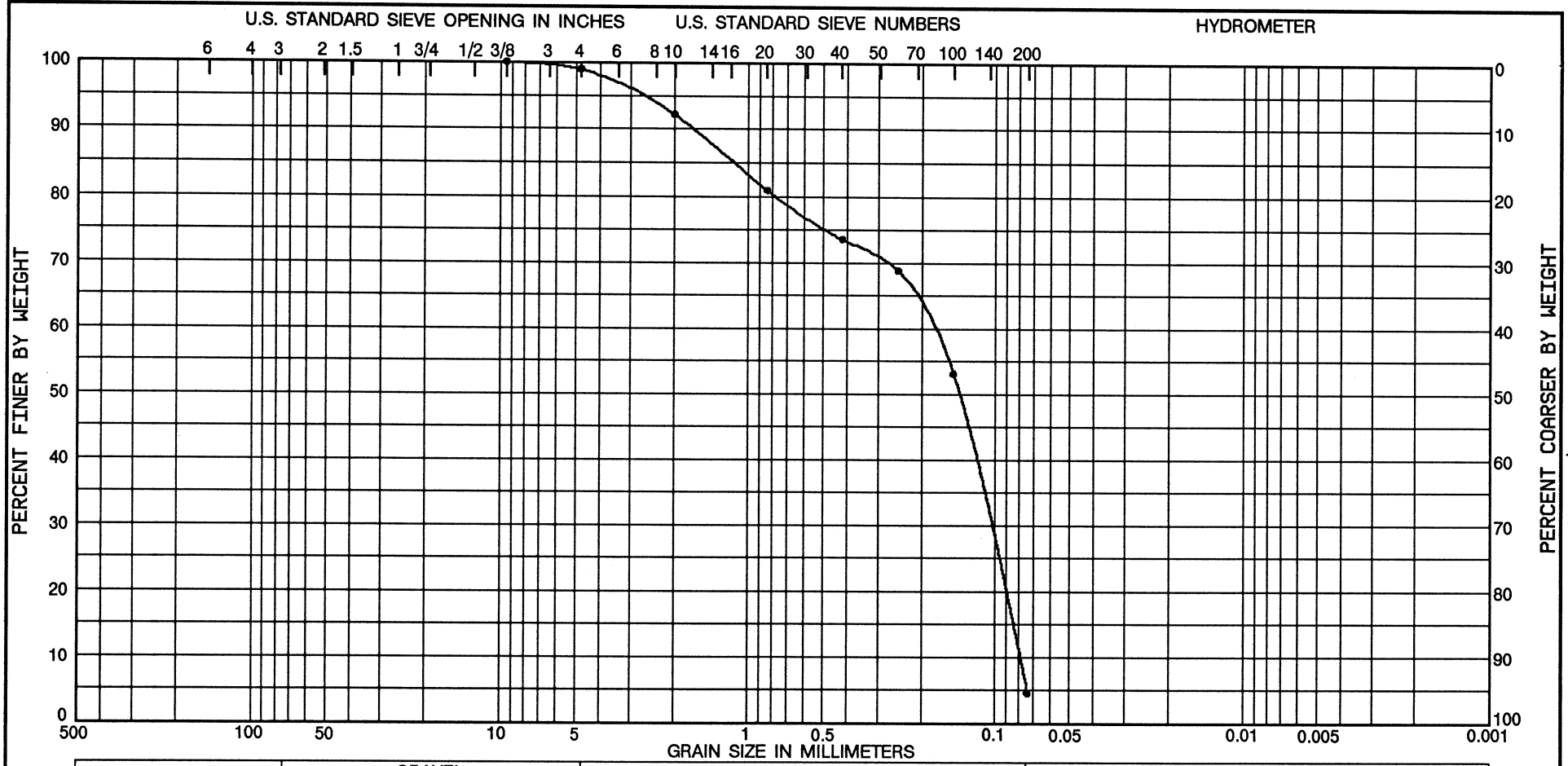
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4605	
BORING NO. CB-CH91-1	SAMPLE NO. 1	DEPTH EL -29.4/-34.4	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-29.9/-34.9	Gray poorly graded sand (SP), with a little sand & gravel size shell and with a trace of wood fragments & mica.	–	–	–	–

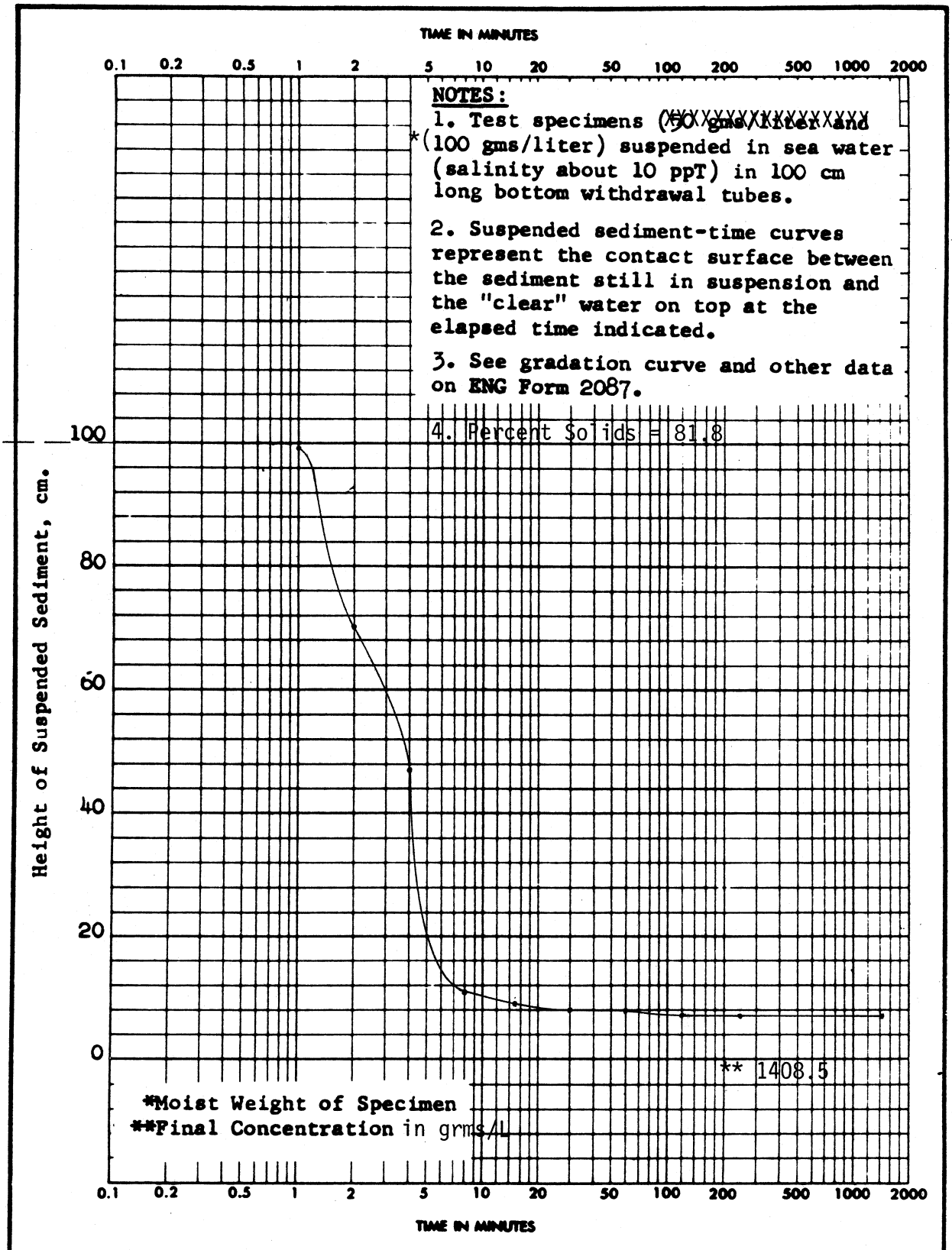
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4606
Boring No. CB-CH91-2
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



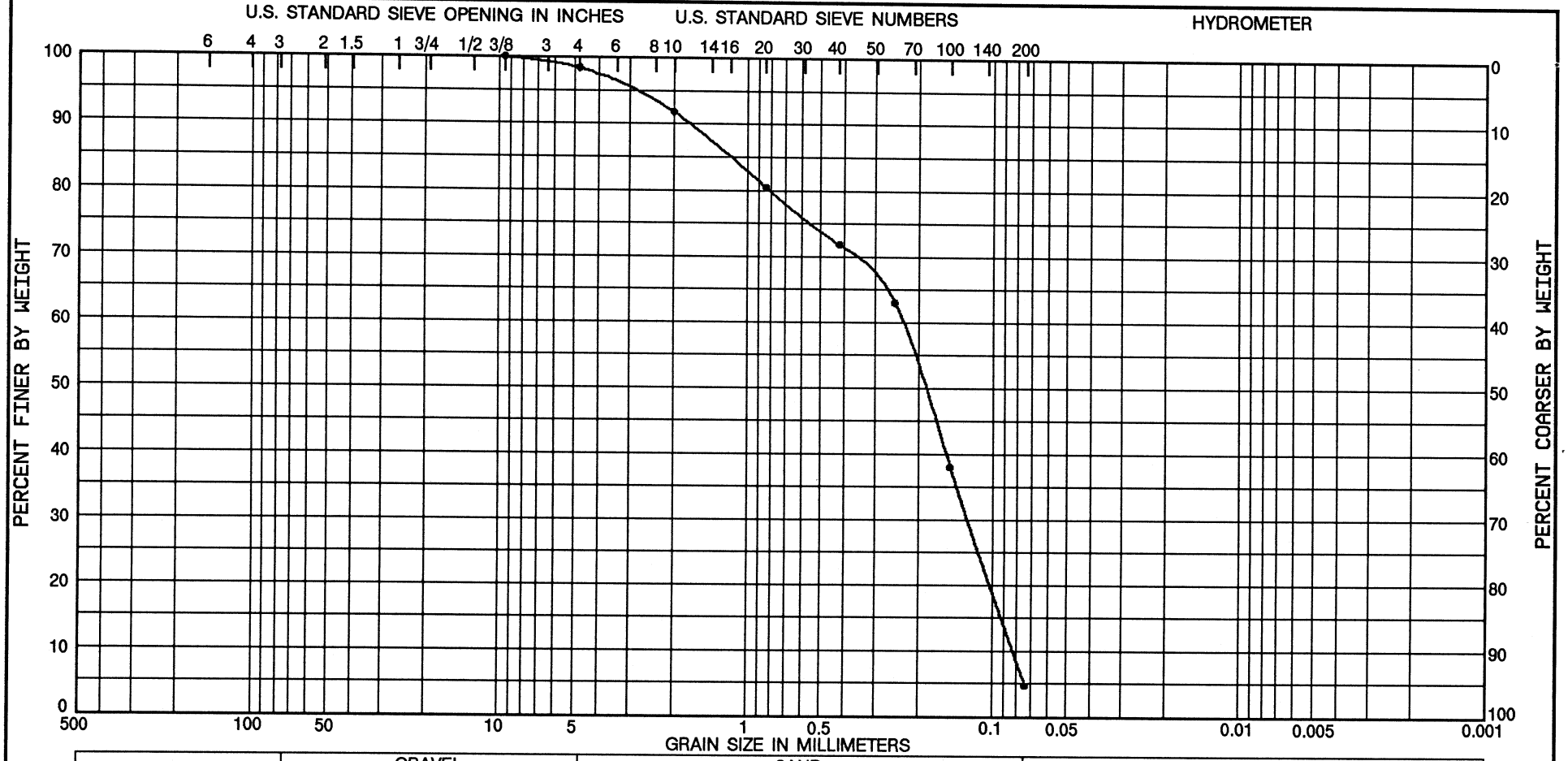
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4606	
BORING NO. CB-CH91-2	SAMPLE NO. 1	DEPTH EL -29.9/-34.9	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-30.9/-35.4	Gray poorly graded sand (SP), with a trace of sand & gravel size shell and with a trace of mica.	--	--	--	--

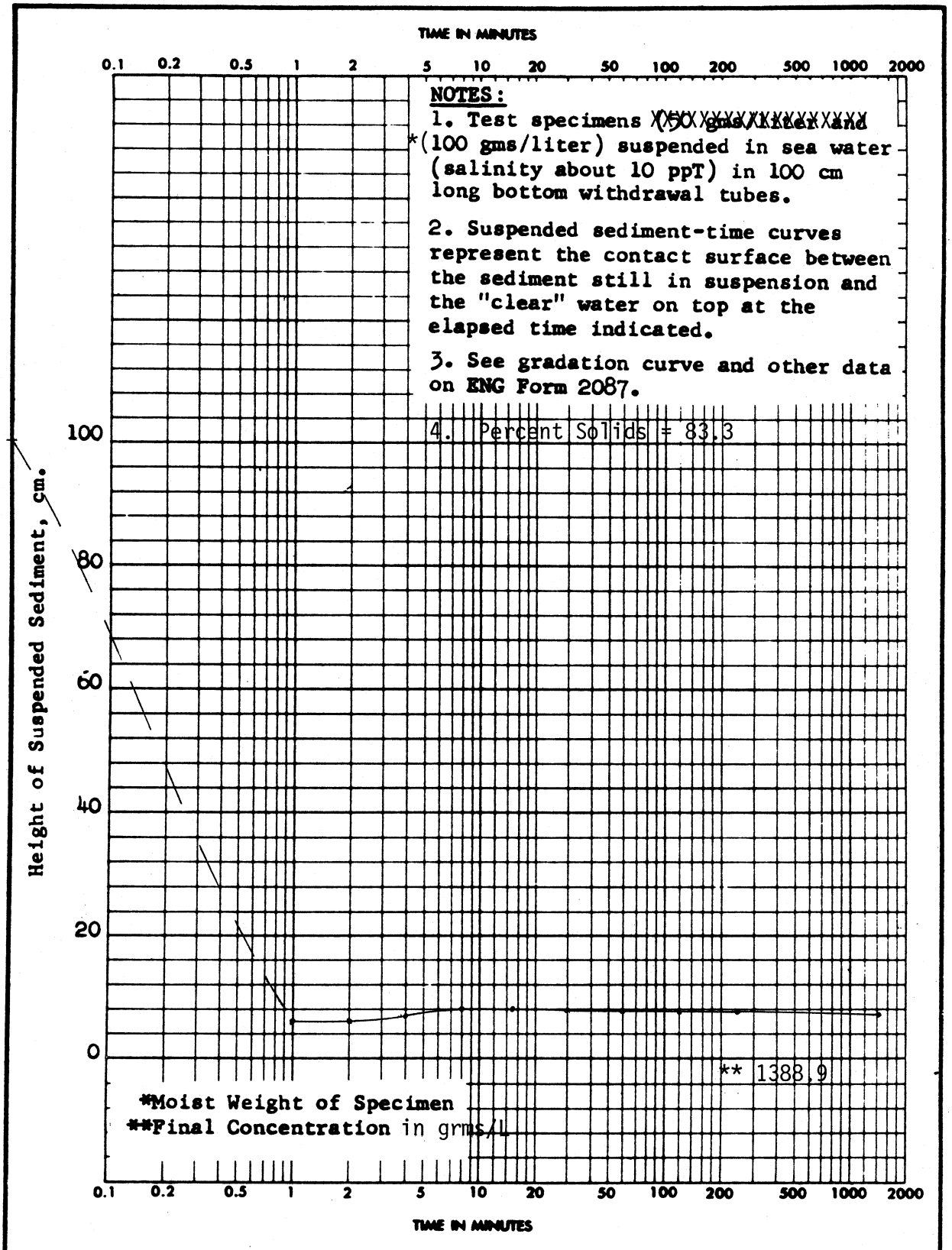
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4607
Boring No. CB-CH91-3
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



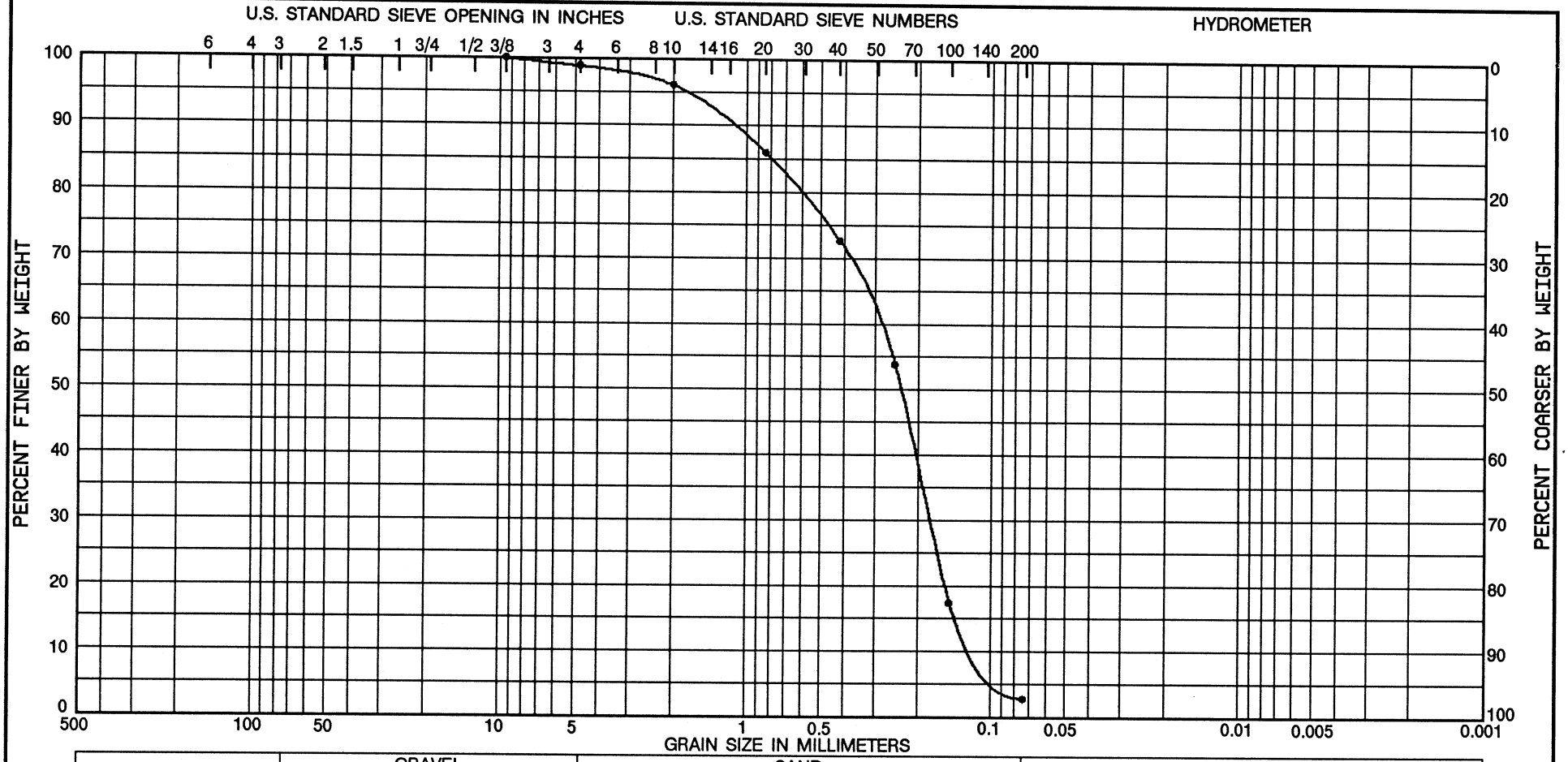
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4607	
BORING NO. CB-CH91-3	SAMPLE NO. 1	~~DEPTH~~ EL -30.9/-35.4	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-30.4/-35.4	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of wood fragments and mica.	–	–	–	–

Project CHARLOTTE HARBOR MAINTENANCE DREDGING

Lab No. 73/4608

Boring No. CB-CH91-4

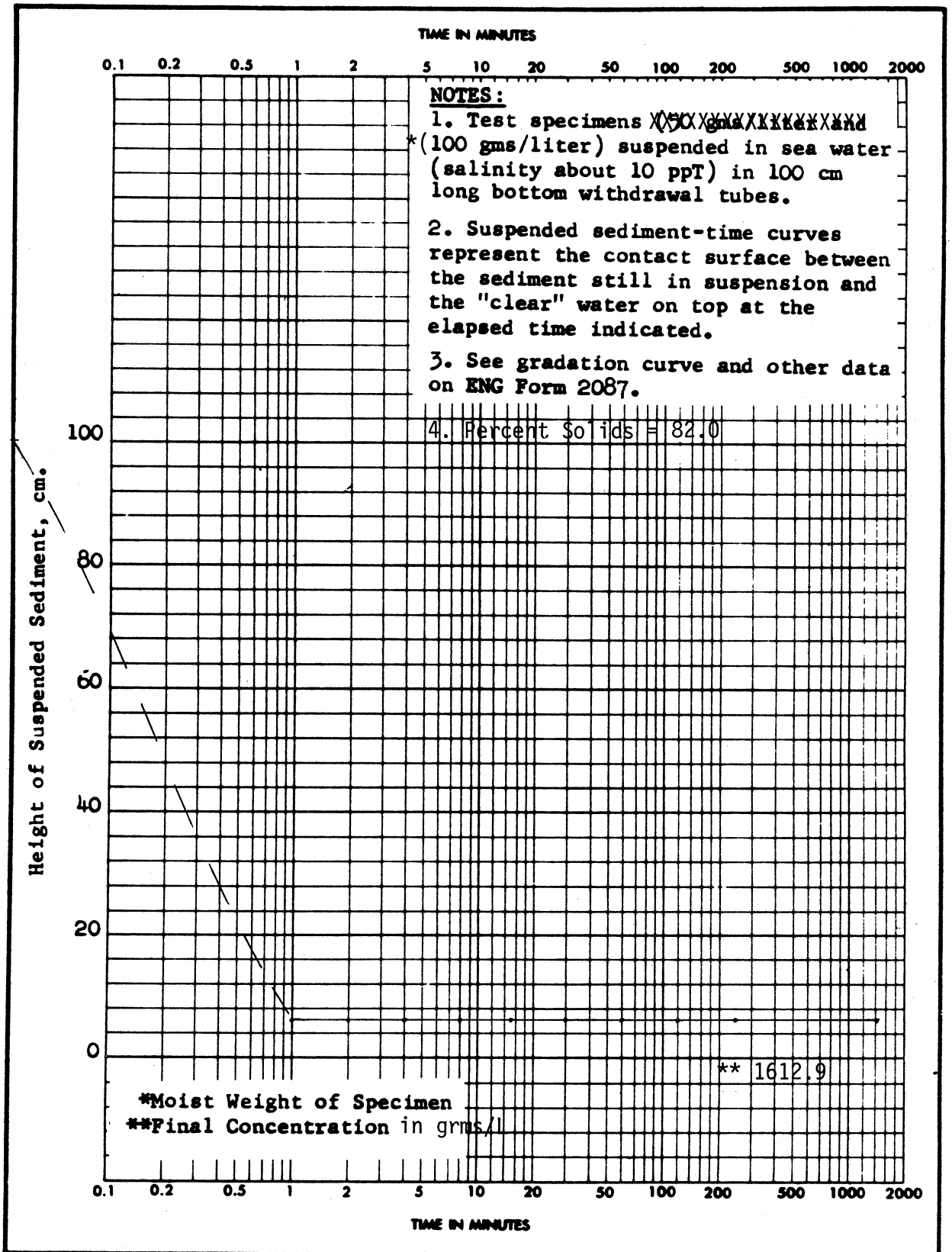
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



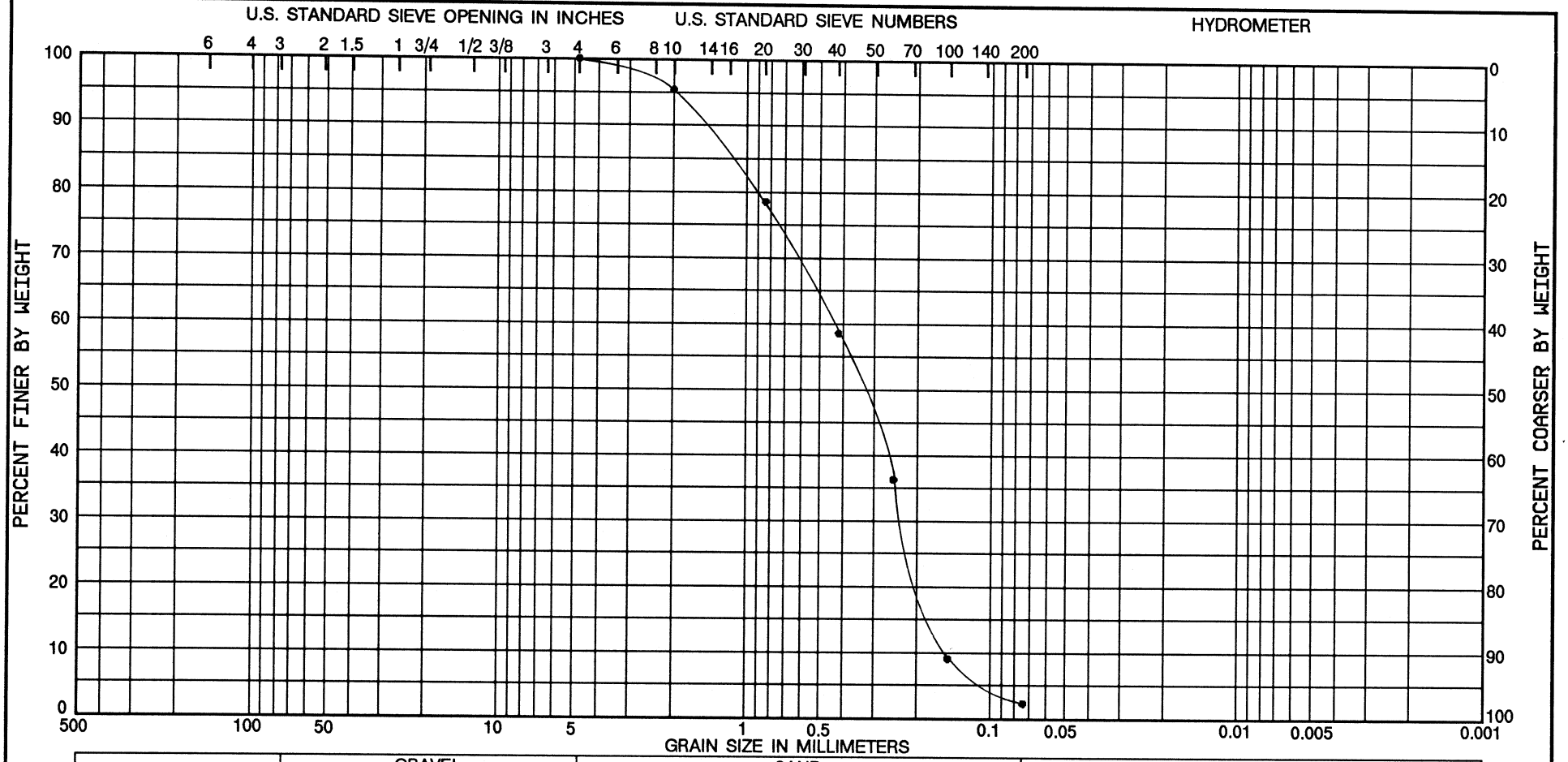
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4608	
BORING NO. CB-CH91-4	SAMPLE NO. 1	EL -30.4/-35.4	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-31.2/-36.2	Tannish gray poorly graded sand (SP), shelly, with a trace of mica.	–	–	–	–

Project CHARLOTTE HARBOR MAINTENANCE DREDGING

Lab No. 73/4609

Boring No. CB-CH91-5

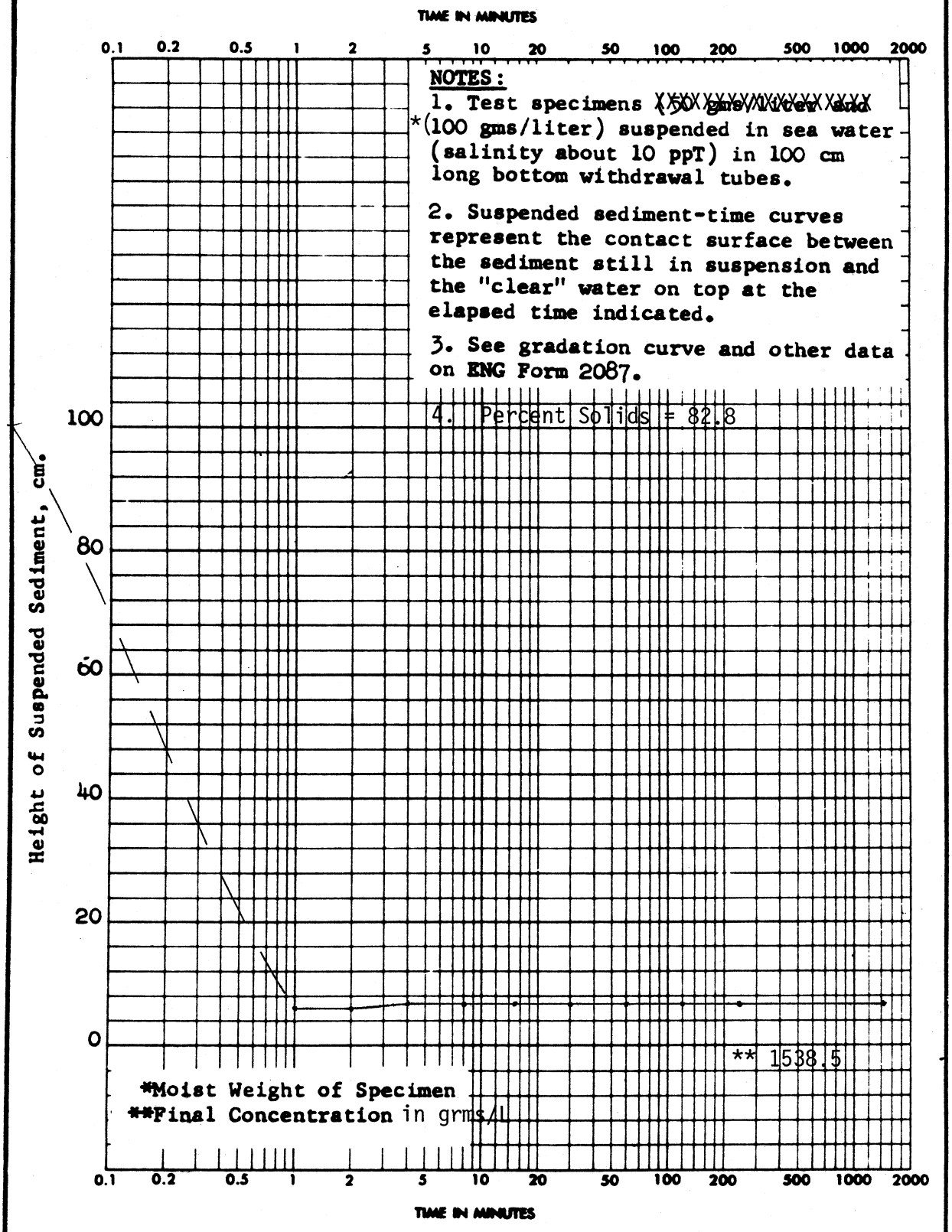
Date 07/25/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-01-0130
Work Order No. 6442



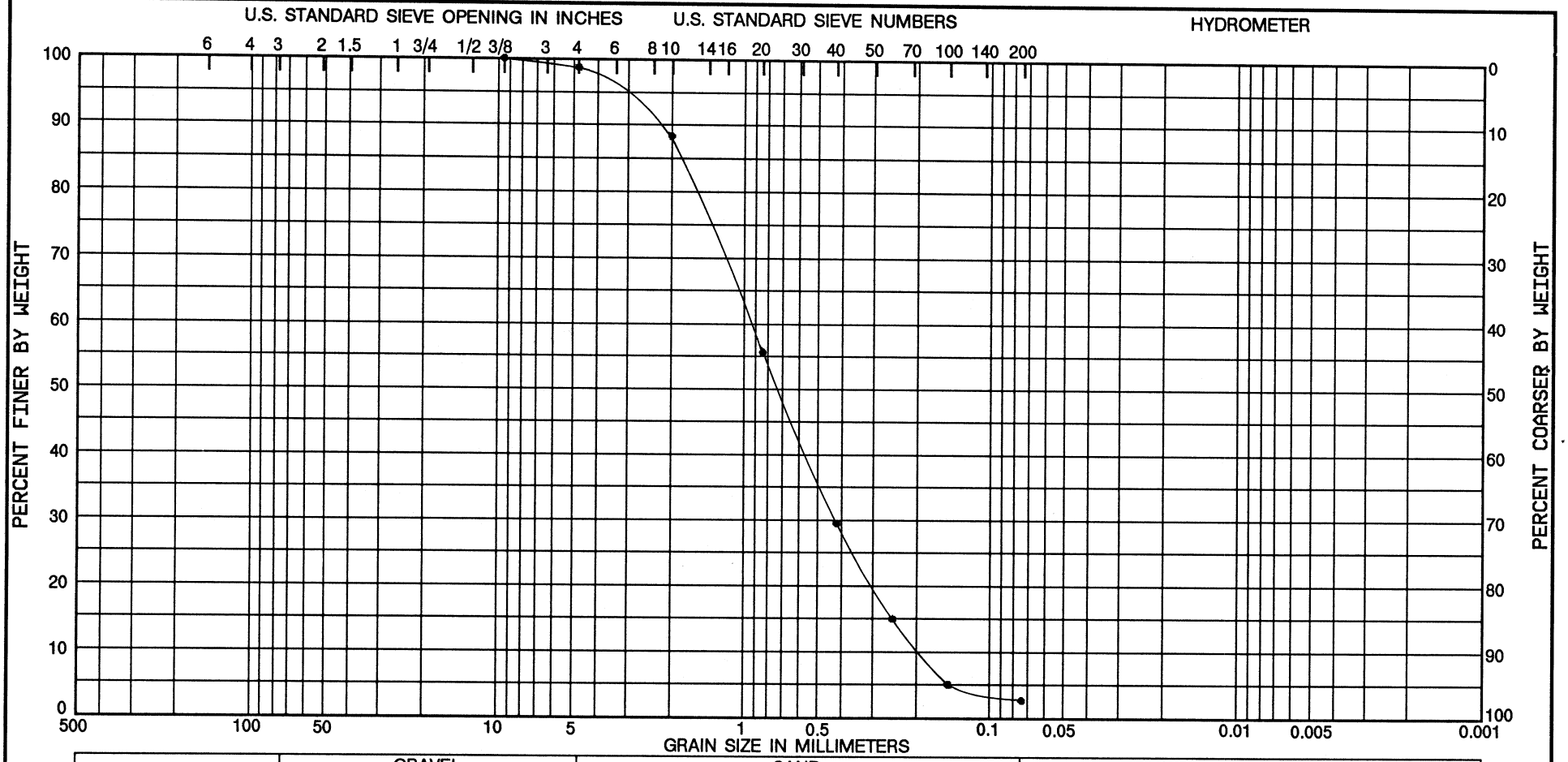
PROJECT Charlotte Harbor Maintenance Dredging			
AREA		Lab. No. 73/4609	
BORING NO. CB-CH91-5	SAMPLE NO. 1	EL -31.2/-36.2	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
1	-23.7/-25.7	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of mica.	–	–	–	–

Project CHARLOTTE HARBOR MAINTENANCE DREDGING

Lab No. 73/4610

Boring No. CB-CH91-6

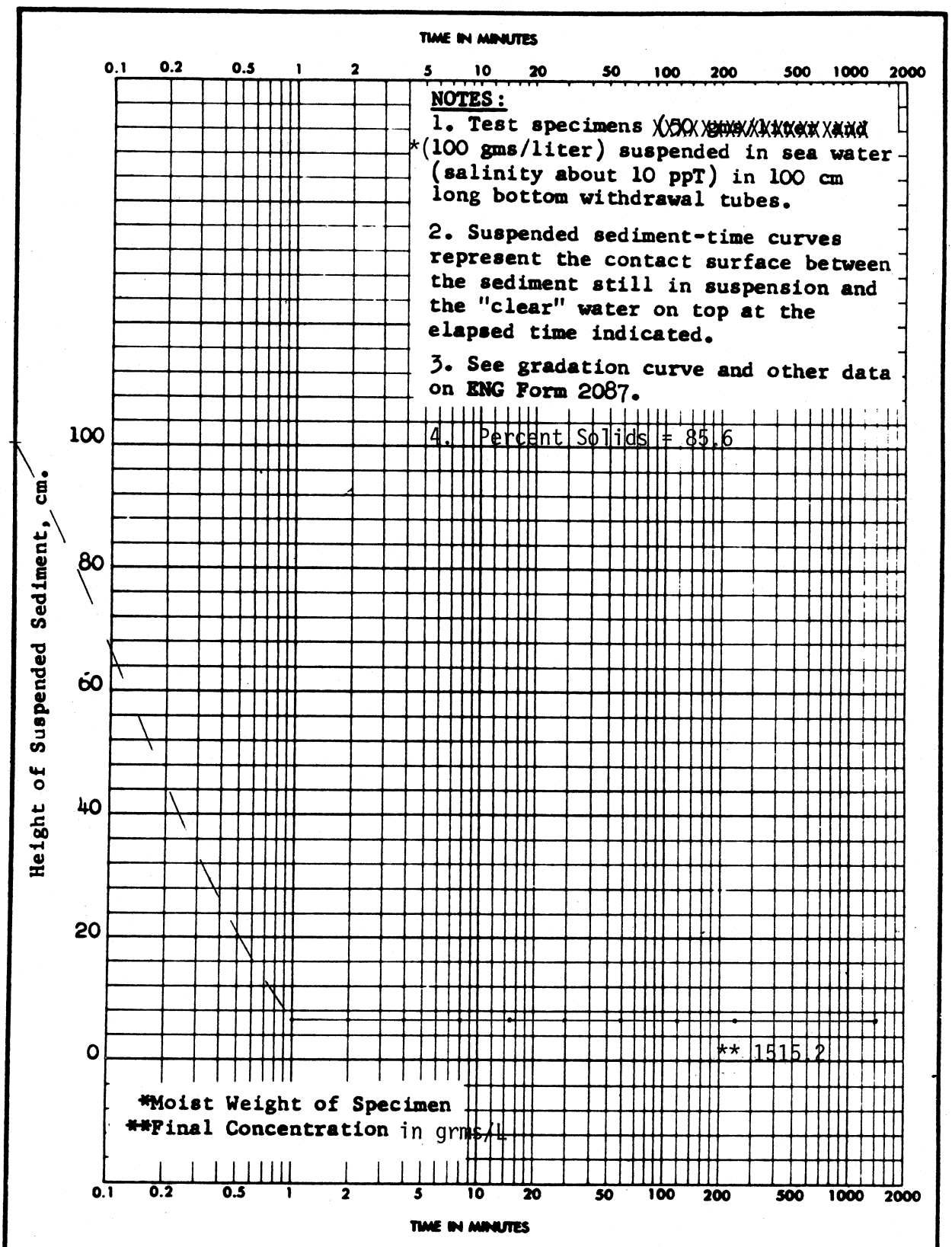
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No.RM-CW-91-0130
Work Order No. 6442



PROJECT Charlotte Harbor Maintenance Dredging

AREA

Lab. No. 73/4610

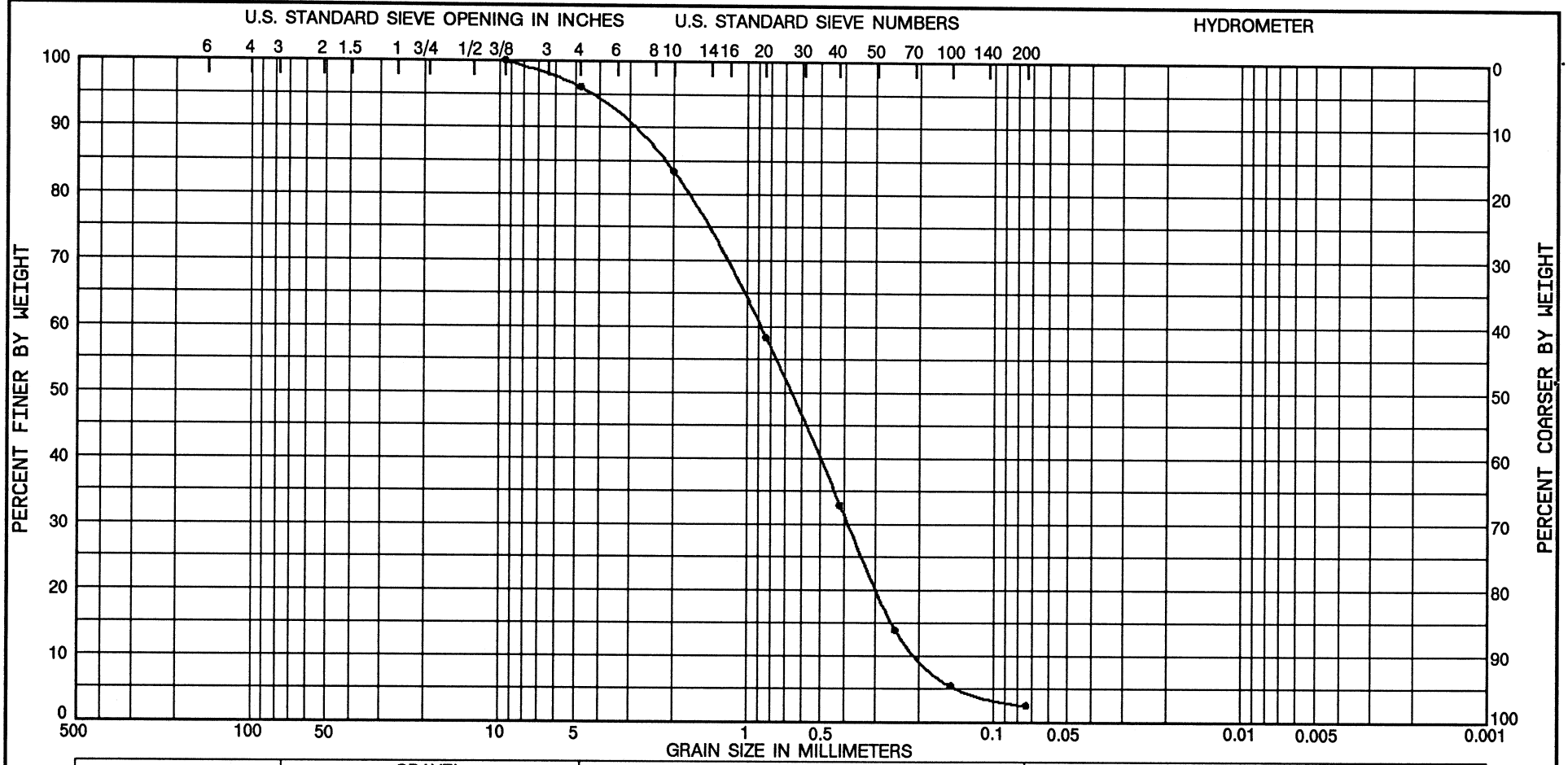
BORING NO. CB-CH91-6	SAMPLE NO. 1	~~DEPTH~~ EL -23.7/-25.7	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
2	-25.7/-28.7	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of mica.	--	--	--	--

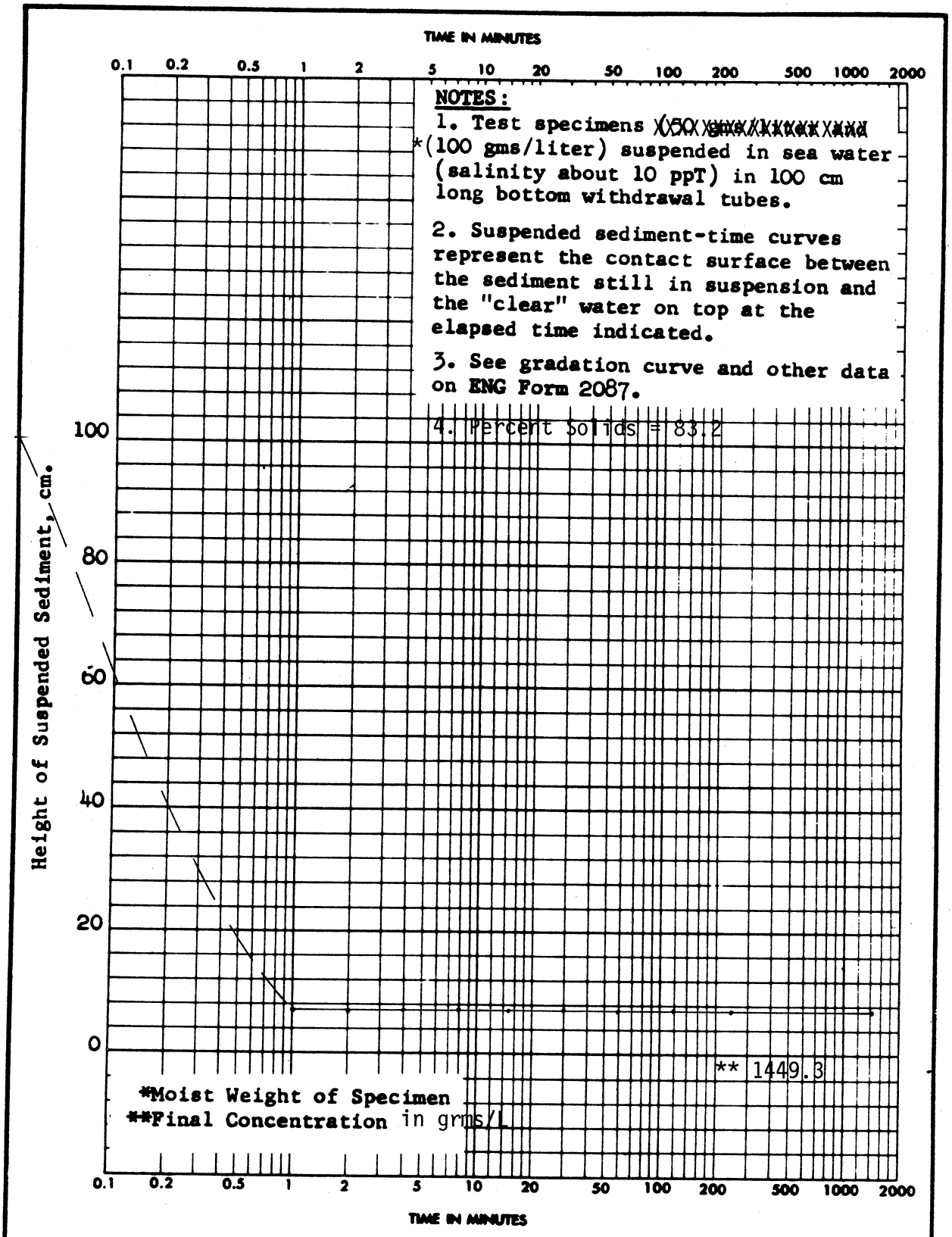
Project CHARLOTTE HARBOR MAINTENANCE DREDGING
Lab No. 73/4611
Boring No. CB-CH91-6
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



PROJECT Charlotte Harbor Maintenance Dredging

AREA

Lab. No. 73/4611

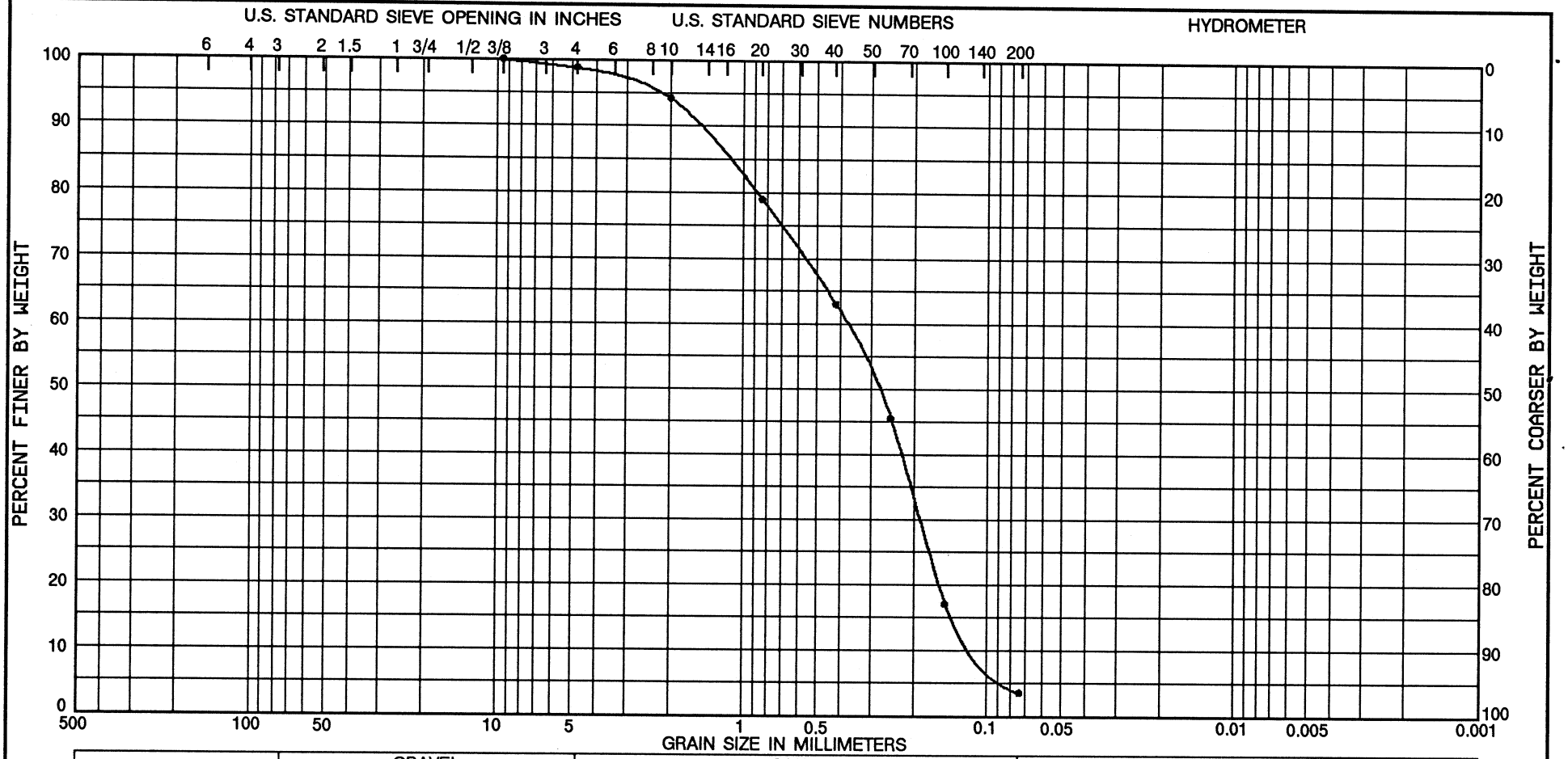
BORING NO.	SAMPLE NO.	EL	DATE
CB-CH91-6	2	-25.7/-28.7	26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6442
REQUISITION: RM_CW_91_0130



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth/Elev	Classification	Nat w%	LL	PL	PI
4	-33.7/-35.7	Tannish gray poorly graded sand (SP), shelly, sand & gravel sizes, with a trace of mica.	--	--	--	--

Project CHARLOTTE HARBOR MAINTENANCE DREDGING

Lab No. 73/4612

Boring No. CB-CH91-6

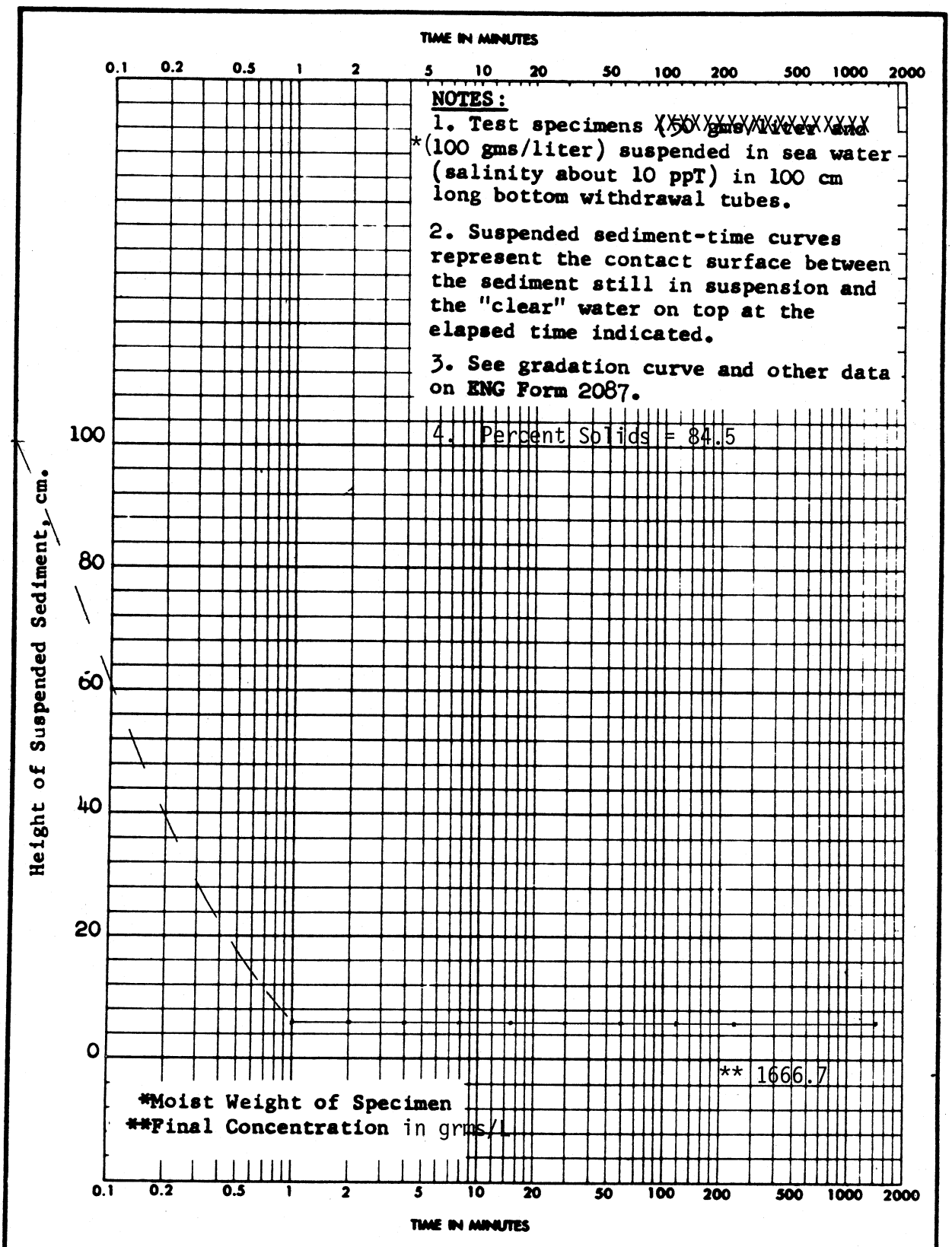
Date 07/24/91

GRADATION CURVES

See Sedimentation Rate Time Curve on SAD Form 3023.

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY,
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GEORGIA 30060

Reqn. No. RM-CW-91-0130
Work Order No. 6442



PROJECT Charlotte Harbor Maintenance Dredging

AREA

Lab. No. 73/4612

BORING NO. CB-CH91-6	SAMPLE NO. 4	EL -33.7/-35.7	DATE 26 July 1991

SUSPENDED SEDIMENT-TIME CURVES

SAD Form 3023
26 Oct 72

Hole No.CB-GIWW00-59

DRILLING LOG

DIVISION: South Atlantic

INSTALLATION: Jacksonville District

1. PROJECT: GIWW - Part #1
2. LOCATION (Coordinates or Station): X=418,826 Y=891,363
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. (As shown on drawing title and file number): CB-GIWW00-59
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 5.7 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 1 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 3/29/00 COMPLETED: 3/29/00
17. ELEVATION TOP OF HOLE: -10.6 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 55 %
19. SIGNATURE OF Civil Engineer: Brian Hathaway (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-10.6	.0					-10.6
			SAND, fine quartz, trace sand sized shell fragments, gray-brown (SM)	55	1	
-16.3	5.7					-16.3
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM. NOTE: Elevation is based on predicted tide tables. SAMPLE NO. 1 — SAMPLE DEPTH 0.0 - 5.7 — LAB CLASSIF.* SP-SM *Lab classification based on gradation curve with no Atterberg Limits.			Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

Hole No.CB-GIWW00-60

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: GIWW – Part #1
2. LOCATION (Coordinates or Station): X=417,855 Y=894,111
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. (As shown on drawing title and file number): CB-GIWW00-60
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 5.8 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 1 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 3/28/00 COMPLETED: 3/28/00
17. ELEVATION TOP OF HOLE: -11.0 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 58 %
19. SIGNATURE OF Civil Engineer: Brian Hathaway (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-11.0	.0					-11.0
			SAND, fine quartz, silty with trace fine sized shell fragments, gray (SM)	58	1	
-16.8	5.8					-16.8
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM. NOTE: Elevation is based on predicted tide tables.			Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW – Part #1 | HOLE NUMBER: CB-GIWW00-60

Hole No.CB-GIWW00-62

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: GIWW – Part #1
2. LOCATION *(Coordinates or Station)*: X=415,836 Y=899,578
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. *(As shown on drawing title and file number)*: CB-GIWW00-62
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 6.1 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 2 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 3/28/00 COMPLETED: 3/28/00
17. ELEVATION TOP OF HOLE: -11.0 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 59 %
19. SIGNATURE OF Civil Engineer: Brian Hathaway (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-11.0	.0					-11.0
			SILT, sandy, fine quartz sand, fine sand sized shell fragments, gray (ML)		1	
-13.2	2.2					
			SHELL SAND, fine sand to fine gravel sized shell fragments, silty, light tan (SP)	59	2	
-17.1	6.1					-17.1
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.
			NOTE: Elevation is based on predicted tide tables.			

SAMPLE NO.	SAMPLE DEPTH	LAB CLASSIF.*
1	0.0 - 2.2	SM

*Lab classification based on gradation curve with no Atterberg Limits.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW – Part #1 | HOLE NUMBER: CB-GIWW00-62

Hole No.CB-GIWW00-63

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: GIWW – Part #1
2. LOCATION *(Coordinates or Station)*: X=414,769 Y=902,291
3. DRILLING AGENCY: USAED Wilmington
4. HOLE NO. *(As shown on drawing title and file number)*: CB-GIWW00-63
5. NAME OF DRILLER: Snell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 0 Ft.
8. DEPTH DRILLED INTO ROCK: 0 Ft.
9. TOTAL DEPTH OF HOLE: 8.4 Ft.
10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLLW Horizontal Datum: FLW NAD 27
12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 2 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: Tidal
16. DATE HOLE STARTED: 3/28/00 COMPLETED: 3/28/00
17. ELEVATION TOP OF HOLE: -11.8 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 82 %
19. SIGNATURE OF Civil Engineer: Brian Hathaway (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-11.8	.0					-11.8
			SILT, sandy, fine quartz sand, trace sand sized shell fragments, gray (ML)		1	
-14.9	3.1					
			SHELL SAND, fine sand sized to gravel sized shell fragments, trace silt, brown (SP-SM)	82	2	
-20.2	8.4					-20.2
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.
			NOTE: Elevation is based on predicted tide tables.			

SAMPLE NO.	SAMPLE DEPTH	LAB CLASSIF.*
1	0.0 - 3.1	SM

*Lab classification based on gradation curve with no Atterberg Limits.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW – Part #1 | HOLE NUMBER: CB-GIWW00-63

Hole No.CB-GIWW00-64A

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: GIWW – Part #1	10. SIZE AND TYPE OF BIT: 4-inch Vibracore Tube
2. LOCATION *(Coordinates or Station)*: X=413,807 Y=905,038	11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*: MLLW Horizontal Datum: FLW NAD 27
3. DRILLING AGENCY: USAED Wilmington	12. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore
4. HOLE NO. *(As shown on drawing title and file number)*: CB-GIWW00-64A	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 2 undisturbed: 0
5. NAME OF DRILLER: Snell	14. TOTAL NUMBER OF CORE BOXES: 1
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED	15. ELEVATION GROUND WATER: Tidal
7. THICKNESS OF BURDEN: 0 Ft.	16. DATE HOLE STARTED: 3/28/00 COMPLETED: 3/28/00
8. DEPTH DRILLED INTO ROCK: 0 Ft.	17. ELEVATION TOP OF HOLE: -11.2 Ft.
9. TOTAL DEPTH OF HOLE: 5.6 Ft.	18. TOTAL CORE RECOVERY FOR BORING: 55 %
	19. SIGNATURE OF Civil Engineer: Andy Gibiser (LAW)

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS Vibracore
-11.2	.0					-11.2
			SAND, fine quartz, trace silt, dark gray (SP-SM)		1	
-12.7	1.5					
			SAND, fine quartz, little silt, dark gray (SM)	55	2	
-16.8	5.6					-16.8
			SOILS ARE FIELD VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOILS CLASSIFICATION SYSTEM.			Vibracore tubes split and logged by Law Engineering and Environmental Services, Inc., Jacksonville, Florida.
			NOTE: Elevation is based on predicted tide tables.			

SAMPLE NO.	SAMPLE DEPTH	LAB CLASSIF.*
1	0.0 - 1.5	SP-SM
2	1.5 - 5.6	SP-SM

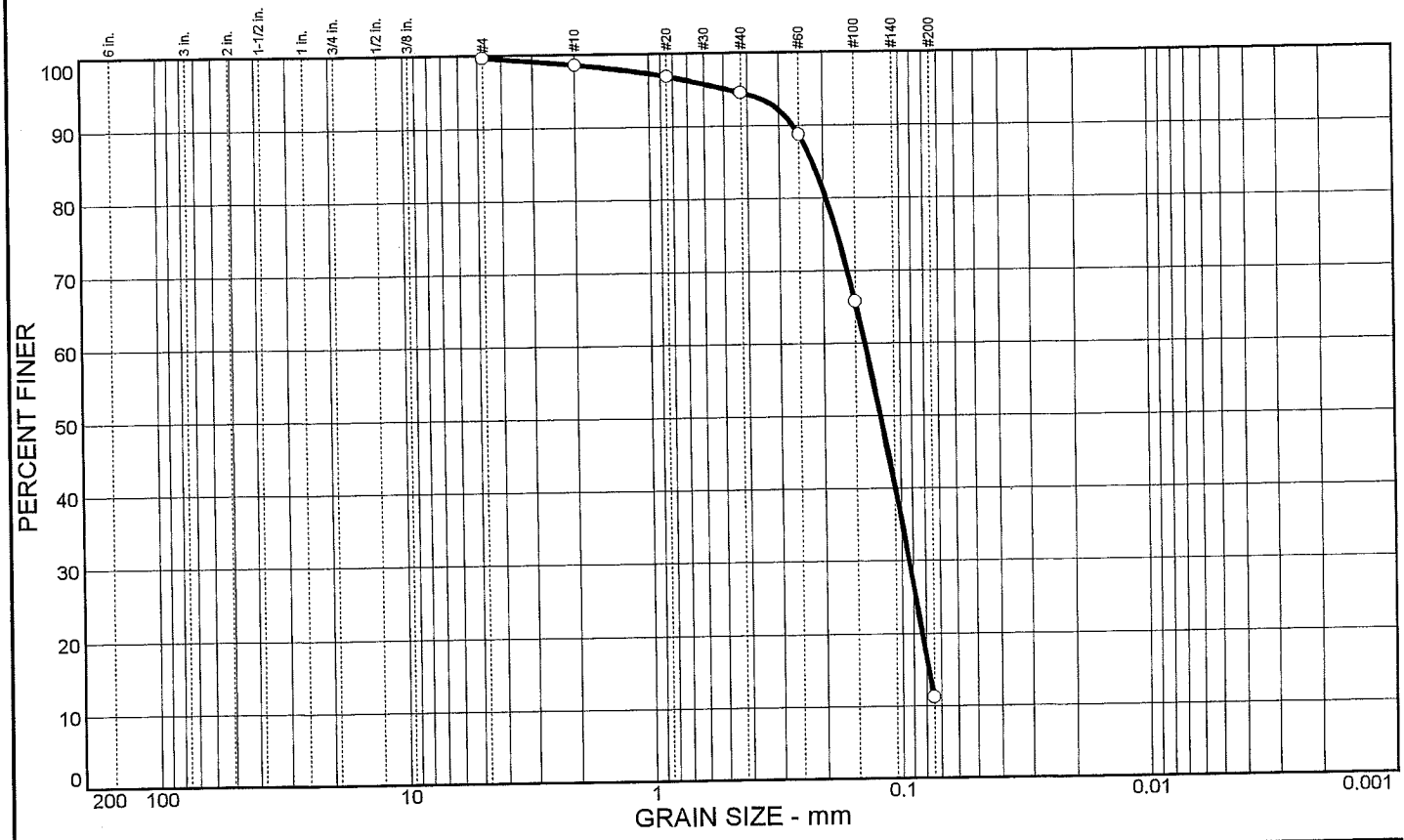
*Lab classification based on gradation curve with no Atterberg Limits.

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: GIWW – Part #1 | HOLE NUMBER: CB-GIWW00-64A

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			88.5	11.2		SP-SM	A-2-4(0)		

SIEVE inches size	PERCENT FINER ○

GRAIN SIZE	
D_{60}	0.137
D_{30}	0.0934
D_{10}	

COEFFICIENTS	
C_c	
C_u	

SIEVE number size	PERCENT FINER ○
#4	99.7
#10	98.6
#20	96.9
#40	94.5
#60	88.7
#100	65.8
#200	11.2

SOIL DESCRIPTION

○ SAND, fine quartz, little silt, trace sand sized shell fragments, gray-brown

REMARKS:

○

○ Source: CB-GIWWOO-59 Sample No.: 1 Elev./Depth: 0.0'-5.7'

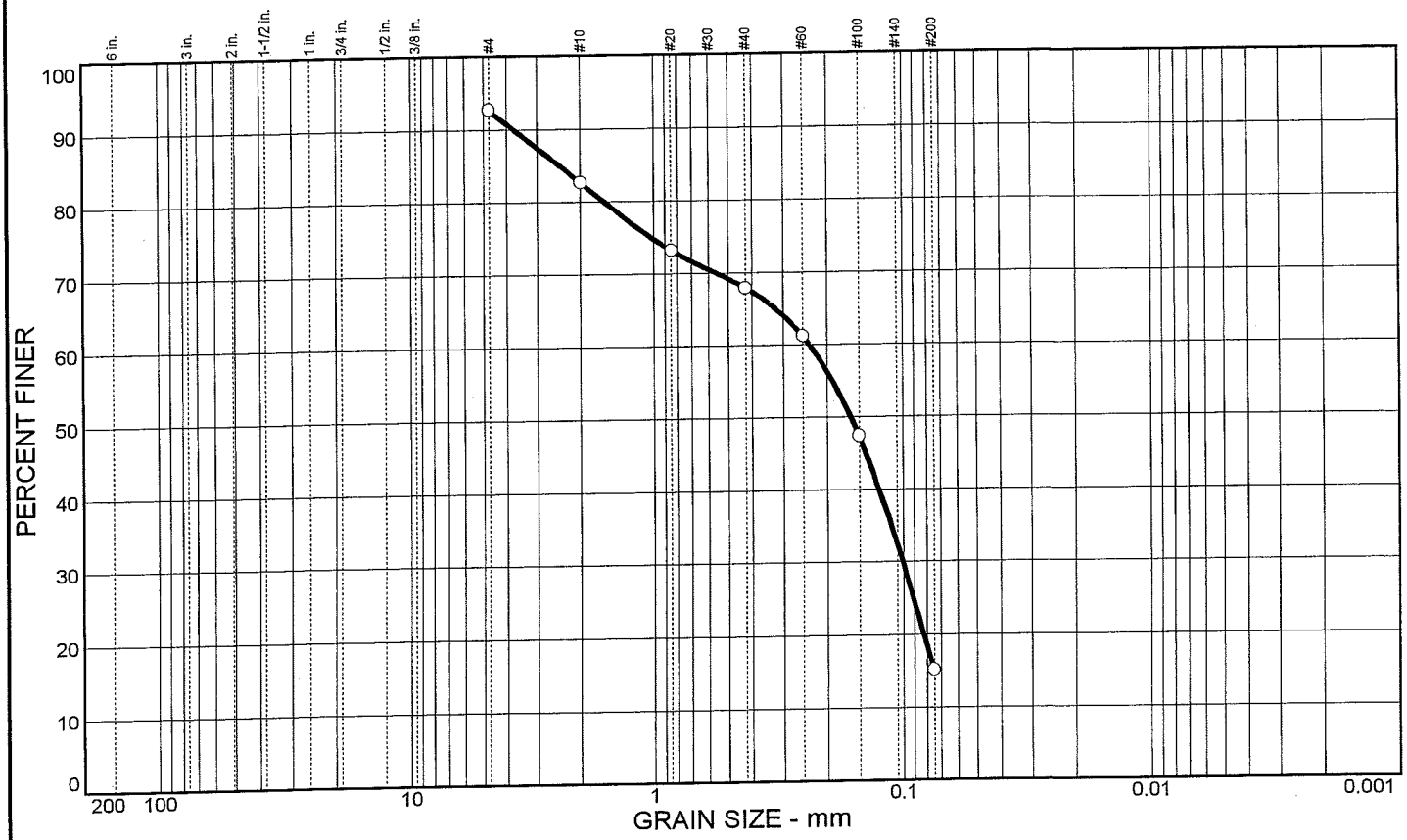
Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part 1

Project No.: 40521-8-8051-38

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			77.6	15.1		SM	A-2-4(0)		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.235		
D_{30}	0.101		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

○ Source: CB-GIWWOO-62

SIEVE number size	PERCENT FINER ○		
#4	92.7		
#10	82.7		
#20	73.2		
#40	67.9		
#60	61.2		
#100	47.4		
#200	15.1		

Sample No.: 1

SOIL DESCRIPTION

○ SAND, fine quartz, little sand sized shell fragments, little silt, gray

REMARKS:

○

Elev./Depth: 0.0'-2.2'

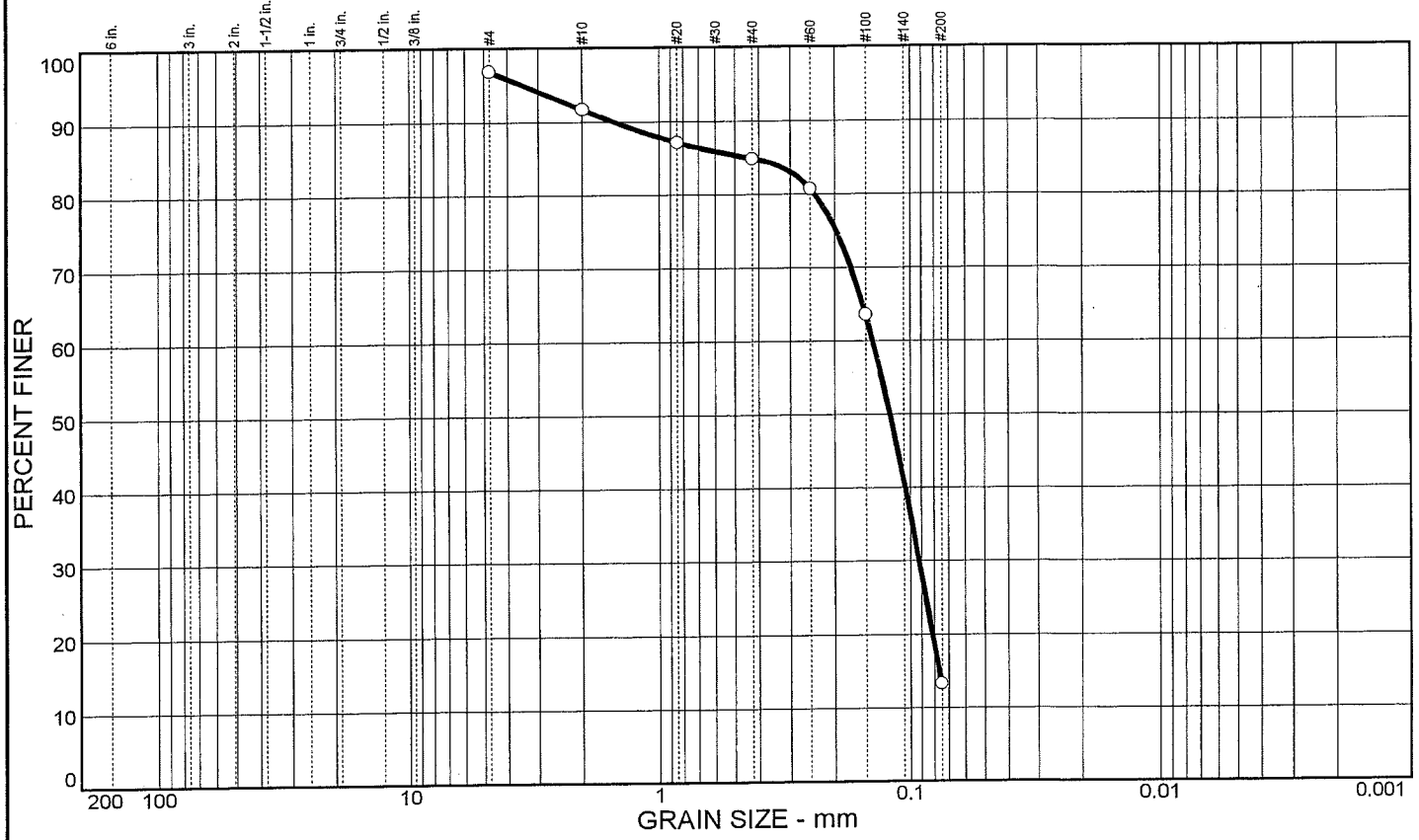
Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part 1

Project No.: 40521-8-8051-38

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			83.6	13.3		SM	A-2-4(0)		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.141		
D_{30}	0.0920		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○
#4	96.9
#10	91.7
#20	87.1
#40	84.8
#60	80.7
#100	63.6
#200	13.3

SOIL DESCRIPTION

○ SAND, fine quartz, trace fine gravel to sand sized shell fragments, little silt, gray

REMARKS:

○

○ Source: CB-GIWWOO-63 Sample No.: 1 Elev./Depth: 0.0'-3.1'

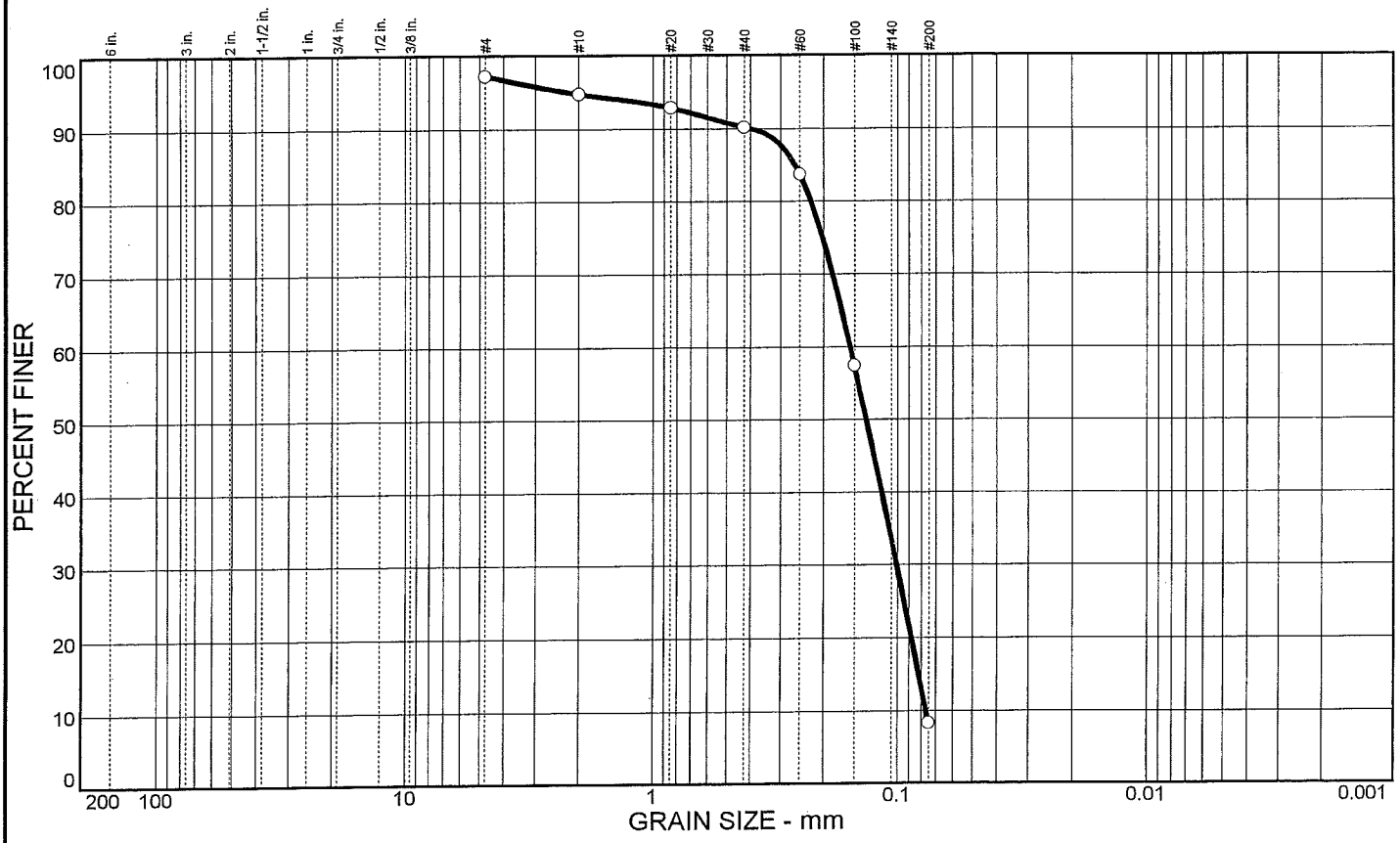
Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part 1

Project No.: 40521-8-8051-38

Grain Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			89.0	8.3		SP-SM	A-3		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.156		
D_{30}	0.101		
D_{10}	0.0767		
	COEFFICIENTS		
C_c	0.85		
C_u	2.03		

SIEVE number size	PERCENT FINER ○		
#4	97.3		
#10	94.8		
#20	92.9		
#40	90.2		
#60	83.7		
#100	57.5		
#200	8.3		

SOIL DESCRIPTION

○ SAND, fine quartz, trace silt, dark gray

REMARKS:

○

○ Source: CB-GIWWOO-64A Sample No.: 1 Elev./Depth: 0.0'-1.5'

Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part 1

Project No.: 40521-8-8051-38

Grain Size Distribution Report

	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			87.9	12.1		SP-SM	A-2-4(0)		

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.142		
D_{30}	0.0942		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○
#4	99.9
#10	99.0
#20	98.0
#40	95.8
#60	88.8
#100	63.7
#200	12.0

SOIL DESCRIPTION

○ SAND, fine quartz, little silt, dark gray

REMARKS:

○

○ Source: CB-GIWWOO-64A Sample No.: 2 Elev./Depth: 1.5'-5.6'

Law Engineering and Environmental Services, Inc.

Client: USACE, Jacksonville District

Project: GIWWOO Part 1

Project No.: 40521-8-8051-38

APPENDIX B – PART 4

LEE COUNTY GEOTECHNICAL DATA

US Army Corps of Engineers ® Jacksonville District	Lee County GIWW Miserable Mile Maintenance Dredging 2016	Dsn by: AMH Dwn by: AMH Ckd by: JW Dated: 13NOV15	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	PLATE NO. **B-1**

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-01 @ 0.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
649,721	790,873	State Plane, FLW (U.S. Ft.)	-9.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 13.09 #230 - 12.42		40.00	36.1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	5.67	5.67
3/8"	-3.25	9.50	4.33	10.00
#3.5	-2.50	5.60	6.03	16.03
#4	-2.25	4.75	1.36	17.39
#5	-2.00	4.00	1.57	18.96
#7	-1.50	2.80	2.32	21.28
#10	-1.00	2.00	2.67	23.95
#14	-0.50	1.40	2.53	26.48
#18	0.00	1.00	2.20	28.68
#25	0.50	0.71	2.00	30.68
#35	1.00	0.50	1.69	32.37
#45	1.50	0.36	2.25	34.62
#60	2.00	0.25	2.78	37.40
#80	2.50	0.18	3.73	41.13
#120	3.00	0.13	18.13	59.26
#170	3.50	0.09	24.19	83.45
#200	3.75	0.08	3.46	86.91
#230	4.00	0.06	0.67	87.58

SAND, silty, mostly fine-grained sand-sized quartz, some sand to gravel-sized shell, little silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.54	3.33	2.74	-0.79	-2.50	

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.97	0.51	2.74	0.15	2.34	-0.45	1.93

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-01 @ 0.501 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
649,721	790,873	State Plane, FLW (U.S. Ft.)	-9.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 0.83 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.08	0.08
#35	1.00	0.50	0.50	0.58
#45	1.50	0.36	2.65	3.23
#60	2.00	0.25	4.19	7.42
#80	2.50	0.18	7.09	14.51
#120	3.00	0.13	34.98	49.49
#170	3.50	0.09	43.67	93.16
#200	3.75	0.08	6.01	99.17
#230	4.00	0.06	0.83	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.58	3.40	3.29	3.01	2.65	2.52	1.71

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.90	0.13	3.01	0.12	0.54	-1.43	5.59

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-01 @ 1.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
649,721	790,873	State Plane, FLW (U.S. Ft.)	-10.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 21.47 #230 - 19.68			13.3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.52	0.52
#4	-2.25	4.75	0.00	0.52
#5	-2.00	4.00	0.36	0.88
#7	-1.50	2.80	0.50	1.38
#10	-1.00	2.00	1.14	2.52
#14	-0.50	1.40	2.10	4.62
#18	0.00	1.00	2.28	6.90
#25	0.50	0.71	2.19	9.09
#35	1.00	0.50	1.53	10.62
#45	1.50	0.36	2.05	12.67
#60	2.00	0.25	2.68	15.35
#80	2.50	0.18	3.91	19.26
#120	3.00	0.13	29.16	48.42
#170	3.50	0.09	25.09	73.51
#200	3.75	0.08	5.02	78.53
#230	4.00	0.06	1.79	80.32

SAND, silty, mostly fine-grained sand-sized quartz, little silt, little medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.57	3.03	2.60	2.08	-0.42

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.46	0.18	3.03	0.12	1.29	-1.95	6.32

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-01 @ 2.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
649,721	790,873	State Plane, FLW (U.S. Ft.)	-11.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 6/1	#200 - 14.53 #230 - 13.76			23.1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.46	0.46
#4	-2.25	4.75	0.57	1.03
#5	-2.00	4.00	0.46	1.49
#7	-1.50	2.80	1.07	2.56
#10	-1.00	2.00	1.98	4.54
#14	-0.50	1.40	3.35	7.89
#18	0.00	1.00	3.47	11.36
#25	0.50	0.71	3.23	14.59
#35	1.00	0.50	2.41	17.00
#45	1.50	0.36	4.00	21.00
#60	2.00	0.25	5.47	26.47
#80	2.50	0.18	8.61	35.08
#120	3.00	0.13	27.07	62.15
#170	3.50	0.09	20.12	82.27
#200	3.75	0.08	3.20	85.47
#230	4.00	0.06	0.77	86.24

SAND, silty, mostly fine-grained sand-sized quartz, little medium-grained sand-sized shell, little silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.64	3.32	2.78	1.87	0.79	-0.93

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.08	0.24	2.78	0.15	1.45	-1.38	4.02

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-02 @ 1 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
648,772	790,408	State Plane, FLW (U.S. Ft.)	-6.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10Y 5/1	#200 - 17.30 #230 - 14.56		7.00	7

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.22	0.22
#4	-2.25	4.75	0.00	0.22
#5	-2.00	4.00	0.36	0.58
#7	-1.50	2.80	0.23	0.81
#10	-1.00	2.00	0.46	1.27
#14	-0.50	1.40	0.82	2.09
#18	0.00	1.00	0.81	2.90
#25	0.50	0.71	0.88	3.78
#35	1.00	0.50	0.65	4.43
#45	1.50	0.36	0.68	5.11
#60	2.00	0.25	1.12	6.23
#80	2.50	0.18	2.71	8.94
#120	3.00	0.13	18.27	27.21
#170	3.50	0.09	45.65	72.86
#200	3.75	0.08	9.84	82.70
#230	4.00	0.06	2.74	85.44

SAND, silty, mostly fine-grained sand-sized quartz, little silt, few medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.87	3.55	3.25	2.94	2.69	1.42

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.94	0.13	3.25	0.11	0.94	-3.36	15.75

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-02 @ 1.001 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
648,772	790,408	State Plane, FLW (U.S. Ft.)	-6.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 3.18 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#25	0.50	0.71	0.00	0.00
#35	1.00	0.50	0.05	0.05
#45	1.50	0.36	0.29	0.34
#60	2.00	0.25	0.84	1.18
#80	2.50	0.18	2.83	4.01
#120	3.00	0.13	24.45	28.46
#170	3.50	0.09	56.55	85.01
#200	3.75	0.08	11.81	96.82
#230	4.00	0.06	3.18	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.71	3.49	3.41	3.19	2.93	2.75	2.52

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.14	0.11	3.19	0.11	0.38	-1.1	6.3

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-02 @ 3 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
648,772	790,408	State Plane, FLW (U.S. Ft.)	-8.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10Y 6/1	#200 - 32.35 #230 - 27.78			5.1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.06	0.06
#4	-2.25	4.75	0.00	0.06
#5	-2.00	4.00	0.09	0.15
#7	-1.50	2.80	0.18	0.33
#10	-1.00	2.00	0.19	0.52
#14	-0.50	1.40	0.37	0.89
#18	0.00	1.00	0.49	1.38
#25	0.50	0.71	0.48	1.86
#35	1.00	0.50	0.33	2.19
#45	1.50	0.36	0.22	2.41
#60	2.00	0.25	0.26	2.67
#80	2.50	0.18	1.21	3.88
#120	3.00	0.13	18.56	22.44
#170	3.50	0.09	35.70	58.14
#200	3.75	0.08	9.51	67.65
#230	4.00	0.06	4.57	72.22

SAND, silty, mostly fine-grained sand-sized quartz, some silt, few fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
			3.39	3.04	2.83	2.53

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.07	0.12	3.39	0.10	0.74	-3.86	22.51

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-02 @ 5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
648,772	790,408	State Plane, FLW (U.S. Ft.)	-10.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10Y 6/1	#200 - 27.79 #230 - 23.80			6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.31	0.31
#4	-2.25	4.75	0.09	0.40
#5	-2.00	4.00	0.06	0.46
#7	-1.50	2.80	0.29	0.75
#10	-1.00	2.00	0.44	1.19
#14	-0.50	1.40	0.70	1.89
#18	0.00	1.00	0.76	2.65
#25	0.50	0.71	0.65	3.30
#35	1.00	0.50	0.48	3.78
#45	1.50	0.36	0.41	4.19
#60	2.00	0.25	0.46	4.65
#80	2.50	0.18	1.44	6.09
#120	3.00	0.13	20.98	27.07
#170	3.50	0.09	36.22	63.29
#200	3.75	0.08	8.92	72.21
#230	4.00	0.06	3.99	76.20

SAND, silty, mostly fine-grained sand-sized quartz, some silt, few fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.92	3.32	2.95	2.74	2.12

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.96	0.13	3.32	0.10	0.94	-3.5	17.14

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-03 @ 0.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
647,686	789,708	State Plane, FLW (U.S. Ft.)	-8.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 11.16 #230 - 9.26		6.00	5.9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.37	0.37
#4	-2.25	4.75	0.00	0.37
#5	-2.00	4.00	0.00	0.37
#7	-1.50	2.80	0.13	0.50
#10	-1.00	2.00	0.27	0.77
#14	-0.50	1.40	0.45	1.22
#18	0.00	1.00	0.41	1.63
#25	0.50	0.71	0.49	2.12
#35	1.00	0.50	0.45	2.57
#45	1.50	0.36	0.48	3.05
#60	2.00	0.25	0.81	3.86
#80	2.50	0.18	1.89	5.75
#120	3.00	0.13	29.58	35.33
#170	3.50	0.09	45.66	80.99
#200	3.75	0.08	7.85	88.84
#230	4.00	0.06	1.90	90.74

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, few fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.60	3.43	3.16	2.83	2.67	2.30

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.98	0.13	3.16	0.11	0.74	-4.31	27.53

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-03 @ 0.501 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
647,686	789,708	State Plane, FLW (U.S. Ft.)	-8.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 2.05 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#14	-0.50	1.40	0.00	0.00
#18	0.00	1.00	0.01	0.01
#25	0.50	0.71	0.02	0.03
#35	1.00	0.50	0.02	0.05
#45	1.50	0.36	0.10	0.15
#60	2.00	0.25	0.31	0.46
#80	2.50	0.18	1.63	2.09
#120	3.00	0.13	33.30	35.39
#170	3.50	0.09	53.27	88.66
#200	3.75	0.08	9.29	97.95
#230	4.00	0.06	2.05	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.67	3.46	3.37	3.14	2.84	2.71	2.54

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.11	0.12	3.14	0.11	0.34	-0.68	6.22

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-03 @ 1 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
647,686	789,708	State Plane, FLW (U.S. Ft.)	-8.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 10.54 #230 - 9.26			6.9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.08	0.08
#5	-2.00	4.00	0.00	0.08
#7	-1.50	2.80	0.07	0.15
#10	-1.00	2.00	0.18	0.33
#14	-0.50	1.40	0.52	0.85
#18	0.00	1.00	0.61	1.46
#25	0.50	0.71	0.82	2.28
#35	1.00	0.50	0.78	3.06
#45	1.50	0.36	0.73	3.79
#60	2.00	0.25	0.94	4.73
#80	2.50	0.18	2.10	6.83
#120	3.00	0.13	42.17	49.00
#170	3.50	0.09	35.35	84.35
#200	3.75	0.08	5.11	89.46
#230	4.00	0.06	1.28	90.74

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, few fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.50	3.37	3.01	2.72	2.61	2.06

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.88	0.14	3.01	0.12	0.68	-3.35	18.14

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-03 @ 3 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
647,686	789,708	State Plane, FLW (U.S. Ft.)	-10.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 19.84 #230 - 17.63			7.8

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.56	0.56
#4	-2.25	4.75	0.23	0.79
#5	-2.00	4.00	0.15	0.94
#7	-1.50	2.80	0.35	1.29
#10	-1.00	2.00	0.63	1.92
#14	-0.50	1.40	0.88	2.80
#18	0.00	1.00	0.89	3.69
#25	0.50	0.71	0.84	4.53
#35	1.00	0.50	0.65	5.18
#45	1.50	0.36	0.71	5.89
#60	2.00	0.25	1.10	6.99
#80	2.50	0.18	2.66	9.65
#120	3.00	0.13	26.70	36.35
#170	3.50	0.09	36.96	73.31
#200	3.75	0.08	6.85	80.16
#230	4.00	0.06	2.21	82.37

SAND, silty, mostly fine-grained sand-sized quartz, little silt, few fine to medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.56	3.18	2.79	2.62	0.86

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.81	0.14	3.18	0.11	1.05	-3.21	14.24

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-04 @ 0.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
646,591	788,923	State Plane, FLW (U.S. Ft.)	-8.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 16.52 #230 - 13.76		3.00	1.3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.05	0.05
#4	-2.25	4.75	0.10	0.15
#5	-2.00	4.00	0.03	0.18
#7	-1.50	2.80	0.11	0.29
#10	-1.00	2.00	0.12	0.41
#14	-0.50	1.40	0.04	0.45
#18	0.00	1.00	0.12	0.57
#25	0.50	0.71	0.16	0.73
#35	1.00	0.50	0.10	0.83
#45	1.50	0.36	0.21	1.04
#60	2.00	0.25	0.78	1.82
#80	2.50	0.18	2.61	4.43
#120	3.00	0.13	22.25	26.68
#170	3.50	0.09	46.77	73.45
#200	3.75	0.08	10.03	83.48
#230	4.00	0.06	2.76	86.24

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.80	3.54	3.25	2.96	2.76	2.51

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.10	0.12	3.25	0.11	0.55	-4.65	39.95

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-04 @ 0.501 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
646,591	788,923	State Plane, FLW (U.S. Ft.)	-8.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	2.5Y 4/1	#200 - 2.95 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.04	0.04
#35	1.00	0.50	0.02	0.06
#45	1.50	0.36	0.19	0.25
#60	2.00	0.25	0.66	0.91
#80	2.50	0.18	2.70	3.61
#120	3.00	0.13	25.95	29.56
#170	3.50	0.09	55.75	85.31
#200	3.75	0.08	11.74	97.05
#230	4.00	0.06	2.95	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.71	3.49	3.41	3.18	2.91	2.74	2.53

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.14	0.11	3.18	0.11	0.37	-1.04	6.65

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-04 @ 1.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
646,591	788,923	State Plane, FLW (U.S. Ft.)	-9.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10YR 7/1	#200 - 27.09 #230 - 24.40			1.6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.11	0.11
#4	-2.25	4.75	0.00	0.11
#5	-2.00	4.00	0.00	0.11
#7	-1.50	2.80	0.04	0.15
#10	-1.00	2.00	0.00	0.15
#14	-0.50	1.40	0.01	0.16
#18	0.00	1.00	0.03	0.19
#25	0.50	0.71	0.05	0.24
#35	1.00	0.50	0.06	0.30
#45	1.50	0.36	0.11	0.41
#60	2.00	0.25	0.35	0.76
#80	2.50	0.18	1.74	2.50
#120	3.00	0.13	19.34	21.84
#170	3.50	0.09	42.43	64.27
#200	3.75	0.08	8.64	72.91
#230	4.00	0.06	2.69	75.60

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.94	3.33	3.04	2.85	2.56

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.14	0.11	3.33	0.10	0.45	-4.84	57.2

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-04 @ 2.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
646,591	788,923	State Plane, FLW (U.S. Ft.)	-10.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 10.94 #230 - 8.91			0.5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#7	-1.50	2.80	0.00	0.00
#10	-1.00	2.00	0.01	0.01
#14	-0.50	1.40	0.05	0.06
#18	0.00	1.00	0.10	0.16
#25	0.50	0.71	0.09	0.25
#35	1.00	0.50	0.11	0.36
#45	1.50	0.36	0.33	0.69
#60	2.00	0.25	0.99	1.68
#80	2.50	0.18	3.13	4.81
#120	3.00	0.13	35.17	39.98
#170	3.50	0.09	41.26	81.24
#200	3.75	0.08	7.82	89.06
#230	4.00	0.06	2.03	91.09

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.59	3.42	3.12	2.79	2.66	2.50

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.03	0.12	3.12	0.12	0.43	-1.84	13.93

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-05 @ 0.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
645,545	788,297	State Plane, FLW (U.S. Ft.)	-8.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 10.88 #230 - 9.42		15.00	14.5

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	2.72	2.72
#4	-2.25	4.75	0.52	3.24
#5	-2.00	4.00	0.62	3.86
#7	-1.50	2.80	1.49	5.35
#10	-1.00	2.00	1.43	6.78
#14	-0.50	1.40	1.65	8.43
#18	0.00	1.00	1.19	9.62
#25	0.50	0.71	0.91	10.53
#35	1.00	0.50	0.75	11.28
#45	1.50	0.36	1.36	12.64
#60	2.00	0.25	2.75	15.39
#80	2.50	0.18	5.32	20.71
#120	3.00	0.13	28.95	49.66
#170	3.50	0.09	33.51	83.17
#200	3.75	0.08	5.95	89.12
#230	4.00	0.06	1.46	90.58

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.53	3.38	3.01	2.57	2.06	-1.62

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.41	0.19	3.01	0.12	1.55	-2.21	6.93

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-05 @ 0.501 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
645,545	788,297	State Plane, FLW (U.S. Ft.)	-8.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 1.75 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.02	0.02
#35	1.00	0.50	0.18	0.20
#45	1.50	0.36	1.17	1.37
#60	2.00	0.25	2.69	4.06
#80	2.50	0.18	6.94	11.00
#120	3.00	0.13	36.40	47.40
#170	3.50	0.09	43.34	90.74
#200	3.75	0.08	7.51	98.25
#230	4.00	0.06	1.75	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.64	3.42	3.32	3.03	2.69	2.57	2.07

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.97	0.13	3.03	0.12	0.47	-1.15	5.49

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-05 @ 1.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
645,545	788,297	State Plane, FLW (U.S. Ft.)	-9.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 12.06 #230 - 8.30			0.6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.04	0.04
#7	-1.50	2.80	0.06	0.10
#10	-1.00	2.00	0.10	0.20
#14	-0.50	1.40	0.06	0.26
#18	0.00	1.00	0.05	0.31
#25	0.50	0.71	0.06	0.37
#35	1.00	0.50	0.07	0.44
#45	1.50	0.36	0.11	0.55
#60	2.00	0.25	0.33	0.88
#80	2.50	0.18	2.57	3.45
#120	3.00	0.13	36.77	40.22
#170	3.50	0.09	39.82	80.04
#200	3.75	0.08	7.90	87.94
#230	4.00	0.06	3.76	91.70

SAND, silty, mostly fine-grained sand-sized quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.63	3.44	3.12	2.79	2.67	2.52

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.05	0.12	3.12	0.12	0.46	-3.11	31.2

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-05 @ 2.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
645,545	788,297	State Plane, FLW (U.S. Ft.)	-10.5 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 12.06 #230 - 8.98			0.3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.04	0.04
#10	-1.00	2.00	0.03	0.07
#14	-0.50	1.40	0.06	0.13
#18	0.00	1.00	0.03	0.16
#25	0.50	0.71	0.04	0.20
#35	1.00	0.50	0.11	0.31
#45	1.50	0.36	0.44	0.75
#60	2.00	0.25	1.52	2.27
#80	2.50	0.18	5.62	7.89
#120	3.00	0.13	43.18	51.07
#170	3.50	0.09	30.19	81.26
#200	3.75	0.08	6.68	87.94
#230	4.00	0.06	3.08	91.02

SAND, silty, mostly fine-grained sand-sized quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.60	3.40	2.99	2.70	2.59	2.24

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.95	0.13	2.99	0.13	0.47	-1.56	14.13

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-06 @ 1 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,826	787,837	State Plane, FLW (U.S. Ft.)	-7.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 10.57 #230 - 8.67		3.90	3

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.61	0.61
#4	-2.25	4.75	0.09	0.70
#5	-2.00	4.00	0.00	0.70
#7	-1.50	2.80	0.14	0.84
#10	-1.00	2.00	0.05	0.89
#14	-0.50	1.40	0.13	1.02
#18	0.00	1.00	0.12	1.14
#25	0.50	0.71	0.16	1.30
#35	1.00	0.50	0.20	1.50
#45	1.50	0.36	0.80	2.30
#60	2.00	0.25	2.90	5.20
#80	2.50	0.18	6.79	11.99
#120	3.00	0.13	32.03	44.02
#170	3.50	0.09	38.31	82.33
#200	3.75	0.08	7.10	89.43
#230	4.00	0.06	1.90	91.33

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.56	3.40	3.08	2.70	2.56	1.97

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.90	0.13	3.08	0.12	0.75	-4.32	30.66

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-06 @ 1.001 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,826	787,837	State Plane, FLW (U.S. Ft.)	-7.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 2.08 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.01	0.01
#35	1.00	0.50	0.10	0.11
#45	1.50	0.36	0.73	0.84
#60	2.00	0.25	2.98	3.82
#80	2.50	0.18	7.27	11.09
#120	3.00	0.13	37.88	48.97
#170	3.50	0.09	41.18	90.15
#200	3.75	0.08	7.77	97.92
#230	4.00	0.06	2.08	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.66	3.43	3.32	3.01	2.68	2.56	2.08

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.97	0.13	3.01	0.12	0.46	-0.91	4.75

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-06 @ 2 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,826	787,837	State Plane, FLW (U.S. Ft.)	-8.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 25.98 #230 - 22.94			1.1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.16	0.16
#10	-1.00	2.00	0.18	0.34
#14	-0.50	1.40	0.15	0.49
#18	0.00	1.00	0.14	0.63
#25	0.50	0.71	0.12	0.75
#35	1.00	0.50	0.22	0.97
#45	1.50	0.36	0.83	1.80
#60	2.00	0.25	2.11	3.91
#80	2.50	0.18	4.95	8.86
#120	3.00	0.13	25.80	34.66
#170	3.50	0.09	32.05	66.71
#200	3.75	0.08	7.31	74.02
#230	4.00	0.06	3.04	77.06

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.83	3.24	2.81	2.64	2.11

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.97	0.13	3.24	0.11	0.62	-2.84	18.11

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-06 @ 4 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,826	787,837	State Plane, FLW (U.S. Ft.)	-10.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 16.38 #230 - 13.87			6.8

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.19	1.19
#3.5	-2.50	5.60	0.55	1.74
#4	-2.25	4.75	0.11	1.85
#5	-2.00	4.00	0.30	2.15
#7	-1.50	2.80	0.44	2.59
#10	-1.00	2.00	0.46	3.05
#14	-0.50	1.40	0.69	3.74
#18	0.00	1.00	0.58	4.32
#25	0.50	0.71	0.59	4.91
#35	1.00	0.50	0.60	5.51
#45	1.50	0.36	1.36	6.87
#60	2.00	0.25	2.99	9.86
#80	2.50	0.18	5.85	15.71
#120	3.00	0.13	34.33	50.04
#170	3.50	0.09	27.70	77.74
#200	3.75	0.08	5.88	83.62
#230	4.00	0.06	2.51	86.13

SAND, silty, mostly fine-grained sand-sized quartz, little silt, few medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.79	3.45	3.00	2.64	2.50	0.57

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.64	0.16	3.00	0.13	1.25	-3.29	15

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-07 @ 1 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,436	787,599	State Plane, FLW (U.S. Ft.)	-7.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 19.91 #230 - 16.71		3.00	2.9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.11	0.11
#10	-1.00	2.00	0.07	0.18
#14	-0.50	1.40	0.07	0.25
#18	0.00	1.00	0.13	0.38
#25	0.50	0.71	0.13	0.51
#35	1.00	0.50	0.21	0.72
#45	1.50	0.36	0.61	1.33
#60	2.00	0.25	1.82	3.15
#80	2.50	0.18	4.67	7.82
#120	3.00	0.13	25.36	33.18
#170	3.50	0.09	37.96	71.14
#200	3.75	0.08	8.95	80.09
#230	4.00	0.06	3.20	83.29

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.61	3.22	2.84	2.66	2.20

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.03	0.12	3.22	0.11	0.55	-2.64	18.08

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-07 @ 1.001 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,436	787,599	State Plane, FLW (U.S. Ft.)	-7.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 3.81 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#14	-0.50	1.40	0.00	0.00
#18	0.00	1.00	0.03	0.03
#25	0.50	0.71	0.01	0.04
#35	1.00	0.50	0.12	0.16
#45	1.50	0.36	0.60	0.76
#60	2.00	0.25	1.94	2.70
#80	2.50	0.18	5.50	8.20
#120	3.00	0.13	30.87	39.07
#170	3.50	0.09	46.81	85.88
#200	3.75	0.08	10.31	96.19
#230	4.00	0.06	3.81	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.72	3.48	3.38	3.12	2.77	2.63	2.21

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	3.06	0.12	3.12	0.12	0.45	-1.1	6.02

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-07 @ 2 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,436	787,599	State Plane, FLW (U.S. Ft.)	-8.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 24.57 #230 - 22.37			2.4

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.26	0.26
#4	-2.25	4.75	0.00	0.26
#5	-2.00	4.00	0.06	0.32
#7	-1.50	2.80	0.07	0.39
#10	-1.00	2.00	0.15	0.54
#14	-0.50	1.40	0.21	0.75
#18	0.00	1.00	0.21	0.96
#25	0.50	0.71	0.25	1.21
#35	1.00	0.50	0.29	1.50
#45	1.50	0.36	1.13	2.63
#60	2.00	0.25	3.48	6.11
#80	2.50	0.18	7.01	13.12
#120	3.00	0.13	28.16	41.28
#170	3.50	0.09	27.99	69.27
#200	3.75	0.08	6.16	75.43
#230	4.00	0.06	2.20	77.63

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.73	3.16	2.71	2.55	1.84

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.85	0.14	3.16	0.11	0.74	-3.24	21.06

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-07 @ 4 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
644,436	787,599	State Plane, FLW (U.S. Ft.)	-10.1 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 4/1	#200 - 16.03 #230 - 13.75			2.8

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.19	0.19
#3.5	-2.50	5.60	0.09	0.28
#4	-2.25	4.75	0.24	0.52
#5	-2.00	4.00	0.01	0.53
#7	-1.50	2.80	0.17	0.70
#10	-1.00	2.00	0.21	0.91
#14	-0.50	1.40	0.33	1.24
#18	0.00	1.00	0.33	1.57
#25	0.50	0.71	0.33	1.90
#35	1.00	0.50	0.43	2.33
#45	1.50	0.36	1.59	3.92
#60	2.00	0.25	3.49	7.41
#80	2.50	0.18	6.45	13.86
#120	3.00	0.13	37.91	51.77
#170	3.50	0.09	26.75	78.52
#200	3.75	0.08	5.45	83.97
#230	4.00	0.06	2.28	86.25

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.75	3.43	2.98	2.65	2.53	1.65

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.79	0.14	2.98	0.13	0.82	-3.59	22.69

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-08 @ 1 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
643,598	787,083	State Plane, FLW (U.S. Ft.)	-7.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10Y 5/1	#200 - 19.06 #230 - 17.29		11.00	9.1

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	2.23	2.23
#3.5	-2.50	5.60	1.28	3.51
#4	-2.25	4.75	0.20	3.71
#5	-2.00	4.00	0.30	4.01
#7	-1.50	2.80	0.41	4.42
#10	-1.00	2.00	0.49	4.91
#14	-0.50	1.40	0.50	5.41
#18	0.00	1.00	0.47	5.88
#25	0.50	0.71	0.46	6.34
#35	1.00	0.50	0.56	6.90
#45	1.50	0.36	1.86	8.76
#60	2.00	0.25	4.66	13.42
#80	2.50	0.18	7.78	21.20
#120	3.00	0.13	24.65	45.85
#170	3.50	0.09	29.05	74.90
#200	3.75	0.08	6.04	80.94
#230	4.00	0.06	1.77	82.71

SAND, silty, mostly fine-grained sand-sized quartz, little silt, few fine to coarse-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.50	3.07	2.58	2.17	-0.91

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.47	0.18	3.07	0.12	1.54	-2.8	10.6

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-08 @ 1.001 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
643,598	787,083	State Plane, FLW (U.S. Ft.)	-7.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 2.14 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#25	0.50	0.71	0.00	0.00
#35	1.00	0.50	0.26	0.26
#45	1.50	0.36	1.95	2.21
#60	2.00	0.25	5.60	7.81
#80	2.50	0.18	10.09	17.90
#120	3.00	0.13	33.18	51.08
#170	3.50	0.09	38.83	89.91
#200	3.75	0.08	7.95	97.86
#230	4.00	0.06	2.14	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.66	3.42	3.31	2.98	2.61	2.41	1.75

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.90	0.13	2.98	0.13	0.55	-0.97	4.04

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-08 @ 2 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
643,598	787,083	State Plane, FLW (U.S. Ft.)	-8.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10Y 5/1	#200 - 16.27 #230 - 14.73			4.7

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.34	0.34
#4	-2.25	4.75	0.10	0.44
#5	-2.00	4.00	0.25	0.69
#7	-1.50	2.80	0.47	1.16
#10	-1.00	2.00	0.59	1.75
#14	-0.50	1.40	0.69	2.44
#18	0.00	1.00	0.61	3.05
#25	0.50	0.71	0.50	3.55
#35	1.00	0.50	0.61	4.16
#45	1.50	0.36	2.70	6.86
#60	2.00	0.25	5.75	12.61
#80	2.50	0.18	10.03	22.64
#120	3.00	0.13	34.99	57.63
#170	3.50	0.09	21.92	79.55
#200	3.75	0.08	4.18	83.73
#230	4.00	0.06	1.54	85.27

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.79	3.40	2.89	2.53	2.17	1.16

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.59	0.17	2.89	0.13	0.97	-2.71	12.56

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-08 @ 4 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
643,598	787,083	State Plane, FLW (U.S. Ft.)	-10.0 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	10Y 5/1	#200 - 19.33 #230 - 16.57			6.7

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.74	0.74
#3.5	-2.50	5.60	0.05	0.79
#4	-2.25	4.75	0.06	0.85
#5	-2.00	4.00	0.17	1.02
#7	-1.50	2.80	0.57	1.59
#10	-1.00	2.00	0.89	2.48
#14	-0.50	1.40	1.12	3.60
#18	0.00	1.00	1.00	4.60
#25	0.50	0.71	0.96	5.56
#35	1.00	0.50	0.79	6.35
#45	1.50	0.36	1.81	8.16
#60	2.00	0.25	3.67	11.83
#80	2.50	0.18	6.82	18.65
#120	3.00	0.13	27.24	45.89
#170	3.50	0.09	28.88	74.77
#200	3.75	0.08	5.90	80.67
#230	4.00	0.06	2.76	83.43

SAND, silty, mostly fine-grained sand-sized quartz, little silt, few medium-grained sand-sized shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.51	3.07	2.62	2.31	0.21

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.63	0.16	3.07	0.12	1.2	-2.79	12.16

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-09 @ 1 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
642,791	786,603	State Plane, FLW (U.S. Ft.)	-7.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 5/1	#200 - 10.66 #230 - 9.57		3.00	3.9

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.30	0.30
#4	-2.25	4.75	0.08	0.38
#5	-2.00	4.00	0.00	0.38
#7	-1.50	2.80	0.07	0.45
#10	-1.00	2.00	0.08	0.53
#14	-0.50	1.40	0.06	0.59
#18	0.00	1.00	0.14	0.73
#25	0.50	0.71	0.30	1.03
#35	1.00	0.50	0.22	1.25
#45	1.50	0.36	1.06	2.31
#60	2.00	0.25	3.21	5.52
#80	2.50	0.18	8.30	13.82
#120	3.00	0.13	39.12	52.94
#170	3.50	0.09	31.10	84.04
#200	3.75	0.08	5.30	89.34
#230	4.00	0.06	1.09	90.43

SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.50	3.35	2.96	2.64	2.53	1.92

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.84	0.14	2.96	0.13	0.66	-3.78	28.71

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-09 @ 1.001 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
642,791	786,603	State Plane, FLW (U.S. Ft.)	-7.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 1.08 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.01	0.01
#35	1.00	0.50	0.15	0.16
#45	1.50	0.36	0.95	1.11
#60	2.00	0.25	3.42	4.53
#80	2.50	0.18	9.60	14.13
#120	3.00	0.13	44.65	58.78
#170	3.50	0.09	34.30	93.08
#200	3.75	0.08	5.84	98.92
#230	4.00	0.06	1.08	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.58	3.37	3.24	2.90	2.62	2.52	2.02

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.89	0.13	2.90	0.13	0.46	-0.85	4.68

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-09 @ 2 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
642,791	786,603	State Plane, FLW (U.S. Ft.)	-8.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 5/1	#200 - 23.84 #230 - 22.71			3.6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.12	0.12
#3.5	-2.50	5.60	0.00	0.12
#4	-2.25	4.75	0.00	0.12
#5	-2.00	4.00	0.00	0.12
#7	-1.50	2.80	0.06	0.18
#10	-1.00	2.00	0.26	0.44
#14	-0.50	1.40	0.19	0.63
#18	0.00	1.00	0.27	0.90
#25	0.50	0.71	0.45	1.35
#35	1.00	0.50	0.33	1.68
#45	1.50	0.36	1.13	2.81
#60	2.00	0.25	3.39	6.20
#80	2.50	0.18	8.39	14.59
#120	3.00	0.13	33.47	48.06
#170	3.50	0.09	22.89	70.95
#200	3.75	0.08	5.21	76.16
#230	4.00	0.06	1.13	77.29

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.69	3.04	2.66	2.52	1.82

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.78	0.15	3.04	0.12	0.71	-3.12	21.25

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-09 @ 4 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
642,791	786,603	State Plane, FLW (U.S. Ft.)	-10.6 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	5Y 5/1	#200 - 12.96 #230 - 11.51			1.6

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.12	0.12
#10	-1.00	2.00	0.04	0.16
#14	-0.50	1.40	0.05	0.21
#18	0.00	1.00	0.08	0.29
#25	0.50	0.71	0.32	0.61
#35	1.00	0.50	0.13	0.74
#45	1.50	0.36	0.63	1.37
#60	2.00	0.25	2.49	3.86
#80	2.50	0.18	7.21	11.07
#120	3.00	0.13	42.14	53.21
#170	3.50	0.09	28.41	81.62
#200	3.75	0.08	5.42	87.04
#230	4.00	0.06	1.45	88.49

SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.61	3.38	2.96	2.67	2.56	2.08

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.88	0.14	2.96	0.13	0.52	-2.33	17.17

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-10 @ 0.5 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
639,628	784,890	State Plane, FLW (U.S. Ft.)	-6.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10Y 6/1	#200 - 4.47 #230 - 4.35		27.00	27.7

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.26	0.26
#3.5	-2.50	5.60	2.65	2.91
#4	-2.25	4.75	1.39	4.30
#5	-2.00	4.00	1.11	5.41
#7	-1.50	2.80	2.32	7.73
#10	-1.00	2.00	3.06	10.79
#14	-0.50	1.40	3.51	14.30
#18	0.00	1.00	3.31	17.61
#25	0.50	0.71	3.17	20.78
#35	1.00	0.50	2.61	23.39
#45	1.50	0.36	5.48	28.87
#60	2.00	0.25	8.80	37.67
#80	2.50	0.18	15.75	53.42
#120	3.00	0.13	29.00	82.42
#170	3.50	0.09	12.06	94.48
#200	3.75	0.08	1.05	95.53
#230	4.00	0.06	0.12	95.65

SAND, poorly-graded, mostly fine-grained sand-sized quartz, some fine to coarse-grained sand-sized shell, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.62	3.07	2.87	2.39	1.15	-0.24	-2.09

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	1.65	0.32	2.39	0.19	1.68	-1.29	3.62

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-10 @ 0.501 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
639,628	784,890	State Plane, FLW (U.S. Ft.)	-6.3 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
SP	10YR 7/1	#200 - 0.14 #230 - 0.00			

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
#18	0.00	1.00	0.00	0.00
#25	0.50	0.71	0.09	0.09
#35	1.00	0.50	0.93	1.02
#45	1.50	0.36	5.64	6.66
#60	2.00	0.25	12.10	18.76
#80	2.50	0.18	21.65	40.41
#120	3.00	0.13	41.77	82.18
#170	3.50	0.09	16.26	98.44
#200	3.75	0.08	1.42	99.86
#230	4.00	0.06	0.14	100.00

SAND, poorly-graded, mostly fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	3.06	2.91	2.61	2.14	1.89	1.35

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	2.51	0.18	2.61	0.16	0.58	-0.69	3.22

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-10 @ 2 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
639,628	784,890	State Plane, FLW (U.S. Ft.)	-7.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 26.45 #230 - 25.92			49.4

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	1.33	1.33
#3.5	-2.50	5.60	3.02	4.35
#4	-2.25	4.75	1.43	5.78
#5	-2.00	4.00	2.20	7.98
#7	-1.50	2.80	4.51	12.49
#10	-1.00	2.00	4.20	16.69
#14	-0.50	1.40	5.58	22.27
#18	0.00	1.00	5.38	27.65
#25	0.50	0.71	5.45	33.10
#35	1.00	0.50	3.82	36.92
#45	1.50	0.36	3.85	40.77
#60	2.00	0.25	3.33	44.10
#80	2.50	0.18	3.93	48.03
#120	3.00	0.13	9.68	57.71
#170	3.50	0.09	12.71	70.42
#200	3.75	0.08	3.13	73.55
#230	4.00	0.06	0.53	74.08

SAND, silty, some sand to gravel-sized shell, little silt, little fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
			2.60	-0.25	-1.08	-2.39

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.87	0.55	2.60	0.16	2.09	-0.33	1.87

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16

Granularmetric Report

Project Name: GIWW in the Vicinity of Lee County

Sample Name: VB-GIWW-LEE-12-10 @ 4 ft

Analysis Date: 1/4/2013

US Army Corps of Engineers
Jacksonville District

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
639,628	784,890	State Plane, FLW (U.S. Ft.)	-9.8 MLLW

USCS:	Munsell:	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
	2.5Y 5/1	#200 - 28.71 #230 - 27.11			54

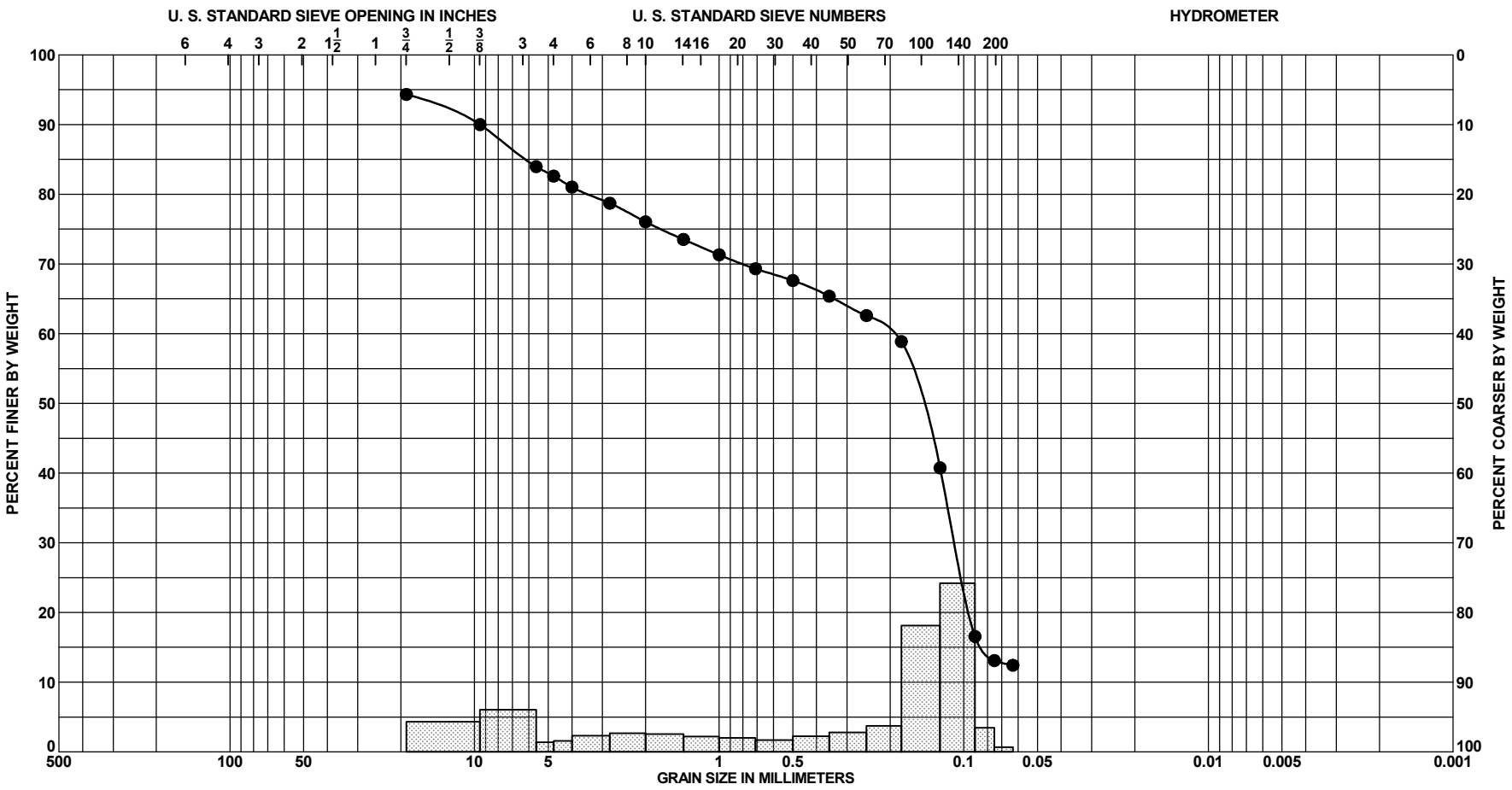
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	3.44	3.44
#3.5	-2.50	5.60	3.52	6.96
#4	-2.25	4.75	1.22	8.18
#5	-2.00	4.00	1.70	9.88
#7	-1.50	2.80	4.76	14.64
#10	-1.00	2.00	5.56	20.20
#14	-0.50	1.40	7.19	27.39
#18	0.00	1.00	6.72	34.11
#25	0.50	0.71	6.43	40.54
#35	1.00	0.50	4.38	44.92
#45	1.50	0.36	3.48	48.40
#60	2.00	0.25	2.93	51.33
#80	2.50	0.18	2.65	53.98
#120	3.00	0.13	4.28	58.26
#170	3.50	0.09	8.77	67.03
#200	3.75	0.08	4.26	71.29
#230	4.00	0.06	1.60	72.89

SAND, silty, mostly sand to gravel-sized shell, little silt, little fine-grained sand-sized quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
			1.77	-0.67	-1.38	-2.92

Moment	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
Statistics	0.42	0.75	1.77	0.29	2.17	-0.04	1.97

GRANULARMETRIC REPORT % GIWW_VC_LEE_2012_NEWTEMPLATE.GPJ CESAJ3.GDT 9/13/16



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, silty, mostly fine-grained	2.5Y 4/1	40/36 (est)						
		sand-sized quartz, some sand to								
		gravel-sized shell, little silt, dark								
		gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-01
BORING ELEV.	-8.8 Ft., MLLW
DATE	1/4/2013

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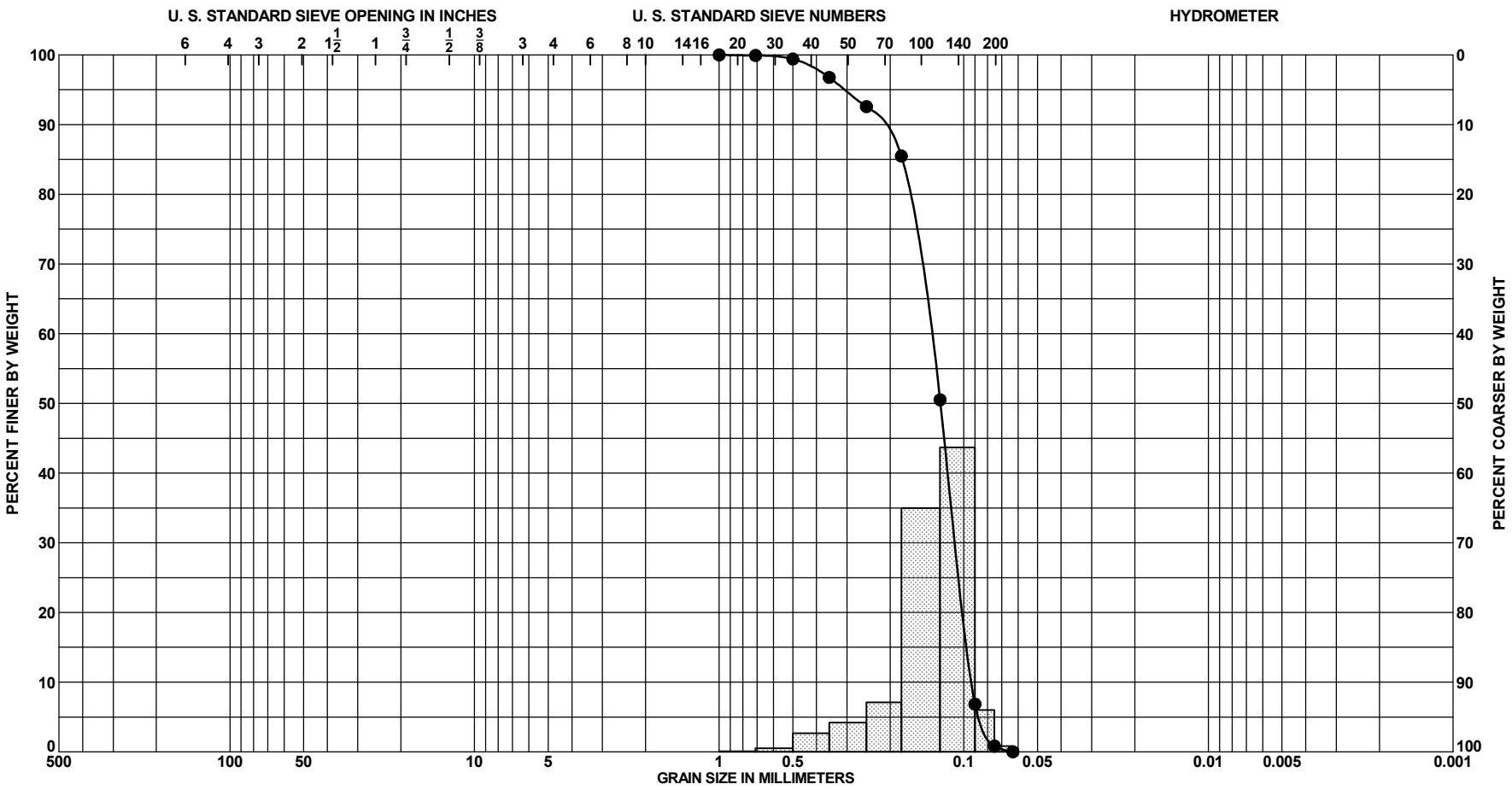
JUN 02

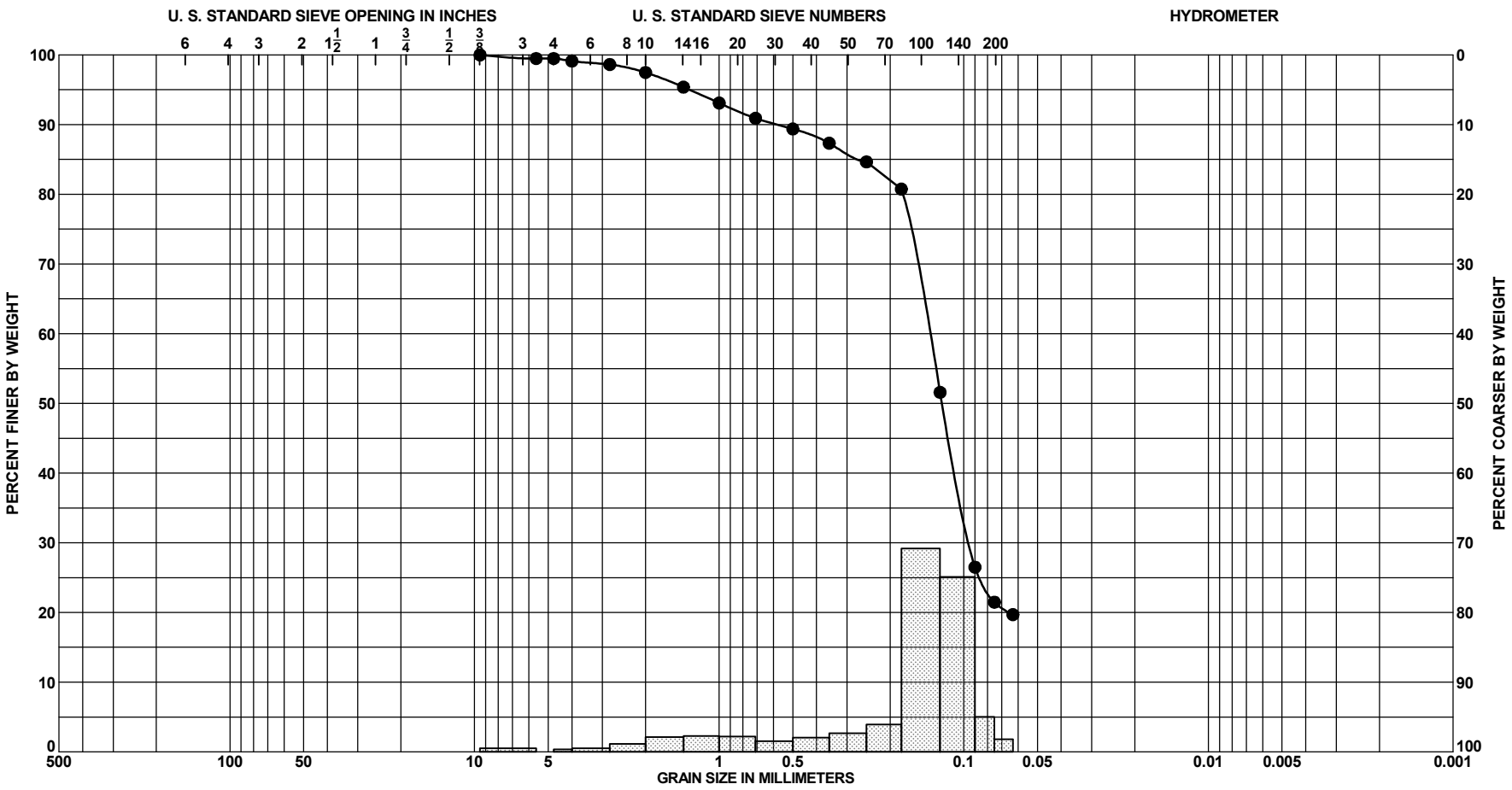


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-01
BORING ELEV.	-8.8 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	1.5 to 2.0 Ft.	SAND, silty, mostly fine-grained	2.5Y 4/1	13 (est)						
		sand-sized quartz, little silt, little								
		medium-grained sand-sized shell,								
		dark gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-01
BORING ELEV.	-8.8 Ft., MLLW
DATE	1/4/2013

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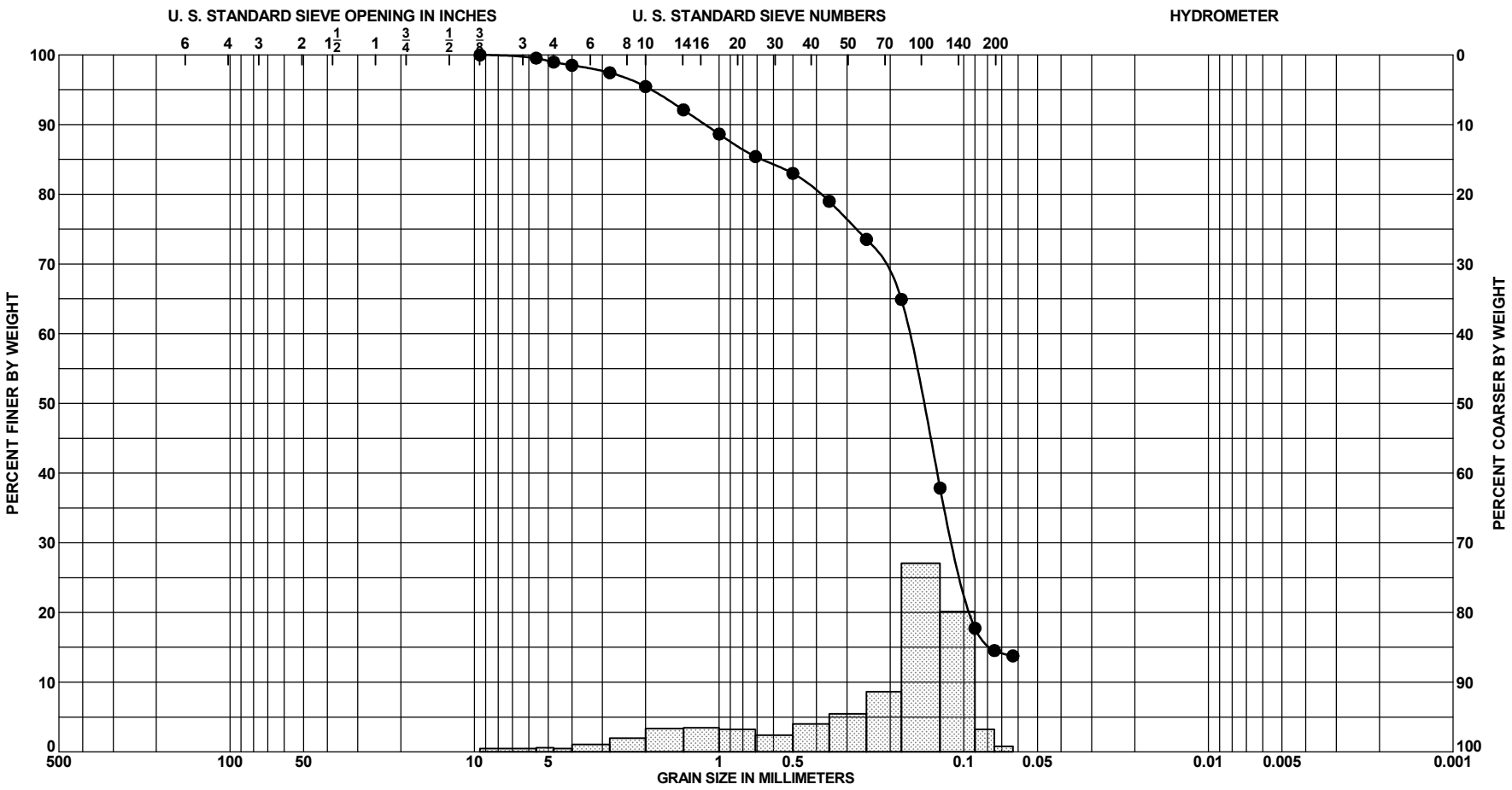
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	2.5 to 3.0 Ft.	SAND, silty, mostly fine-grained	2.5Y 6/1	23 (est)						
		sand-sized quartz, little								
		medium-grained sand-sized shell,								
		little silt, gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-01
BORING ELEV.	-8.8 Ft., MLLW
DATE	1/4/2013

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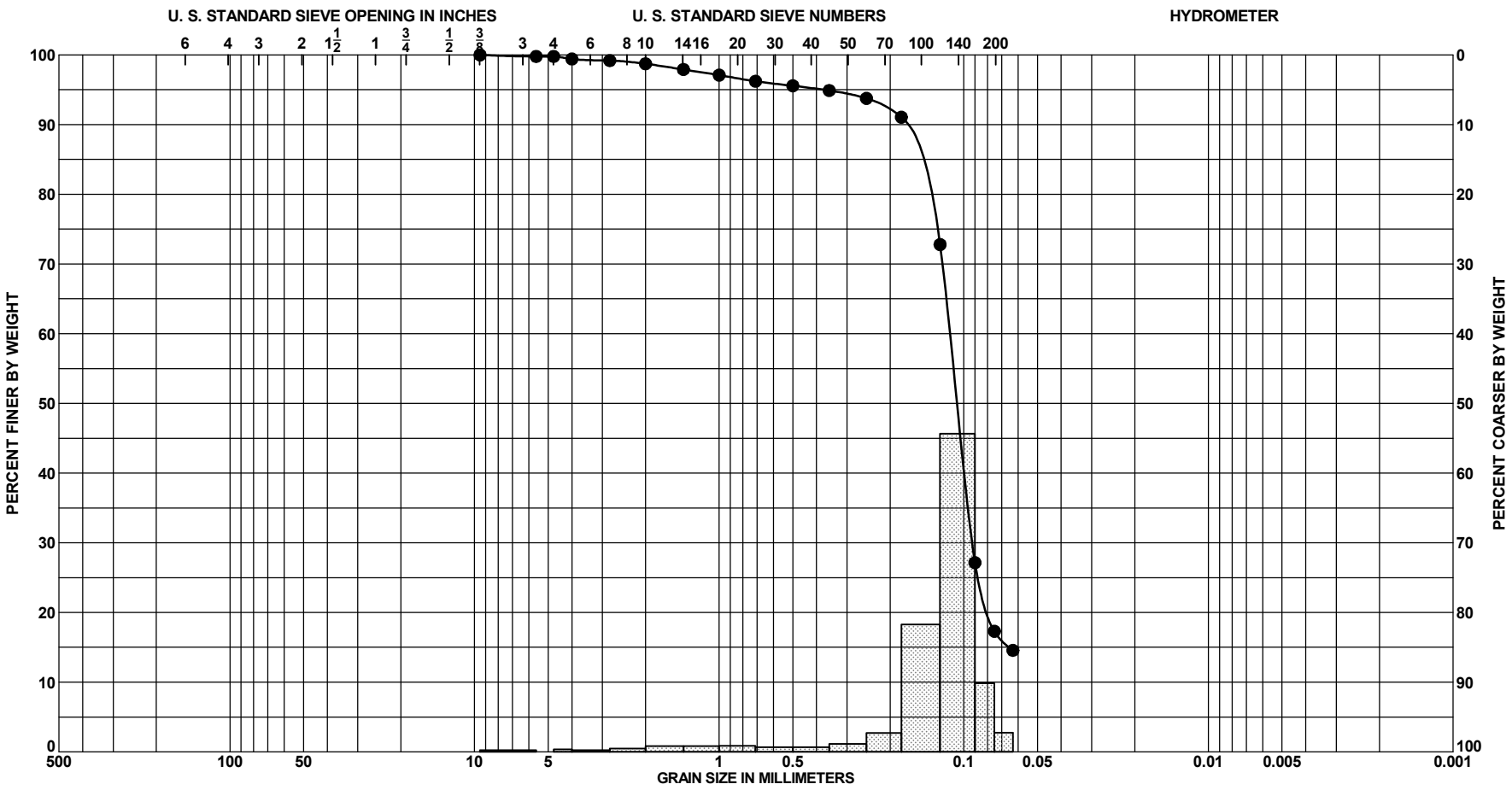

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.0 to 1.5 Ft.	SAND, silty, mostly fine-grained	10Y 5/1	7/7 (est)						
		sand-sized quartz, little silt, few								
		medium-grained sand-sized shell,								
		greenish gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-02
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

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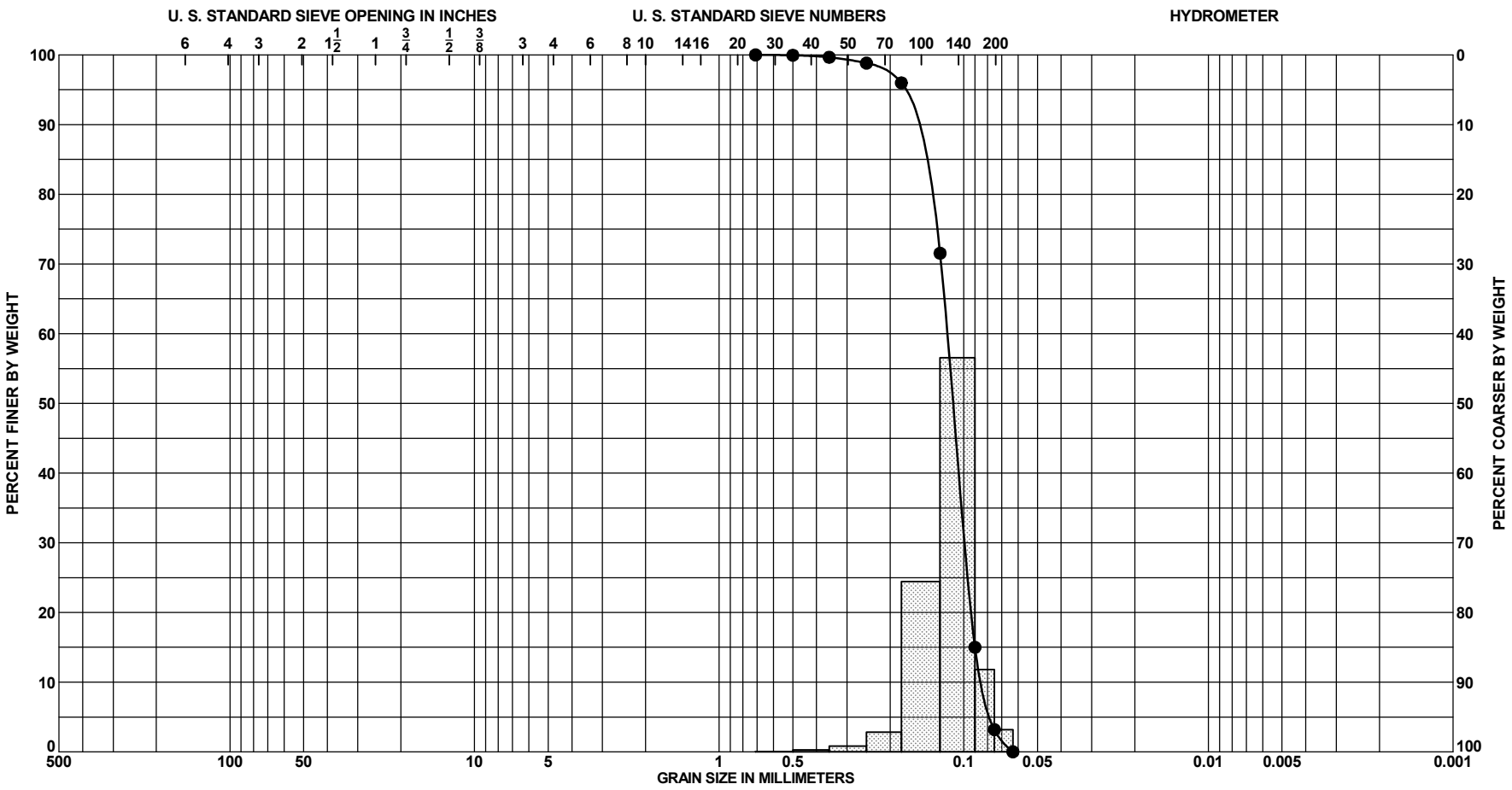
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	1.0 to 1.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-02
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

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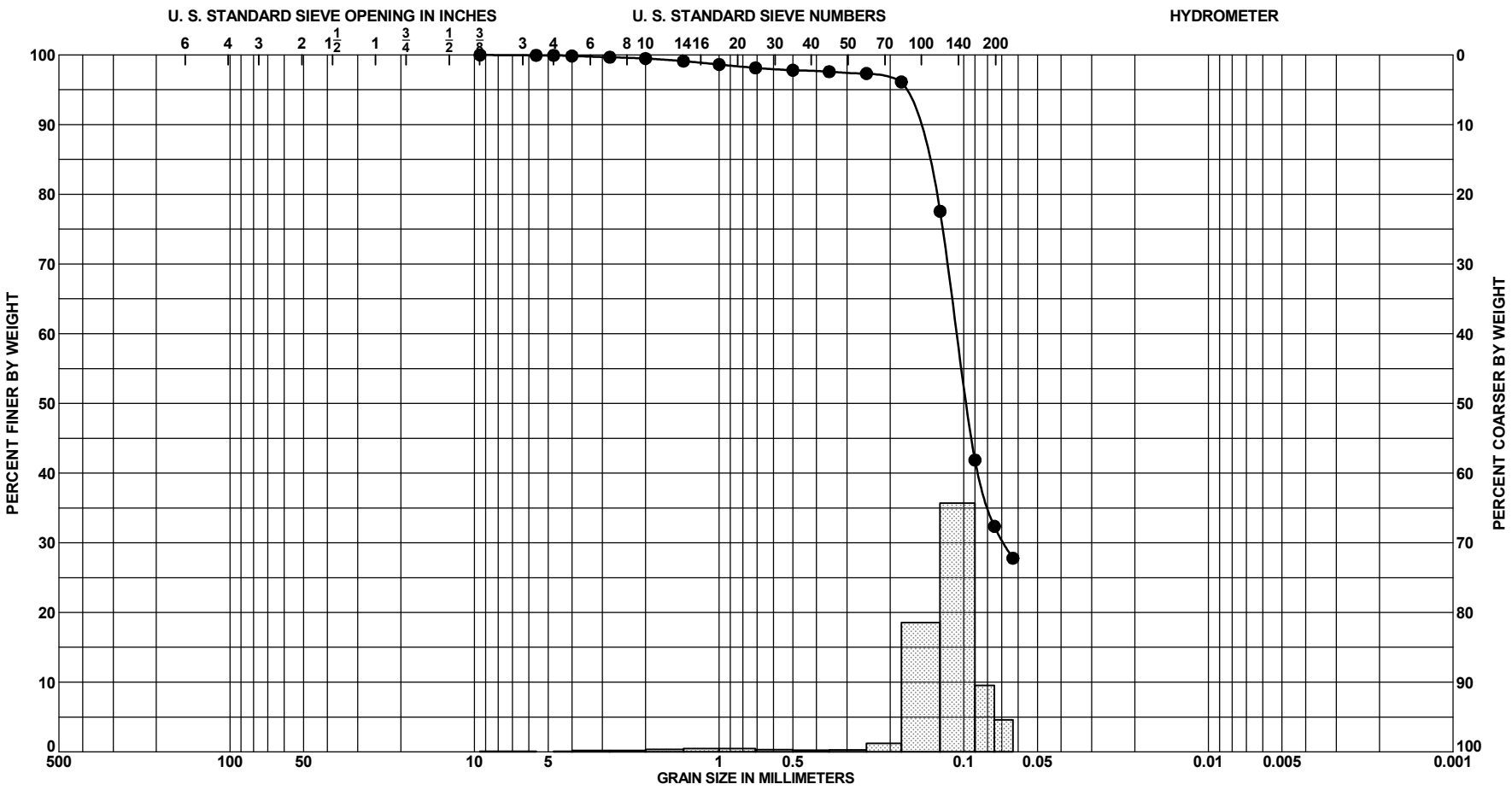
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	3.0 to 3.5 Ft.	SAND, silty, mostly fine-grained	10Y 6/1	5 (est)						
		sand-sized quartz, some silt, few								
		fine to medium-grained sand-sized								
		shell, greenish gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-02
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

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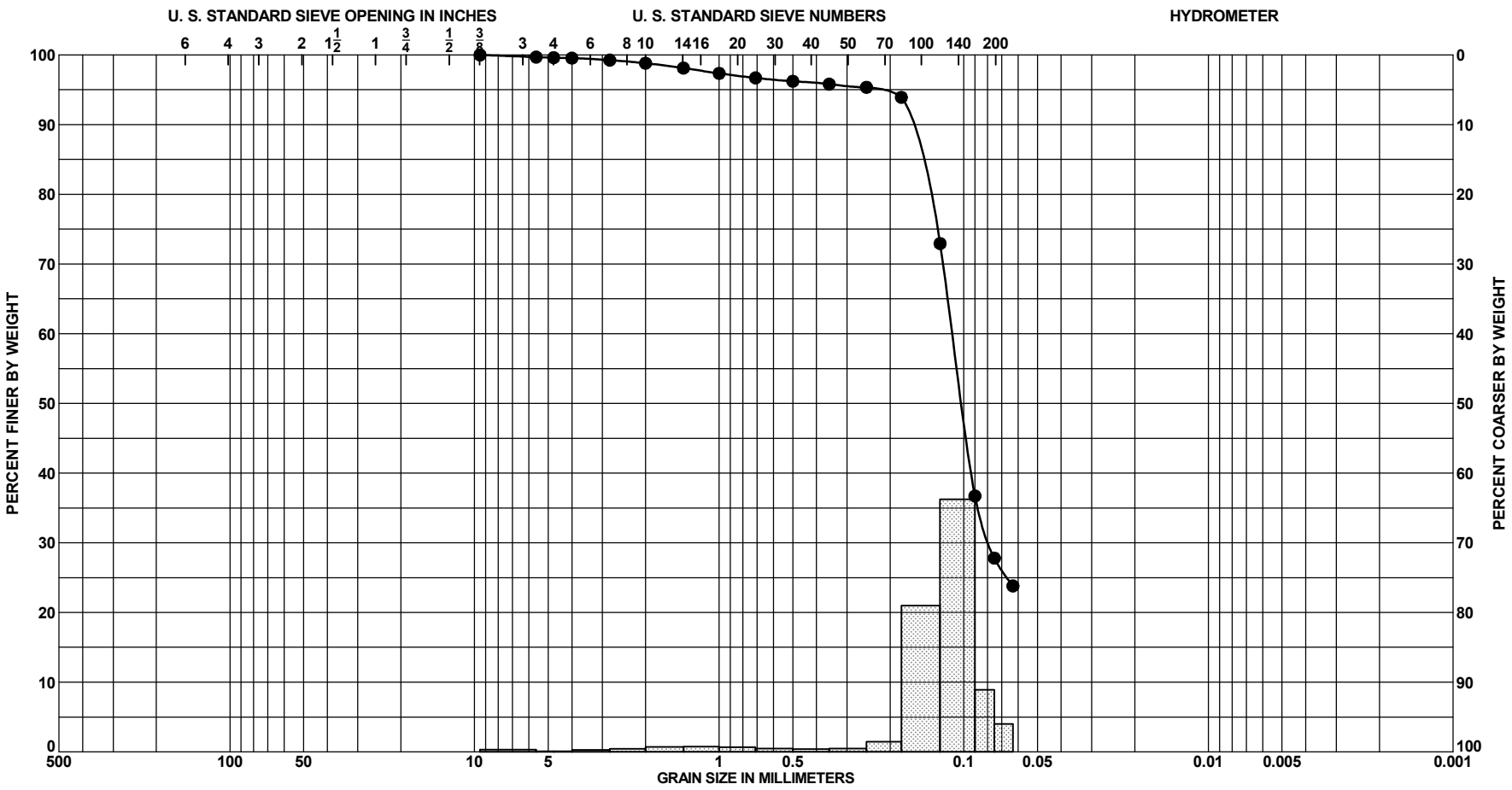
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	5.0 to 5.5 Ft.	SAND, silty, mostly fine-grained	10Y 6/1	6 (est)						
		sand-sized quartz, some silt, few								
		fine to medium-grained sand-sized								
		shell, greenish gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-02
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

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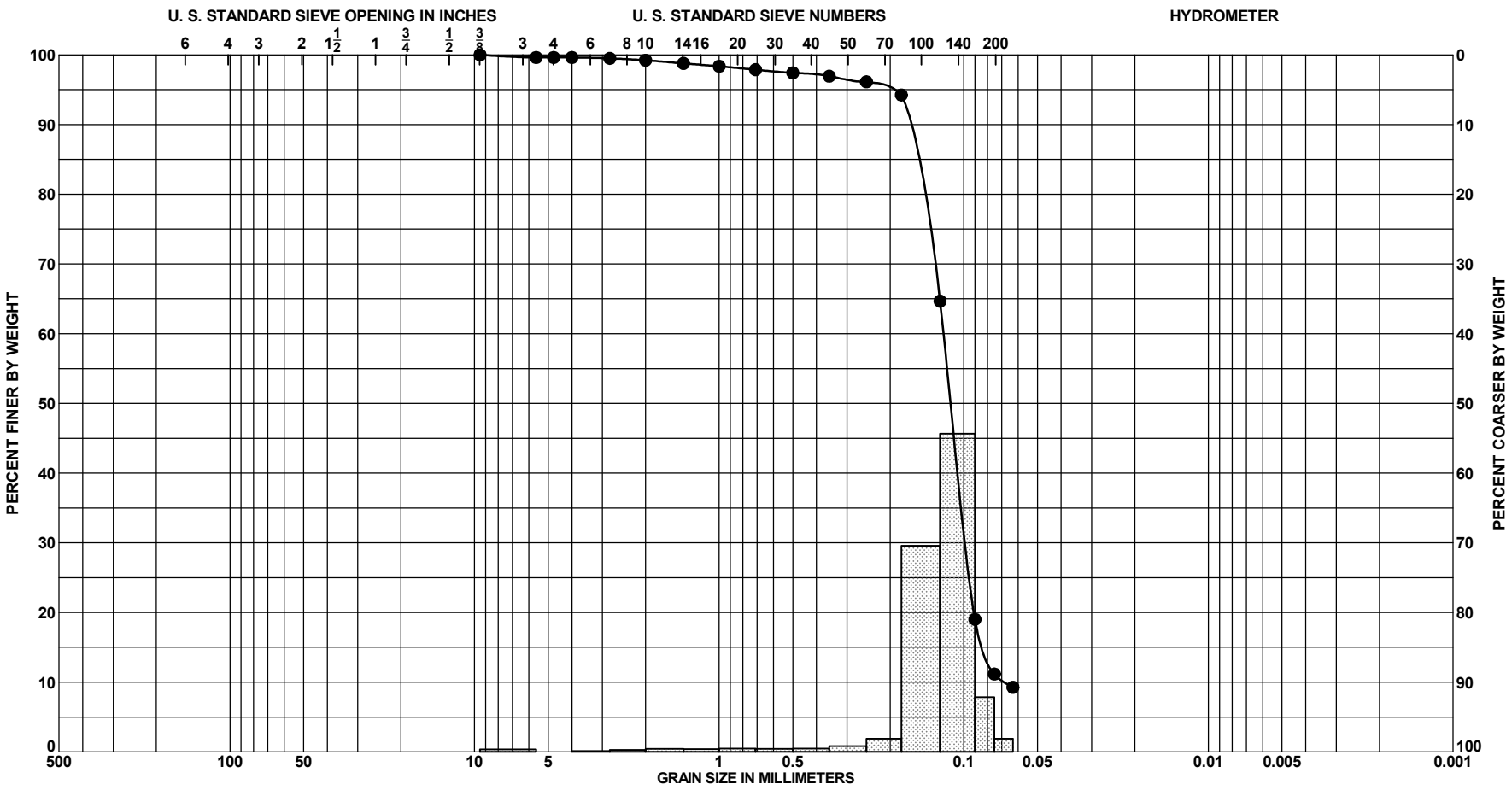
JUN 02

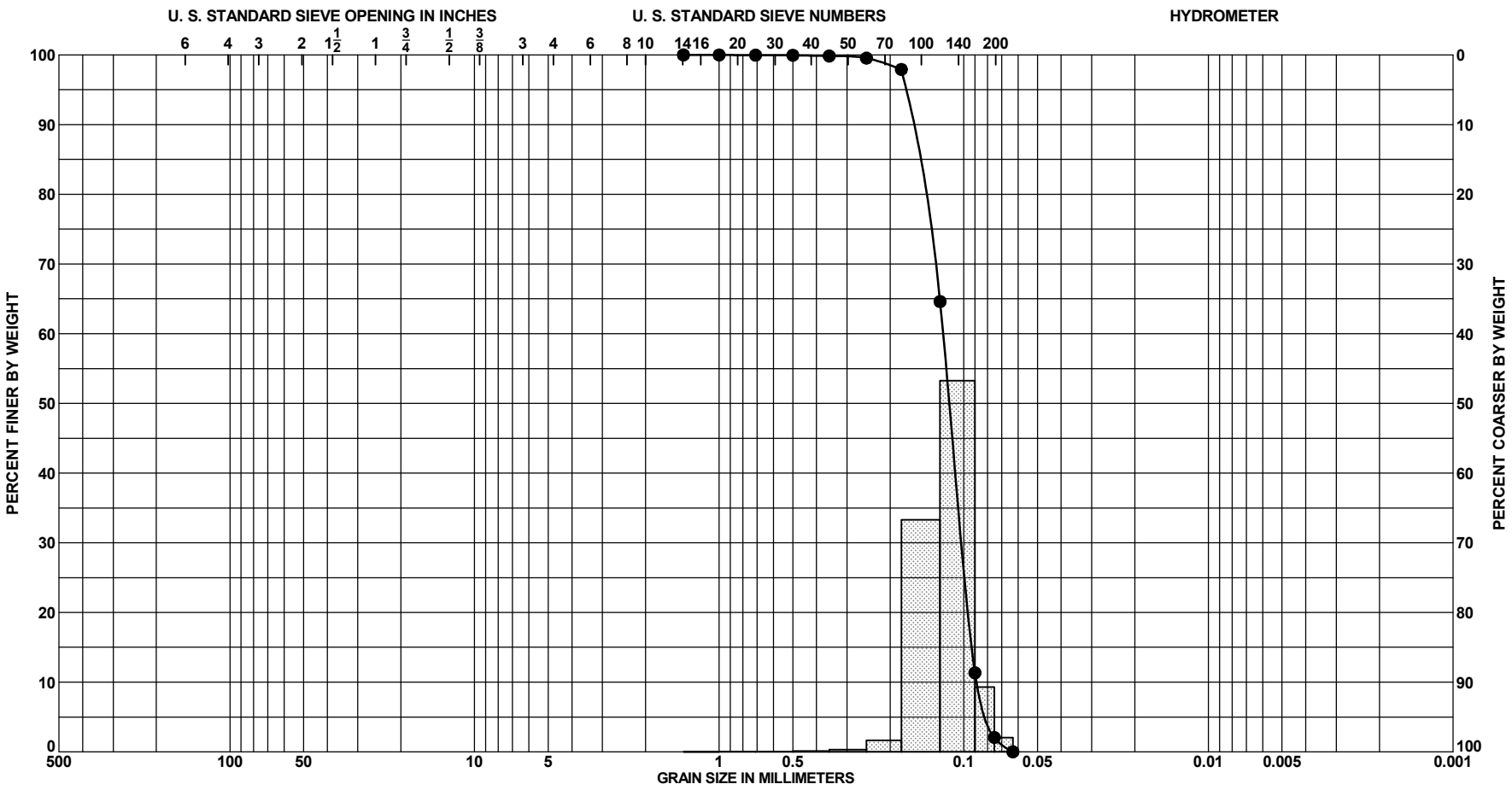


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_2 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, poorly-graded with silt,	2.5Y 4/1	6/6 (est)						
		mostly fine-grained sand-sized								
		quartz, few silt, few fine to								
		medium-grained sand-sized shell,								
		dark gray (SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-03
BORING ELEV.	-7.8 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

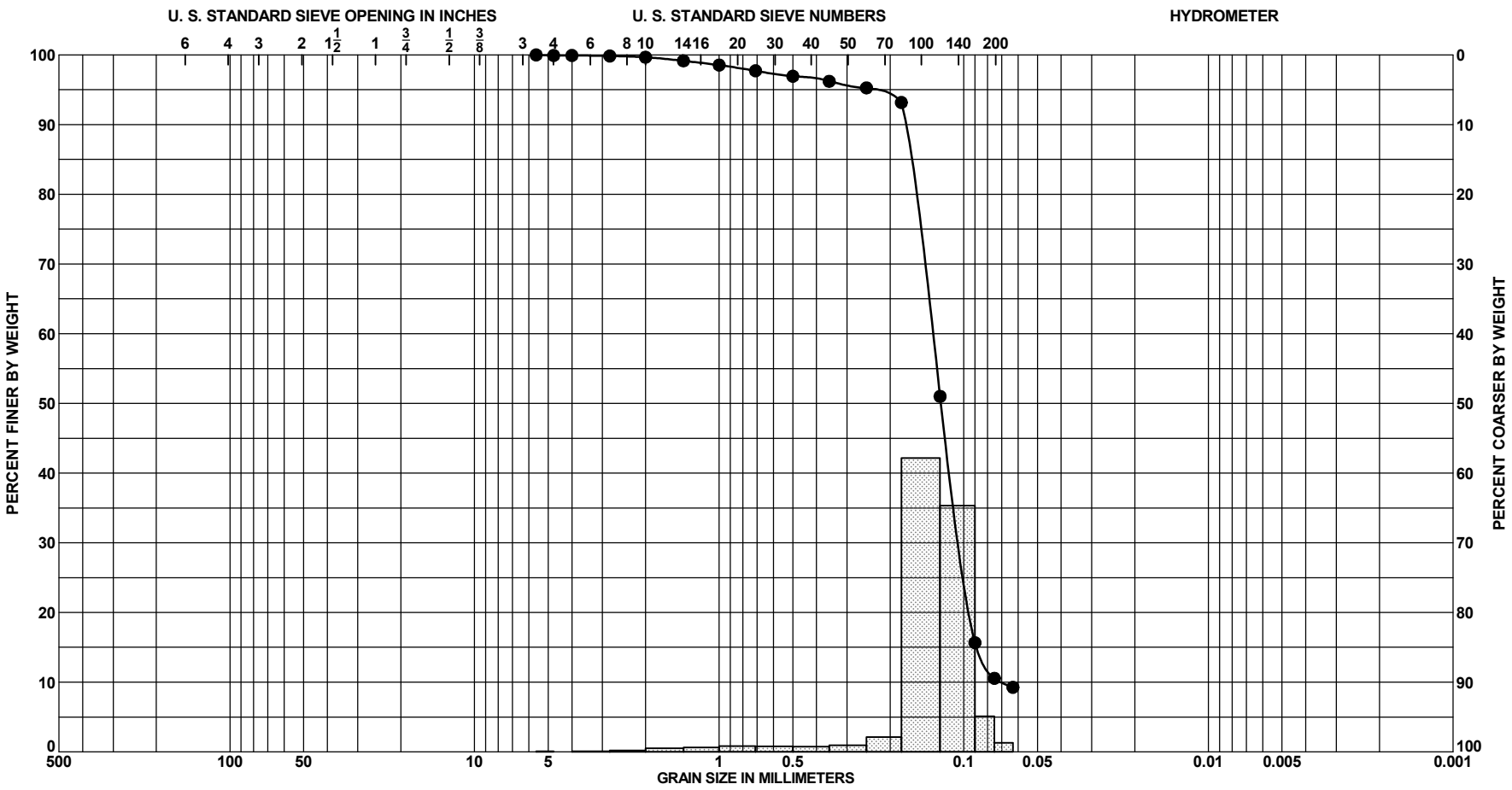


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-03
BORING ELEV.	-7.8 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

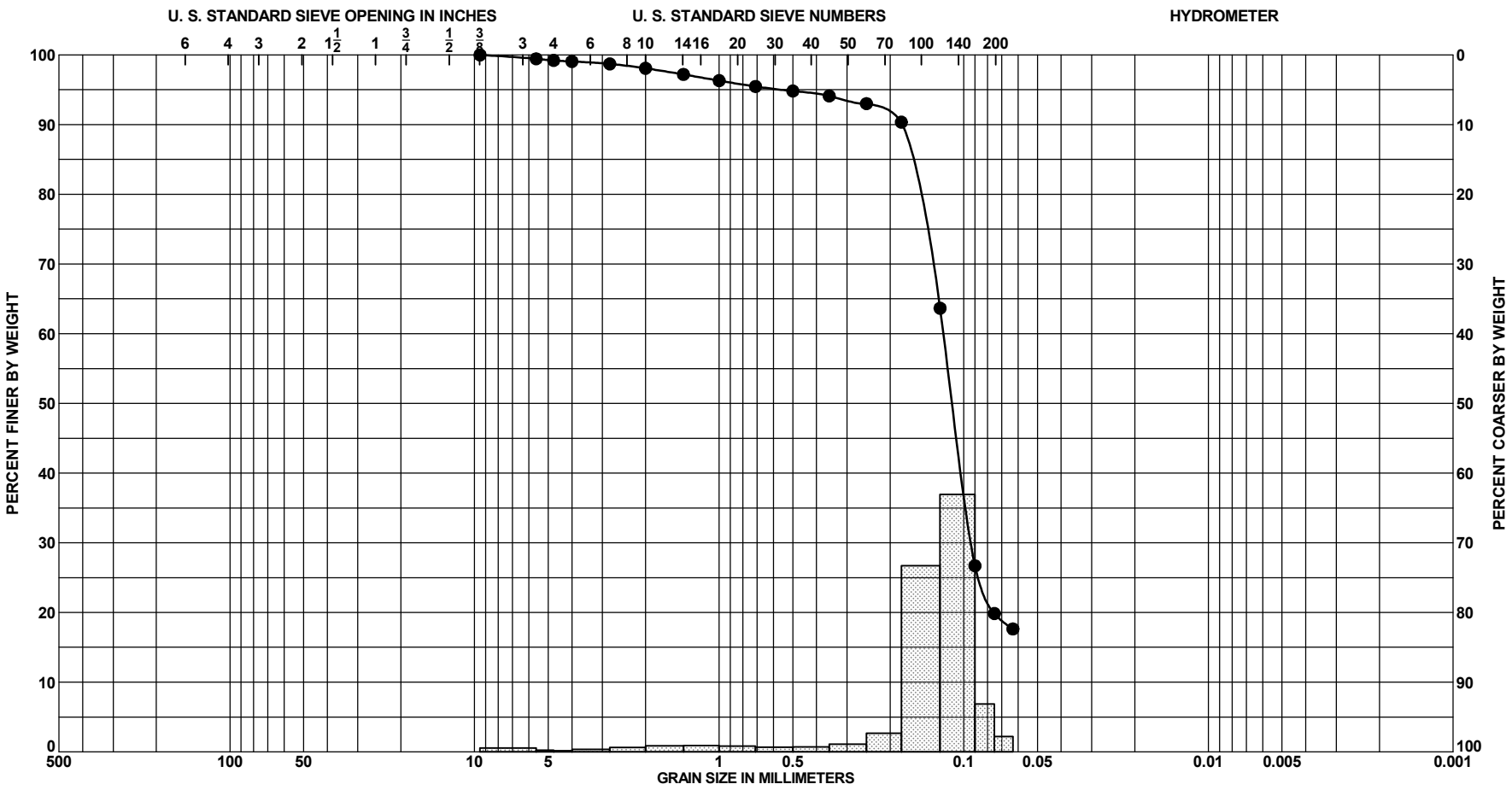


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	1.0 to 1.5 Ft.	SAND, poorly-graded with silt,	2.5Y 4/1	7 (est)						
		mostly fine-grained sand-sized								
		quartz, few silt, few fine to								
		medium-grained sand-sized shell,								
		dark gray (SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-03
BORING ELEV.	-7.8 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

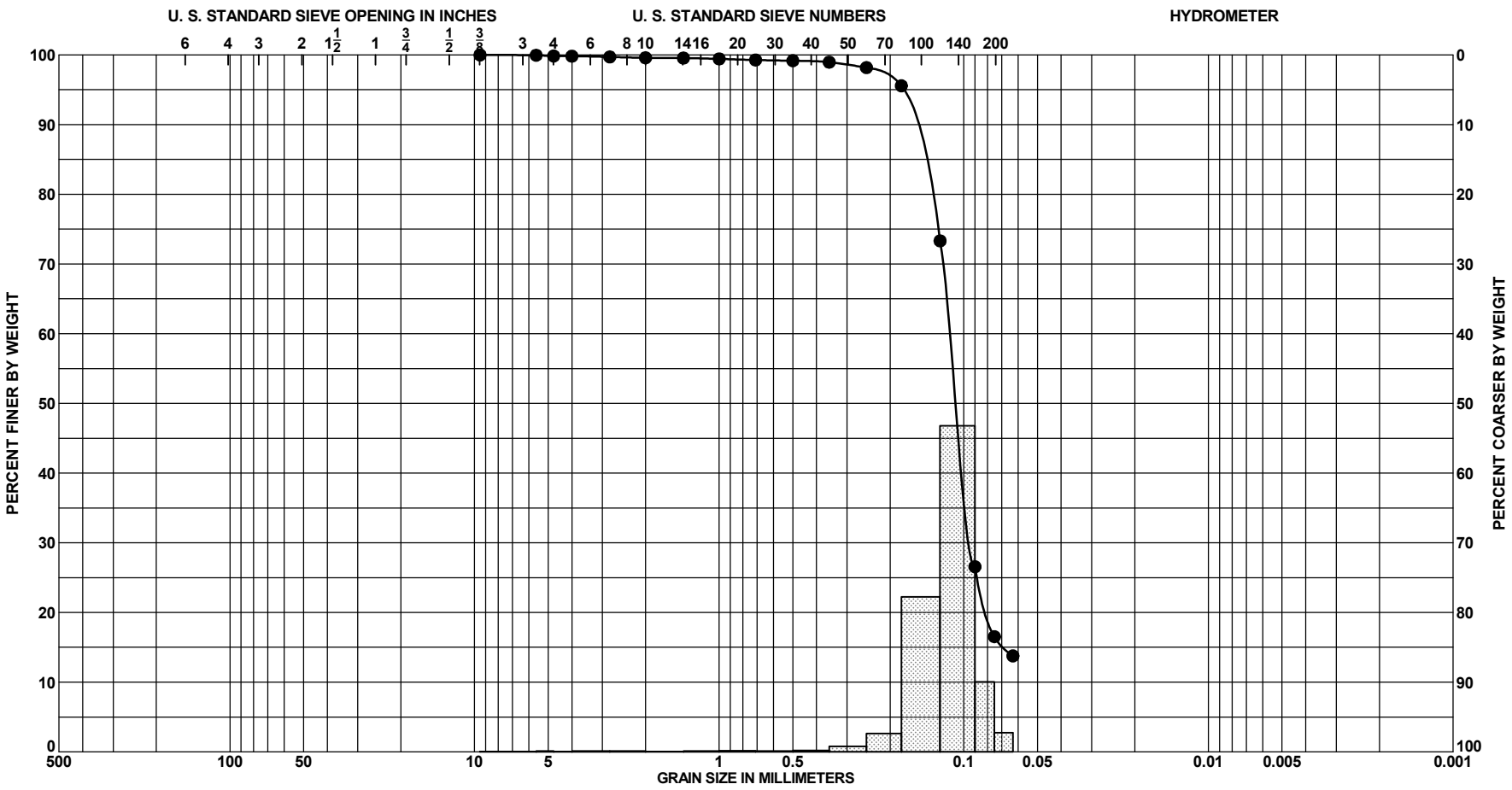


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	3.0 to 3.5 Ft.	SAND, silty, mostly fine-grained	2.5Y 4/1	8 (est)						
		sand-sized quartz, little silt, few fine								
		to medium-grained sand-sized shell,								
		dark gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-03
BORING ELEV.	-7.8 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

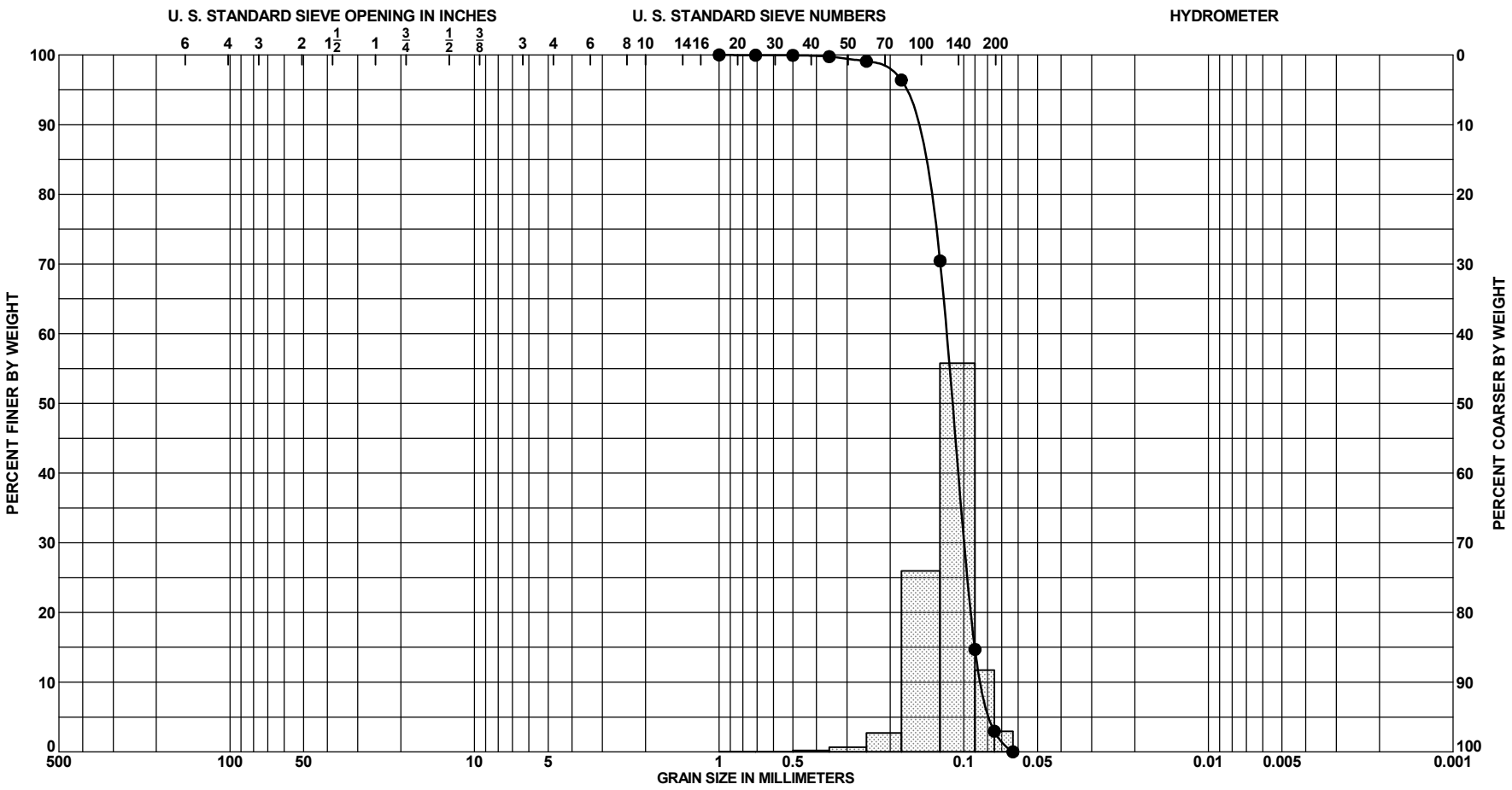


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_2 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, silty, mostly fine-grained	2.5Y 5/1	3/1 (est)						
		sand-sized quartz, little silt, trace								
		shell, gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-04
BORING ELEV.	-7.5 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

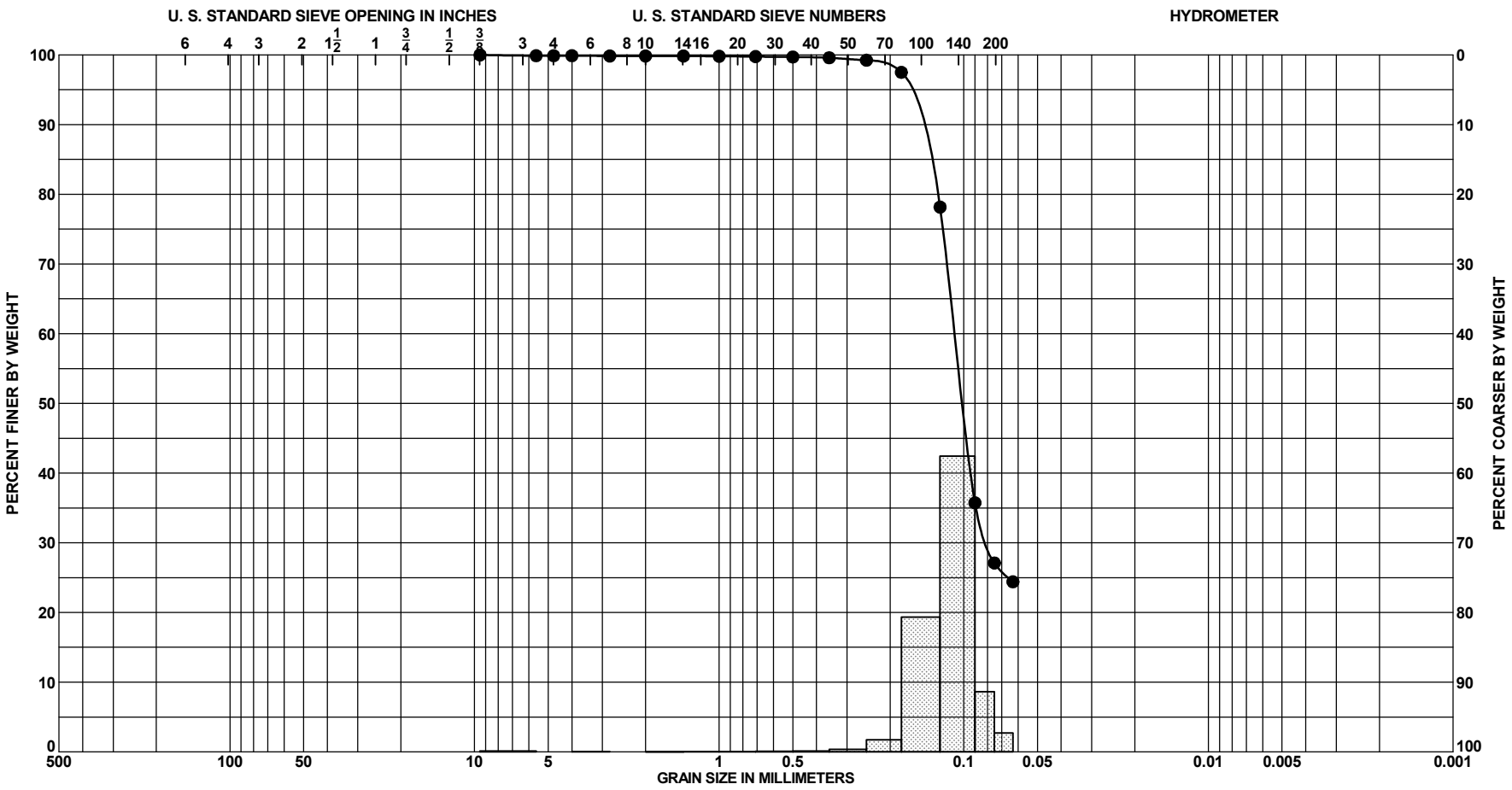


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	2.5Y 4/1							
		fine-grained sand-sized quartz, dark								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-04
BORING ELEV.	-7.5 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

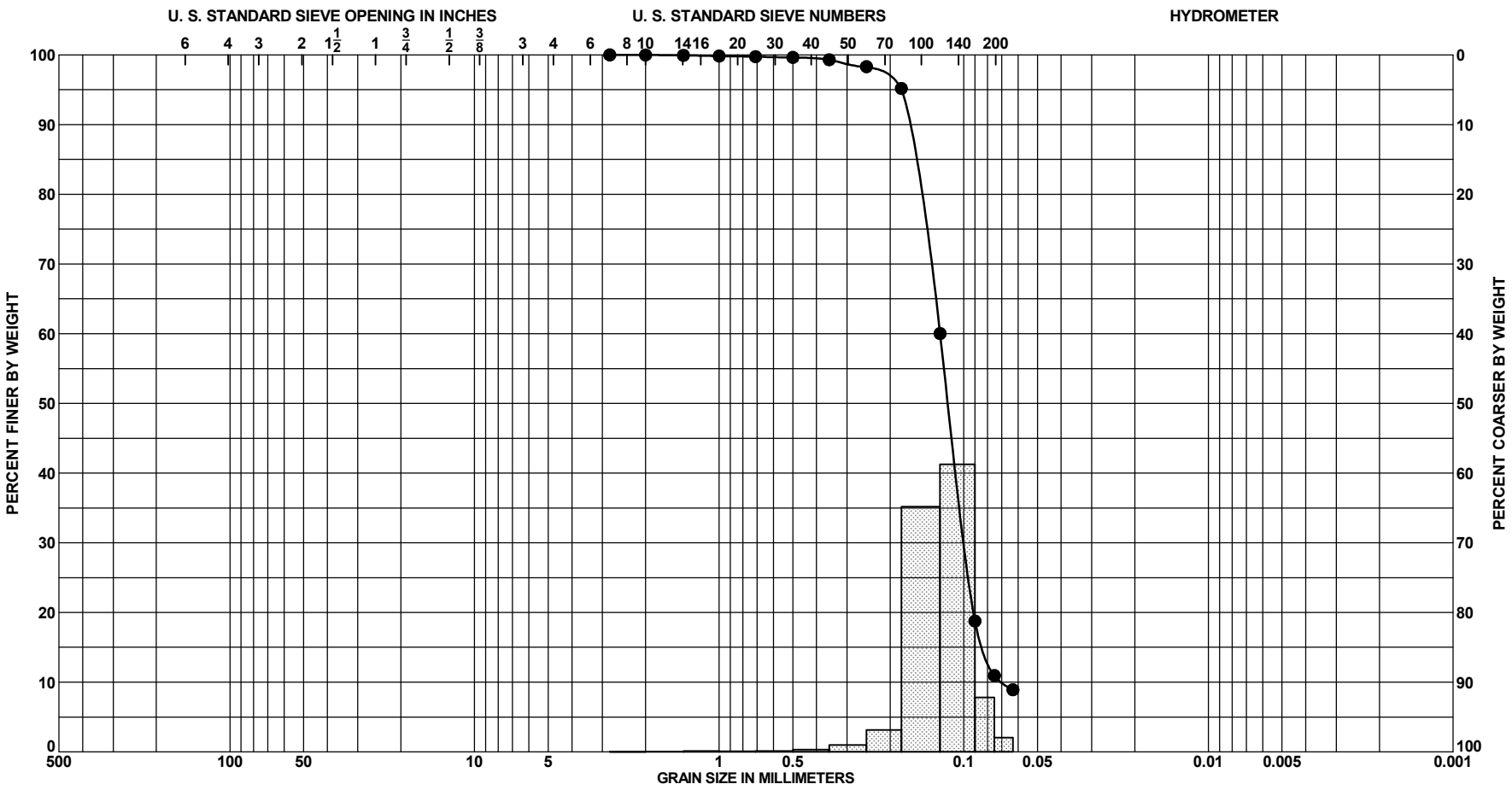


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	1.5 to 2.0 Ft.	SAND, silty, mostly fine-grained	10YR 7/1	2 (est)						
		sand-sized quartz, little silt, trace								
		shell, light gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-04
BORING ELEV.	-7.5 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

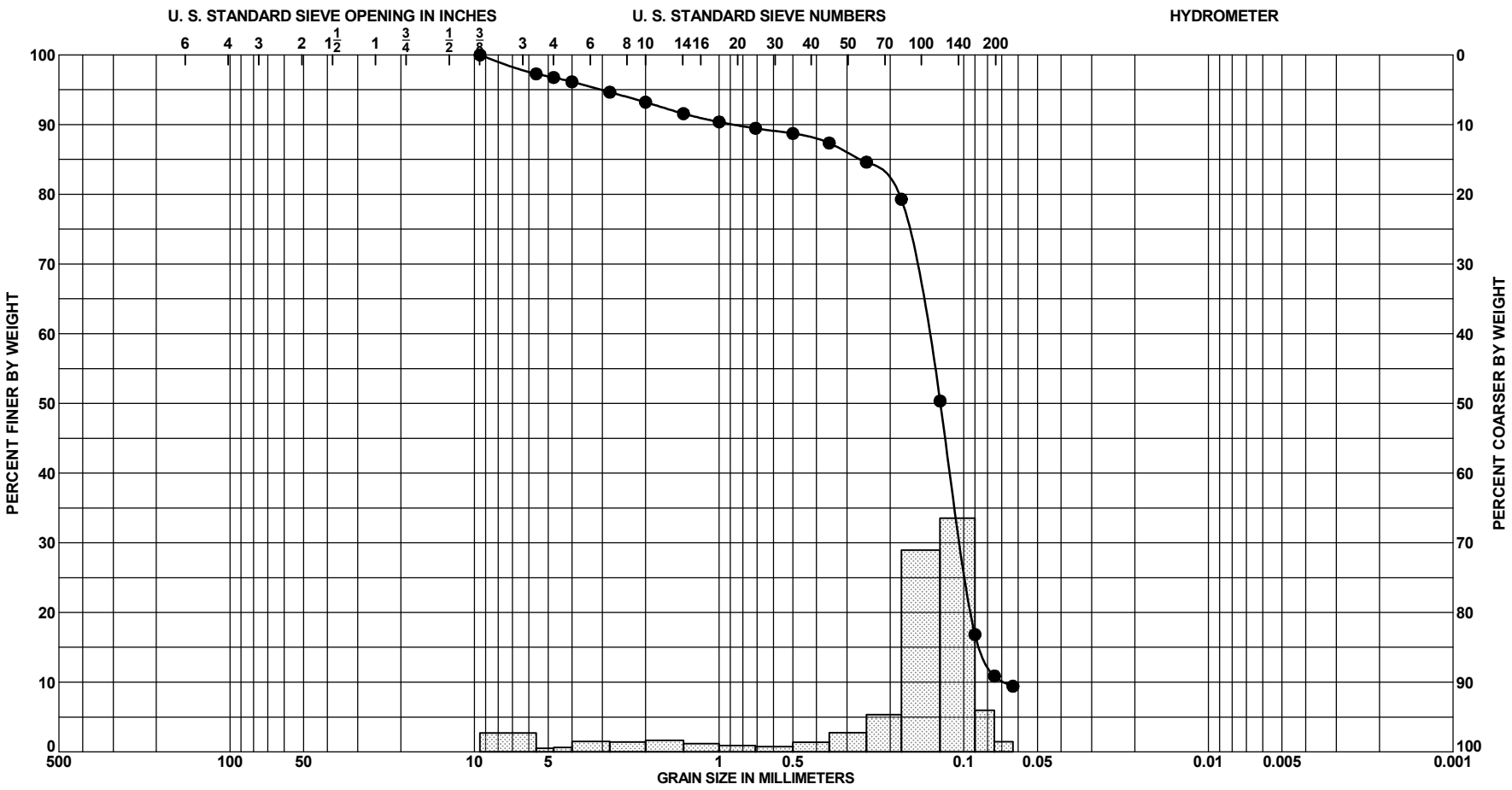


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	2.5 to 3.0 Ft.	SAND, poorly-graded with silt,	2.5Y 5/1	1 (est)						
		mostly fine-grained sand-sized								
		quartz, few silt, gray (SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-04
BORING ELEV.	-7.5 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

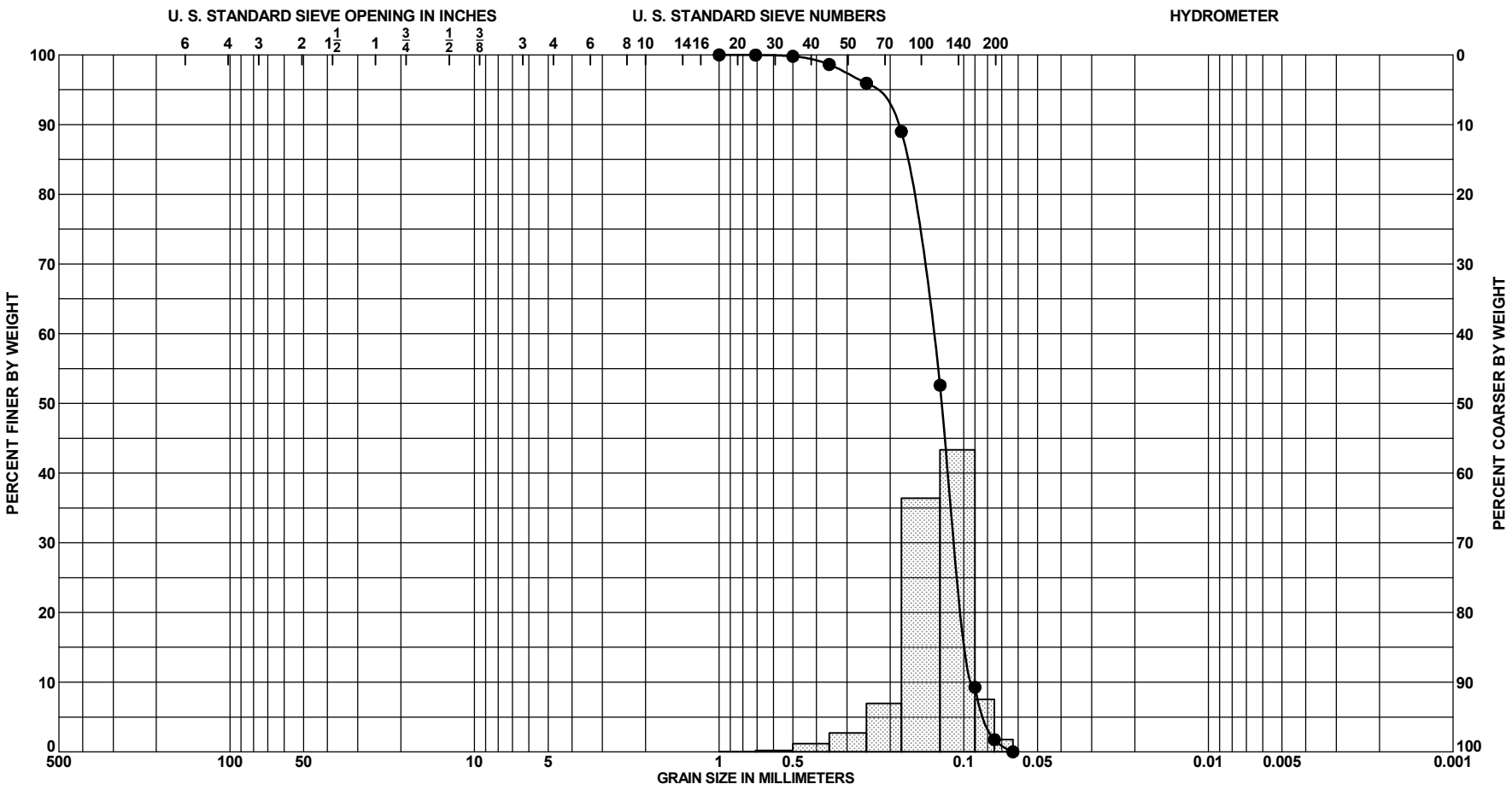


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 1.0 Ft.	SAND, poorly-graded with silt,	2.5Y 5/1	15/15 (est)						
		mostly fine-grained sand-sized								
		quartz, little fine to coarse-grained								
		sand-sized shell, few silt, gray								
		(SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-05
BORING ELEV.	-8.0 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

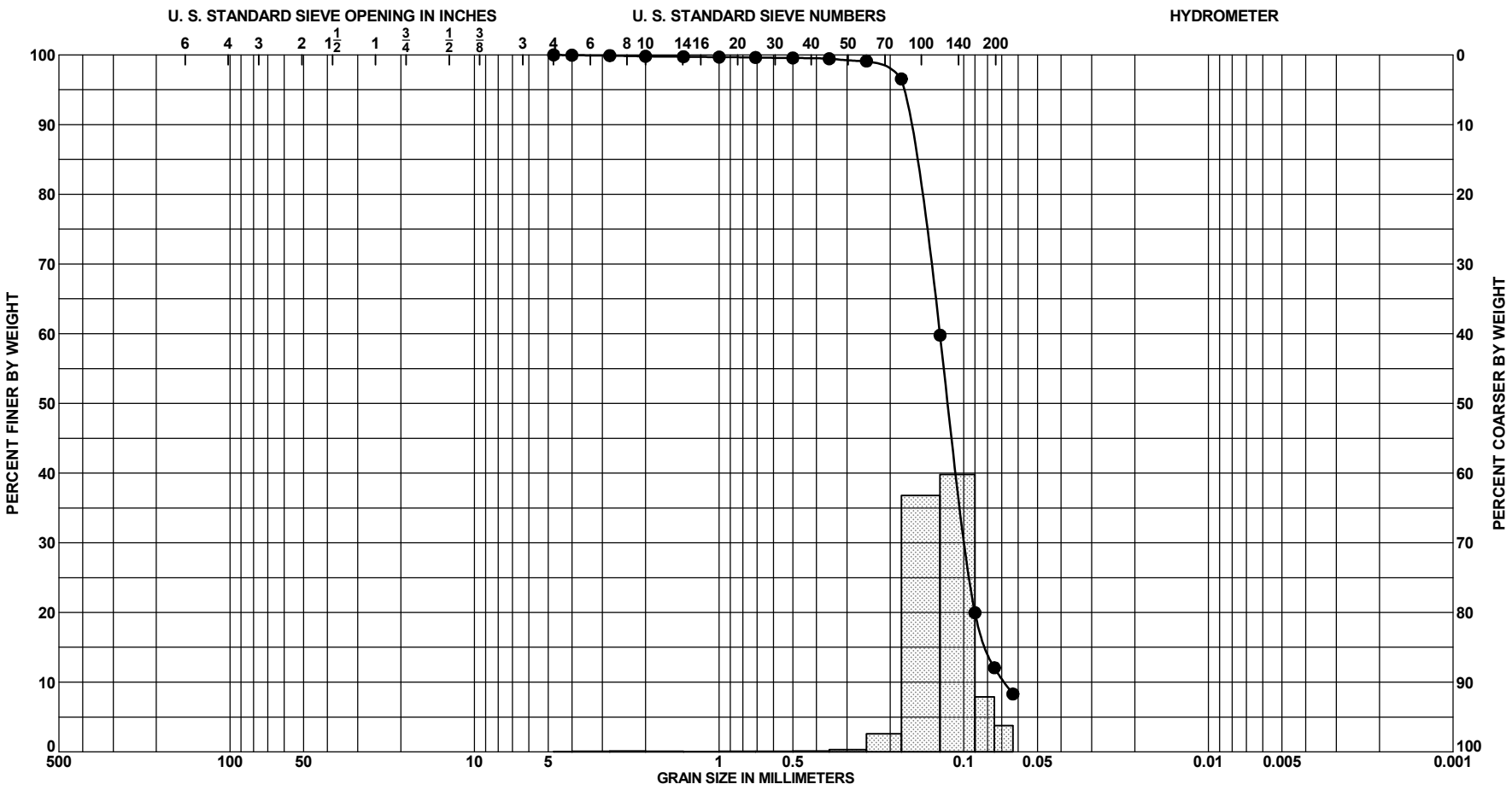


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-05
BORING ELEV.	-8.0 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

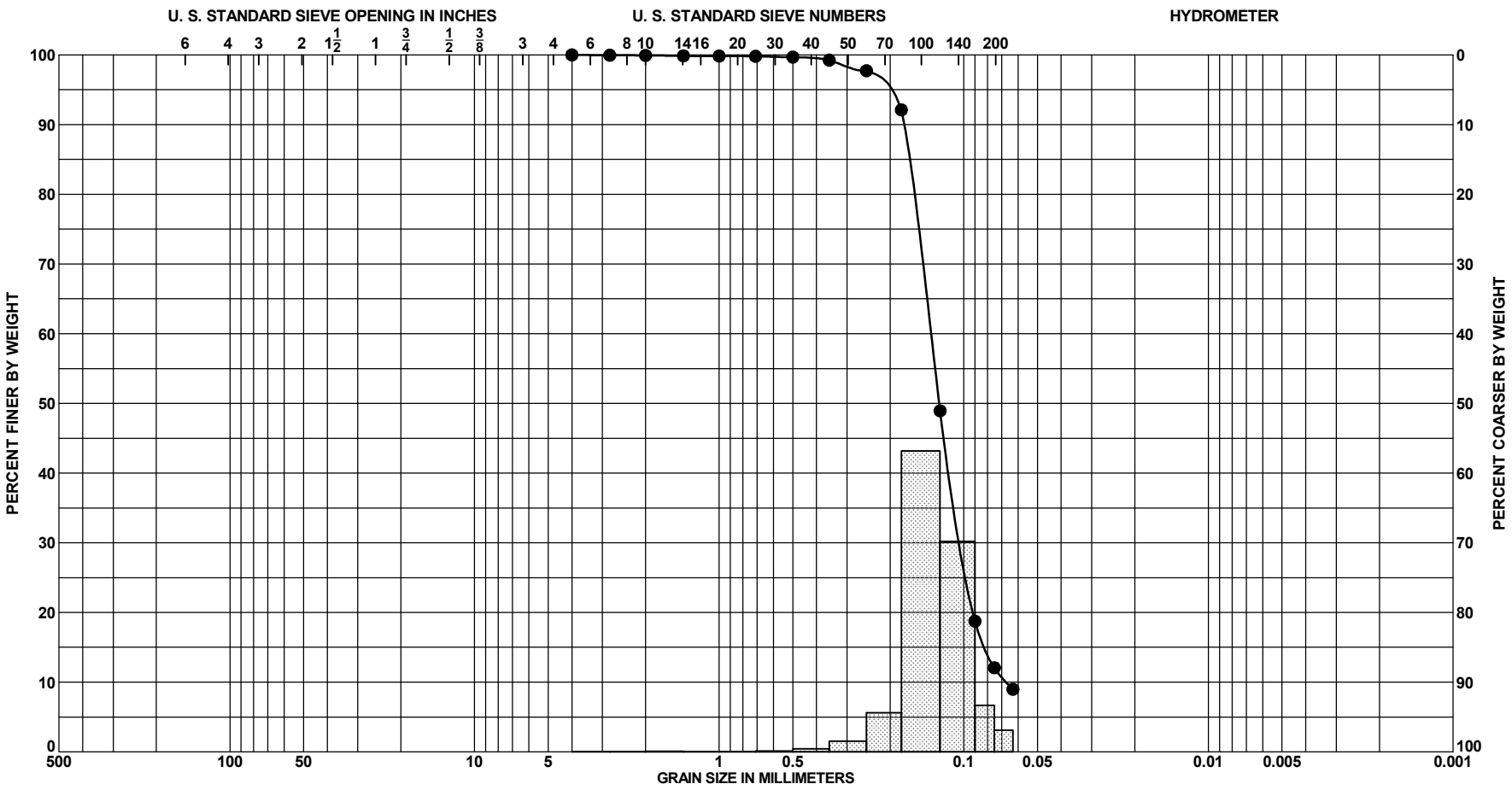


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	1.5 to 2.0 Ft.	SAND, silty, mostly fine-grained	2.5Y 5/1	1 (est)						
		sand-sized quartz, few silt, gray								
		(SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-05
BORING ELEV.	-8.0 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

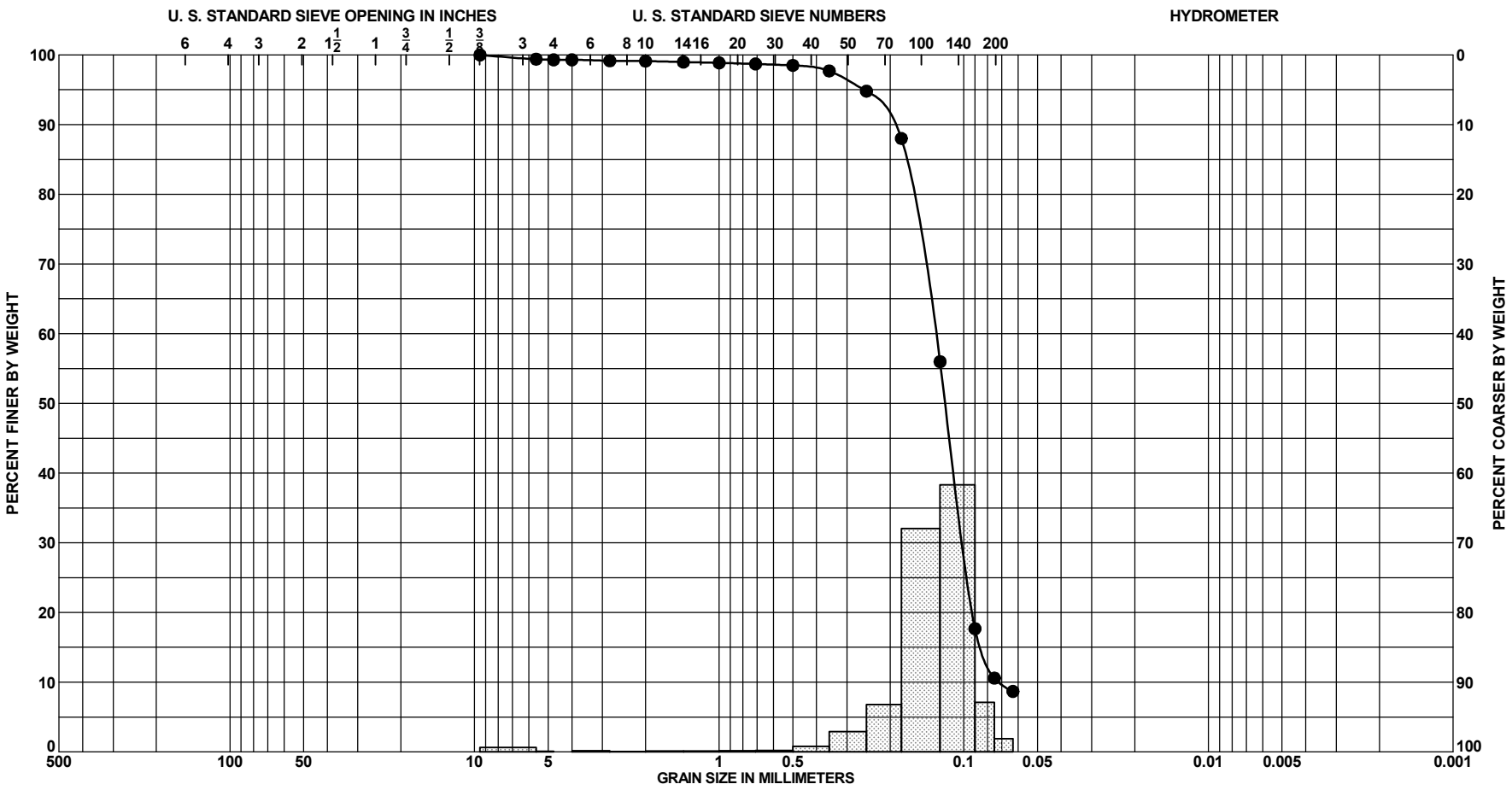


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	2.5 to 2.7 Ft.	SAND, silty, mostly fine-grained	2.5Y 5/1	0 (est)						
		sand-sized quartz, few silt, gray								
		(SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-05
BORING ELEV.	-8.0 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

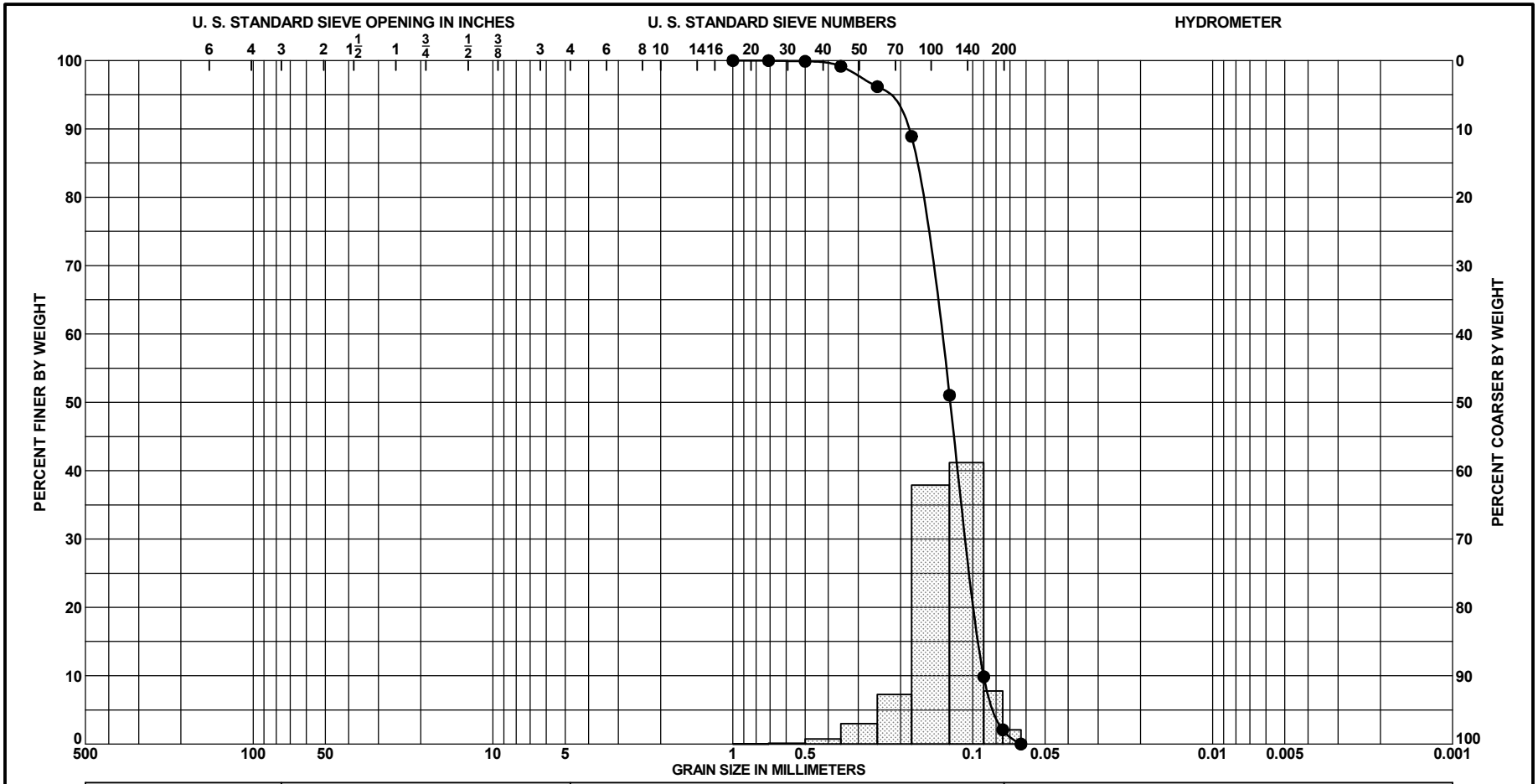


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_2 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.0 to 1.5 Ft.	SAND, poorly-graded with silt,	2.5Y 4/1	4/3 (est)						
		mostly fine-grained sand-sized								
		quartz, few silt, trace shell, dark								
		gray (SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-06
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

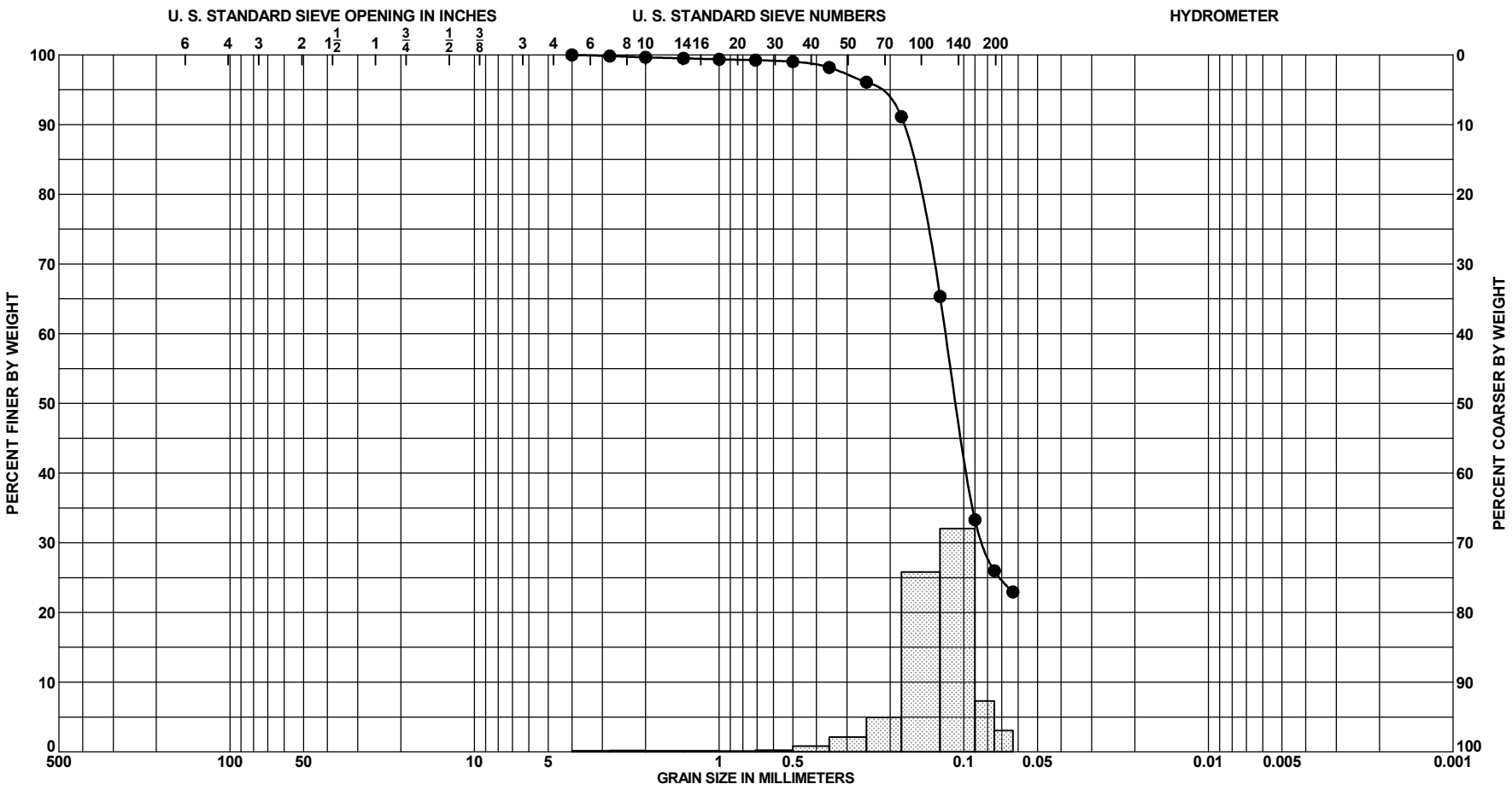


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	1.0 to 1.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-06
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

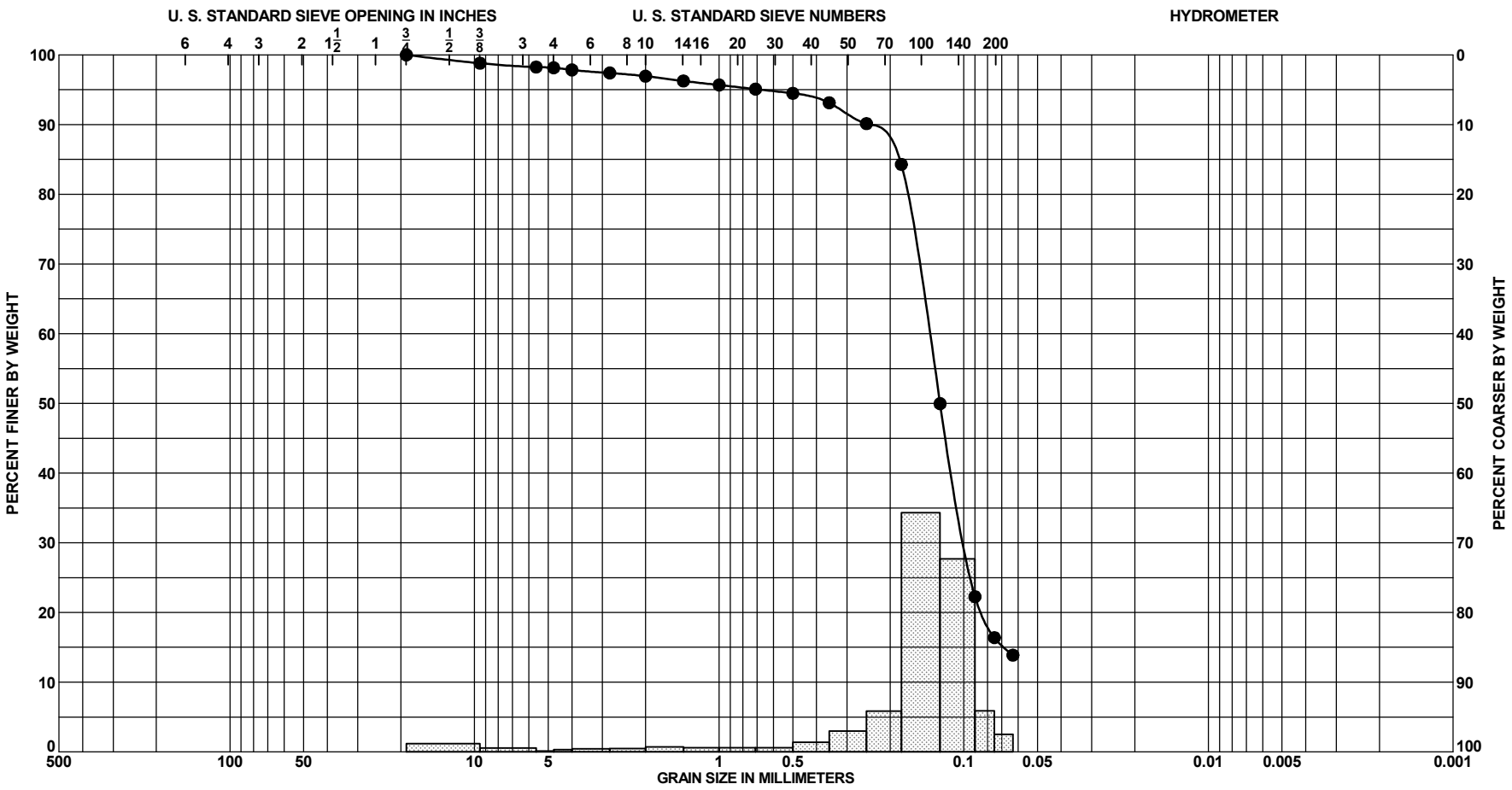


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	2.0 to 2.5 Ft.	SAND, silty, mostly fine-grained	2.5Y 5/1	1 (est)						
		sand-sized quartz, little silt, trace								
		shell, gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-06
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

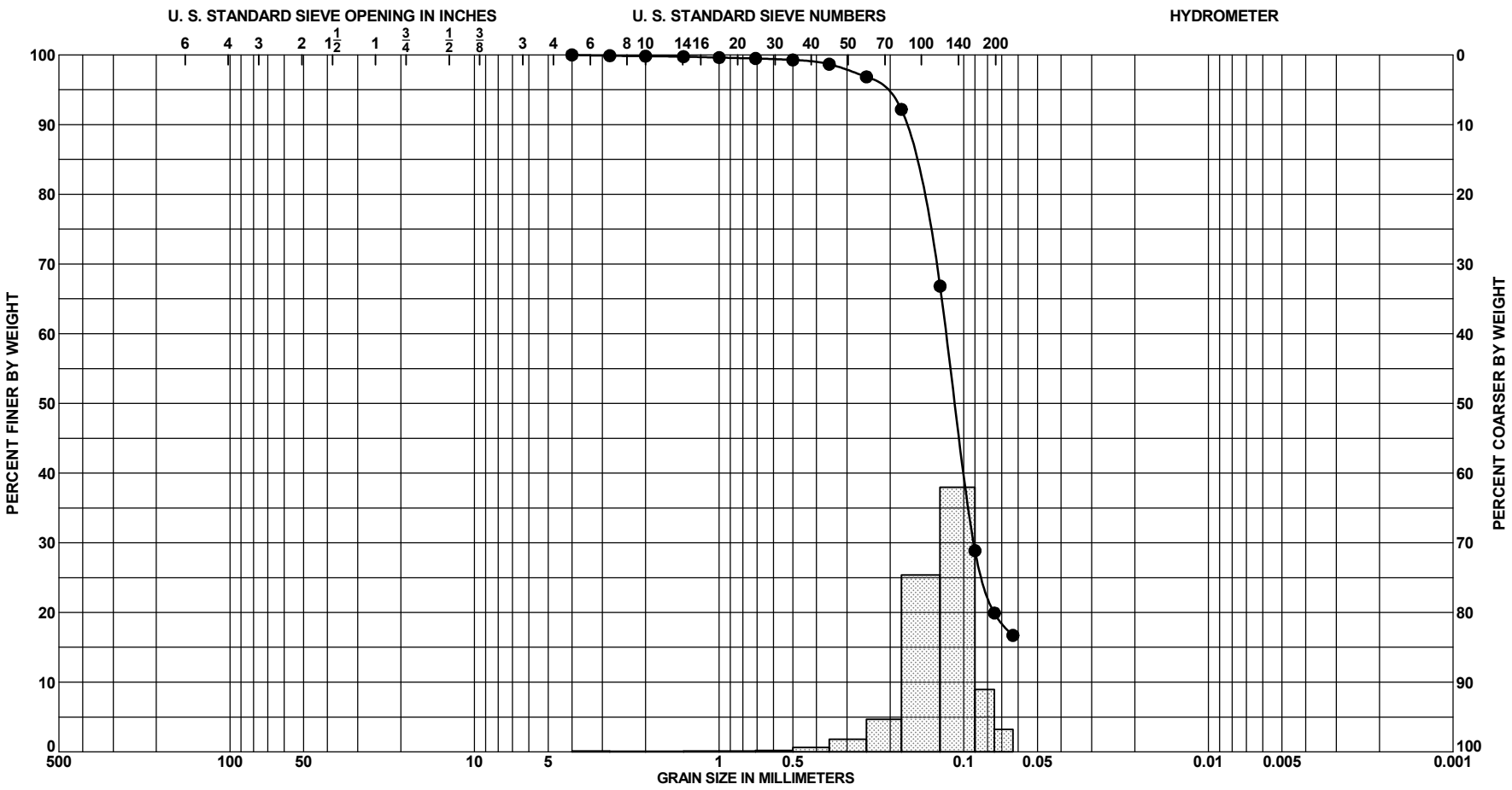


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	4.0 to 4.5 Ft.	SAND, silty, mostly fine-grained	2.5Y 5/1	7 (est)						
		sand-sized quartz, little silt, few								
		medium-grained sand-sized shell,								
		gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-06
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_2 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.0 to 1.5 Ft.	SAND, silty, mostly fine-grained	2.5Y 4/1	3/3 (est)						
		sand-sized quartz, little silt, trace								
		shell, dark gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-07
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

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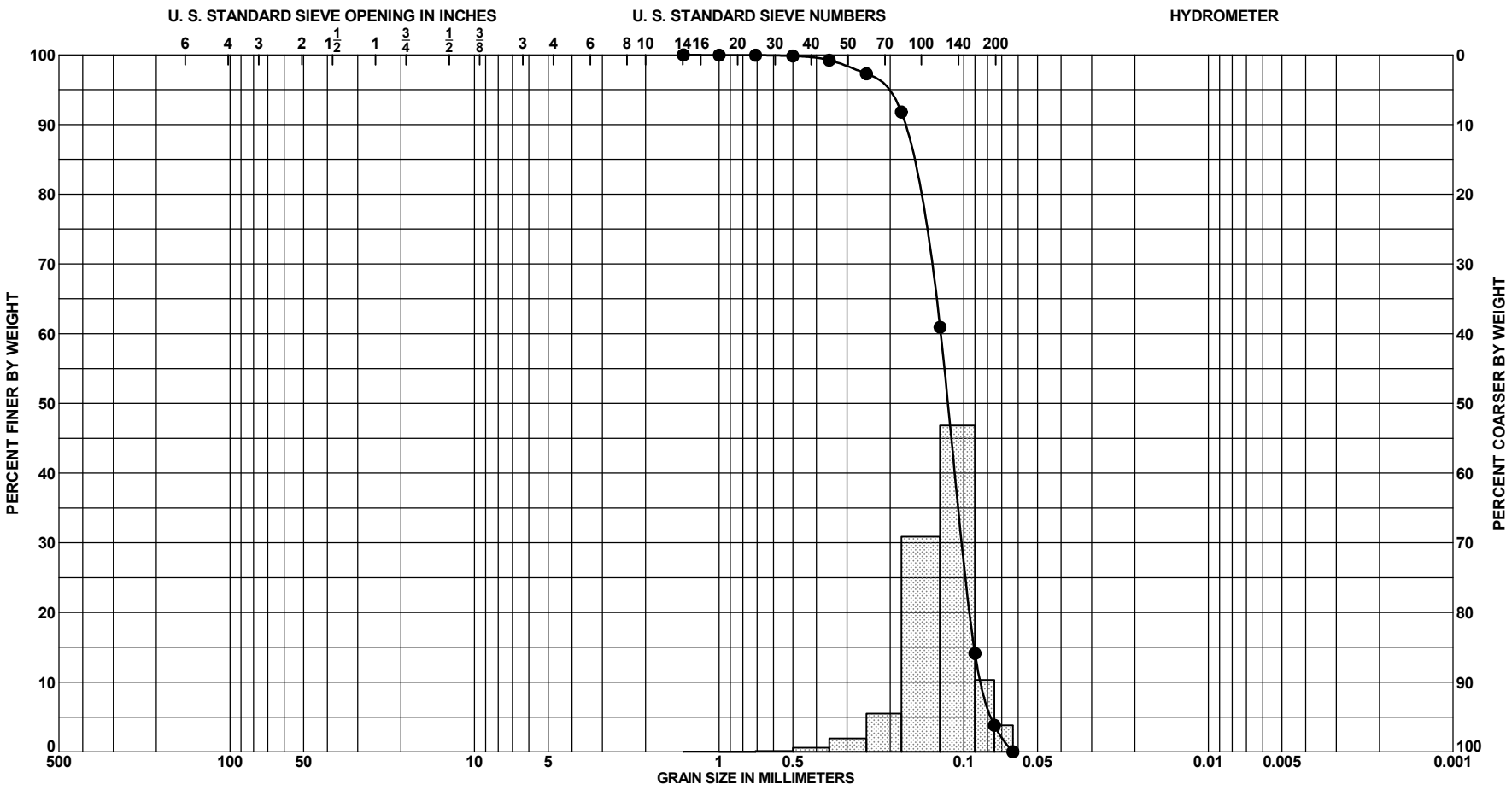

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	1.0 to 1.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-07
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

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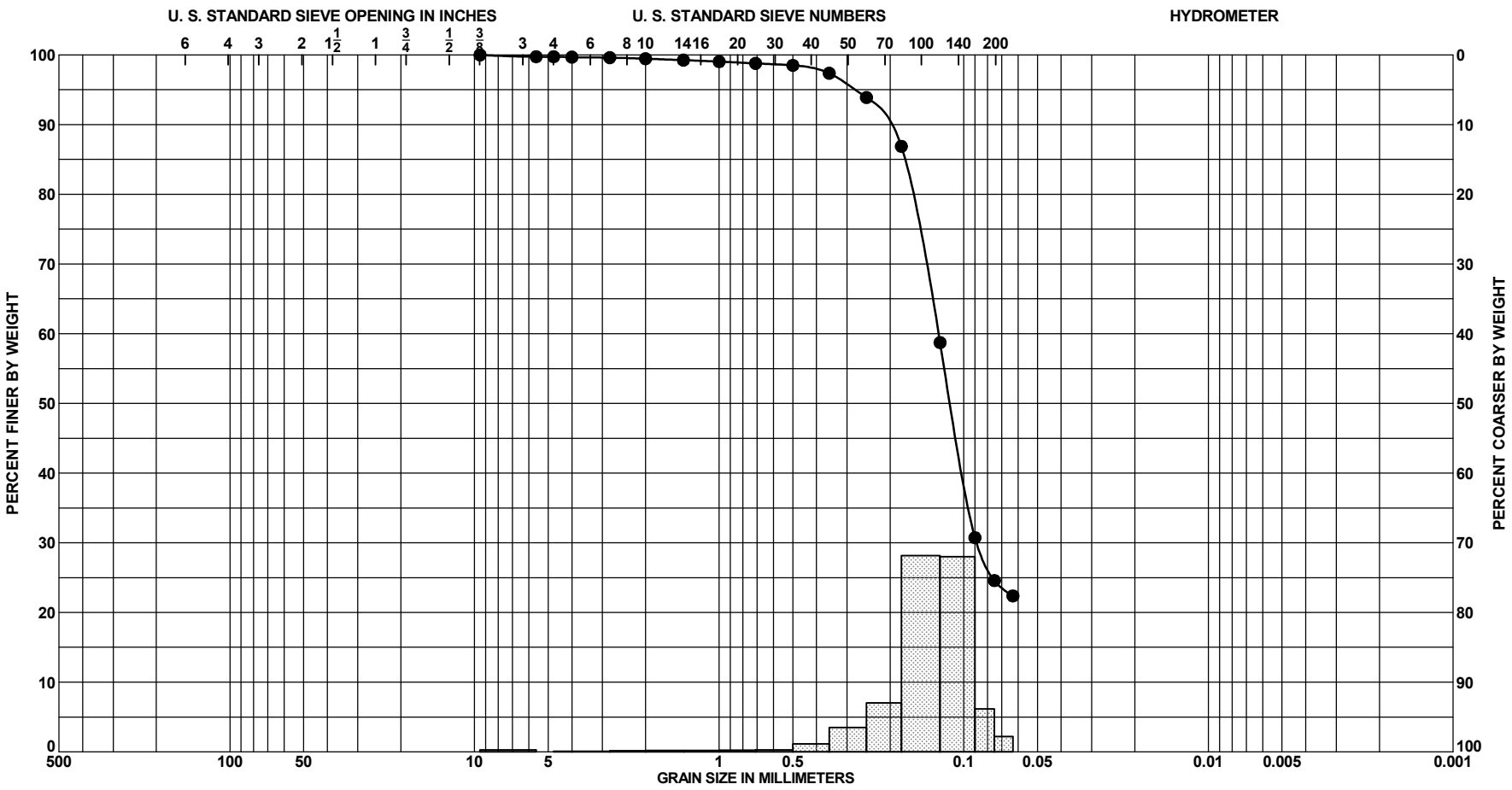
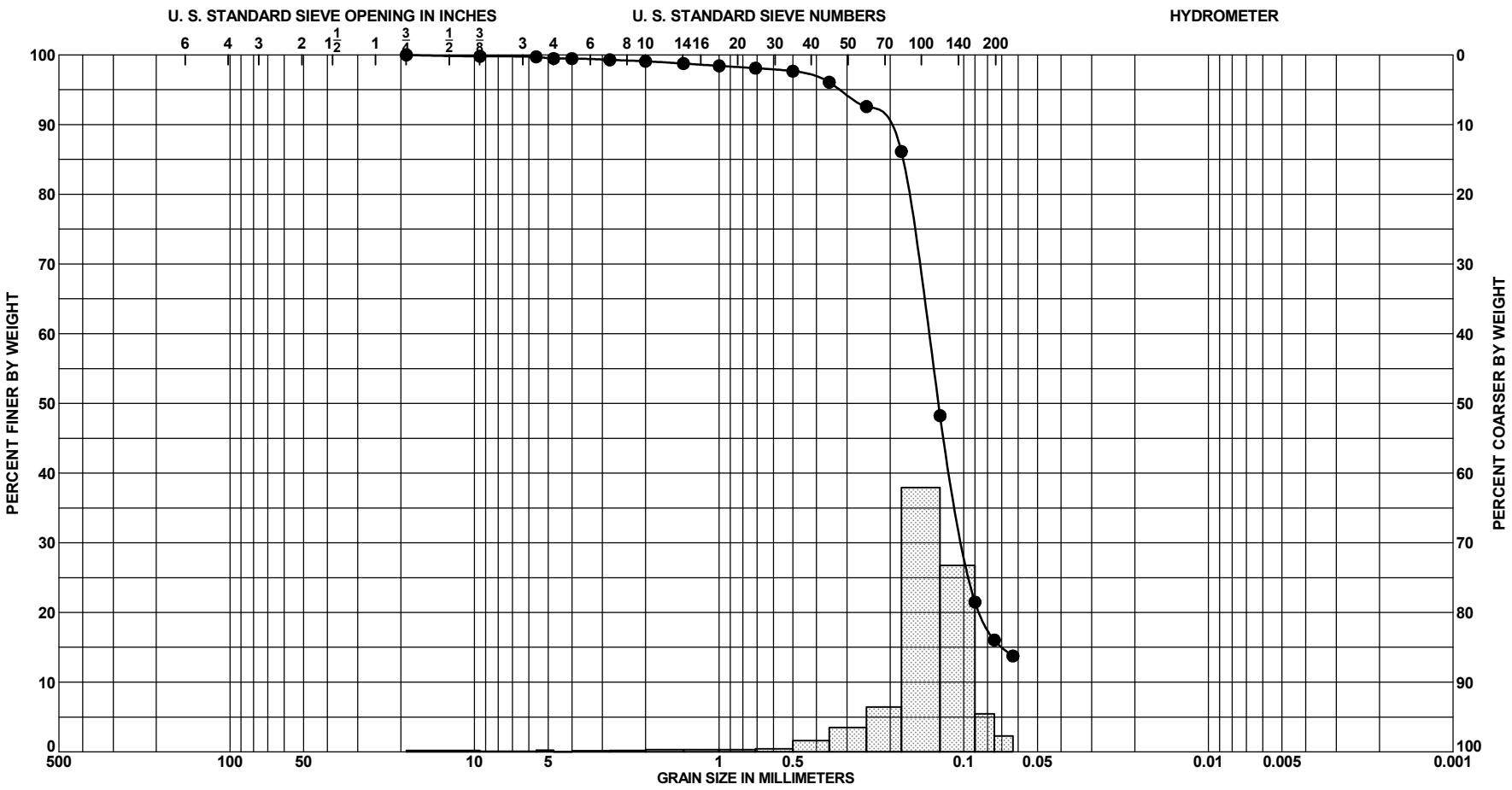


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	2.0 to 2.5 Ft.	SAND, silty, mostly fine-grained	2.5Y 4/1	2 (est)						
		sand-sized quartz, little silt, trace								
		shell, dark gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-07
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	4.0 to 4.5 Ft.	SAND, silty, mostly fine-grained	2.5Y 4/1	3 (est)						
		sand-sized quartz, little silt, trace								
		shell, dark gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-07
BORING ELEV.	-6.1 Ft., MLLW
DATE	1/4/2013

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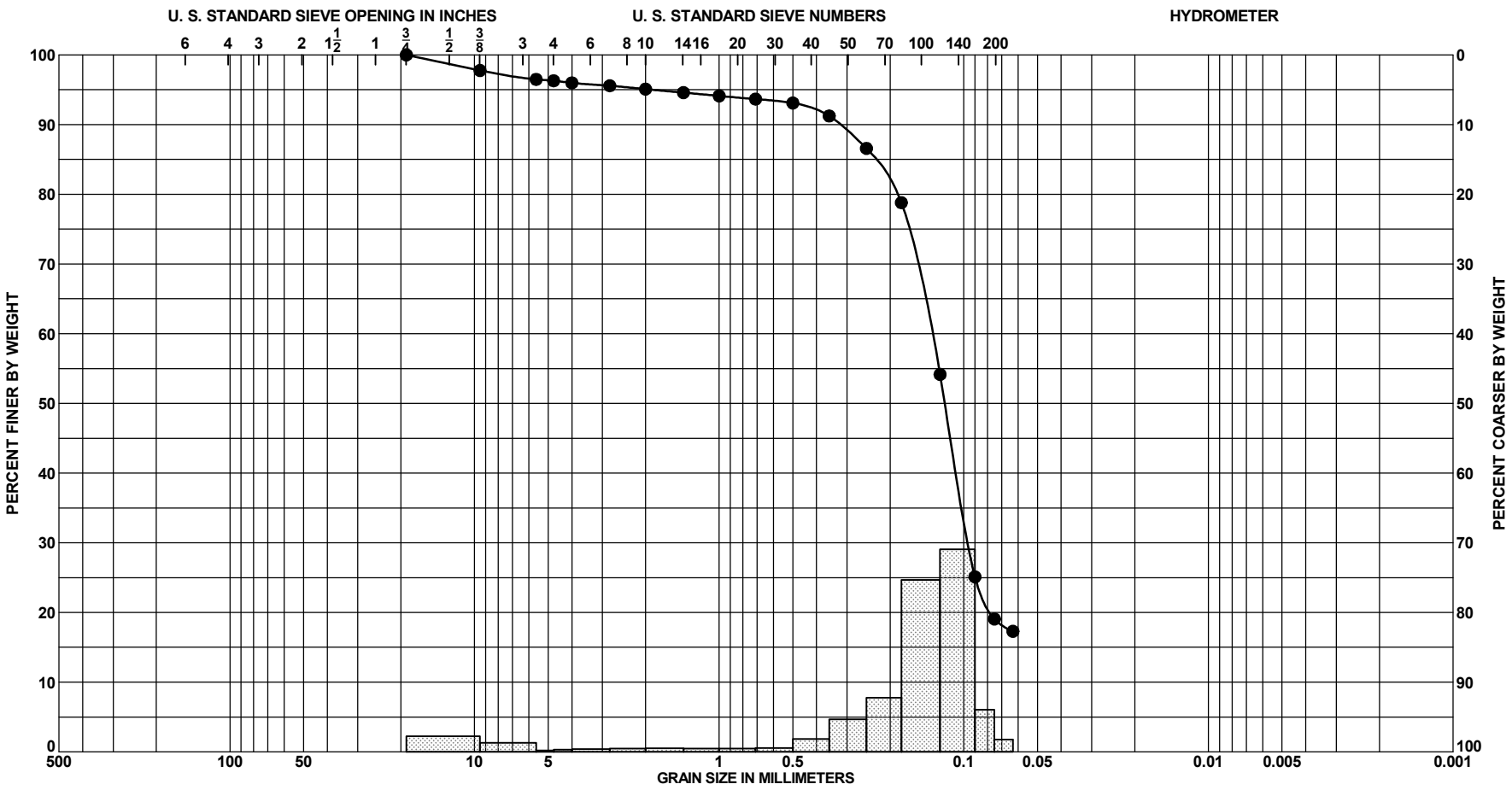
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.0 to 1.5 Ft.	SAND, silty, mostly fine-grained	10Y 5/1	11/9 (est)						
		sand-sized quartz, little silt, few fine								
		to coarse-grained sand-sized shell,								
		greenish gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-08
BORING ELEV.	-6.0 Ft., MLLW
DATE	1/4/2013

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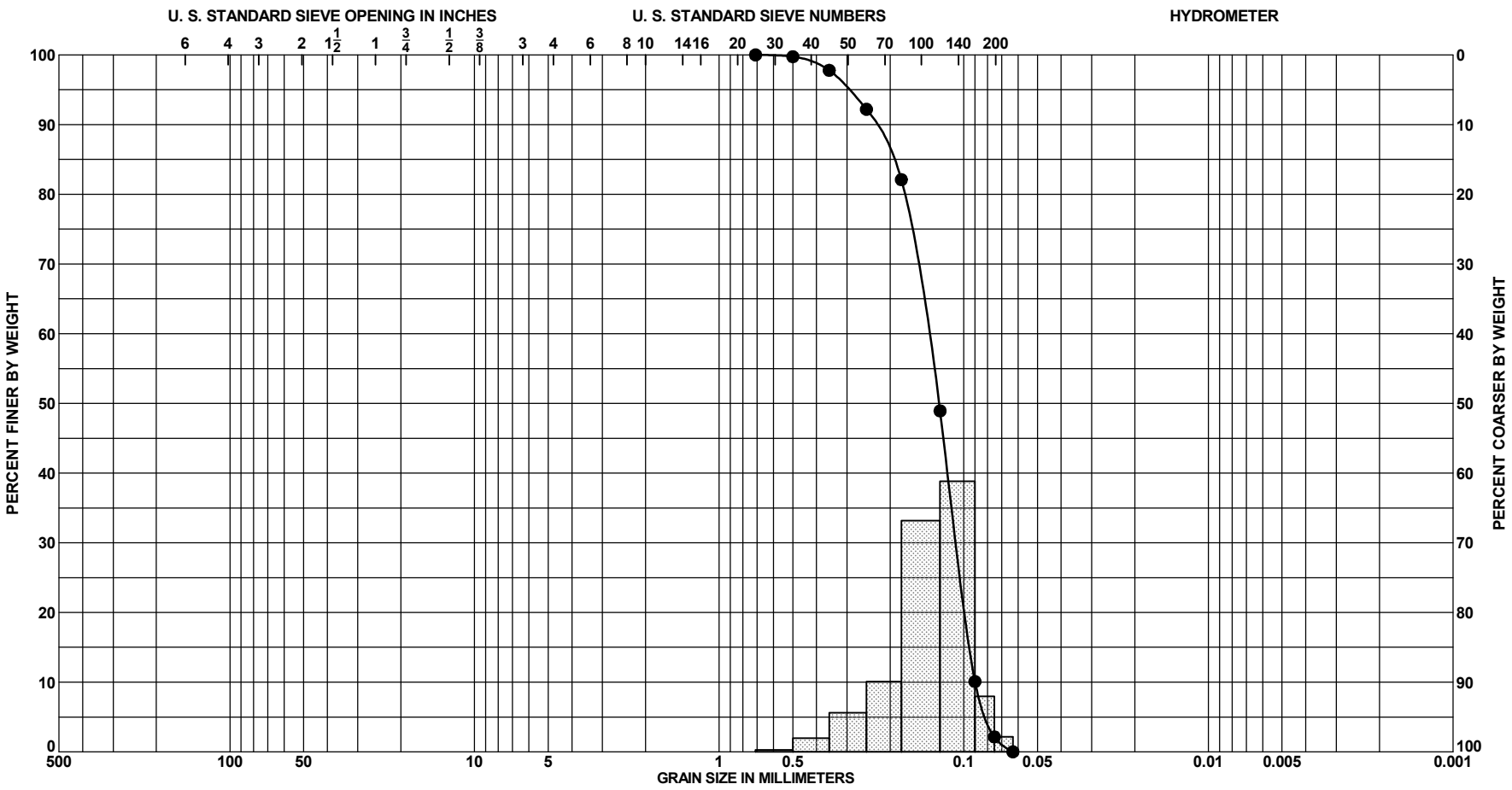

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	1.0 to 1.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-08
BORING ELEV.	-6.0 Ft., MLLW
DATE	1/4/2013

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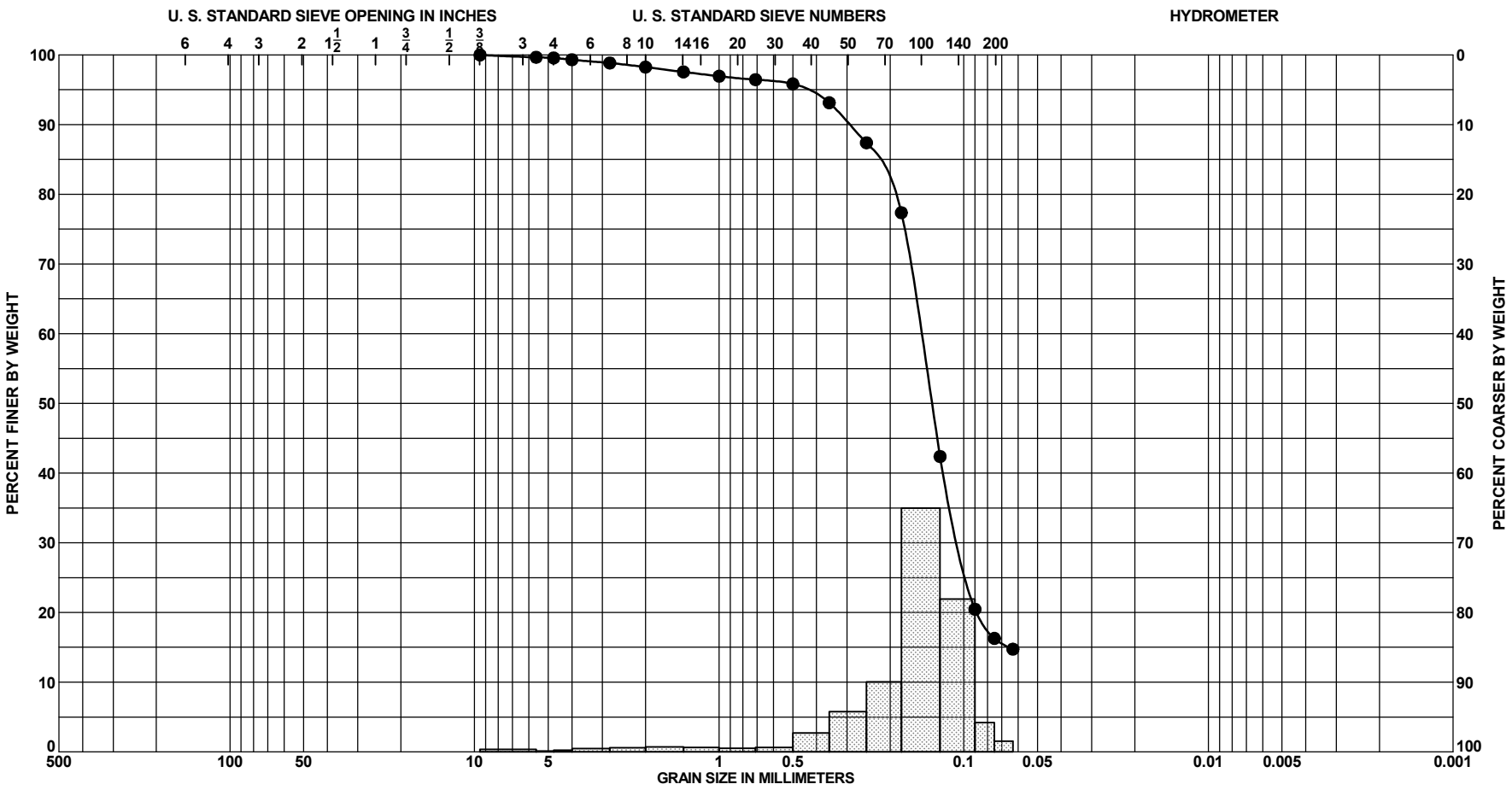
JUN 02



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	2.0 to 2.5 Ft.	SAND, silty, mostly fine-grained	10Y 5/1	5 (est)						
		sand-sized quartz, little silt, trace								
		shell, greenish gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-08
BORING ELEV.	-6.0 Ft., MLLW
DATE	1/4/2013

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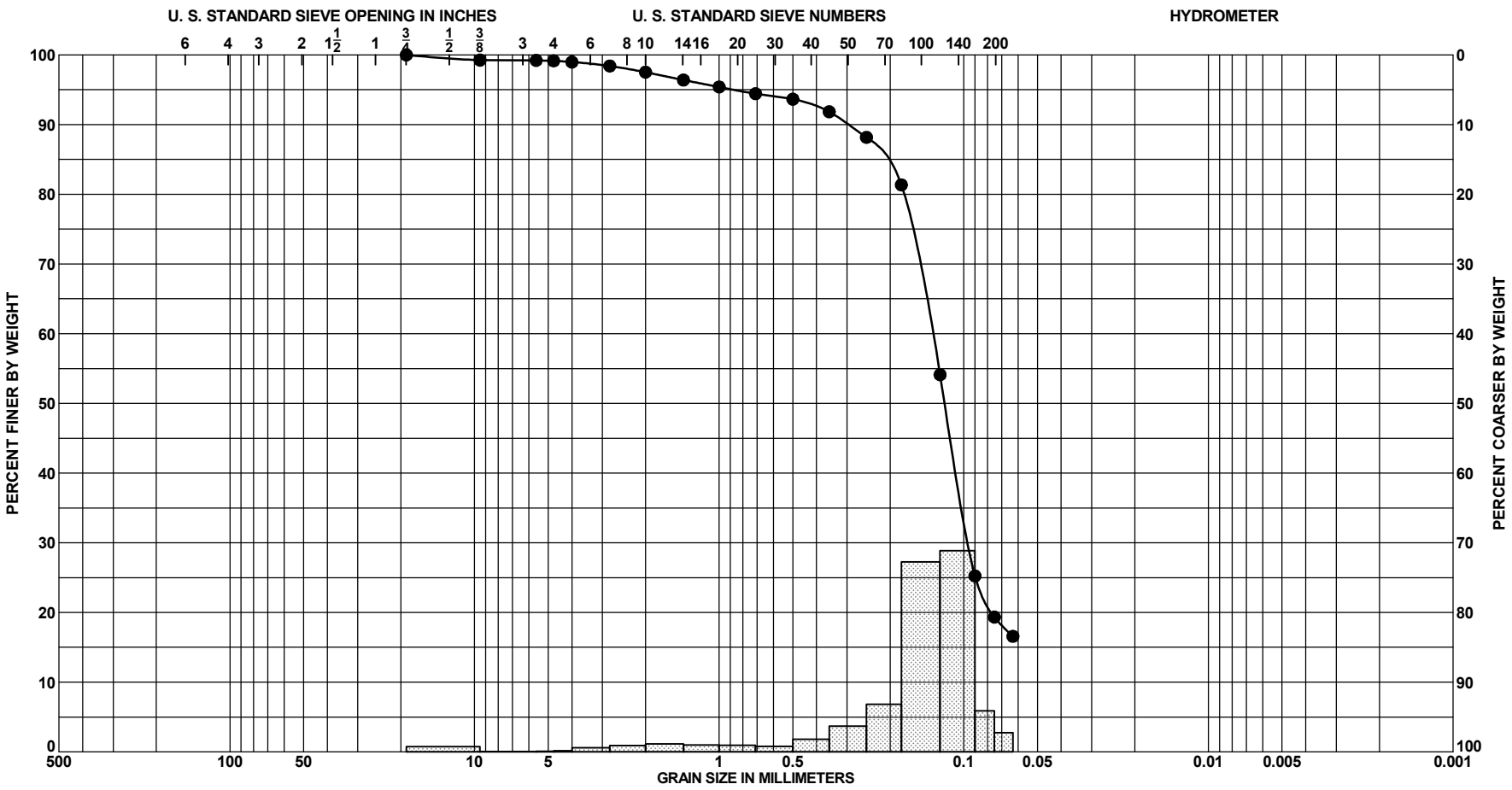

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	4.0 to 4.5 Ft.	SAND, silty, mostly fine-grained	10Y 5/1	7 (est)						
		sand-sized quartz, little silt, few								
		medium-grained sand-sized shell,								
		greenish gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-08
BORING ELEV.	-6.0 Ft., MLLW
DATE	1/4/2013

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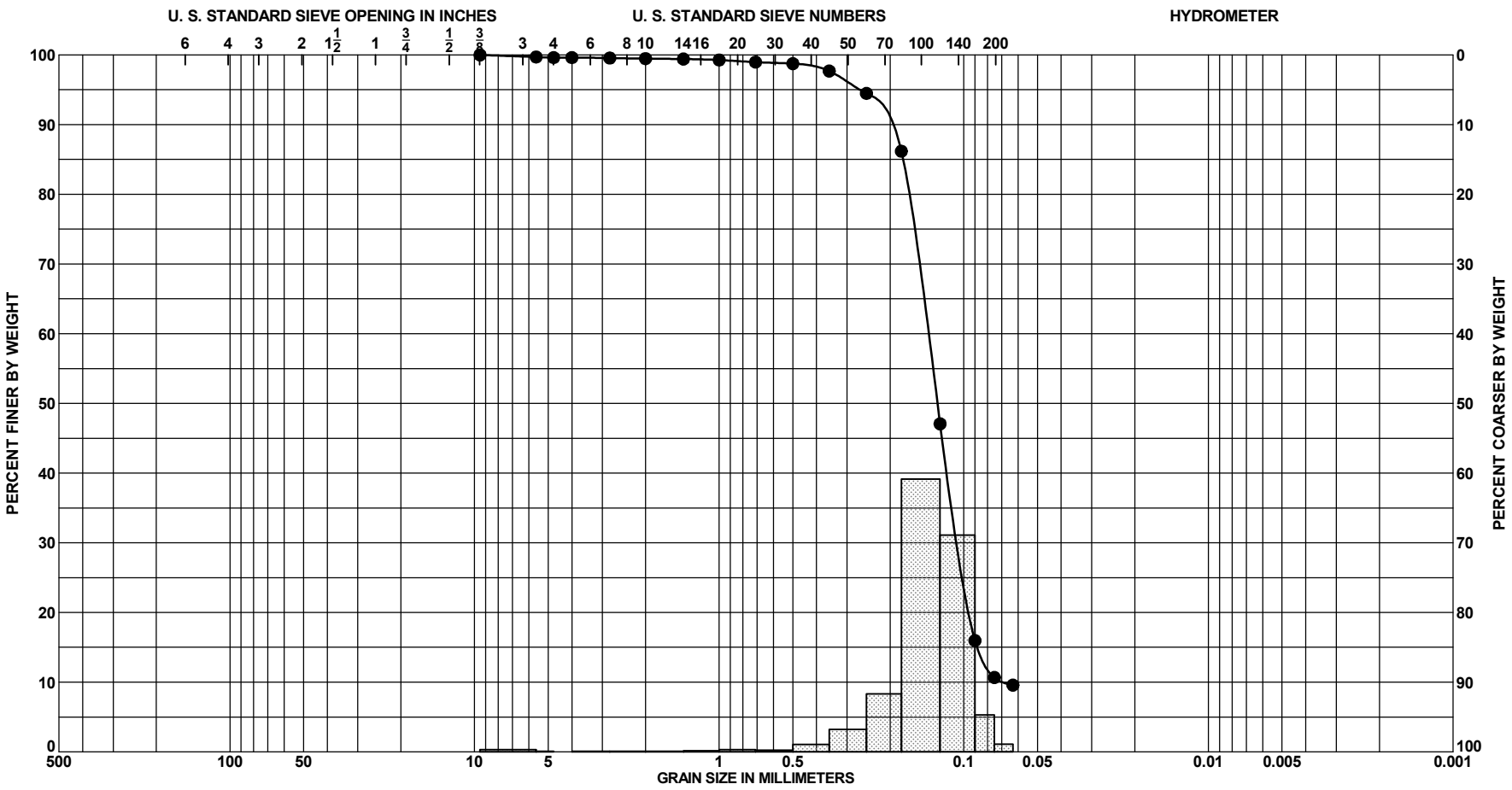

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	1.0 to 1.5 Ft.	SAND, poorly-graded with silt,	5Y 5/1	3/4 (est)						
		mostly fine-grained sand-sized								
		quartz, few silt, trace shell, gray								
		(SP-SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-09
BORING ELEV.	-6.6 Ft., MLLW
DATE	1/4/2013

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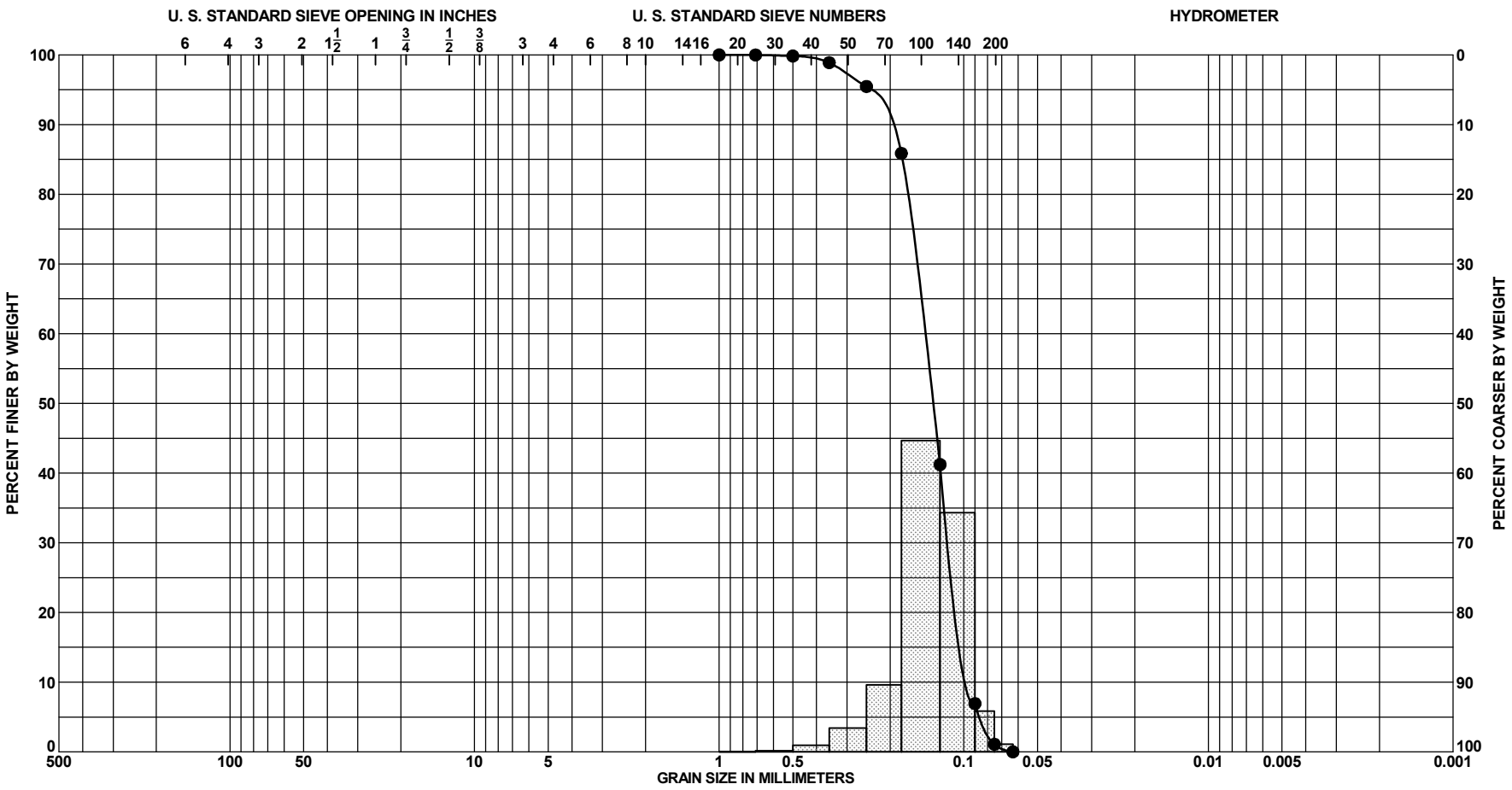

Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	1.0 to 1.5 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-09
BORING ELEV.	-6.6 Ft., MLLW
DATE	1/4/2013

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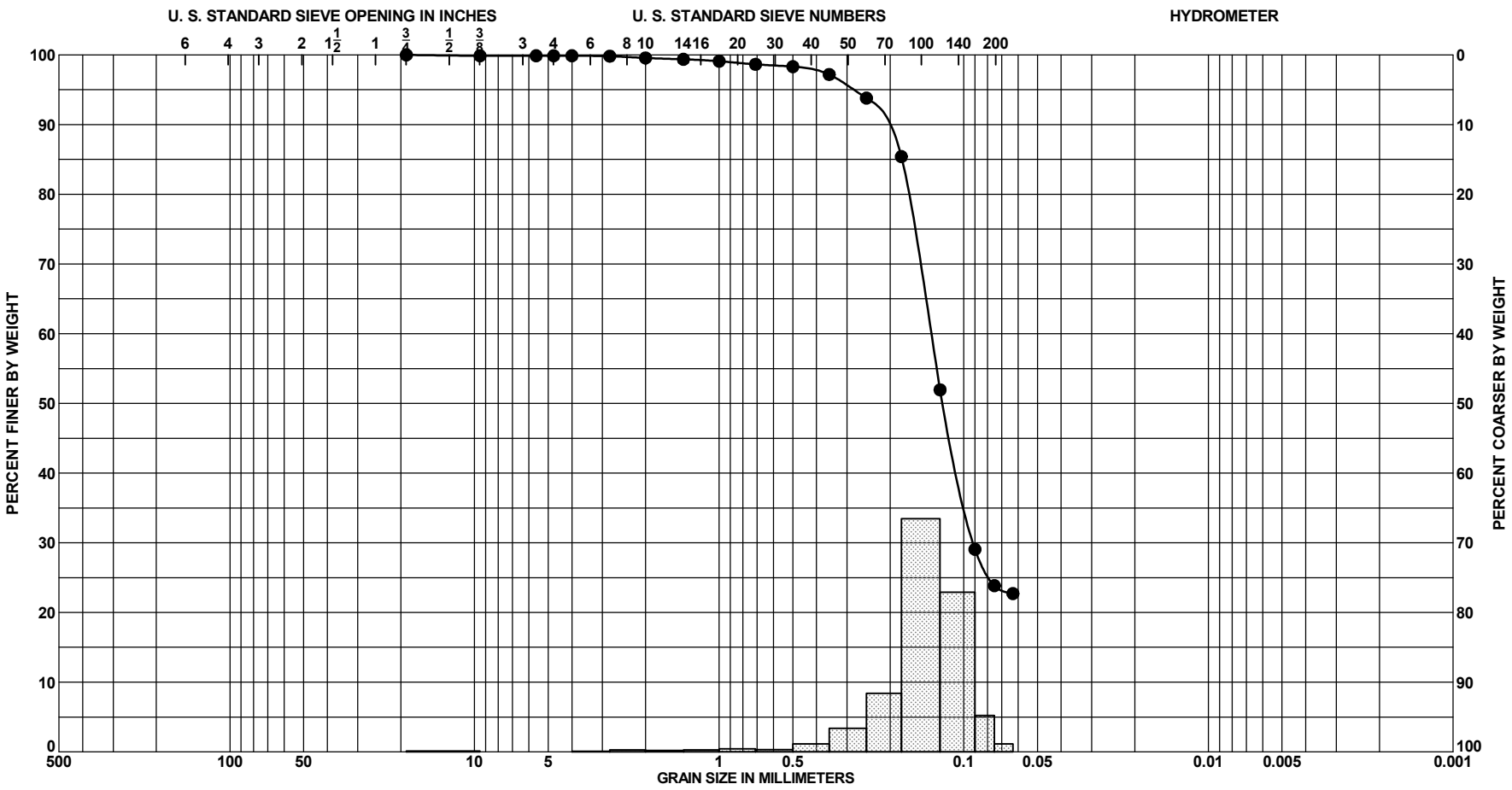
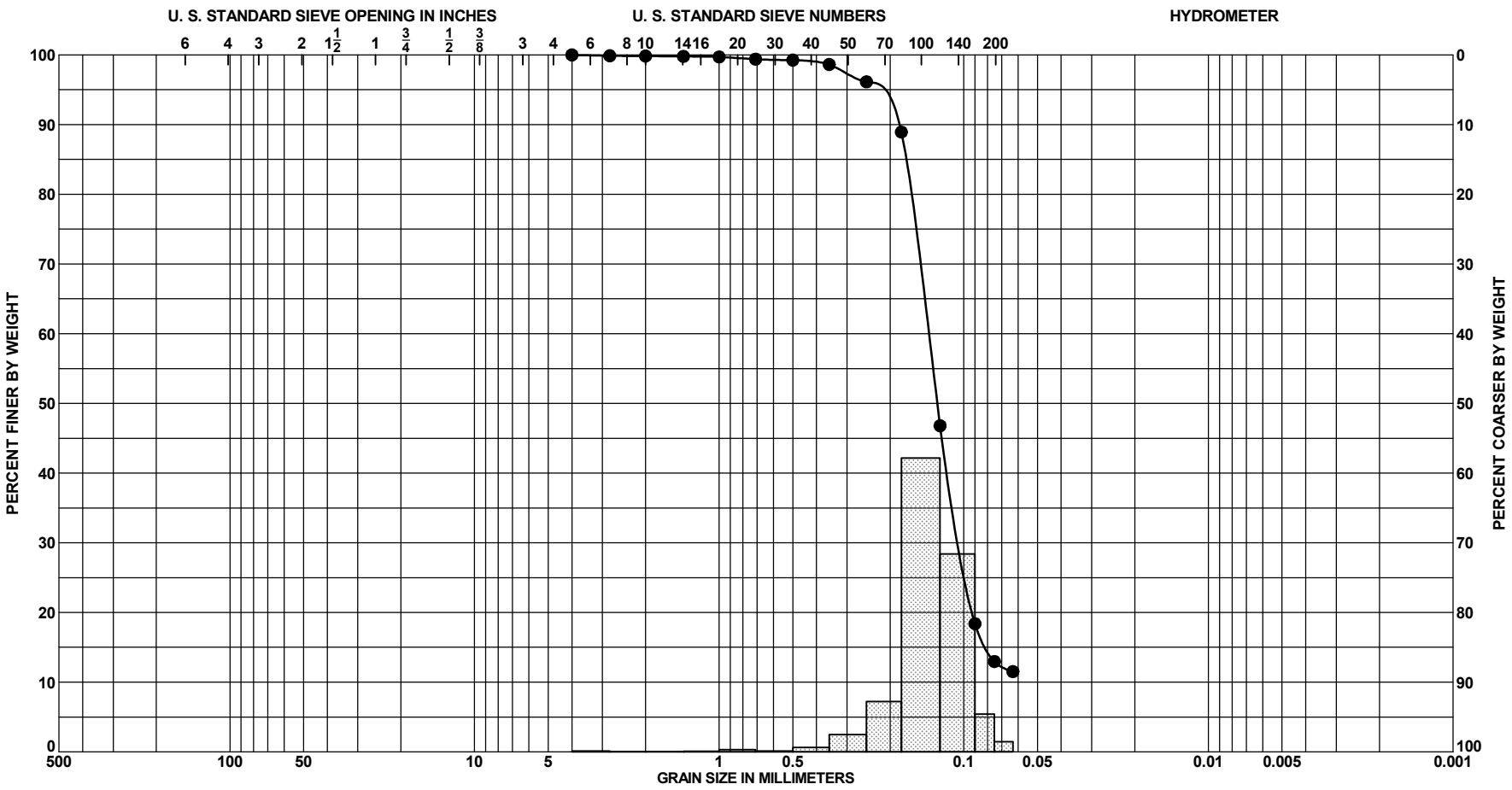


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	2.0 to 2.5 Ft.	SAND, silty, mostly fine-grained	5Y 5/1	4 (est)						
		sand-sized quartz, little silt, trace								
		shell, gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-09
BORING ELEV.	-6.6 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

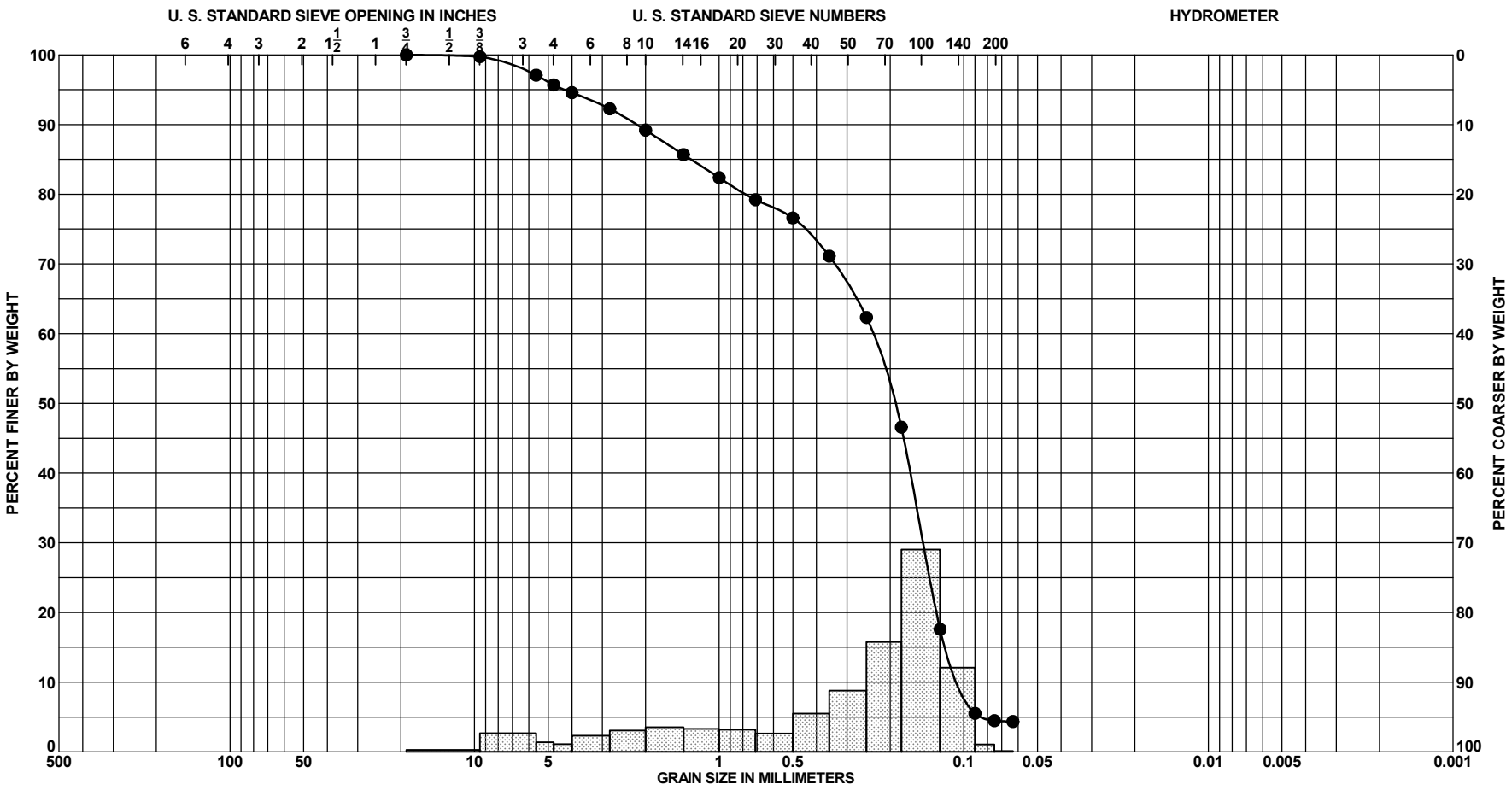


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	4.0 to 4.5 Ft.	SAND, silty, mostly fine-grained	5Y 5/1	2 (est)						
		sand-sized quartz, little silt, trace								
		shell, gray (SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-09
BORING ELEV.	-6.6 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02

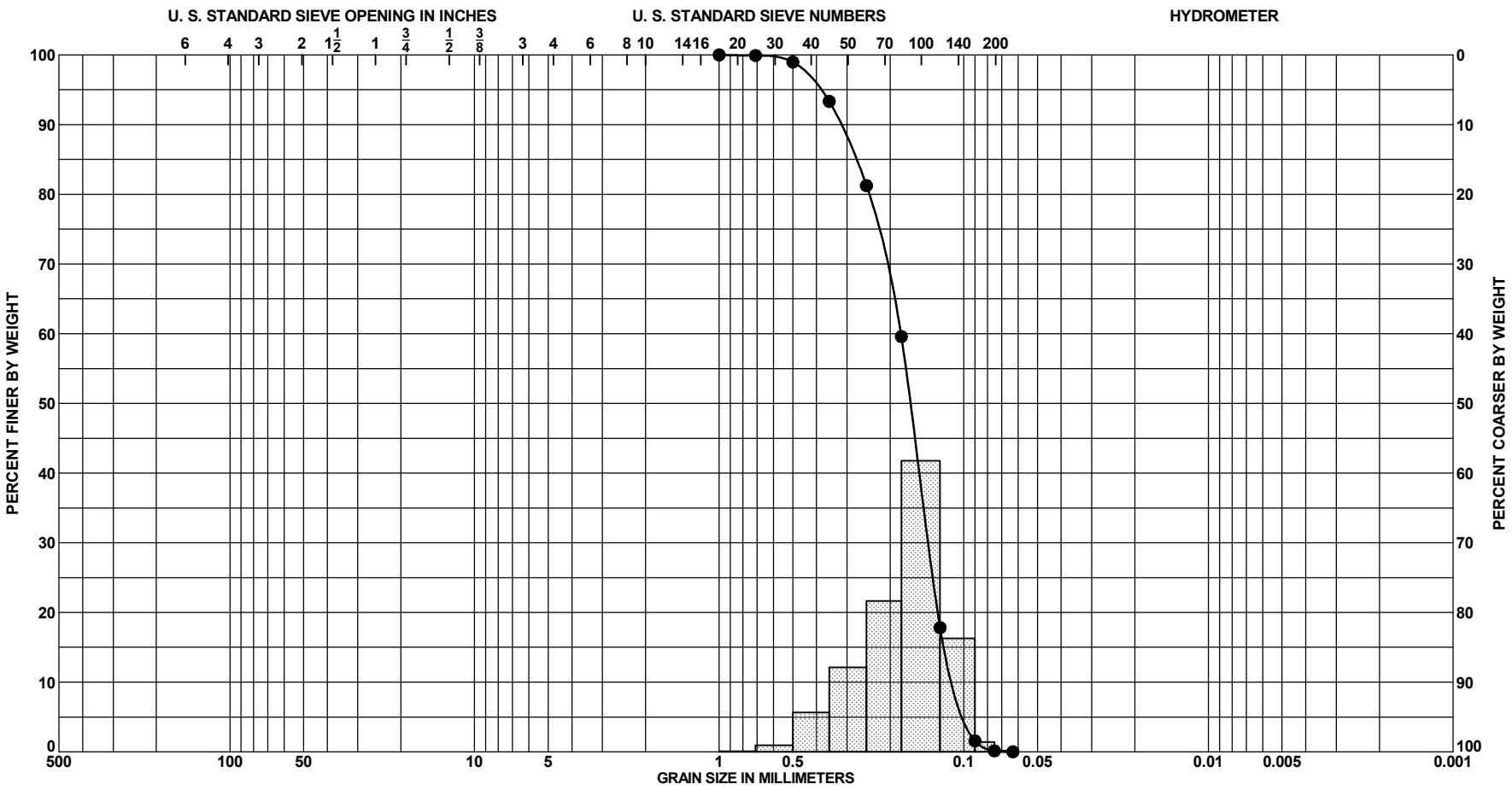


Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.5 to 0.8 Ft.	SAND, poorly-graded, mostly fine-grained sand-sized quartz, some fine to coarse-grained sand-sized shell, trace silt, greenish gray (SP)	10Y 6/1	27/28 (est)						

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-10
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

SAJ FORM 2087
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1-Post	0.5 to 1.0 Ft.	SAND, poorly-graded, mostly	10YR 7/1							
		fine-grained sand-sized quartz, light								
		gray (SP)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-10
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

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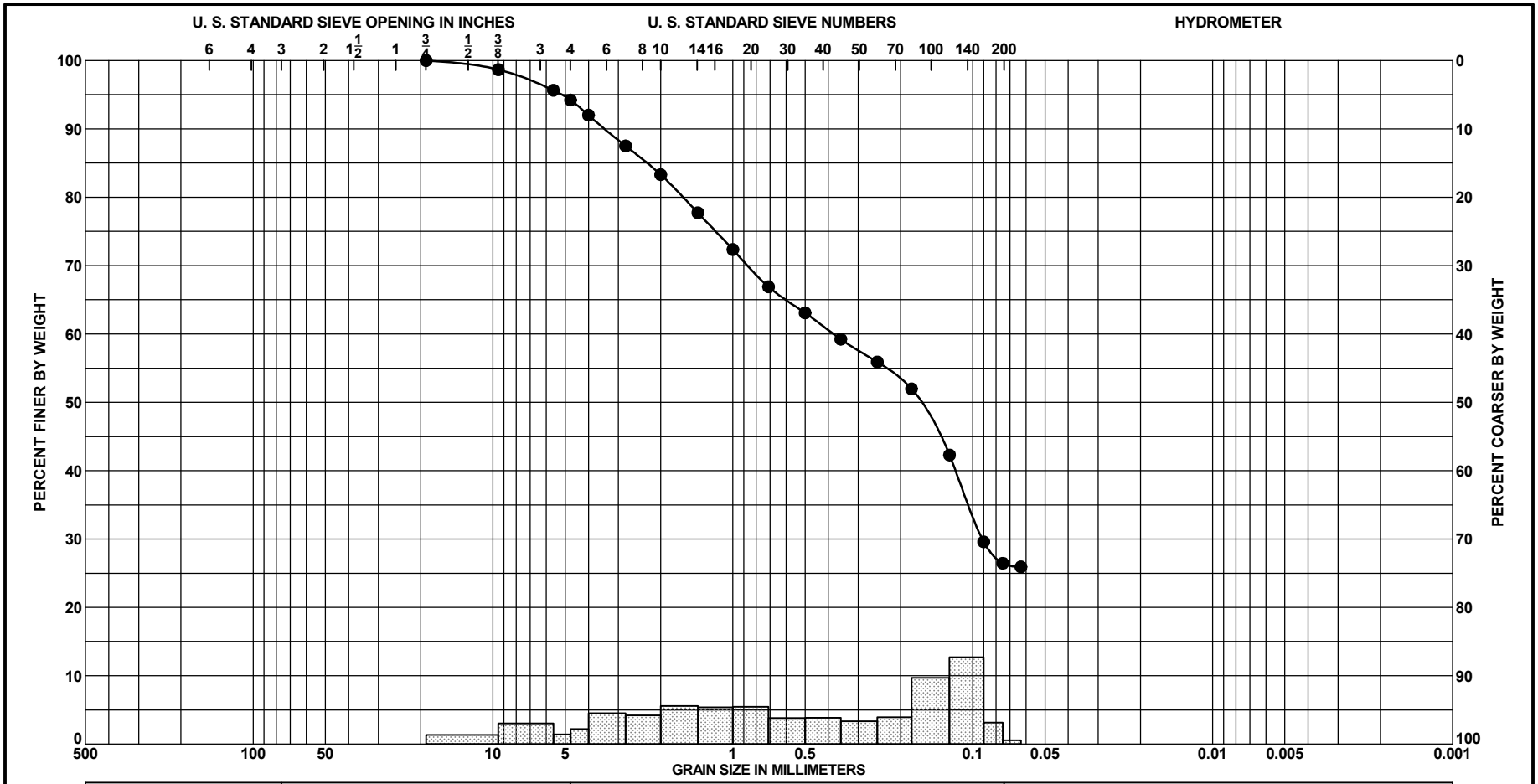
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 2	2.0 to 2.5 Ft.	SAND, silty, some sand to	2.5Y 5/1	49 (est)						
		gravel-sized shell, little silt, little								
		fine-grained sand-sized quartz, gray								
		(SM)								

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-10
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

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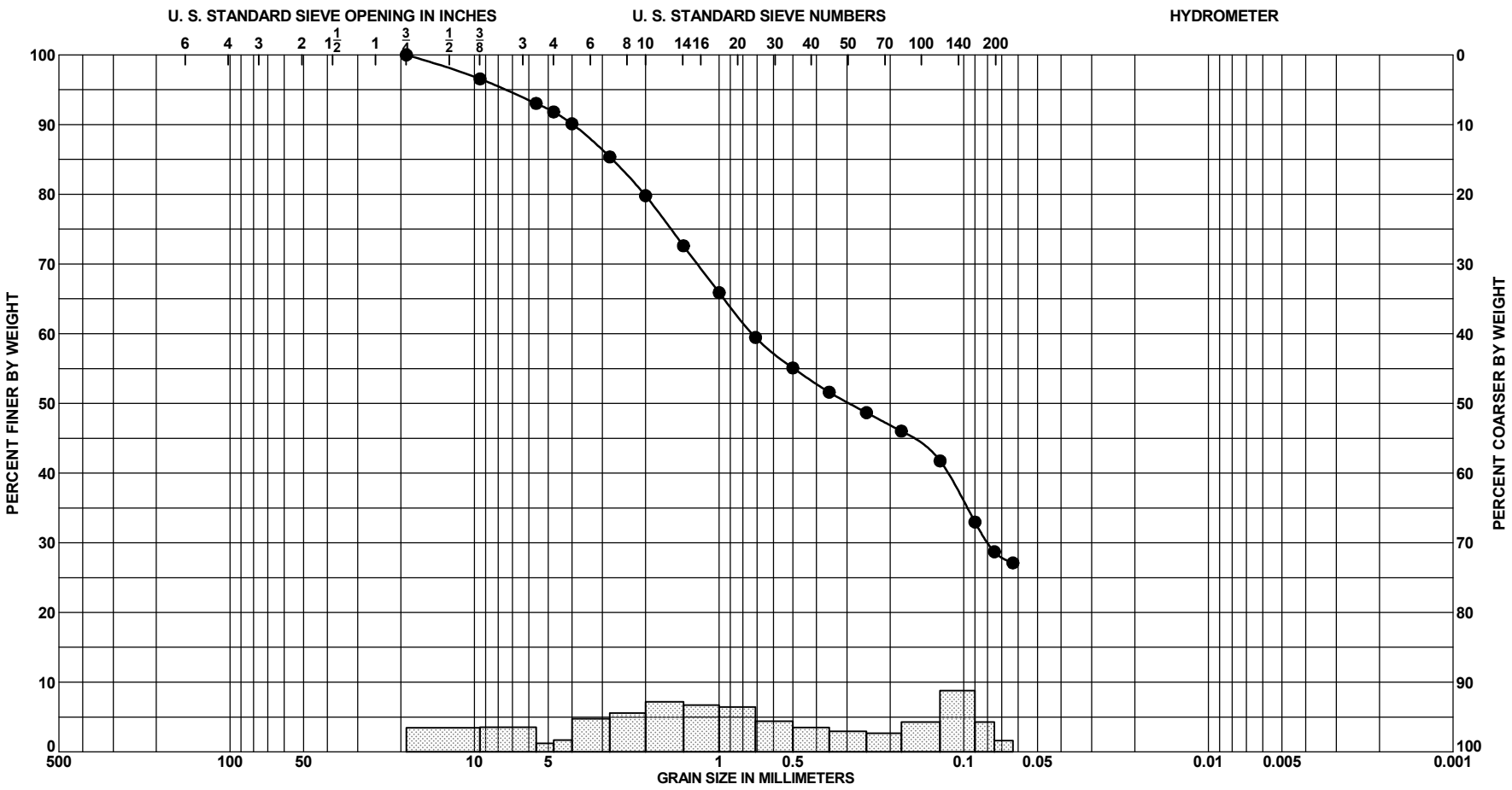
JUN 02



Sample No.	Depth	Classification	Munsell	Visual Shell/ CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 3	4.0 to 4.5 Ft.	SAND, silty, mostly sand to gravel-sized shell, little silt, little fine-grained sand-sized quartz, gray (SM)	2.5Y 5/1	54 (est)						

GRADATION CURVES

PROJECT	GIWW in the Vicinity of Lee County
BORING NO.	VB-GIWW-LEE-12-10
BORING ELEV.	-5.8 Ft., MLLW
DATE	1/4/2013

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JUN 02

Boring Designation VB-GIWW-LEE-12-01

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 1 SHEETS	
1. PROJECT: GIWW in the Vicinity of Lee County	9. SIZE AND TYPE OF BIT		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWW-LEE-12-01	LOCATION COORDINATES: X = 649,721 Y = 790,873	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: American Vibracore Services, Inc.	CONTRACTOR FILE NO.: 6734-12-9681	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Brian McCord		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER:
		15. DATE BORING	STARTED: 12-01-12 / COMPLETED: 12-01-12
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -8.8 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 78 %	
8. TOTAL DEPTH OF BORING: 7.8 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-8.8	0.0								
			SAND, silty, mostly fine-grained sand-sized quartz, some fine to coarse gravel-sized shell, little silt, weak reaction with HCl, moist, 2.5Y 4/1 dark gray (SM)				-9.3		
					1		-9.3		
					1-Post				
			At El. -10.1 Ft., few sand to gravel-sized shell, no reaction with HCl				-10.3		
					2				
							-11.3		
			At El. -11.3 Ft., little fine to coarse-grained sand-sized shell, weak reaction with HCl, 2.5Y 6/1 gray		3				
			At El. -11.6 Ft., few fine to coarse-grained sand-sized shell, no reaction with HCl, 2.5Y 4/1 dark gray						
			At El. -13.8 Ft., little sand to gravel-sized shell, weak reaction with HCl, 5Y 5/1 gray						
-14.8	6.0								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace sand to gravel-sized shell, no reaction with HCl, moist, 2.5Y 5/2 grayish brown (SP-SM)						
-16.6	7.8						-16.6		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.5/1.0	SM*
1-Post	0.5/1.0	SP*
2	1.5/2.0	SM*
3	2.5/3.0	SM*

*Lab visual classification based on gradation curve. No Atterberg limits.

Abbreviations:
NR = Not Recorded.

0
5
10
15

SAJ FORM 1836
JUN 02

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS	
1. PROJECT: GIWW in the Vicinity of Lee County	9. SIZE AND TYPE OF BIT		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWW-LEE-12-02	LOCATION COORDINATES: X = 648,772 Y = 790,408	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: American Vibracore Services, Inc.	CONTRACTOR FILE NO.: 6734-12-9681	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Brian McCord		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER:
		15. DATE BORING	STARTED: 12-01-12 / COMPLETED: 12-01-12
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -5.8 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 84 %	
8. TOTAL DEPTH OF BORING: 8.7 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.8	0.0								
-6.8	1.0		SILT, inorganic-L, little fine-grained sand-sized quartz, few sand to gravel-sized shell, no reaction with HCl, moist, (seams of fine-grained sand-sized quartz), 10Y 5/1 greenish gray (ML)				-6.8		
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, few medium-grained sand-sized shell, no reaction with HCl, moist, (seams of silt), 10Y 5/1 greenish gray (SM)		1 1-Post		-6.8		
			At El. -8.3 Ft., 10Y 6/1 greenish gray				-8.8		
			At El. -8.8 Ft., some silt, few fine to medium-grained sand-sized shell		2		-10.8		
			At El. -10.8 Ft., some sand to gravel-sized shell, weak reaction with HCl		3		-14.5		
			At El. -12.8 Ft., little silt						
-14.5	8.7								

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SM*
1-Post	1.0/1.5	SP*
2	3.0/3.5	SM*
3	5.0/5.5	SM*

*Lab visual classification based on gradation

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-02

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 648,772 Y = 790,408	-5.8 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			curve. No Atterberg limits.						

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SAJ FORM 1836-A
JUN 02

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS	
1. PROJECT: GIWW in the Vicinity of Lee County	9. SIZE AND TYPE OF BIT		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWW-LEE-12-03	LOCATION COORDINATES: X = 647,686 Y = 789,708	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: American Vibracore Services, Inc.	CONTRACTOR FILE NO.: 6734-12-9681	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Brian McCord		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER:
		15. DATE BORING	STARTED: 12-01-12 / COMPLETED: 12-01-12
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -7.8 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 100 %	
8. TOTAL DEPTH OF BORING: 10.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.8	0.0								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, few fine to medium-grained sand-sized shell, no reaction with HCl, moist, occasional seams of silt, 2.5Y 4/1 dark gray (SP-SM)		1 -Post 2		-8.3 -8.3 -8.8		
-10.8	3.0						-10.8		
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, few fine to medium-grained sand-sized shell, 2.5Y 4/1 dark gray (SM) At El. -11.6 Ft., some fine to coarse gravel-sized shell, strong reaction with HCl		3				
-15.7	7.9								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, no reaction with HCl, moist, 2.5Y 6/1 gray (SP-SM)						
-18.4	10.6						-18.4		

NOTES:

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2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-03

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 647,686 Y = 789,708	-7.8 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 0.5/1.0 SP-SM* 1-Post 0.5/1.0 SP* 2 1.0/1.5 SP-SM* 3 3.0/3.5 SM* *Lab visual classification based on gradation curve. No Atterberg limits.						

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Boring Designation VB-GIWW-LEE-12-04

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District	**SHEET** 1 **OF** 2 **SHEETS**	
1. PROJECT GIWW in the Vicinity of Lee County	**9. SIZE AND TYPE OF BIT**		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD83	**VERTICAL** MLLW
2. BORING DESIGNATION VB-GIWW-LEE-12-04	**LOCATION COORDINATES** X = 646,591 Y = 788,923	**11. MANUFACTURER'S DESIGNATION OF DRILL** Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY American Vibracore Services, Inc.	**CONTRACTOR FILE NO.** 6734-12-9681	**12. TOTAL SAMPLES**	**DISTURBED** 4 / **UNDISTURBED (UD)** 0
4. NAME OF DRILLER Brian McCord		**13. TOTAL NUMBER CORE BOXES** 0	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED	**DEG. FROM VERTICAL** / **BEARING**	**14. ELEVATION GROUND WATER**	
		15. DATE BORING	**STARTED** 12-01-12 / **COMPLETED** 12-01-12
6. THICKNESS OF OVERBURDEN N/A		**16. ELEVATION TOP OF BORING** -7.5 Ft.	
7. DEPTH DRILLED INTO ROCK N/A		**17. TOTAL RECOVERY FOR BORING** 98 %	
8. TOTAL DEPTH OF BORING 9.8 Ft.		**18. SIGNATURE AND TITLE OF INSPECTOR** James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-7.5	0.0								
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell, no reaction with HCl, moist, 2.5Y 5/1 gray (SM)				-8.0		
					1		-8.0		
					1-Post		-9.0		
					2				
-10.0	2.5						-10.0		
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace fine to coarse-grained sand-sized shell, weak reaction with HCl, moist, 2.5Y 4/1 dark gray (SP-SM)		3				
			At El. -11.5 Ft., few sand to gravel-sized shell, N 6/ gray						
-13.0	5.5		At El. -12.6 Ft., some fine to coarse gravel-sized shell, strong reaction with HCl						
			SAND, silty, mostly fine-grained sand-sized quartz, little silt (SM)						
-17.3	9.8						-17.3		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.5/1.0	SM*
1-Post	0.5/1.0	SP*

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-04

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 646,591 Y = 788,923	-7.5 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			2 1.5/2.0 SM* 3 2.5/3.0 SP-SM* *Lab visual classification based on gradation curve. No Atterberg limits.						

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Boring Designation VB-GIWW-LEE-12-05

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: GIWW in the Vicinity of Lee County		9. SIZE AND TYPE OF BIT	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWW-LEE-12-05	LOCATION COORDINATES: X = 645,545 Y = 788,297	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: American Vibracore Services, Inc.	CONTRACTOR FILE NO.: 6734-12-9681	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Brian McCord		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER:
		15. DATE BORING	STARTED: 12-01-12 / COMPLETED: 12-01-12
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -8.0 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 100 %	
8. TOTAL DEPTH OF BORING: 10.2 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-8.0	0.0								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little fine to coarse-grained sand-sized shell, few silt, no reaction with HCl, moist, (silt seams), 2.5Y 5/1 gray (SP-SM)				-8.5		
					1		-8.5		
					-Post		-9.5		
					2				
-10.7	2.7				3		-10.5		
			SILT, inorganic-L, some fine-grained sand-sized quartz, little fine to coarse gravel-sized shell, weak reaction with HCl, moist, 2.5Y 5/1 gray (ML)						
			At El. -13.0 Ft., little fine-grained sand-sized quartz, 5Y 5/1 gray						
-15.8	7.8								
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, little sand to gravel-sized shell, weak reaction with HCl, moist, 5Y 5/1 gray (SM)						
-18.2	10.2						-18.2		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.5/1.0	SP-SM*

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-05

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 645,545 Y = 788,297	-8.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1-Post 0.5/1.0 SP* 2 1.5/2.0 SP-SM* 3 2.5/2.7 SP-SM* *Lab visual classification based on gradation curve. No Atterberg limits.						

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SAJ FORM 1836-A
JUN 02

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS	
1. PROJECT: GIWW in the Vicinity of Lee County	9. SIZE AND TYPE OF BIT		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWW-LEE-12-06	LOCATION COORDINATES: X = 644,826 Y = 787,837	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: American Vibracore Services, Inc.	CONTRACTOR FILE NO.: 6734-12-9681	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Brian McCord		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER:
		15. DATE BORING	STARTED: 12-01-12 / COMPLETED: 12-01-12
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -6.1 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 93 %	
8. TOTAL DEPTH OF BORING: 9.3 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-6.1	0.0								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, no reaction with HCl, moist, (seams of silt throughout), 2.5Y 4/1 dark gray (SP-SM)				-7.1		
					1		-7.1		
-8.1	2.0				1-Post		-8.1		
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell, weak reaction with HCl, 2.5Y 5/1 gray (SM)		2		-10.1		
-10.7	4.6		At El. -10.1 Ft., few medium-grained sand-sized shell		3				
-11.3	5.2		SILT, inorganic-L, little fine-grained sand-sized quartz, no reaction with HCl, moist, 10Y 6/1 greenish gray (ML)						
			SAND, silty, some fine-grained sand-sized quartz, some silt, no reaction with HCl, moist, 10Y 6/1 greenish gray (SM)						
-15.4	9.3		At El. -13.6 Ft., some fine to coarse gravel-sized shell, little silt, strong reaction with HCl				-15.4		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SP-SM*
1-Post	1.0/1.5	SP*
2	2.0/2.5	SM*
3	4.0/4.5	SM*

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-06

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 644,826 Y = 787,837	-6.1 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			*Lab visual classification based on gradation curve. No Atterberg limits.						

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SAJ FORM 1836-A
JUN 02

DRILLING LOG

DIVISION	South Atlantic
INSTALLATION	Jacksonville District
SHEET	1 OF 2 SHEETS
1. PROJECT	GIWW in the Vicinity of Lee County
2. BORING DESIGNATION	VB-GIWW-LEE-12-07
LOCATION COORDINATES	X = 644,436 Y = 787,599
3. DRILLING AGENCY	American Vibracore Services, Inc.
CONTRACTOR FILE NO.	6734-12-9681
4. NAME OF DRILLER	Brian McCord
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	7.9 Ft.
9. SIZE AND TYPE OF BIT	
10. COORDINATE SYSTEM/DATUM	State Plane, FLW (U.S. Ft.)
HORIZONTAL	NAD83
VERTICAL	MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	DISTURBED 4 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	0
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 12-01-12 / COMPLETED 12-01-12
16. ELEVATION TOP OF BORING	-6.1 Ft.
17. TOTAL RECOVERY FOR BORING	78 %
18. SIGNATURE AND TITLE OF INSPECTOR	James A. Horton, P.E., Geotechnical Engineer

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-6.1	0.0								
			SAND, silty, some fine-grained sand-sized quartz, little silt, few sand to gravel-sized shell, no reaction with HCl, moist, 2.5Y 4/1 dark gray (SM)				-7.1		
					1		-7.1		
					1-Post				
-8.5	2.4						-8.1		
-8.9	2.8		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, no reaction with HCl, moist, 2.5Y 7/1 light gray (SP-SM)		2				
			SAND, silty, some fine-grained sand-sized quartz, little silt, few sand to gravel-sized shell, weak reaction with HCl, moist, 2.5Y 4/1 dark gray (SM)				-10.1		
-11.1	5.0				3				
-11.6	5.5		SILT, inorganic-L, some fine-grained sand-sized quartz, trace fine-grained sand-sized shell, no reaction with HCl, moist, seams of sand throughout, 2.5Y 4/1 dark gray (ML)						
-12.5	6.4		SAND, silty, mostly fine-grained sand-sized quartz, little silt, few fine to coarse-grained sand-sized shell, no reaction with HCl, moist, 2.5Y 4/1 dark gray (SM)						
-14.0	7.9		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace fine to coarse-grained sand-sized shell, no reaction with HCl, moist, 2.5Y 4/1 dark gray (SP-SM)				-14.0		

NOTES:

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2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SM*
1-Post	1.0/1.5	SP*
2	2.0/2.5	SM*
3	4.0/4.5	SM*

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-07

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 644,436 Y = 787,599	-6.1 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			*Lab visual classification based on gradation curve. No Atterberg limits.						

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Boring Designation VB-GIWW-LEE-12-08

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT: GIWW in the Vicinity of Lee County		9. SIZE AND TYPE OF BIT	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWW-LEE-12-08	LOCATION COORDINATES: X = 643,598 Y = 787,083	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: American Vibracore Services, Inc.	CONTRACTOR FILE NO.: 6734-12-9681	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Brian McCord		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER:
		15. DATE BORING	STARTED: 12-01-12 / COMPLETED: 12-01-12
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -6.0 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 100 %	
8. TOTAL DEPTH OF BORING: 10.5 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-6.0	0.0								
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, little sand to gravel-sized shell, weak reaction with HCl, moist, 10Y 5/1 greenish gray (SM)				-7.0		
					1 -Post		-7.0		
							-8.0		
			At El. -8.5 Ft., some silt, few medium-grained sand-sized shell, strong reaction with HCl		2				
			At El. -8.6 Ft., some silt, no reaction with HCl				-10.0		
					3				
			At El. -11.0 Ft., mostly fine-grained sand-sized quartz, little sand to gravel-sized shell, weak reaction with HCl						
-12.0	6.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, few organic matter, trace fine-grained sand-sized shell, no reaction with HCl, moist, 2.5Y 4/1 dark gray (SP-SM)						
			At El. -13.0 Ft., 2.5Y 4/2 dark grayish brown						
			At El. -15.4 Ft., 2.5Y 7/1 light gray						
-16.5	10.5						-16.5		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-08

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 643,598 Y = 787,083	-6.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			1 1.0/1.5 SM* 1-Post 1.0/1.5 SP* 2 2.0/2.5 SM* 3 4.0/4.5 SM* *Lab visual classification based on gradation curve. No Atterberg limits.						

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DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS	
1. PROJECT: GIWW in the Vicinity of Lee County	9. SIZE AND TYPE OF BIT		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLW (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: VB-GIWW-LEE-12-09	LOCATION COORDINATES: X = 642,791 Y = 786,603	11. MANUFACTURER'S DESIGNATION OF DRILL: Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: American Vibracore Services, Inc.	CONTRACTOR FILE NO.: 6734-12-9681	12. TOTAL SAMPLES	DISTURBED: 4 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Brian McCord		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER:
		15. DATE BORING	STARTED: 12-01-12 / COMPLETED: 12-01-12
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -6.6 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 86 %	
8. TOTAL DEPTH OF BORING: 8.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: James A. Horton, P.E., Geotechnical Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-6.6	0.0								
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, trace shell, no reaction with HCl, moist, (silt seams throughout), 5Y 5/1 gray (SP-SM)				-7.6		
					1 1-Post		-7.6		
-8.6	2.0						-8.6		
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, trace shell, no reaction with HCl, moist, 5Y 5/1 gray (SM)		2				
							-10.6		
					3				
-13.1	6.5								
-14.0	7.4		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, no reaction with HCl, moist, 5Y 7/1 light gray (SP-SM)						
-15.2	8.6		SAND, silty, mostly fine-grained sand-sized quartz, little silt, no reaction with HCl, moist, 10Y 5/1 greenish gray (SM)				-15.2		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	1.0/1.5	SP-SM*
1-Post	1.0/1.5	SP*
2	2.0/2.5	SM*
3	4.0/4.5	SM*

*Lab visual classification based on gradation

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-09

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 642,791 Y = 786,603	-6.6 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			curve. No Atterberg limits.						

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Boring Designation VB-GIWW-LEE-12-10

DRILLING LOG

DIVISION South Atlantic	**INSTALLATION** Jacksonville District	**SHEET** 1 **OF** 2 **SHEETS**	
1. PROJECT GIWW in the Vicinity of Lee County	**9. SIZE AND TYPE OF BIT**		
	10. COORDINATE SYSTEM/DATUM State Plane, FLW (U.S. Ft.)	**HORIZONTAL** NAD83	**VERTICAL** MLLW
2. BORING DESIGNATION VB-GIWW-LEE-12-10 **LOCATION COORDINATES** X = 639,628 Y = 784,890	**11. MANUFACTURER'S DESIGNATION OF DRILL** Vibracore	☐ **AUTO HAMMER** ☐ **MANUAL HAMMER**	
3. DRILLING AGENCY American Vibracore Services, Inc. **CONTRACTOR FILE NO.** 6734-12-9681	**12. TOTAL SAMPLES**	**DISTURBED** 4	**UNDISTURBED (UD)** 0
4. NAME OF DRILLER Brian McCord	**13. TOTAL NUMBER CORE BOXES** 0		
5. DIRECTION OF BORING ☒ **VERTICAL** ☐ **INCLINED** **DEG. FROM VERTICAL** **BEARING**	**14. ELEVATION GROUND WATER**		
	15. DATE BORING	**STARTED** 12-01-12	**COMPLETED** 12-01-12
6. THICKNESS OF OVERBURDEN N/A	**16. ELEVATION TOP OF BORING** -5.8 Ft.		
7. DEPTH DRILLED INTO ROCK N/A	**17. TOTAL RECOVERY FOR BORING** 97 %		
8. TOTAL DEPTH OF BORING 9.8 Ft.	**18. SIGNATURE AND TITLE OF INSPECTOR** James A. Horton, P.E., Geotechnical Engineer		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-5.8	0.0								
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, some fine to coarse-grained sand-sized shell, trace silt, weak reaction with HCl, moist, 10Y 6/1 greenish gray (SP)		1 1-Post		-6.3 -6.3		
-7.8	2.0				2		-7.8		
			SAND, silty, some sand to gravel-sized shell, little silt, little fine-grained sand-sized quartz, strong reaction with HCl, moist, 2.5Y 5/1 gray (SM)						
-9.8	4.0						-9.8		
-10.6	4.8		SAND, silty, mostly sand to gravel-sized shell (SM)		3				
			SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, no reaction with HCl, moist, 2.5Y 5/1 gray (SP-SM) At El. -11.6 Ft., 2.5Y 6/2 light brownish gray						
-13.7	7.9								
			SILT, inorganic-L, few fine-grained sand-sized quartz, trace organic matter, no reaction with HCl, moist, N 5/ gray (ML)						
-15.6	9.8						-15.6		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.5/0.8	SP*
1-Post	0.5/1.0	SP*

Abbreviations:
NR = Not Recorded.

(Continued)

Boring Designation VB-GIWW-LEE-12-10

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
GIWW in the Vicinity of Lee County	State Plane, FLW (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 639,628 Y = 784,890	-5.8 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			2 2.0/2.5 SM* 3 4.0/4.5 SM* *Lab visual classification based on gradation curve. No Atterberg limits.						

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