

**Biological Characterization/Numerical Wave Model  
Analysis within Borrow Sites Offshore West Florida Coast  
Contract No. 1435-01005-CT-39054  
Final Report Volume II  
Appendices A-C**

*Submitted to:*

**Department of Interior Minerals Management Service (MMS)  
Offshore Sand and Gravel Program and Alternative Energy Branch  
Herndon, VA**

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## Appendix A

### Fishery Data

- A1. Commercial and Recreational Landings Data for 2005.
- A2. Commercial Invertebrate Fisheries Landings Data for 2005.



Table A1-1. Commercial and recreational landings data for 2005. Commercial data are landings (lbs.) and trips from counties near the study areas Hillsborough, Pinellas, Manatee, Sarasota, Charlotte, and Lee (FWRI, 2007). Recreational data are landings (number of fish.) from Florida west coast (Marine Recreational Fishery Statistics Survey, NMFS Fishery Statistics Division).

Fish Species	Scientific Name	Commercial Landings			Recreational Landings		
		Total landings (lbs)	Total Trips	Proportion of total landings (%)	Proportion of total trips (%)	Number of fish	Proportion of total fish (%)
Mullet, Black/ Striped	<i>Mugil cephalus</i>	3,739,215	11,119	24.589%	24.643%	1,033,829	1.957%
Grouper, Red	<i>Epinephelus morio</i>	3,660,844	2,557	24.074%	5.667%	1,849,072	3.501%
Herring, Thread	<i>Opisthonema oglinum</i>	1,546,185	90	10.168%	0.199%		
Ladyfish	<i>Elops saurus</i>	1,326,987	1,163	8.726%	2.578%		
Grouper, Gag	<i>Mycteroperca microlepis</i>	1,214,677	2,342	7.988%	5.190%	2,834,961	5.368%
Shark	various species	590,707	272	3.885%	0.603%		
Grouper, Yellowedge	<i>Epinephelus flavolimbatus</i>	375,886	198	2.472%	0.439%		
Amberjacks	<i>Seriola dumerili</i>	277,299	645	1.824%	1.429%	140,406	0.266%
Bait Fish	various species	255,061	206	1.677%	0.457%		
Jack, Crevalle	<i>Caranx hippos</i>	201,044	2,258	1.322%	5.004%	1,478,085	2.799%
Mojarra	Gerreidae	184,223	3,135	1.211%	6.948%		
Grouper, Scamp	<i>Mycteroperca phenax</i>	169,468	1,346	1.114%	2.983%		
Pompano	<i>Trachinotus carolinus</i>	163,889	1,153	1.078%	2.555%	263,369	0.499%
Grunts	Haemulidae	146,397	1,092	0.963%	2.420%	3,970,389	7.517%
Tilefish (Golden)	<i>Lopholatilus chamaeleonticeps</i>	129,620	74	0.852%	0.164%		
Tilapia (Nile Perch)	Cichidae	129,536	423	0.852%	0.937%		
Sheepshead	<i>Archosargus probatocephalus</i>	108,937	4,294	0.716%	9.517%	2,187,566	4.142%
Grouper, Snowy	<i>Epinephelus niveatus</i>	103,806	181	0.683%	0.401%		
Snapper, Gray	<i>Lutjanus griseus</i>	78,454	1,718	0.516%	3.808%	5,589,588	10.583%
Snapper, Red	<i>Lutjanus campechanus</i>	71,115	521	0.468%	1.155%	1,434,748	2.716%
Grouper, Black	<i>Mycteroperca bonaci</i>	68,076	346	0.448%	0.767%		
Snapper, Mutton	<i>Lutjanus analis</i>	64,186	333	0.422%	0.738%	33,175	0.063%
Tilefish, Blueline (Gray)	<i>Caulolatilus microps</i>	63,864	172	0.420%	0.381%		





Table A1-1. (continued).

Fish Species	Scientific Name	Commercial Landings			Recreational Landings		
		Total landings (lbs)	Total Trips	Proportion of total landings (%)	Proportion of total trips (%)	Number of fish	Proportion of total fish (%)
Grouper, Other	Serranidae	59,902	321	0.394%	0.711%		
Porgies	Sparidae	39,064	863	0.257%	1.913%		
Mackerel, Spanish	<i>Scomberomorus maculatus</i>	38,703	358	0.255%	0.793%	2,260,039	4.279%
Sardines, Spanish	<i>Sardinella aurita</i>	34,370	4	0.226%	0.009%		
Jack, Mixed	Carangidae	32,788	293	0.216%	0.649%		
Pinfish	<i>Lagodon rhomboides</i>	32,197	1,025	0.212%	2.272%	9,078,981	17.190%
Snapper, Vermillion	<i>Rhomboplites aurorubens</i>	25,525	378	0.168%	0.838%	345,365	0.654%
Bluefish	<i>Pomatomus saltatrix</i>	20,955	700	0.138%	1.551%	408,272	0.773%
Shark Fins	various species	19,831	234	0.130%	0.519%		
Cobia	<i>Rachycentron canadum</i>	18,748	357	0.123%	0.791%	78,798	0.149%
Permit	<i>Trachinotus falcatus</i>	18,666	329	0.123%	0.729%		
Mullet, Silver/ White	<i>Mugil curema</i>	15,355	137	0.101%	0.304%		
Rays	Rajidae	14,921	13	0.098%	0.029%		
Misc. Food Fish	various species	13,120	589	0.086%	1.305%		
Seatrout, Spotted	<i>Cynoscion nebulosus</i>	13,060	451	0.086%	1.000%	13,471,289	25.506%
Snapper, Silk	<i>Lutjanus vivanus</i>	11,853	115	0.078%	0.255%		
Snapper, Other	Lutjanidae	10,878	132	0.072%	0.293%		
Tuna, Yellowfin	<i>Thunnus albacares</i>	10,734	6	0.071%	0.013%	2,061	0.004%
Mackerel, King	<i>Scomberomorus cavalla</i>	10,513	91	0.069%	0.202%	309,138	0.585%
Swordfish	<i>Xiphias gladius</i>	9,600	13	0.063%	0.029%		
Tunny, Little (Bonito)	<i>Euthynnus alletteratus</i>	9,449	42	0.062%	0.093%	92,478	0.175%
Grouper, Warsaw	<i>Epinephelus nigritus</i>	9,360	112	0.062%	0.248%		
Triggerfish	Balistidae	8,472	442	0.056%	0.980%	243,006	0.460%
Kingfish (Whiting)	<i>Menticirrhus</i> spp.	7,524	140	0.049%	0.310%		
Mullet, Black, Roe	<i>Mugil cephalus</i>	7,276	99	0.048%	0.219%		
Hogfish	<i>Lachnolaimus maximus</i>	5,282	112	0.035%	0.248%		



Table A1-1. (continued).

Fish Species	Scientific Name	Commercial Landings			Recreational Landings		
		Total landings (lbs)	Total Trips	Proportion of total landings (%)	Proportion of total trips (%)	Number of fish	Proportion of total fish (%)
Tuna, Blackfin	<i>Thunnus atlanticus</i>	4,818	95	0.032%	0.211%	33,203	0.063%
Sea Bass, Mixed	<i>Centropristis</i> spp.	4,553	205	0.030%	0.454%	1,589,977	3.010%
Snapper, Lane	<i>Lutjanus synagris</i>	4,137	182	0.027%	0.403%		
Flounders	<i>Paralichthys</i> spp.	3,386	706	0.022%	1.565%	272,513	0.516%
Wahoo	<i>Acanthocybium solandri</i>	2,861	67	0.019%	0.148%	2,430	0.005%
Snapper, Yellowtail	<i>Lutjanus chrysurus</i>	2,590	126	0.017%	0.279%	321,007	0.608%
Jack, Other	Carangidae	2,576	83	0.017%	0.184%		
Drum, Black	<i>Pogonias cromis</i>	2,513	213	0.017%	0.472%	203,477	0.385%
Dolphin	<i>Coryphaena hippurus</i>	2,412	101	0.016%	0.224%	277,047	0.525%
Blue Runner	<i>Caranx crysos</i>	2,392	47	0.016%	0.104%		
Menhaden (Pogies)	<i>Brevoortia patronus</i>	1,441	13	0.009%	0.029%		
Catfish	Ariidae	1,101	51	0.007%	0.113%		
Misc. Industrial Fish	various species	990	5	0.007%	0.011%		
Seatrout, Sand	<i>Cynoscion arenarius</i>	948	58	0.006%	0.129%	388,615	0.736%
Spot	<i>Leiostomus xanthurus</i>	908	122	0.006%	0.270%	21,957	0.042%
Seatrout, Silver	<i>Cynoscion nothus</i>	778	24	0.005%	0.053%		
Scad, Round (Cigarfish)	<i>Decapterus punctatus</i>	133	3	0.001%	0.007%		
Snapper, Mixed	Lutjanidae	130	4	0.001%	0.009%		
Tuna, Bigeye	<i>Thunnus obesus</i>	118	3	0.001%	0.007%		
Tuna, Mixed	various species	101	1	0.001%	0.002%		
Croaker	<i>Micropogonias undulatus</i>	92	4	0.001%	0.009%	118,083	0.224%
Sand Perch	<i>Diplectrum formosum</i>	45	4	0.000%	0.009%		
Eels	Anguilliformes	24	6	0.000%	0.013%		
Grouper, Yellowfin	<i>Mycteroperca venenosa</i>	8	1	0.000%	0.002%		
Ballyhoo	<i>Hemiramphus brasiliensis</i>	2	3	0.000%	0.007%		
Red Drum	<i>Sciaenops ocellatus</i>					2,483,255	4.702%
<b>Total</b>		<b>15,206,679</b>	<b>45,121</b>			<b>52,816,179</b>	



Table A2-1. Commercial invertebrate fisheries landings data for 2005. Commercial data are landings (lbs.) and trips from counties near the study areas Hillsborough, Pinellas, Manatee, Sarasota, Charlotte, and Lee (FWRI, 2007).

Fish Species	Scientific Name	Commercial Landings			
		Total landings (lbs)	Total Trips	Proportion of total landings (%)	Proportion of total trips (%)
Shrimp, Pink	<i>Farfantepenaeus duorarum</i>	7,661,158	1,581	66.858%	8.373%
Crab, Blue (Hard)	<i>Callinectes sapidus</i>	3,079,039	11,927	26.870%	63.166%
Crab, Stone (Claws)	<i>Menippe mercenaria</i>	241,556	3,891	2.108%	20.607%
Shrimp, Rock	<i>Sicyonia brevirostris</i>	210,507	337	1.837%	1.785%
Sponge (Pieces)	Porifera	116,383	67	1.016%	0.355%
Shrimp, Brown	<i>Penaeus aztecus</i>	101,247	78	0.884%	0.413%
Crab, Blue (Soft)	<i>Callinectes sapidus</i>	10,737	731	0.094%	3.871%
Octopus	Cephalopoda	10,607	152	0.093%	0.805%
Misc. Invertebrates	various species	9,854	41	0.086%	0.217%
Shrimp, Royal Red	<i>Pleoticus robustus</i>	9,303	1	0.081%	0.005%
Lobster, Spiny	<i>Panulirus argus</i>	4,433	21	0.039%	0.111%
Shrimp, Other	Penaeidae	1,426	14	0.012%	0.074%
Lobster, Spanish	<i>Scyllarides aequinoctialis</i>	1,039	16	0.009%	0.085%
Squid	Cephalopoda	977	10	0.009%	0.053%
Conch (Helmet and Whelks)	<i>Cassius</i> spp. and <i>Bcesycon</i> spp.	574	15	0.005%	0.079%
<b>Total</b>		<b>11,458,840</b>	<b>18,882</b>		



## **APPENDIX B**

### **Biological Field Survey Data**

- B1. Benthic Grab Station Positions and Depths
- B2. Otter Trawl Positions
- B3. Plankton and Neuston Trawl Positions
- B4. Epibenthic Camera Sled Transect Positions
- B5. Infaunal Taxa List
- B6. Fish and Benthic Sample Collection Photographs
- B7. Water Quality Profiles
- B8. Fishermen's Survey Data
- B9. Protected Species Observer Data



Table B1-1. Benthic sampling station positions and depths for the October 2005 and June 2006 surveys. Water quality profiles were taken at stations shown in bold font.

Area	October 2005 Survey				June 2006 Survey			
	Station	Latitude	Longitude	Depth (m)	Station	Latitude	Longitude	Depth (m)
Siesta	W1-S-01	27 16.691	82 48.714	13.6	<b>W2-S-01</b>	27 15.912	82 47.541	13.7
	W1-S-02	27 16.721	82 48.432	13.7	W2-S-02	27 16.538	82 48.428	13.7
	<b>W1-S-03</b>	27 16.037	82 47.664	14	<b>W2-S-03</b>	27 16.785	82 48.535	13.7
	W1-S-04	27 15.983	82 47.415	14.1	W2-S-04	27 16.840	82 48.753	14.2
	W1-S-05	27 16.608	82 48.149	13.6	W2-S-05	27 16.094	82 47.813	13.9
	W1-S-06	27 16.449	82 48.406	14	W2-S-06	27 16.853	82 48.480	14
	W1-S-07	27 16.201	82 47.742	13.9	W2-S-07	27 16.024	82 47.836	14.5
	W1-S-08	27 15.782	82 47.534	14.3	W2-S-08	27 16.709	82 48.334	14
	<b>W1-S-09</b>	27 16.842	82 48.542	13.7	W2-S-09	27 16.072	82 47.638	13.9
	W1-S-10	27 16.042	82 47.855	14.4	W2-S-10	27 16.608	82 48.673	14.1
	W1-S-11	27 15.849	82 47.370	14	W2-S-11	27 16.727	82 48.478	13.6
	<b>W1-S-12</b>	27 16.405	82 47.876	14.6	<b>W2-S-12</b>	27 16.263	82 47.757	<b>13.9</b>
	W1-S-13	27 16.565	82 47.976	14.8	W2-S-13	27 17.028	82 48.644	14.8
	W1-S-14	27 16.093	82 47.121	14.9	W2-S-14	27 15.873	82 47.861	15.2
	W1-S-15	27 16.484	82 47.738	15.4	W2-S-15	27 16.381	82 48.572	15.2
	W1-S-16	27 15.846	82 48.086	16.6	W2-S-16	27 15.665	82 47.375	14.9
	W1-S-17	27 16.658	82 48.903	15	W2-S-17	27 16.679	82 47.958	14.8
Hill T1	<b>W1-T1-01</b>	26 23.242	82 22.331	10.3	W2-T1-01	26 22.773	82 21.639	12.2
	W1-T1-03	26 23.380	82 21.944	13.5	W2-T1-02	26 23.268	82 22.535	11.5
	W1-T1-04	26 22.835	82 22.270	13.5	W2-T1-03	26 22.413	82 21.547	12.7
	W1-T1-06	26 22.870	82 21.712	12	W2-T1-04	26 23.042	82 22.151	10.1
	W1-T1-07	26 22.088	82 21.354	13	<b>W2-T1-05</b>	26 22.161	82 21.322	13.6
	W1-T1-09	26 22.971	82 21.853	11.1	<b>W2-T1-06</b>	26 23.279	82 22.197	12
	W1-T1-10	26 24.072	82 22.477	13.3	W2-T1-07	26 23.369	82 22.109	12.5
	<b>W1-T1-11</b>	26 22.468	82 21.674	11.9	W2-T1-08	26 23.139	82 22.381	9.7
	W1-T1-13	26 23.604	82 22.705	13.2	W2-T1-09	26 22.961	82 22.273	10.7
	W1-T1-14	26 23.884	82 22.568	12.8	W2-T1-10	26 22.970	82 21.724	12.4
	W1-T1-15	26 24.032	82 23.077	13.7	W2-T1-11	26 22.739	82 22.018	11
	W1-T1-16	26 23.461	82 22.644	12.1	<b>W2-T1-12</b>	26 22.623	82 21.809	11.4
	W1-T1-17	26 24.004	82 22.860	12.9	W2-T1-13	26 22.495	82 22.275	15.2
	W1-T1-18	26 23.611	82 22.219	13.5	W2-T1-14	26 22.208	82 21.150	14.2
	W1-T1-19	26 23.688	82 22.345	13.8	W2-T1-17	26 24.240	82 22.669	14.3
	<b>W1-T1-21</b>	26 23.571	82 22.921	13.2	W2-T1-18	26 23.957	82 23.184	13.6
	W1-T1-25	26 22.202	82 21.108	14.5	W2-T1-19	26 23.920	82 22.648	12.4
	W1-T1-27	26 22.760	82 22.512	16.2	W2-T1-21	26 23.833	82 22.814	11.7
	W1-T1-28	26 24.166	82 22.409	14.2	<b>W2-T1-22</b>	26 23.497	82 22.731	12.7
	W1-T1-29	26 22.402	82 21.347	14.6	W2-T1-24	26 23.603	82 23.171	14.1
				<b>W2-T1-26</b>	26 23.766	82 23.047	13.5	
				W2-T1-27	26 23.943	82 22.962	12.8	
				W2-T1-28	26 23.691	82 22.693	12.4	
				W2-T1-31	26 23.478	82 22.218	12	
				<b>W2-T1-32</b>	26 23.763	82 22.501	13.3	
Hill T2	<b>W1-T2-01</b>	26 23.060	82 23.654	12.2	W2-T2-01	26 23.119	82 23.765	12.6
	W1-T2-02	26 21.841	82 22.827	13.3	W2-T2-02	26 22.029	82 23.046	11.6
	W1-T2-03	26 22.339	82 23.355	12	W2-T2-03	26 22.933	82 23.451	13.1
	W1-T2-04	26 22.675	82 23.537	13	W2-T2-04	26 22.203	82 23.272	11.3
	W1-T2-05	26 22.886	82 23.612	12.6	W2-T2-05	26 22.212	82 23.050	11.7
	<b>W1-T2-06</b>	26 21.923	82 23.142	13.8	W2-T2-06	26 22.550	82 23.427	12.5
	W1-T2-07	26 21.843	82 23.006	13	<b>W2-T2-07</b>	26 22.027	82 22.873	12.7
	W1-T2-08	26 22.959	82 23.790	12.9	W2-T2-08	26 22.354	82 23.108	12.8
	<b>W1-T2-09</b>	26 22.614	82 23.337	13	W2-T2-09	26 22.381	82 23.309	12.1
	W1-T2-10	26 22.170	82 23.031	12.9	<b>W2-T2-10</b>	26 22.222	82 23.459	13.2
	W1-T2-11	26 22.787	82 23.451	13	W2-T2-11	26 22.095	82 23.333	12.2
	W1-T2-12	26 22.146	82 23.178	11.1	<b>W2-T2-12</b>	26 22.944	82 23.623	12.6
	W1-T2-13	26 21.698	82 23.112	14.9	W2-T2-13	26 22.752	82 23.882	15.9
	W1-T2-14	26 22.791	82 23.270	14.7	W2-T2-14	26 22.805	82 23.292	14.3
	W1-T2-15	26 22.140	82 22.768	15	W2-T2-15	26 22.516	82 23.070	14.6
	W1-T2-16	26 23.371	82 23.726	15.1	W2-T2-16	26 21.637	82 23.132	15.7
	W1-T2-17	26 22.181	82 23.658	15.7	W2-T2-17	26 22.072	82 23.484	15.5



Table B2-1. Otter trawl positions in the T1, T2, and Siesta Shoals study areas off of Southwest Florida.

Area	October 2005				June 2006			
	Trawl	Event	Latitude	Longitude	Trawl	Event	Latitude	Longitude
T1	A	Start	26 23.817	82 22.738	T1	Start	26 23.256	82 21.589
		End	26 23.627	82 22.538		End	26 23.529	82 21.737
	B	Start	26 23.829	82 22.171	T2	Start	26 23.544	82 22.466
		End	26 23.702	82 21.992		End	26 23.780	82 22.662
	D	Start	26 23.020	82 21.871	T3	Start	26 23.995	82 23.005
		End	26 22.836	82 22.062		End	26 23.651	82 22.762
	E	Start	26 22.645	82 22.267	T4	Start	26 23.428	82 22.873
		End	26 22.464	82 22.232		End	26 23.700	82 23.040
	C	Start	26 22.553	82 21.601	T5	Start	26 23.237	82 22.393
		End	26 22.328	82 21.614		End	26 22.986	82 21.964
	F	Start	26 22.824	82 21.350	T6	Start	26 23.055	82 21.775
		End	26 22.550	82 21.370		End	26 22.900	82 22.048
					T7	Start	26 22.305	82 21.702
						End	26 22.582	82 21.682
T2	H	Start	26 21.933	82 22.822	T9	Start	26 22.968	82 23.744
		End	26 22.081	82 23.135		End	26 22.739	82 23.440
	L	Start	26 22.530	82 22.820	T10	Start	26 22.362	82 23.353
		End	26 22.300	82 23.025		End	26 22.665	82 23.350
	I	Start	26 22.427	82 23.237	T11	Start	26 21.832	82 23.003
		End	26 22.534	82 23.500		End	26 22.096	82 23.182
	J	Start	26 22.552	82 23.658				
		End	26 22.825	82 23.861				
	G	Start	26 23.058	82 23.738				
		End	26 22.748	82 23.459				
	K	Start	26 23.045	82 23.294				
		End	26 23.346	82 23.526				
Siesta	Q	Start	27 16.261	82 47.476	S1	Start	27 16.852	82 48.811
		End	27 16.476	82 47.821		End	27 16.614	82 48.527
	M	Start	27 15.941	82 47.452	S2	Start	27 16.415	82 48.273
		End	27 16.284	82 47.636		End	27 16.762	82 48.296
	N	Start	27 16.438	82 48.190	S3	Start	27 15.931	82 47.482
		End	27 16.695	82 48.465		End	27 16.115	82 47.804
	O	Start	27 16.819	82 48.687				
		End	27 16.583	82 48.490				



Table B3-1. Positions of plankton and Neuston trawls in the southwest Florida study area.

Type	October 2005				June 2006			
	Trawl ID	Event	Latitude	Longitude	Trawl ID	Event	Latitude	Longitude
Plankton	Plankton 1	Start	26 23.593	82 22.605	WCIP0106	Start	27 16.649	82 48.352
		End	26 23.164	82 22.794		End	27 17.004	82 48.452
	Plankton 2	Start	26 23.265	82 22.846	WCIP0206	Start	27 16.869	82 48.427
		End	26 23.488	82 22.513		End	27 16.510	82 48.290
	Plankton 3	Start	26 23.525	82 22.449	WCIP0406	Start	26 27.636	82 23.560
		End	26 23.480	82 21.996		End	26 27.299	82 23.473
	Plankton 4	Start	27 18.896	82 48.245	WCIP0506	Start	26 26.973	82 23.406
		End	27 19.104	82 48.236		End	26 26.624	82 23.320
	Plankton 5	Start	27 19.193	82 48.233	WCIP0606	Start	26 26.304	82 23.251
		End	27 19.513	82 48.214		End	26 25.958	82 23.180
	Plankton 6	Start	27 19.626	82 48.207	WCIP0706	Start	26 21.046	82 21.320
		End	27 20.039	82 48.182		End	26 21.374	82 21.334
				WCIP0806	Start	26 21.136	82 21.170	
					End	26 20.651	82 20.990	
				WCIP0906	Start	26 20.713	82 20.963	
					End	26 21.048	82 21.007	
Neuston	Neuston 1	Start	26 23.719	82 22.182	WCN0406	Start	26 29.337	82 24.150
		End	26 23.421	82 22.497		End	26 29.068	82 23.937
	Neuston 2	Start	26 23.390	82 21.811	WCN0506	Start	26 28.840	82 23.869
		End	26 23.574	82 22.148		End	26 28.473	82 23.756
	Neuston 3	Start	26 23.582	82 22.262	WCN0606	Start	26 28.089	82 23.661
		End	26 23.433	82 22.527		End	26 27.881	82 23.603
	Neuston 4	Start	27 17.243	82 48.390	WCN0706	Start	26 21.846	82 21.800
		End	27 17.701	82 48.325		End	26 21.344	82 21.796
	Neuston 5	Start	27 17.882	82 48.304	WCN0806	Start	26 21.210	82 21.683
		End	27 18.352	82 48.254		End	26 21.546	82 21.709
	Neuston 6	Start	27 18.450	82 48.252	WCN0906	Start	26 21.516	82 21.528
		End	27 18.808	82 48.245		End	26 20.959	82 21.455



Table B4-1. Epibenthic camera sled transect positions in the T1, T2, and Siesta study areas off of Southwest Florida, October 2005.

Area	Transect	Event	Latitude	Longitude	
T1	T1-2	Start	26 23.373	82 21.949	
		End	26 22.937	82 22.434	
	T1-3	Start	26 23.868	82 22.576	
		End	26 23.940	82 22.407	
	T1-4	Start	26 22.069	82 21.478	
		End	26 22.229	82 21.235	
	T1-5	Start	26 23.848	82 22.210	
		End	26 23.598	82 21.950	
	T2	T2-1	Start	26 23.082	82 23.794
			End	26 21.844	82 22.682
T2-2		Start	26 21.739	82 22.956	
		End	26 23.248	82 23.596	
T2-3		Start	26 22.964	82 23.437	
		End	26 23.054	82 23.979	
T2-4		Start	26 22.201	82 23.535	
		End	26 21.911	82 22.747	
T1-T2		Start	26 22.170	82 22.428	
ADJ		End	26 23.429	82 23.438	
Siesta	S-1	Start	27 16.568	82 48.091	
		End	27 16.680	82 48.955	
	S-2	Start	27 16.211	82 48.505	
		End	27 16.500	82 48.895	
	S-3	Start	27 16.379	82 47.583	
		End	27 17.037	82 48.108	
	S-4	Start	27 15.858	82 47.573	
		End	27 16.289	82 47.685	





Table B5-1 Phylogenetic list of infauna collected during the October 2005 and June 2006 surveys in the Siesta, Hill T1, and Hill T2 sand borrow areas off of Southwest Florida.

Phylum	Class	Taxonomic Name
Annelida	Oligochaeta	Oligochaeta (LPIL)
Annelida	Polychaeta	Ampharetidae (LPIL)
Annelida	Polychaeta	<i>Amphicteis gunneri</i>
Annelida	Polychaeta	<i>Anaitides longipes</i>
Annelida	Polychaeta	<i>Anaitides madeirensis</i>
Annelida	Polychaeta	<i>Ancistrosyllis hartmanae</i>
Annelida	Polychaeta	<i>Aonides mayaguezensis</i>
Annelida	Polychaeta	<i>Aonides paucibranchiata</i>
Annelida	Polychaeta	<i>Apoprionospio dayi</i>
Annelida	Polychaeta	<i>Apoprionospio pygmaea</i>
Annelida	Polychaeta	<i>Aricidea cf. alisdairi</i>
Annelida	Polychaeta	<i>Aricidea cerrutii</i>
Annelida	Polychaeta	<i>Aricidea simplex</i>
Annelida	Polychaeta	<i>Aricidea suecica</i>
Annelida	Polychaeta	<i>Aricidea</i> sp. A
Annelida	Polychaeta	<i>Aricidea</i> sp. C
Annelida	Polychaeta	<i>Aricidea</i> sp.
Annelida	Polychaeta	<i>Aricidea wassi</i>
Annelida	Polychaeta	<i>Armandia maculata</i>
Annelida	Polychaeta	<i>Autolytus</i> sp.
Annelida	Polychaeta	<i>Axiothella</i> sp. A
Annelida	Polychaeta	Axiothellidae (LPIL)
Annelida	Polychaeta	<i>Bhawania heteroseta</i>
Annelida	Polychaeta	<i>Bogoea enigmatica</i>
Annelida	Polychaeta	<i>Bogoea</i> sp.
Annelida	Polychaeta	<i>Brania clavata</i>
Annelida	Polychaeta	<i>Brania wellfleetensis</i>
Annelida	Polychaeta	<i>Brania</i> sp.
Annelida	Polychaeta	Capitellidae (LPIL)
Annelida	Polychaeta	<i>Caulleriella alta</i>
Annelida	Polychaeta	<i>Ceratocephale oculata</i>
Annelida	Polychaeta	<i>Chaetopterus variopedatus</i>
Annelida	Polychaeta	<i>Cirriformia</i> sp.
Annelida	Polychaeta	<i>Cirrophorus branchiatus</i>
Annelida	Polychaeta	<i>Cirrophorus cf. forticirratus</i>
Annelida	Polychaeta	<i>Cirrophorus lyra</i>
Annelida	Polychaeta	<i>Cirrophorus</i> sp.
Annelida	Polychaeta	<i>Cirrophorus</i> sp. A
Annelida	Polychaeta	<i>Dorvillea sociabilis</i>
Annelida	Polychaeta	<i>Dorvillea</i> sp. A
Annelida	Polychaeta	Dorvilleidae (LPIL)
Annelida	Polychaeta	<i>Eteone lactea</i>
Annelida	Polychaeta	<i>Euclymene</i> sp. A



Annelida	Polychaeta	<i>Euclymene</i> sp. B
Annelida	Polychaeta	<i>Euchone</i> cf. <i>incolor</i>
Annelida	Polychaeta	<i>Exogone atlantica</i>
Annelida	Polychaeta	<i>Exogone dispar</i>
Annelida	Polychaeta	<i>Exogone lourei</i>
Annelida	Polychaeta	Flabelligeridae (LPIL)
Annelida	Polychaeta	<i>Glycera</i> sp.
Annelida	Polychaeta	Glyceridae (LPIL)
Annelida	Polychaeta	<i>Goniadella</i> sp.A
Annelida	Polychaeta	Goniadidae (LPIL)
Annelida	Polychaeta	<i>Goniadides carolinae</i>
Annelida	Polychaeta	<i>Gyptis brevipalpa</i>
Annelida	Polychaeta	<i>Hesione picta</i>
Annelida	Polychaeta	<i>Hesionura</i> sp. A
Annelida	Polychaeta	<i>Heteropodarke</i> cf. <i>heteromorpha</i>
Annelida	Polychaeta	<i>Heteropodarke</i> sp. A
Annelida	Polychaeta	<i>Hydroides</i> sp.
Annelida	Polychaeta	<i>Leitoscoloplos robustus</i>
Annelida	Polychaeta	<i>Lumbrinereis candida</i>
Annelida	Polychaeta	<i>Lumbrinereis</i> sp.
Annelida	Polychaeta	<i>Lycidice ninetta</i>
Annelida	Polychaeta	<i>Magelona pettiboneae</i>
Annelida	Polychaeta	<i>Magelona</i> sp.
Annelida	Polychaeta	<i>Magelona</i> sp. A
Annelida	Polychaeta	<i>Magelona</i> sp. B
Annelida	Polychaeta	<i>Magelona</i> sp. K
Annelida	Polychaeta	Maldanidae (LPIL)
Annelida	Polychaeta	<i>Marphysa</i> sp.
Annelida	Polychaeta	<i>Mediomastus californiensis</i>
Annelida	Polychaeta	<i>Meiodorvillea</i> sp. A
Annelida	Polychaeta	<i>Minuspio cirrifera</i>
Annelida	Polychaeta	<i>Mooreonuphis pallidula</i>
Annelida	Polychaeta	<i>Myriochele oculata</i>
Annelida	Polychaeta	<i>Naineris laevigata</i>
Annelida	Polychaeta	<i>Nematoneseis hebes</i>
Annelida	Polychaeta	<i>Nephtys picta</i>
Annelida	Polychaeta	<i>Nephtys simoni</i>
Annelida	Polychaeta	Nereidae (LPIL)
Annelida	Polychaeta	<i>Nereis lamellosa</i>
Annelida	Polychaeta	<i>Notomastus hemipodus</i>
Annelida	Polychaeta	<i>Odontosyllis</i> sp.
Annelida	Polychaeta	Onuphidae (LPIL)
Annelida	Polychaeta	<i>Onuphis eremita oculata</i>
Annelida	Polychaeta	<i>Ophelia denticulata</i>
Annelida	Polychaeta	<i>Ophelina</i> cf. <i>acuminata</i>
Annelida	Polychaeta	<i>Opisthosyllis</i> sp. A
Annelida	Polychaeta	<i>Owenia</i> sp. A
Annelida	Polychaeta	Paraonidae (LPIL)
Annelida	Polychaeta	<i>Paraonis pygoenigmatica</i>
Annelida	Polychaeta	<i>Parapionosyllis longicirrata</i>



Annelida	Polychaeta	<i>Parapionosyllis</i> sp.
Annelida	Polychaeta	<i>Paraprionospio pinnata</i>
Annelida	Polychaeta	<i>Phyllodoce arenae</i>
Annelida	Polychaeta	Phyllodocidae (LPIL)
Annelida	Polychaeta	<i>Pionosyllis gesae</i>
Annelida	Polychaeta	<i>Pionosyllis</i> sp.
Annelida	Polychaeta	<i>Pisione remota</i>
Annelida	Polychaeta	<i>Pista cristata</i>
Annelida	Polychaeta	<i>Plakosyllis quadrioculata</i>
Annelida	Polychaeta	<i>Podarke</i> sp. A
Annelida	Polychaeta	Polychaeta (LPIL)
Annelida	Polychaeta	<i>Polycirrus</i> sp.
Annelida	Polychaeta	<i>Polydora cf. aggregata</i>
Annelida	Polychaeta	<i>Polydora socialis</i>
Annelida	Polychaeta	<i>Polygordius</i> sp.
Annelida	Polychaeta	<i>Polynoidea</i> sp. A
Annelida	Polychaeta	<i>Prionospio</i> spp.
Annelida	Polychaeta	Sabellidae (LPIL)
Annelida	Polychaeta	<i>Schistomeringos</i> sp.
Annelida	Polychaeta	<i>Scoelelepis squamata</i>
Annelida	Polychaeta	<i>Scoelelepis texana</i>
Annelida	Polychaeta	<i>Scoloplos rubra</i>
Annelida	Polychaeta	<i>Serpula</i> sp. A
Annelida	Polychaeta	<i>Serpula</i> sp.
Annelida	Polychaeta	<i>Sigambra tentaculata</i>
Annelida	Polychaeta	<i>Sphaerosyllis longicauda</i>
Annelida	Polychaeta	<i>Sphaerosyllis piriferopsis</i>
Annelida	Polychaeta	<i>Spio pettiboneae</i>
Annelida	Polychaeta	<i>Spiochaetopterus costarum</i>
Annelida	Polychaeta	<i>Sthenelais</i> sp. A
Annelida	Polychaeta	<i>Streptosyllis pettiboneae</i>
Annelida	Polychaeta	<i>Streptosyllis</i> sp.
Annelida	Polychaeta	Syllidae (LPIL)
Annelida	Polychaeta	<i>Syllis cornuta</i>
Annelida	Polychaeta	<i>Syllis</i> sp. A
Annelida	Polychaeta	<i>Synelmis</i> sp. B
Annelida	Polychaeta	Terebellidae (LPIL)
Annelida	Polychaeta	<i>Tharyx annulosus</i>
Annelida	Polychaeta	<i>Travisia hobsonae</i>
Arthropoda	Amphipoda	<i>Acanthohaustorius pansus</i>
Arthropoda	Amphipoda	<i>Acanthohaustorius</i> sp. A
Arthropoda	Amphipoda	<i>Acanthohaustorius</i> sp.
Arthropoda	Amphipoda	<i>Amerchelidium americanum</i>
Arthropoda	Amphipoda	<i>Ampelisca</i> sp.
Arthropoda	Amphipoda	Amphilochidae (LPIL)
Arthropoda	Amphipoda	<i>Ampithoe</i> sp.
Arthropoda	Amphipoda	Anamixidae (LPIL)
Arthropoda	Amphipoda	Aoridae (LPIL)
Arthropoda	Amphipoda	<i>Argissa hamatipes</i>
Arthropoda	Amphipoda	<i>Batea carinata</i>



Arthropoda	Amphipoda	<i>Batea</i> sp.
Arthropoda	Amphipoda	<i>Bemlos kunkelae</i>
Arthropoda	Amphipoda	<i>Bemlos mackinneyi</i>
Arthropoda	Amphipoda	<i>Bemlos setosus</i>
Arthropoda	Amphipoda	<i>Bemlos</i> sp.
Arthropoda	Amphipoda	<i>Bemlos unicornis</i>
Arthropoda	Amphipoda	Biancolinidae (LPIL)
Arthropoda	Amphipoda	<i>Cerapus cudjoe</i>
Arthropoda	Amphipoda	Cheluridae (LPIL)
Arthropoda	Amphipoda	<i>Chevalia carpenteri</i>
Arthropoda	Amphipoda	<i>Colomastix gibbosa</i>
Arthropoda	Amphipoda	<i>Colomastix heardi</i>
Arthropoda	Amphipoda	<i>Colomastix</i> sp.
Arthropoda	Amphipoda	<i>Dulichella appendiculata</i>
Arthropoda	Amphipoda	<i>Elasmopus laevis</i>
Arthropoda	Amphipoda	<i>Erichthonius brasileinesis</i>
Arthropoda	Amphipoda	<i>Eudevanopus honduranus</i>
Arthropoda	Amphipoda	Eusiridae (LPIL)
Arthropoda	Amphipoda	Gammeroidea (LPIL)
Arthropoda	Amphipoda	<i>Gibberosus myersi</i>
Arthropoda	Amphipoda	<i>Gitana dominica</i>
Arthropoda	Amphipoda	<i>Globolembos smithi</i>
Arthropoda	Amphipoda	Haustoridae (LPIL)
Arthropoda	Amphipoda	<i>Haustorius jaynae</i>
Arthropoda	Amphipoda	<i>Hornellia tequestae</i>
Arthropoda	Amphipoda	<i>Hourstonius</i> sp. B
Arthropoda	Amphipoda	Hyalidae (LPIL)
Arthropoda	Amphipoda	Isaeidae (LPIL)
Arthropoda	Amphipoda	Ischyroceridae (LPIL)
Arthropoda	Amphipoda	<i>Lembos</i> sp.
Arthropoda	Amphipoda	<i>Lembos tempus</i>
Arthropoda	Amphipoda	<i>Lembos unifasciatus</i>
Arthropoda	Amphipoda	<i>Lepidactylus dysticus</i>
Arthropoda	Amphipoda	Leucothoidae (LPIL)
Arthropoda	Amphipoda	Liljeborgiidae (LPIL)
Arthropoda	Amphipoda	Melphidippidae (LPIL)
Arthropoda	Amphipoda	<i>Metatiron triocellatus</i>
Arthropoda	Amphipoda	<i>Metharpinia floridana</i>
Arthropoda	Amphipoda	<i>Pediorophium laminosum</i>
Arthropoda	Amphipoda	<i>Photis pugnator</i>
Arthropoda	Amphipoda	Podoceridae (LPIL)
Arthropoda	Amphipoda	Pontoporeiidae (LPIL)
Arthropoda	Amphipoda	<i>Protohaustorius wiglei</i>
Arthropoda	Amphipoda	<i>Psuedohaustorius</i> sp.
Arthropoda	Amphipoda	<i>Rildardanus laminosa</i>
Arthropoda	Amphipoda	<i>Rudilemboides naglei</i>
Arthropoda	Amphipoda	<i>Syrrhoe crenulata</i>
Arthropoda	Cumacea	Bodotriidae (LPIL)
Arthropoda	Cumacea	Diastylidae (LPIL)
Arthropoda	Cumacea	Nannastacidae (LPIL)



Arthropoda	Decapoda	Decapoda (LPIL)
Arthropoda	Decapoda (Natantia)	<i>Callichirus islagrande</i>
Arthropoda	Decapoda (Natantia)	<i>Discias atlanticus</i>
Arthropoda	Decapoda (Natantia)	<i>Hippolyte zostericola</i>
Arthropoda	Decapoda (Natantia)	<i>Leptocheila bermudensis</i>
Arthropoda	Decapoda (Natantia)	<i>Leptocheila papulata</i>
Arthropoda	Decapoda (Natantia)	<i>Leptocheila serratorbita</i>
Arthropoda	Decapoda (Natantia)	<i>Lucifer faxoni</i>
Arthropoda	Decapoda (Natantia)	<i>Ogyroides alphaerostris</i>
Arthropoda	Decapoda (Natantia)	Penaeidae (LPIL)
Arthropoda	Decapoda (Natantia)	<i>Periclimenes americanus</i>
Arthropoda	Decapoda (Natantia)	<i>Periclimenes pedersoni</i>
Arthropoda	Decapoda (Natantia)	<i>Pleoticus robustus</i>
Arthropoda	Decapoda (Natantia)	<i>Processa bermudensis</i>
Arthropoda	Decapoda (Natantia)	<i>Processa hemphilli</i>
Arthropoda	Decapoda (Natantia)	<i>Processa</i> sp.
Arthropoda	Decapoda (Natantia)	<i>Phtisica marina</i>
Arthropoda	Decapoda (Natantia)	Sergestidae (LPIL)
Arthropoda	Decapoda (Natantia)	<i>Sicyonia brevirostris</i>
Arthropoda	Decapoda (Natantia)	<i>Sicyonia laevigata</i>
Arthropoda	Decapoda (Natantia)	<i>Sicyonia typica</i>
Arthropoda	Decapoda (Natantia)	<i>Solencera necopina</i>
Arthropoda	Decapoda (Natantia)	<i>Solencera</i> sp.
Arthropoda	Decapoda (Natantia)	<i>Trachypenaeopsis mobilispinis</i>
Arthropoda	Decapoda (Natantia)	<i>Trachypenaeus</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Albunea</i> sp.
Arthropoda	Decapoda (Reptantia)	Anomura (LPIL)
Arthropoda	Decapoda (Reptantia)	<i>Calappa sulcata</i>
Arthropoda	Decapoda (Reptantia)	<i>Callinectes sapidus</i>
Arthropoda	Decapoda (Reptantia)	<i>Callinectes similis</i>
Arthropoda	Decapoda (Reptantia)	<i>Cancellus viridis</i>
Arthropoda	Decapoda (Reptantia)	<i>Cronius tumidulus</i>
Arthropoda	Decapoda (Reptantia)	<i>Cryptopodia concava</i>
Arthropoda	Decapoda (Reptantia)	<i>Dissodactylus mellitae</i>
Arthropoda	Decapoda (Reptantia)	<i>Euchirograpsus americanus</i>
Arthropoda	Decapoda (Reptantia)	Goneplacidae (LPIL)
Arthropoda	Decapoda (Reptantia)	<i>Heterocrypta granulata</i>
Arthropoda	Decapoda (Reptantia)	<i>Lepidopa websteri</i>
Arthropoda	Decapoda (Reptantia)	Majidae (LPIL)
Arthropoda	Decapoda (Reptantia)	Paguridae (LPIL)
Arthropoda	Decapoda (Reptantia)	<i>Paguristes hummi</i>
Arthropoda	Decapoda (Reptantia)	<i>Paguristes</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Pagurus brevidactylus</i>
Arthropoda	Decapoda (Reptantia)	<i>Pagurus defensus</i>
Arthropoda	Decapoda (Reptantia)	<i>Pagurus gymnodactylus</i>
Arthropoda	Decapoda (Reptantia)	<i>Pagurus</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Pinnaxodes floridensis</i>
Arthropoda	Decapoda (Reptantia)	<i>Pinnixa</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Portunus floridanus</i>
Arthropoda	Decapoda (Reptantia)	<i>Portunus ventralis</i>



Arthropoda	Decapoda (Reptantia)	<i>Tomopaguropsis problematica</i>
Arthropoda	Isopoda	<i>Accalanthura crassa</i>
Arthropoda	Isopoda	<i>Accalanthura crenulata</i>
Arthropoda	Isopoda	<i>Antias milleri</i>
Arthropoda	Isopoda	Asellota (LPIL)
Arthropoda	Isopoda	Epicaridea (LPIL)
Arthropoda	Isopoda	<i>Mesanthura decorata</i>
Arthropoda	Isopoda	<i>Eurydice littoralis</i>
Arthropoda	Isopoda	<i>Paranthura floridensis</i>
Arthropoda	Isopoda	<i>Serolis mgrayi</i>
Arthropoda	Isopoda	<i>Sphaeroma quadridentatum</i>
Arthropoda	Mysidacea	<i>Amanthimysis brattegardii</i>
Arthropoda	Mysidacea	<i>Anchialina typica</i>
Arthropoda	Mysidacea	<i>Bowmaniella portoricensis</i>
Arthropoda	Mysidacea	<i>Brasilomysis castroi</i>
Arthropoda	Mysidacea	Mysidae (LPIL)
Arthropoda	Mysidacea	<i>Mysidopsis bigelowi</i>
Arthropoda	Mysidacea	<i>Mysidopsis furca</i>
Arthropoda	Mysidacea	<i>Mysidopsis mortensi</i>
Arthropoda	Ostracoda	<i>Astropterygion</i> sp.
Arthropoda	Ostracoda	Cyclasteropinae (LPIL)
Arthropoda	Ostracoda	<i>Eusarsiella</i> sp. A
Arthropoda	Ostracoda	<i>Eusarsiella</i> sp. B
Arthropoda	Ostracoda	Ostracod sp. C
Arthropoda	Ostracoda	Ostracod sp. E
Arthropoda	Ostracoda	<i>Parasterope</i> sp.
Arthropoda	Ostracoda	<i>Pseudophilomedes</i> sp.
Arthropoda	Ostracoda	<i>Reticulocythereis</i> sp.
Arthropoda	Ostracoda	<i>Rutiderma</i> sp. A
Arthropoda	Ostracoda	<i>Rutiderma</i> sp. B
Arthropoda	Stomatopoda	<i>Squilla</i> sp.
Arthropoda	Tanaidacea	Apseudomorpha
Arthropoda	Tanaidacea	<i>Hoplomachus propinquus</i>
Arthropoda	Tanaidacea	<i>Kalliapsuedes macsweenyi</i>
Arthropoda	Tanaidacea	<i>Leptocheilia dubia</i>
Arthropoda	Balanomorpha	Balanomorpha (LPIL)
Cephalochordata	Leptocardii	<i>Branchiostoma floridae</i>
Cnidaria	Anthozoa	<i>Renilla reniformis</i>
Echiura	--	Echiura (LPIL)
Echinodermata	Asteroidea	Asteroidea (LPIL)
Echinodermata	Asteroidea	<i>Astropecten articulatus</i>
Echinodermata	Echinoidea	Echinoidea (LPIL)
Echinodermata	Echinoidea	<i>Encope michelini</i>
Echinodermata	Echinoidea	<i>Leodia sexiesperforata</i>
Echinodermata	Holothuroidea	Holothuroidea (LPIL)
Echinodermata	Holothuroidea	<i>Leptosynapta inharens</i>
Echinodermata	Holothuroidea	<i>Sclerodactyla briareus</i>
Echinodermata	Holothuroidea	<i>Thyonella pervicax</i>
Echinodermata	Ophiuroidea	<i>Hemipholis elongata</i>
Echinodermata	Ophiuroidea	<i>Microphiopholis atra</i>





Echinodermata	Ophiuroidea	<i>Ophiothrix angulata</i>
Echinodermata	Ophiuroidea	Ophiuroidea (LPIL)
Echinodermata	Spatangoida	Spatangoida (LPIL)
Echinodermata	Spatangoida	<i>Moira atropos</i>
Mollusca	Bivalvia	<i>Americardia media</i>
Mollusca	Bivalvia	<i>Anadara transversa</i>
Mollusca	Bivalvia	<i>Argopecten gibbus</i>
Mollusca	Bivalvia	Bivalvia (LPIL)
Mollusca	Bivalvia	Cardiidae (LPIL)
Mollusca	Bivalvia	<i>Chione cancellata</i>
Mollusca	Bivalvia	<i>Chione intapurpurea</i>
Mollusca	Bivalvia	<i>Corbula contracta</i>
Mollusca	Bivalvia	<i>Crassinella lunulata</i>
Mollusca	Bivalvia	<i>Crassinella martinicensis</i>
Mollusca	Bivalvia	<i>Crenella divaricata</i>
Mollusca	Bivalvia	<i>Diplodonta</i> sp.
Mollusca	Bivalvia	<i>Ervilia concentrica</i>
Mollusca	Bivalvia	<i>Glycymeris pectinata</i>
Mollusca	Bivalvia	<i>Laevicardium mortoni</i>
Mollusca	Bivalvia	<i>Lima pellucida</i>
Mollusca	Bivalvia	<i>Lucina multilineata</i>
Mollusca	Bivalvia	<i>Lucina nassula</i>
Mollusca	Bivalvia	Lucinidae (LPIL)
Mollusca	Bivalvia	<i>Macoma brevifrons</i>
Mollusca	Bivalvia	<i>Macoma tenta</i>
Mollusca	Bivalvia	<i>Mysella planulata</i>
Mollusca	Bivalvia	Mytilidae (LPIL)
Mollusca	Bivalvia	<i>Nucula proxima</i>
Mollusca	Bivalvia	<i>Pitar fulminata</i>
Mollusca	Bivalvia	<i>Pleuromeris tridentata</i>
Mollusca	Bivalvia	<i>Pteromeris perplana</i>
Mollusca	Bivalvia	<i>Pseudochama radians</i>
Mollusca	Bivalvia	<i>Semele bellastrata</i>
Mollusca	Bivalvia	<i>Semele nuculoides</i>
Mollusca	Bivalvia	<i>Tellidora cristata</i>
Mollusca	Bivalvia	Tellinidae (LPIL)
Mollusca	Bivalvia	<i>Verticordia ornata</i>
Mollusca	Gastropoda	<i>Acteocina caniculata</i>
Mollusca	Gastropoda	<i>Anachis sparsa</i>
Mollusca	Gastropoda	<i>Astraea caelata</i>
Mollusca	Gastropoda	<i>Caecum bipartitum</i>
Mollusca	Gastropoda	<i>Caecum cooperi</i>
Mollusca	Gastropoda	<i>Caecum floridana</i>
Mollusca	Gastropoda	<i>Caecum imbricatum</i>
Mollusca	Gastropoda	<i>Caecum johnsoni</i>
Mollusca	Gastropoda	<i>Calyptraea centralis</i>
Mollusca	Gastropoda	<i>Cancellaria reticulata</i>
Mollusca	Gastropoda	Columbellidae (LPIL)
Mollusca	Gastropoda	Conidae (LPIL)
Mollusca	Gastropoda	<i>Epitonium lamellosum</i>



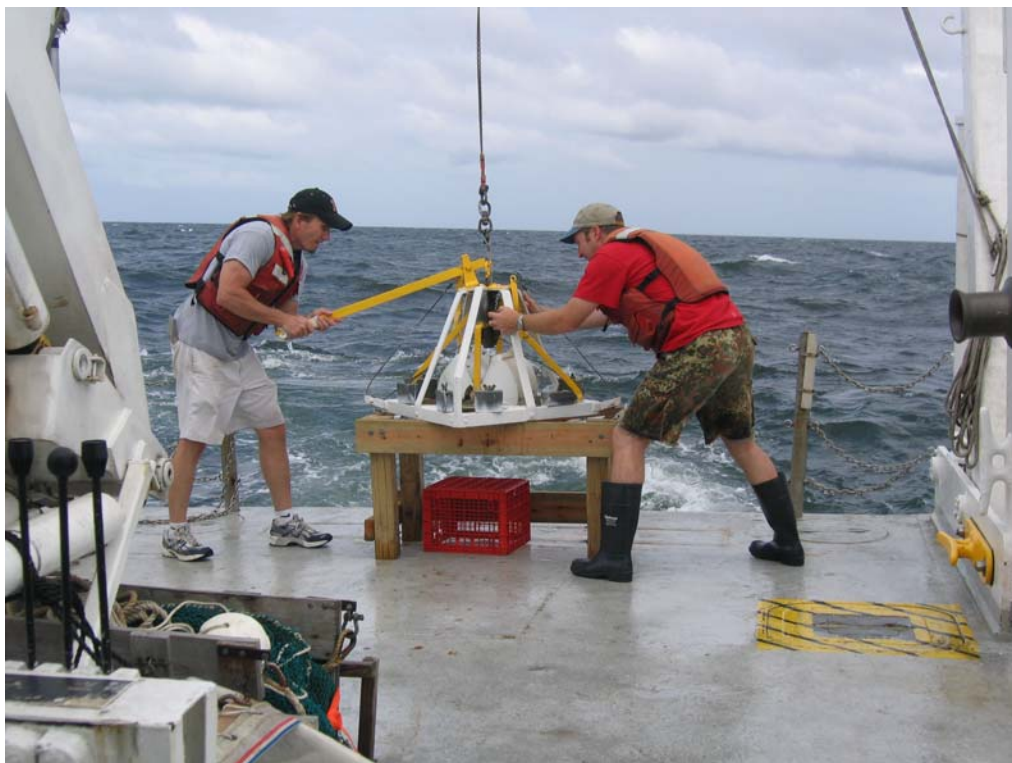
Mollusca	Gastropoda	<i>Eulima</i> sp.
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Mollusca	Gastropoda	<i>Haminoea succinea</i>
Mollusca	Gastropoda	<i>Ithythythara</i> sp.
Mollusca	Gastropoda	<i>Kurtziella serga</i>
Mollusca	Gastropoda	<i>Kurtziella</i> sp.
Mollusca	Gastropoda	<i>Meioceras nitidum</i>
Mollusca	Gastropoda	<i>Mitra barbadensis</i>
Mollusca	Gastropoda	<i>Mitrella lunulata</i>
Mollusca	Gastropoda	Mitrellidae (LPIL)
Mollusca	Gastropoda	Mitridae (LPIL)
Mollusca	Gastropoda	<i>Nassarius acutus</i>
Mollusca	Gastropoda	<i>Nassarius albus</i>
Mollusca	Gastropoda	<i>Natica pusilla</i>
Mollusca	Gastropoda	<i>Odostomia seminuda</i>
Mollusca	Gastropoda	<i>Olivella minuta</i>
Mollusca	Gastropoda	<i>Olivella mutica</i>
Mollusca	Gastropoda	<i>Olivella</i> sp.
Mollusca	Gastropoda	<i>Olivia reticularis</i>
Mollusca	Gastropoda	Retusidae (LPIL)
Mollusca	Gastropoda	<i>Rictaxis punctostriatus</i>
Mollusca	Gastropoda	Rissoidae (LPIL)
Mollusca	Gastropoda	<i>Sigatica semisulcata</i>
Mollusca	Gastropoda	<i>Terebra dislocata</i>
Mollusca	Gastropoda	<i>Trigoniocardia antillarum</i>
Mollusca	Gastropoda	<i>Turbonilla</i> sp.
Mollusca	Gastropoda	Turridae (LPIL)
Mollusca	Gastropoda	<i>Vitrinella multistriata</i>
Mollusca	Gastropoda	Vitrinellidae (LPIL)
Mollusca	Polyplacophora	Polyplacophora (LPIL)
Mollusca	Scaphopoda	<i>Dentalium</i> sp.
Phoronidae	--	Phoronis (LPIL)
Platyhelminthes	Turbellaria	Turbellaria (LPIL)
Rhynchozoela	--	Rhynchozoela (LPIL)
Sipuncula	--	Sipuncula (LPIL)



Appendix B6. Fish and Benthic Sample Collection Photographs



RV Suncoaster used as the survey platform for the October 2005 cruise.



Arming the Smith-McIntyre benthic grab for deployment, October 2005.



MV Thunderforce, the survey platform used for the June 2006 survey.



Hauling back an otter trawl, June 2006.





Otter trawl catch after a 10 minute tow.



Water quality profiling off of southwest Florida, June 2006.

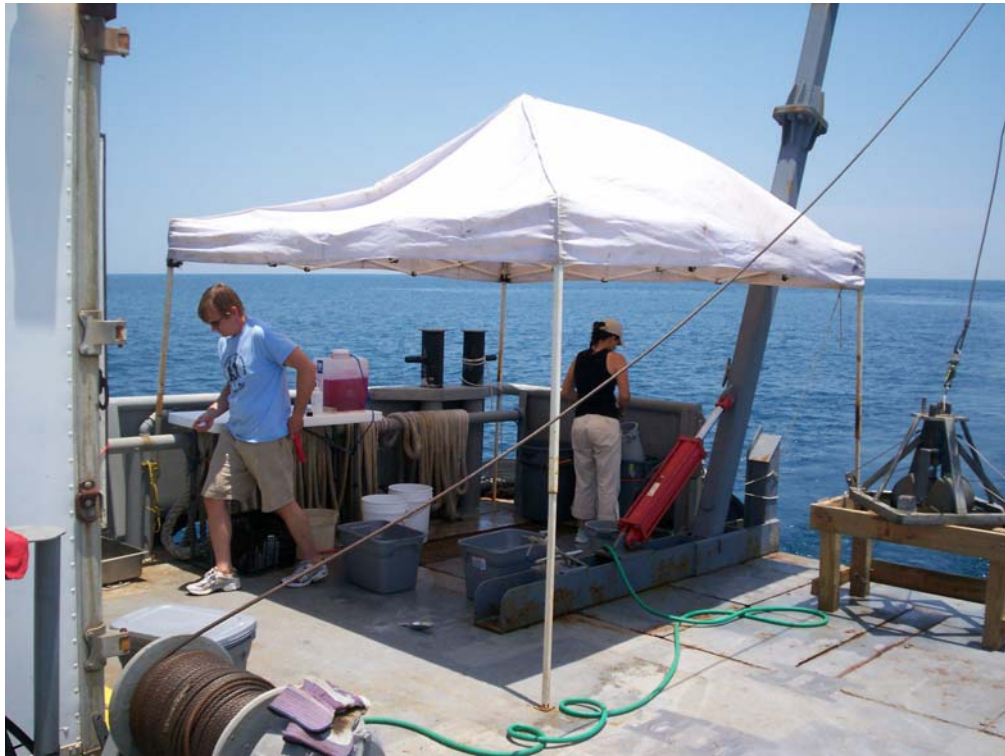


Measuring a pufferfish, southwest Florida, June 2006.



Box crab caught in an otter trawl off of southwest Florida, June 2006.





Benthic grab sample processing aboard MV Thunderforce, June 2006.



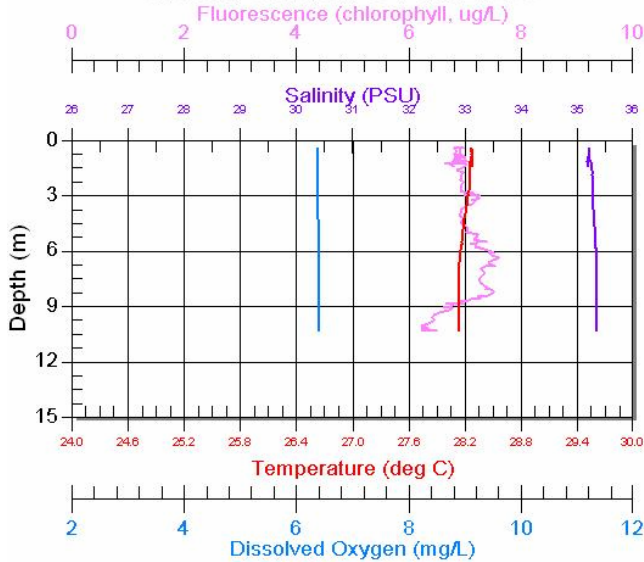
Rough-tooth dolphins in the southwest Florida study area, June 2006.



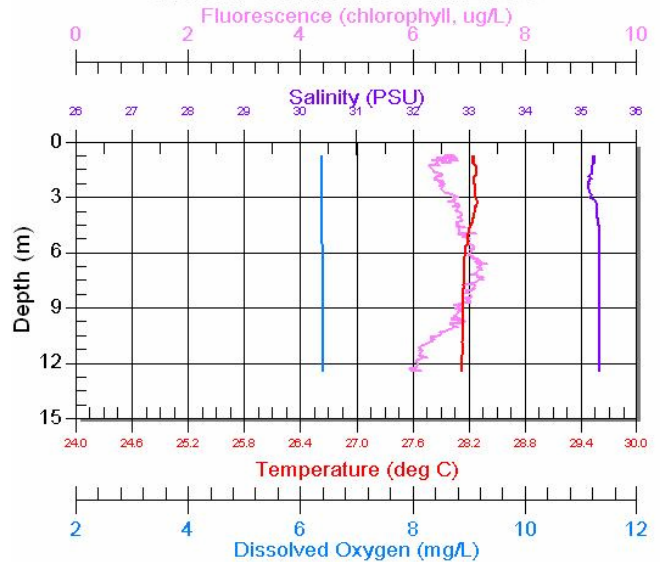
## Appendix B7. RESULTS OF INDIVIDUAL CTD CASTS

### FALL 2005 – Siesta Shoal

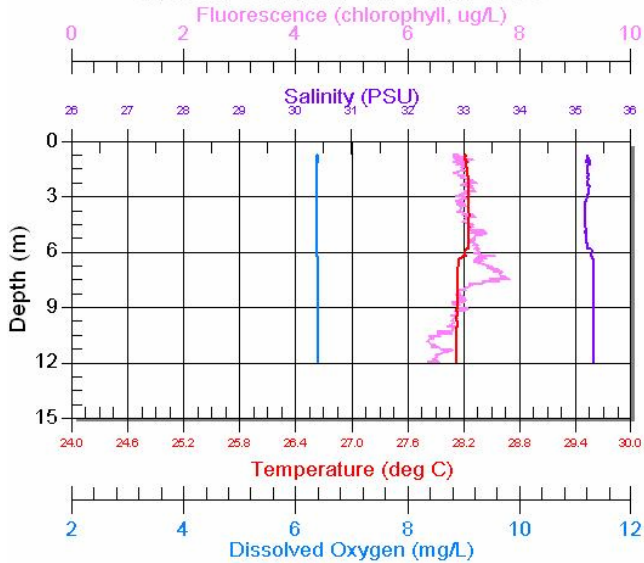
Siesta Station 3 Fall 2005



Siesta Station 9 Fall 2005

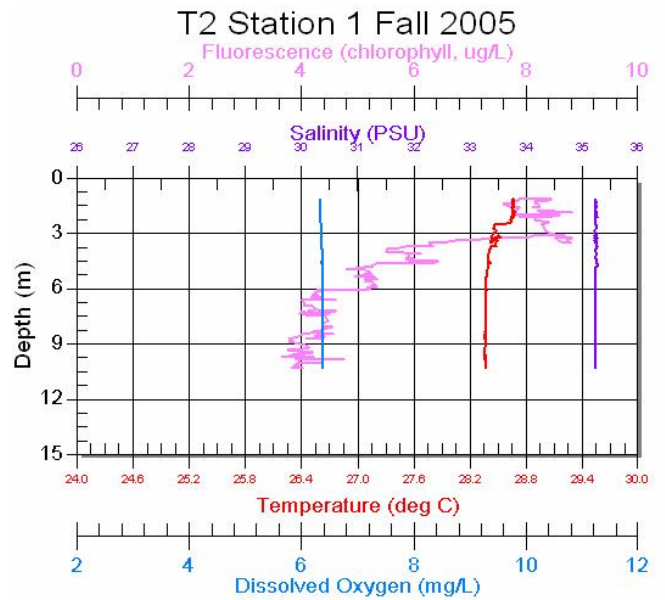
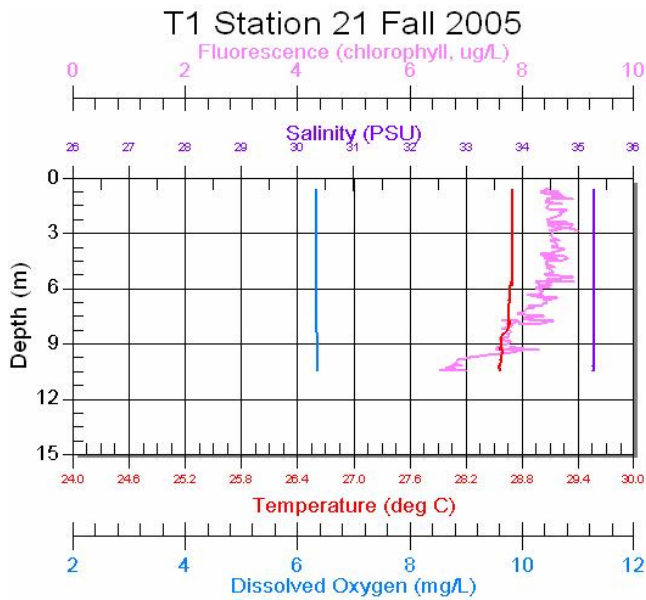
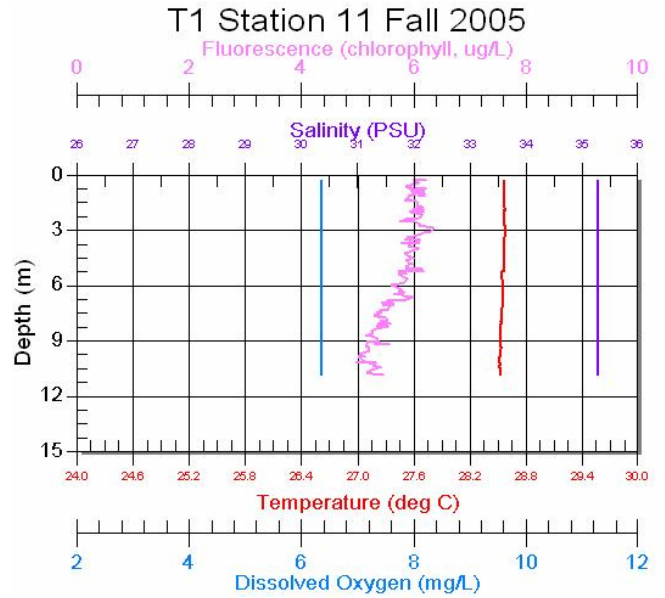
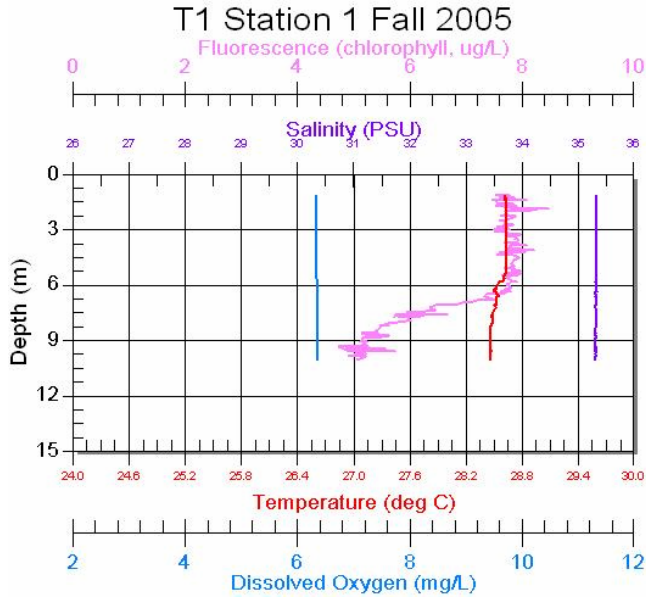


Siesta Station 12 Fall 2005



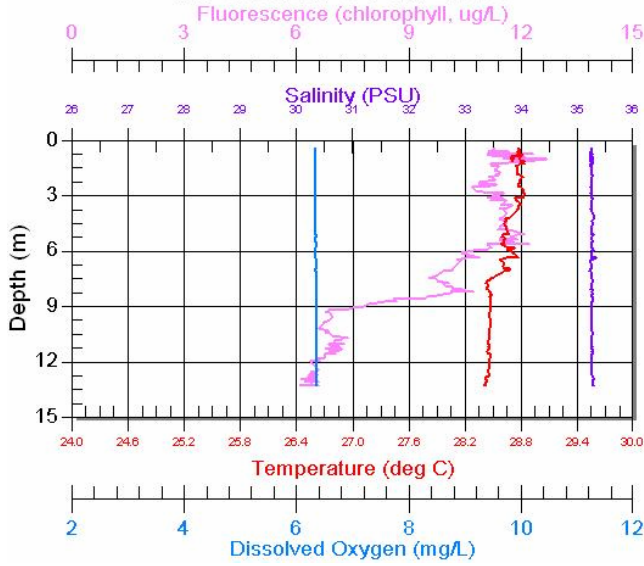


### FALL 2005 – T1/T2

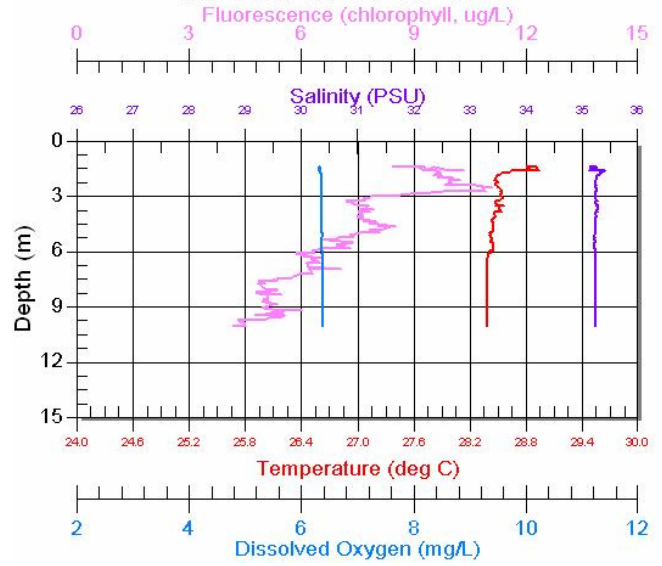




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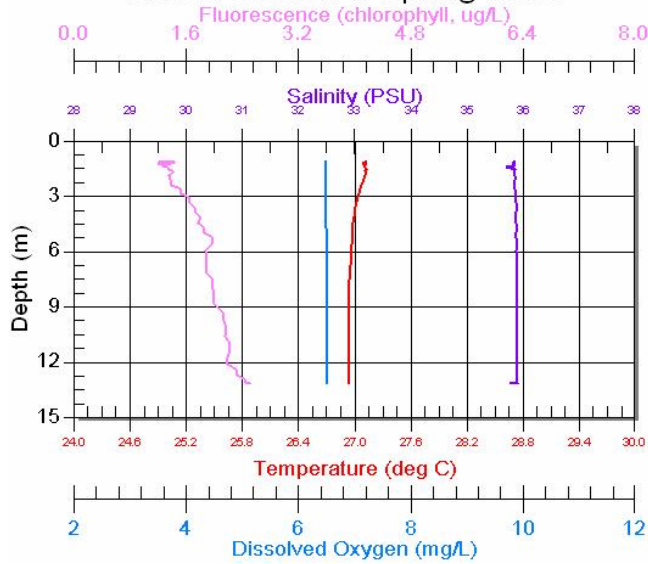


T2 Station 9 Fall 2005

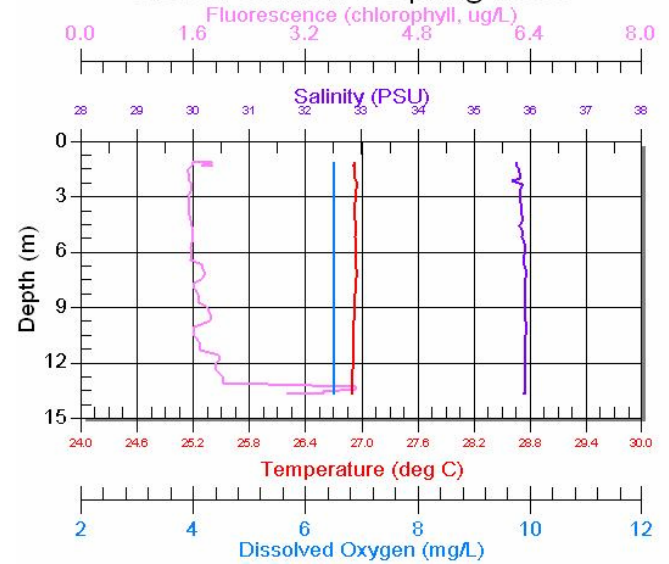


**SPRING 2006 – Siesta Shoal**

Siesta Station 1 Spring 2006



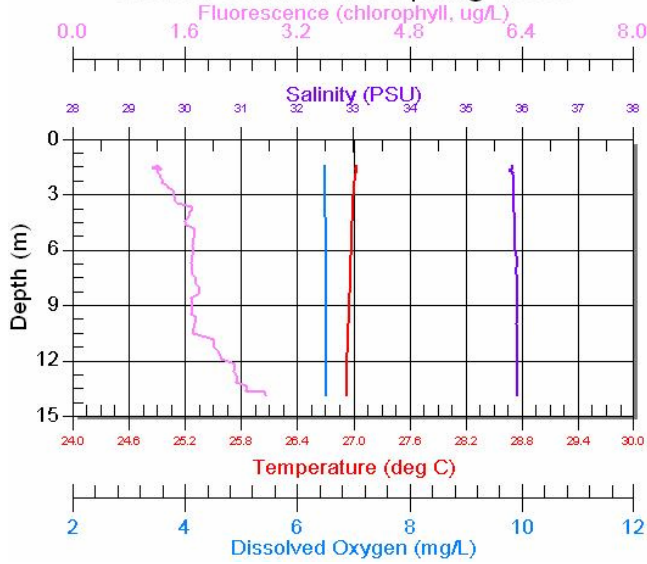
Siesta Station 3 Spring 2006





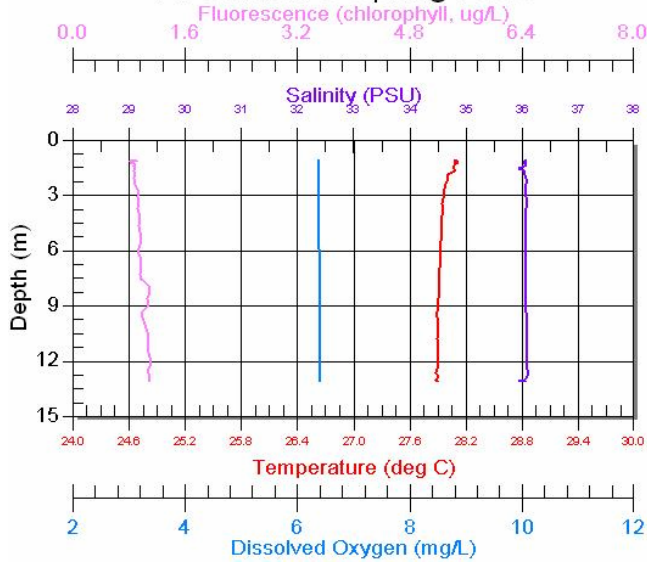


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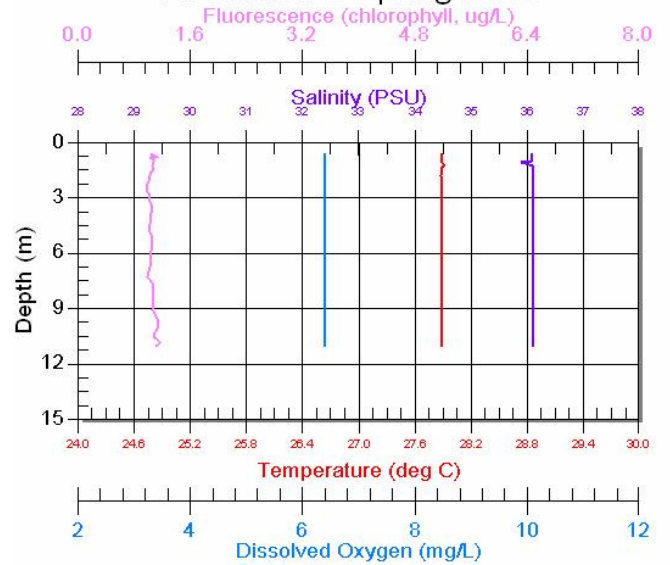


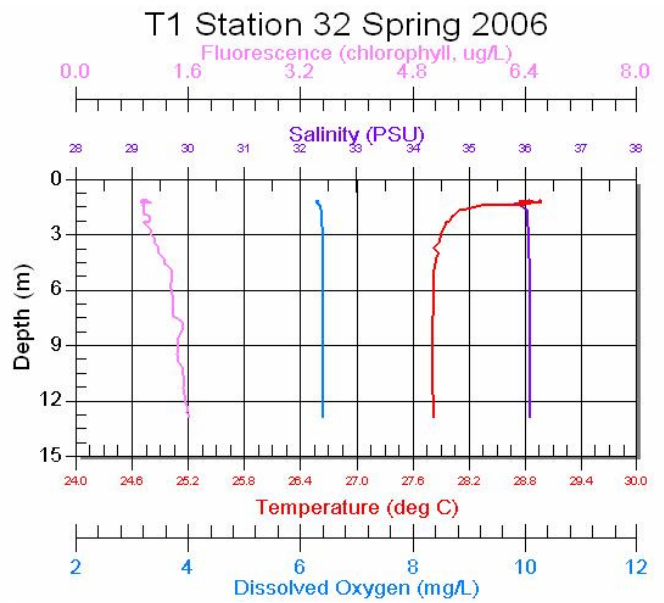
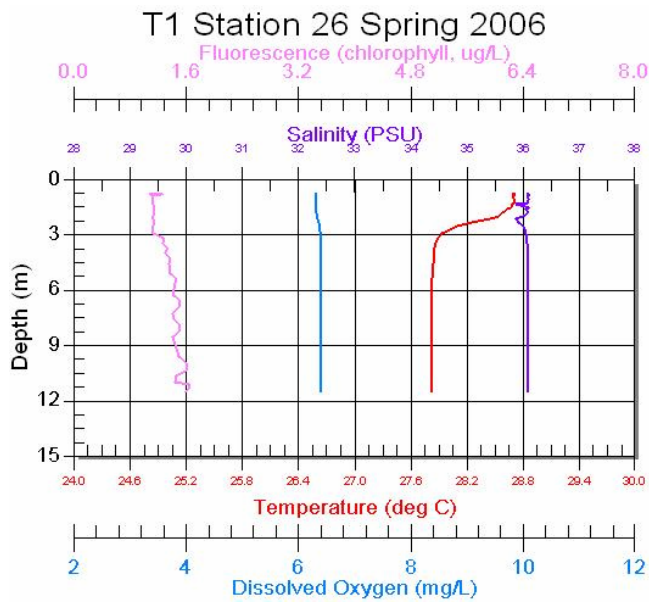
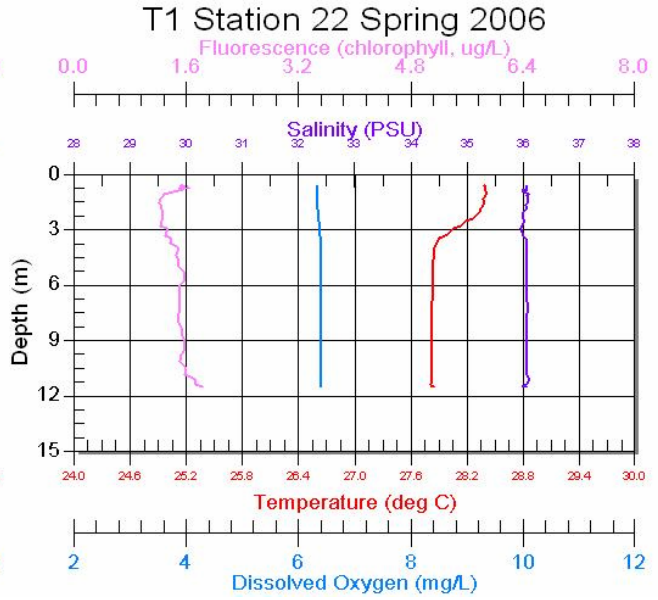
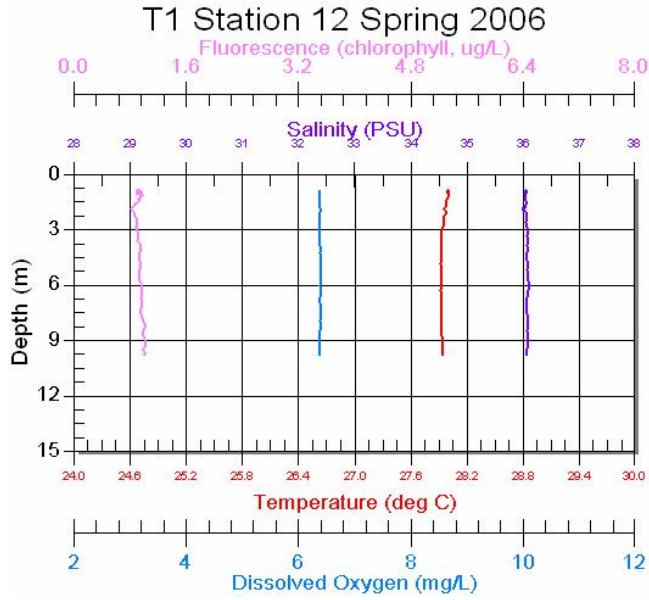
### SPRING 2006 – T1/T2

#### T1 Station 5 Spring 2006



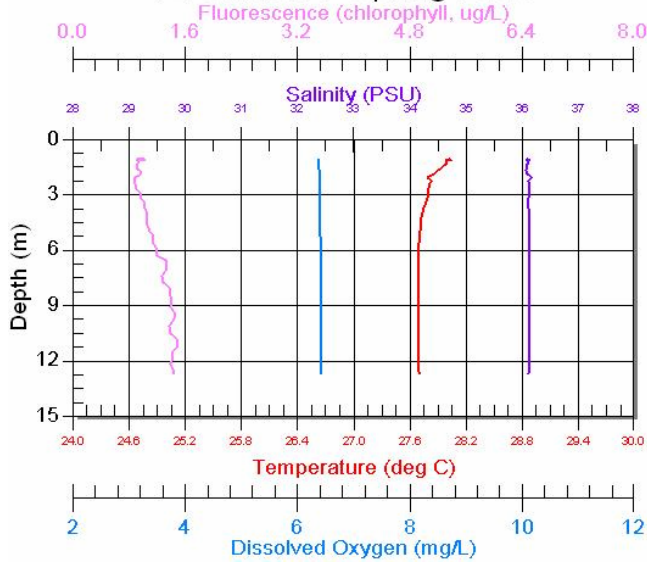
#### T1 Station 6 Spring 2006



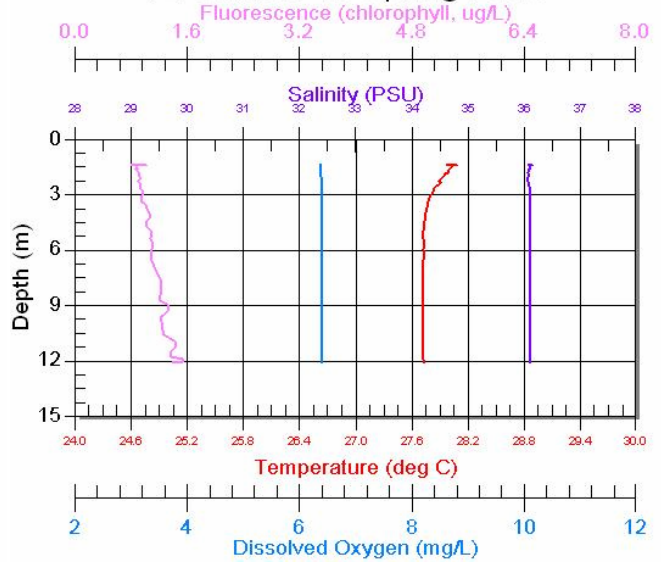




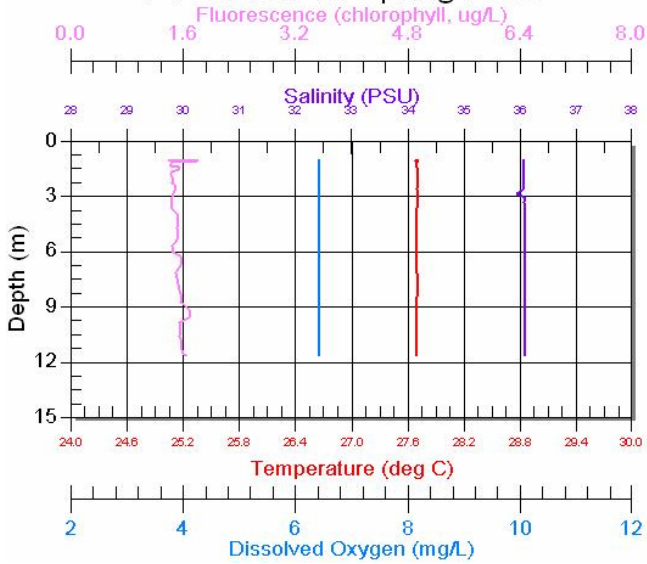
T2 Station 7 Spring 2006



T2 Station 10 Spring 2006



T2 Station 12 Spring 2006



***Scientific Environmental Applications, Inc. (SEA)****5575 Willoughby Dr.**Melbourne, FL 32934**email seapp1@aol.com**Telephone/fax 321.254.2708*

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**Memorandum Report**

**TO:** Mr. Barry S. Drucker, Physical Oceanographer/Environmental Coordinator, Contracting Officer's Technical Representative (COTR), U. S. Department of Interior Minerals Management Service (MMS), Sand and Gravel Program, 381 Elden St., Mail Stop 4010, Herndon, VA 20170-4817

**FROM:** Kim Zarillo, Contract Manager, S.E.A, Inc., 5575 Willoughby Dr. Melbourne, FL 32934

**DATE:** April 1, 2007

**SUBJECT:** Results of Fisherman Survey 2006 for Contract No. 1435-01-05-CT-39054 Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the West Coast of Florida/Physical Implications of Sand Dredging on the Topography of the West Florida Shelf

**West Coast Florida Fisherman Survey**

Between May and June 2006, fishermen along Florida's central west coastal counties from Manatee County and south to Lee County were surveyed for a total of about one week to assess their use of MMS study sites Tom Hills 1 and 2 (T1, T2) and Siesta Shoal. The survey was designed to assess the fishermen's perception of potential impacts to the fishing industry from dredging activities that may occur at the study sites. Attempts were made to survey recreational, commercial, bait shop owners, and guides in the fishing industry. The survey methods and results are described in this report.

**Methods***Sampling*

A questionnaire survey tool, see Appendix A, was designed to assess the types of fishermen (e.g., commercial or recreational), to obtain information about fishing on and/or near the MMS west coast study sites and fishermen's perceptions on dredging impacts to the fishing industry. This survey is a convenience sample of willing participants at major ports inshore of the study areas and is not a statistical analysis. The sample target was commercial and/or recreational fishermen that may use the study sites. Identifying, defining and estimating the subpopulation of fishermen for a statistical survey using MMS study sites would require a more in-depth analysis. Identifying and establishing fisherman populations are problematic for several reasons: access to information collected by state and federal agencies about fisherman is not public, the subset of fishermen relevant to the study sites probably fish for specific species that require specific licenses. Fishing licenses are provided by the state and distributed by county registration. Fishing activities and locations do not necessarily match county boundaries. Data collected from licensees for Florida fish catches or trip landings are kept confidential (Florida Fish & Wildlife Commission 2006). Federal licenses may/may not overlap in federal and state waters, yet data

collected for landing numbers with respect to the purpose of the license(s) are aggregated for larger geographical areas beyond the study sites. For example, federally licensed Fisherman A is licensed in Pinellas County, but fishes off Lee County in federal waters. Florida vessel registration statistics are available by county and classes, however the definition of vessel registration class and uses are broad. For commercial vessels payment for use of the vessel is considered commercial, such as sightseeing. One approach to a statistically valid survey would be for MMS to collaborate with Florida Wildlife Commission (FWC) Division of Marine Fisheries and National Marine Fishery Services (NMFS) ongoing survey landing programs that have access to landing records tied to license holders. The two agencies have the advantages of access to license information, a long history of collecting data from licensees, and statistically established survey methods that are evaluated and updated (National Research Council (NRC) of National Academy of Sciences (NAS), 2007:NMFS 2007). They have the ability to expand their data collection efforts to reach the population of fisherman that use these and future MMS study sites.

In this study, the target group was located by visiting known ports of entry for fisherman off central west Florida. Two data collection periods were conducted in May and June 2006 at major ports in Sarasota, Ft. Myers, and Clearwater. Boat captains, charter fishing guides, and bait and dive shops owners were surveyed by a compliment of personal interview and fill-in forms. Participants were shown a map of the study locations then verbally asked questions numbered 1-6 in which case the surveyor entered responses on the form, or a blank survey form was provided to the respondent and collected upon completion. Two different surveyors conducted surveys, the first surveyor, a Florida Tech Biology graduate student, spent two days visiting ports in Ft. Myers in Lee County and Clearwater in Pinellas with minimal responses (3 completed surveys) during May. The second surveyor, Captain Ray Dunzelman who once trawl fished on the west coast of Florida conducted 20 surveys in early June at Sarasota and Ft. Myers. During data entry questionnaires were numbered in sequential order for example West-MMS-1 to West-MMS-23 for QA/QC purposes. Data from the survey were entered into an excel spreadsheet for summary analysis.

## **Results**

The first survey attempt in May 2006 from the Tampa Bay area yielded three completed surveys. The second survey period in June 2006 conducted in Sarasota and Lee Counties was more successful. In all (23) twenty-three fisherman representing commercial and recreational interests responded to the questionnaire. A tabulation of survey responses are provided in Table 1. Comments received from participants are provided in full for Question 6.

### **Categories of Fisherman**

Respondents answered whether they were fishermen or divers. They then selected qualifying conditions, commercial or recreational. Two respondents were diving guides and recreational fisherman and the rest answered either as 43% commercial and 48% recreational fisherman (see Table 1). For simplification purposes responses were split into two groups commercial and recreational.

### **Target Fish Species**

The primary target fish species by the number of responses was: grouper and red snapper (10 each); shrimp (7); other pelagic fish (2); reef fish (1); hog fish (1); and, lobster (1). One diver collected shark teeth. Responses often included more than one target fish.

### **Target Habitat**

Habitat choices that were provided in the questionnaire were hard bottom, sand bottom, artificial reef, and open water. Some respondents chose more than one target habitat. A summary of target habitats chosen were (17) or 74% hard bottom, (13) or 56% sand bottom, (11) or 48% artificial reef, and (6) or 26% open water.

### **Fishing on Study Sites and/or Within 5 Miles**

Question 4 asked if respondents fished on the sites shown on a map see Appendix A. Responses were (15) or 65% No, percentages of those that used the sites were (1) or 4% Siesta Shoals, (7) or 30% T1 and T2. Six (6) respondents who were mostly trawlers said they fished during all seasons on the study sites. In Question 5, fishermen were asked if they fished within 5 miles of the sites shown on a map. Responses were (12) or 52% No, percentages of those that used the sites were (2) or 9% Siesta Shoals, (10) or 43% T1, and T2. For both Questions 4 and 5 the type(s) of gear used included trawl nets and rod and reel. Only one (1) respondent fished during spring and winter and the rest (5) fished all seasons.

### **Fisherman Concerns of Dredging Impacts on Fishing**

In Question 6, respondents were asked three related questions on the perceived impacts of dredging on fishing. The first question was “Are you concerned that dredging on these sites will Directly impact your fishing activities – if so, how?” The second question was “Are you concerned that dredging on these sites will indirectly impact your fishing activities – if so, how?” The final question was “What are other things do you think are impacted or should be considered?”

#### Direct and Indirect Impacts on Fishing from Dredging

##### *Direct Impacts on Fishing from Dredging*

Forty-seven percent (11) said there was no direct impact on fishing from dredging or it did not apply to them. Others provided comment about perceived direct impacts, which were

- Red tide outbreak
- Beach replenishment covering teeth and search areas
- Any disruption of natural currents, sand, & reef activities changes fish / wildlife
- Loss of fish and shellfish

##### *Indirect Impacts on Fishing from Dredging*

Twenty-two percent (22%) said there was no indirect impact to them from dredging and the rest either did not respond or provided comment. Comments ranged from a positive effect on fishing to the perception that certain fishing problems may be indirectly related to dredging, such as

- Possibility of increased turbidity
- Better dragging area
- Bottom disturbance

- Not me personally but customers of mine who fish
- No, have not noticed a change
- May disrupt juveniles
- Possibility of increased red tide event, spooked fish, turbidity.

#### Other Things to Consider and Comments

Responses for these two parts of question 6 were general in nature. They were combined and include:

- If taken down to rock it would improve fishing
- Water clarity, tearing up seagrass that will wash up on Sanibel Island
- Damage to small reef systems & patches during the dredging, as well as damage to coral, etcetera near the beach itself
- Reproduction for next year and after, silt, shell
- Live aboard dive boat
- Cleaner drag area - less fish more shrimp
- Area already impacted by freshwater run off
- Replenishment a waste of time
- Don't fish that far south or north
- In Texas, dredge operations actually concentrate shrimp as they feed on the new mud
- Thanks for asking the fishermen who work

#### References

July 2006. Commercial Saltwater Regulations Florida Fish and Wildlife Conservation Commission 2006-2007, Florida Fish & Wildlife Conservation Commission Division of Marine Fisheries Management. Volume 97. Tallahassee, Florida. [http://myfwc.com/marine/Commercial\\_Fisheries\\_Information.htm](http://myfwc.com/marine/Commercial_Fisheries_Information.htm)

February 2007. Development Plan for Improving Recreational Fisheries Statistics. NMFS, Office of Science and Technology. Courtesy: NOAA Fisheries. [http://www.st.nmfs.gov/RecSurveyUpgrade/documents/Rec\\_Implementation\\_Plan\\_02092007.pdf](http://www.st.nmfs.gov/RecSurveyUpgrade/documents/Rec_Implementation_Plan_02092007.pdf)

2006. Committee on the Review of Recreational Fisheries Survey Methods, National Research Council. Review of Recreational Fisheries Survey Methods. Ocean Studies Board Division on Earth and Life Studies, The National Academies Press Washington, D.C. [www.nap.edu](http://www.nap.edu)

Table 1. 2006 MMS Florida West Coast Fisherman Survey Results (Questions 1-5).

Question	1 Fishing or Diving?					2 Target species?	3 Habitat Targets?				4 On Site?						5 Within 5 Miles of site?												
	Fishing	Diving	Commercial	Guided	Recreation		Target species	HB	SB	Artificial Reel	Open H2O	No	Yes	T1	T2	Siesta Shoal	Target	Geat	Season	No	Yes	T1	T2	Siesta Shoal	Target	Geat	Season		
Sample																													
West-MMS-1						All	1	1	1		1								1										
West-MMS-2	1			1		Grouper, Snapper	1				1							Rod & Reel		1	1	1	1		Grouper, Snapper	Rod & Reel	All		
West-MMS-3	1			1	1	Grouper, Snapper	1					1	1	1				Rod & Reel		1	1	1	1		Grouper, Snapper	Rod & Reel			
West-MMS-4	1				1	Grouper, Snapper, & Reef fish	1		1		1							Rod & Reel		1									
West-MMS-5	1		1			Shrimp	1	1				1					Shrimp	Trawl Nets	All	1					Shrimp	Trawl Net			
West-MMS-6	1		1			Shrimp	1	1				1	1	1			Shrimp	Nets	All	1	1	1	1		Shrimp	Net	All		
West-MMS-7	1		1			Snapper, Grouper	1				0		1	1					0		1	1							
West-MMS-8	1		1			Shrimp	1	1				1	1	1			Shrimp	Net	All	1	1	1	1		Shrimp	Net			
West-MMS-9		1		1	1	Shark teeth		1			1								1										
West-MMS-10	1		1			Shrimp	1	1			1								1										
West-MMS-11	1			1	1	Bottom / Pelagic	1	1	1	1	1								1										
West-MMS-12	1		1			Shrimp		1				1	1	1			Shrimp	Nets	All	1	1	1	1		Shrimp	Net			
West-MMS-13	1		1			Shrimp		1			1								1						Shrimp	Trawls	All		
West-MMS-14	1				1	Bottom fish, Grouper, Snapper, Grunt	1	1	1			1	1	1			Grouper, Snapper & Grunt		All	1	1	1	1		Grouper, Snapper, & Grunt		All		
West-MMS-15	1				1	Grouper, Snapper	1		1		1								1										
West-MMS-16	1				1			1	1	1	1								1										
West-MMS-17	1				1	Hog lobster				1	1								1										
West-MMS-18	1				1	All	1	1	1	1	0		1	1	1			All	0		1	1	1						
West-MMS-19	1				1	Snapper, Grouper	1		1		1								1										
West-MMS-20	1		1			Shrimp		1			1										1	1			Shrimp	Trawls	All		
West-MMS-21	1		1			Snapper, Grouper, Dolphin, other pelagic	1		1	1	1								1										
West-MMS-22	1		1			Snapper, Grouper,	1		1	1	1								1										
West-MMS-23	1				1	Grouper, Snapper, other	1				1									1	1	1	1		Grouper, Mangrove Snapper	Rod & Reel	Spring & Winter		
Totals	21	2	10	6	11		17	13	11	6	15	6	7	7	1				12	8	10	10	2						
% of Totals	91%	9%	43%	26%	48%		74%	57%	48%	26%	65%	26%	30%	30%	4%				52%	35%	43%	43%	9%						



S.E.A., INC.



## Impacts of Sand Dredging for Beach Renourishment on Commercial and Recreational Fisheries and Diving in Southwest Florida



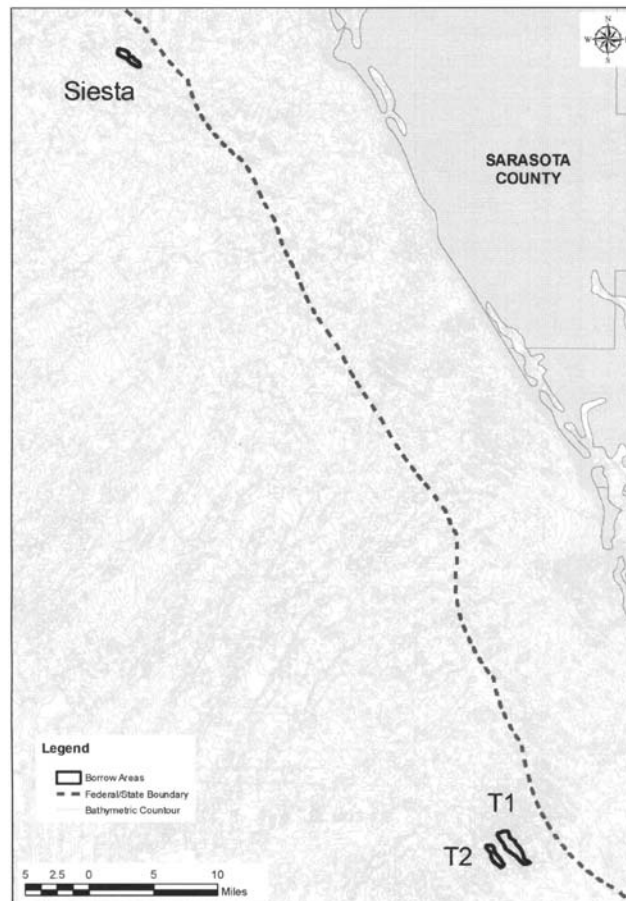
**Issue:** Sand for beach renourishment may be dredged from:

- One site about 10 miles offshore from the border of Sarasota/Manatee Counties
- Two sites about 11 miles offshore from Lee/Charlotte Counties.

**Background:** All three sites are low sand hills rising 3-5 feet above the surrounding sea floor. Trawl surveys and reviews of previous studies are being conducted to determine what fish and shellfish inhabit those area.

**Fisheries Concern:** Will removal of sand from these habitats directly or indirectly impact commercial and/or recreational fishing and diving? Please help the U.S. Minerals and Management Service and S.E.A., Inc., answer this question by filling in the form on the back of this sheet and faxing it to 321-728-9417 or calling Jon Shenker, 321-674-8145 for more information.

Siesta centered at  
27.27 N  
x 82.80 W



T1 centered  
at 26.38 N x  
82.36 W

T2 centered  
at 26.37 N x  
82.39 W

**Impacts of Sand Dredging on Fishing and Diving**

1) Type of Fishing or Diving:

Commercial \_\_\_ Guide \_\_\_ Recreational \_\_\_

2) Target species of fish and shellfish: \_\_\_\_\_

3) What types of habitat are you targeting?

hard bottom \_\_\_ sand bottom \_\_\_ artificial reef \_\_\_ open water \_\_\_

4) Do you fish on the sites shown on the front?

No \_\_\_ Yes, I fish on Siesta \_\_\_ T1 \_\_\_ T2 \_\_\_

If yes, what species are you targeting? \_\_\_\_\_

What type(s) of gear do you use? \_\_\_\_\_

What seasons do you fish there? Spring, Summer, Fall, Winter

5) Do you fish within about 5 miles of the sites shown on the front?

No \_\_\_ Yes, I fish on Siesta \_\_\_ T1 \_\_\_ T2 \_\_\_

If yes, what species are you targeting? \_\_\_\_\_

What type(s) of gear do you use? \_\_\_\_\_

What seasons do you fish there? Spring, Summer, Fall, Winter

6) Are you concerned that dredging on these sites will

Directly impact your fishing activities – if so, how? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Indirectly impact your fishing activities – if so, how? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

What are other things that you think may be impacted or should be considered?

\_\_\_\_\_

\_\_\_\_\_


\_\_\_\_\_

Thank you very much for your assistance. If you'd like more information, please contact Jon Shenker at 321-674-8145 or by fax at 321-728-9417.


## Data Sheet - Marine Mammal Recording Form – Location and Effort Data (Fall 2005)

Vessel Name: R/V Suncoaster		Vessel Type: Research Vessel				
Project Start Date: October 10, 2005		Project End Date: October 14, 2005				
Time Zone of Records: EDT		Page 1 of 1				QC
Lead Observer: James Barkaszi		Observer 2: Leif Halvorson				
<b>Date</b>	10/04/05	10/05/05	10/05/05	10/05/05	10/06/05	10/06/05
<b>Observer(s)</b>	Barkaszi Halvorson	Barkaszi Halvorson	Barkaszi Halvorson	Barkaszi Halvorson	Barkaszi Halvorson	Barkaszi Halvorson
<b>Duration of Visual Surveys for Protected Species</b>						
Time when visual survey began	0745	0925	N/A	1721	1115	N/A
Time when visual survey ended	1715	1545	N/A	1920	1905	N/A
Duration of visual survey for protected species (Hrs:Mins)	9:30	6:20	N/A	1:59	7:50	N/A
<b>Duration of Acoustic Survey for Protected Species</b>						
Time when acoustic survey began	N/A	N/A	1552	N/A	N/A	1918
Time when acoustic survey ended	N/A	N/A	1658	N/A	N/A	2045
Duration of acoustic survey for protected species (hrs:mins)	N/A	N/A	1:06	N/A	N/A	1:27
<b>Location and Observation Conditions</b>						
Latitude at start of survey	26° 22.92'N	26° 22.23'N	26° 22.27'N	26° 22.22'N	27° 16.13'N	27° 16.54' N
Longitude at start of survey	82° 23.62' W	82° 23.06W	82° 22.49'W	82°21.11W	82° 47.64'W	82° 46.26' W
Latitude at end of survey	26° 22.61'N	26° 22.27'N	26° 23.30'N	26° 22.08' N	27°16.38' N	27° 18.42' N
Longitude at end of survey	82° 23.42' W	82° 22.49'W	82° 23.33'W	82° 21.24'W	82°47.64' W	82° 48.26' W
Wind Force: Beaufort Knots	3 Beaufort 20 - 25 Knots	2 Beaufort 5 - 10 Knots	1 Beaufort 5 - 7 Knots	1 Beaufort 5 - 7 Knots	2 Beaufort 5 - 10 Knots	1 Beaufort 3 - 5 Knots
Sea State (Glassy -mirror like; Slight - few white caps; Choppy - many white caps, Rough - large waves & spray)	Choppy	Slight	Slight	Slight	Slight	Slight
Swell (0 = Low <2m; M = medium 2-4m; L = Large >4m)	Low to Medium	Low	Low	Low	Low	Low
Visibility (Poor <1km; Moderate 1-5 km; Good >5 km)	Moderate	Good	N/A	Good	N/A	Good
Notes:					James Barkaszi Lead Observer	

## Marine Mammal Recording Form - Record of Sighting

GeoCet Marine Mammal Recording Form - Record of Sighting			
<b>Date</b> 4-Oct-05	<b>Time</b> 0815EDT	<b>Project No.</b> 05071DRE	<b>Sighting No.</b> 1
<b>How did this sighting occur?</b>			
<i>While you were keeping a continuous watch for marine mammals</i> <i>Spotted incidentally by you or someone else</i> <i>Other (please specify)</i>			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>Ship</b> RV Suncoaster		<b>Observer</b> James Barkaszi Leif Halvorson	
<b>Ships Position</b> (Latitude and Longitude)  26° 22.45' N 82° 23.22' W		<b>Water Depth</b> (meters)  11 meters	
<b>Species</b>  Bottlenose Dolphin ( <i>Tursiops truncatus</i> )		<b>Certainty of identification</b>  <u>Definite</u> / Probable / Possible	
<b>Total Number</b>  3		<b>Number of Adults</b> 1 <b>Number Of Juveniles</b> 2	
<b>Description</b> (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		<b>Photograph or Video Taken</b>  Yes / <u>No</u>	
		<b>Direction of travel in relation to ship</b>  	
<b>Behavior</b>  surface twice then headed south		<b>Direction of travel of animals</b> (compass heading)  South (180°)	
<b>Activity of Ship</b>  Sampling	<b>Closet distance of animal to Vessel (meters)</b> 35 Meters		


## Marine Mammal Recording Form - Record of Sighting

GeoCet Marine Mammal Recording Form - Record of Sighting			
<b>Date</b> 5-Oct-05	<b>Time</b> 1252 EDT	<b>Project No.</b> 05071DRE	<b>Sighting No.</b> 2
<b>How did this sighting occur?</b>			
<i>While you were keeping a continuous watch for marine mammals</i> <i>Spotted incidentally by you or someone else</i> <i>Other (please specify)</i>			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>Ship</b> RV Suncoaster		<b>Observer</b> James Barkaszi Leif Halvorson	
<b>Ships Position</b> (Latitude and Longitude)  26° 22.71' N 82° 22.62' W		<b>Water Depth</b> (meters)  11 meters	
<b>Species</b>  Loggerhead turtle ( <i>Caretta caretta</i> )		<b>Certainty of identification</b>  <u>Definite</u> / Probable / Possible	
<b>Total Number</b>  1		<b>Number of Adults</b> 1 <b>Number Of Juveniles</b>	
<b>Description</b> (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)  Large oval yellowish brown carapace Flippers small large head		<b>Photograph or Video Taken</b>  Yes / <u>No</u>	
		<b>Direction of travel in relation to ship</b>  	
<b>Behavior</b>  surface off starboard side then dove after seeing ship		<b>Direction of travel of animals</b> (compass heading)  East (90°)	
<b>Activity of Ship</b>  Sampling	<b>Closest distance of animal to Vessel (meters)</b> 20 Meters		

## Marine Mammal Recording Form - Record of Sighting

GeoCet Marine Mammal Recording Form - Record of Sighting						
<b>Date</b> 6-Oct-05	<b>Time</b> 0850 EDT	<b>Project No.</b> 05071DRE	<b>Sighting No.</b> 3			
<b>How did this sighting occur?</b>						
<p><i>While you were keeping a continuous watch for marine mammals</i></p> <p><i>Spotted incidentally by you or someone else</i></p> <p><i>Other (please specify)</i></p>			<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="width: 50px; height: 20px;"></td></tr> <tr><td style="text-align: center;">X</td></tr> <tr><td style="width: 50px; height: 20px;"></td></tr> </table>		X	
X						
<b>Ship</b> RV Suncoaster		<b>Observer</b> James Barkaszi Leif Halvorson				
<b>Ships Position</b> (Latitude and Longitude)  26° 56.61' N 82° 38.03' W		<b>Water Depth</b> (meters)  15 meters				
<b>Species</b>  Loggerhead turtle ( <i>Caretta caretta</i> )		<b>Certainty of identification</b>  <u>Definite</u> / Probable / Possible				
<b>Total Number</b>  1		<b>Number of Adults</b> 1 <b>Number Of Juveniles</b>				
<b>Description</b> (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow) A full grown adult turtle was found floating in the water with a large crack down the carapace, stretching from the head down to the tail. The turtle was slightly bloated and its color was lighter than normal. It was a very pale yellow, almost white. The crack was just left of center on the shell and was the only apparent injury. All four limbs and its head and tail were all fully intact.		<b>Photograph or Video Taken</b>  Yes / <u>No</u>				
		<b>Direction of travel in relation to ship</b>  				
<b>Behavior</b>  Deceased		<b>Direction of travel of animals</b> (compass heading)				
<b>Activity of Ship</b>  Traveling to North site	<b>Closest distance of animal to Vessel (meters)</b> 20 Meters					

## Marine Mammal Recording Form - Record of Sighting

ECOES Marine Mammal Recording Form - Record of Sighting						
<b>Date</b> 10/6/2005	<b>Time</b> 12:55 EDT	<b>Project No.</b> 05071DRE	<b>Sighting No.</b> 4			
<b>How did this sighting occur?</b>						
<p><i>While you were keeping a continuous watch for marine mammals</i></p> <p><i>Spotted incidentally by you or someone else</i></p> <p><i>Other (please specify)</i></p>			<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">X</td></tr> <tr><td style="text-align: center;"> </td></tr> <tr><td style="text-align: center;"> </td></tr> </table>	X		
X						
<b>Ship</b> R/V Suncoaster		<b>Observer</b> Leif Malvorson James Barkaszi				
<b>Ships Position</b> (Latitude and Longitude)  27°16.29 N 82°48.61 W		<b>Water Depth</b> (meters)  13 meters				
<b>Species</b>  <i>Tursiops truncatus</i> Bottlenose Dolphin		<b>Certainty of identification</b>  <u>Definite</u> / Probable / Possible				
<b>Total Number</b>  1		<b>Number of Adults</b> ? <b>Number Of Juveniles</b> ?				
<b>Description</b> (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)  Gray, tall and falcated dorsal		<b>Photograph or Video Taken</b>  Yes / <u>No</u>				
		<b>Direction of travel in relation to ship</b>  				
<b>Behavior</b>  Traviling - very breif view		<b>Direction of travel of animals</b> (compass heading)  SW				
<b>Activity of Ship/ Boat</b>  Sampling			<b>Closet distance of animal to Boat/Ship</b>  35 meters			

## Hydrophone Monitoring Log

5-Oct-05

1552 begin hydrophone

lat: 26° 22.27'N lon: 82° 22.49'W

1608 All clear no cetacean sounds recorded

1612 Pulled hydrophone cable boat traveling too fast

1618 Hydrophone back in recording

1641 All clear no cetacean sounds recorded

1658 End hydrophone no recordings of marine mammals

lat: 26° 23.30'N lon: 82° 23.33'W

6-Oct-05

1918 begin hydrophones

lat: 27° 16.54'N lon: 82° 46.26'W

1922 Much clearer sound than yesterday seas calmer

1930 All clear no cetacean sounds recorded

2008 All clear no cetacean sounds recorded

2019 All clear no cetacean sounds recorded

2045 end of hydrophones monitoring

lat: 27° 18.42'N lon: 82° 48.26'W



## Protected Species Recording Form - Visual Location & Effort Data

Vessel Name: Thunderforce

Project Dates: June 9, 2006 - June 18, 2006 (West Cruise)

Project: MMS CT 39054

Observers: Justin Prince (lead), Clint Miller

Time Zone of Records: EDT

QC
----

<b>Date:</b>	9-Jun-06	10-Jun-06	11-Jun-06
<b>Observers:</b>	JP,CM	JP,CM	JP,CM
<b>Duration of Visual Surveys for Protected Species:</b>			
Time when visual survey began:	No survey due to	No survey due to	No survey due to
Time when visual survey ended:	transit	transit	transit
Duration of visual survey: hr: min:			
<b>Location and Observation Conditions:</b>			
Starting latitude:			
Starting longitude:			
Ending latitude:			
Ending longitude:			
Wind Force (with scale used)			
Sea State:			
Swell:			
Visibility:			
<b>Notes &amp; Comments:</b>			

<b>Date:</b>	12-Jun-06	13-Jun-06	14-Jun-06
<b>Observers:</b>	JP,CM	JP,CM	JP,CM
<b>Duration of Visual Surveys for Protected Species:</b>			
Time when visual survey began:	No survey due to	No survey due to	6:44
Time when visual survey ended:	transit	transit	20:31
Duration of visual survey: hr: min:			13:47
<b>Location and Observation Conditions:</b>			
Starting latitude:			27° 77.07 N
Starting longitude:			82° 49.05 W
Ending latitude:			27° 16.59 N
Ending longitude:			82° 48.22 W
Wind Force (with scale used)			B2-B5
Sea State:			Choppy
Swell:			medium
Visibility:			Poor
<b>Notes &amp; Comments:</b>			

**Protected Species Recording Form - Visual Location & Effort Data**

Vessel Name: Thunderforce

Project Dates: June 9, 2006 - June 18, 2006 (West Cruise)

Project: MMS CT 39054

Observers: Justin Prince (lead), Clint Miller

Time Zone of Records: EDT

<b>QC</b>
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<b>Date:</b>	15-Jun-06	16-Jun-06	17-Jun-06
<b>Observers:</b>	JP,CM	JP,CM	JP,CM
<b>Duration of Visual Surveys for Protected Species:</b>			
Time when visual survey began:	6:30	6:36	No survey
Time when visual survey ended:	20:30	11:25	due to transit
Duration of visual survey: hr: min:	14:00	4:49	
<b>Location and Observation Conditions:</b>			
Starting latitude:	26° 23.85' N	26° 23.67' N	
Starting longitude:	82° 23.68' W	82° 22.45' W	
Ending latitude:	26° 23.45' N	26° 22.16' N	
Ending longitude:	82° 22.74' W	82° 21.15' W	
Wind Force (with scale used)	B0	B1	
Sea State:	Glassy	Slight Chop	
Swell:	low	low	
Visibility:	Excellent	Good	
<b>Notes &amp; Comments:</b>			

<b>Date:</b>	18-Jun-06		
<b>Observers:</b>	JP,CM		
<b>Duration of Visual Surveys for Protected Species:</b>			
Time when visual survey began:	No survey		
Time when visual survey ended:	Do to transit		
Duration of visual survey: hr: min:			
<b>Location and Observation Conditions:</b>			
Starting latitude:			
Starting longitude:			
Ending latitude:			
Ending longitude:			
Wind Force (with scale used)			
Sea State:			
Swell:			
Visibility:			
<b>Notes &amp; Comments:</b>			

Acoustic Monitoring

**Protected Species Recording Form - Acoustic Data**

Vessel Name: Thunderforce

Project Dates: June 9, 2006 - June 18, 2006 (West Cruise)

Project: MMS CT 39054

<b>QC</b>
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Observers: Justin Prince (lead), Clint Miller

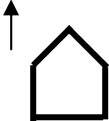
Time Zone of Records: EDT


<b>Date:</b>	14-Jun-06	14-Jun-06	14-Jun-06
<b>Observers:</b>	JP, CM	JP, CM	JP, CM
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	13:55	15:11	16:51
End acoustic survey:	14:03	15:21	0:00
Length of sound files (minutes)	3.03,5.02	10.09	8.04,30.32
<b>Location of Deployment:</b>			
Latitude of deployment:	27° 16.27' N	27° 15.92' N	27° 15.93' N
Longitude of deployment:	82° 47.75' W	82° 47.54' W	82° 45.48' W
<b>Notes:</b>			

<b>Date:</b>	15-Jun-06	15-Jun-06	15-Jun-06
<b>Observers:</b>	JP,CM	JP,CM	JP,CM
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	7:18	9:19	10:55
End acoustic survey:	7:28	9:49	11:10
Length of sound files (minutes)	10.01	20.44	4.30 , 10.35
<b>Location of Deployment:</b>			
Latitude of deployment:	26°22.95' N	26°22.49' N	26°22.19' N
Longitude of deployment:	82°23.62' W	82°23.33' W	82°23.30' W
<b>Notes:</b>			

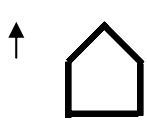
<b>Date:</b>	15-Jun-06	15-Jun-06	15-Jun-06
<b>Observers:</b>	JP,CM	JP,CM	JP,CM
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	18:01	19:26	20:19
End acoustic survey:	18:33	19:38	20:29
Length of sound files (minutes)	32.06	12.04	10.04
<b>Location of Deployment:</b>			
Latitude of deployment:	26° 23.72' N	26° 23.71' N	26° 23.45' N
Longitude of deployment:	82° 22.51' W	82° 23.01' W	82° 22.74' W
<b>Notes:</b>			


<b>Date:</b>	16-Jun-06	16-Jun-06	16-Jun-06
<b>Observers:</b>	JP,CM	JP,CM	JP,CM
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	8:15	10:37	11:05
End acoustic survey:	8:25	10:47	11:15
Length of sound files (minutes)	10.01	10.04	10.02
<b>Location of Deployment:</b>			
Latitude of deployment:	26° 23.26' N	26° 22.60' N	26° 22.16' N
Longitude of deployment:	82° 22.19' W	82° 21.77' W	82° 21.32' W
<b>Notes:</b>			


Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 11-Jun-06	<b>Time (Include Time Zone):</b> 15:16 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-1			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td>XXX</td></tr> </table>				XXX
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below): Coming through the Caloosahatchee River canal system during transit.						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 33.20' N Longitude: 81° 56.06' W		<b>Water Depth (in meters):</b> 3m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Approx 7ft adult with grayish back, falcated dorsal fin, and dark grayish beak.		<b>Photographs or Video:</b>  Yes/both photo and video				
		<b>Direction of travel in relation to the ship:</b>  				
<b>Behavior:</b>  Came up alongside the vessel on the port side and bow rode for several minutes before disappearing.		<b>Direction of travel of animals:</b> (compass heading)  209°				
<b>Activity of Vessel:</b> Transit in canals	<b>Notes:</b> May be linked to Sighting Report #2	<b>Closest distance of animal to vessel (in meters):</b> 1 m				

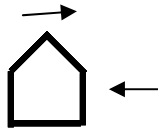
Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 11-Jun-06	<b>Time (Include Time Zone):</b> 15:38-16:20 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-2			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals: Spotted incidentally by you or someone else:		<table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td>XXX</td></tr> </table>				XXX
XXX						
Other (Please specify on the line below): Transiting through the Caloosahatchee River canal system						
<b>Vessel Name:</b> R/V Thunderforce	<b>Observer(s) who spotted the animal:</b> Justin Prince and Clint Miller					
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 32.25' N Longitude: 81° 56.73' W		<b>Water Depth (in meters):</b> 4m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  3		<b>Number of adults:</b>  2				
		<b>Number of juveniles:</b>  1				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  2 adults approximately 7-8 ft in length with grayish backs, falcated dorsal fins, and dark grayish beaks. The juveniles was similar in appearance but was only approximately 4ft in length.		<b>Photographs or Video:</b>  Yes/both video and photo				
		<b>Direction of travel in relation to the ship:</b>  				
<b>Behavior:</b>  First observed bow riding, diving back and forth port side to starboard side. Juvenile tended to be in the middle. All three dolphins had various contacts between one another.		<b>Direction of travel of animals:</b> (compass heading)  209°				
<b>Activity of Vessel:</b>  Transiting through the canal	<b>Notes:</b>  Stayed for a long time leaving periodical for no more than a minute.	<b>Closest distance of animal to vessel (in meters):</b>  1m				





Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 8:45 ETD	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-03			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals: Spotted incidentally by you or someone else:		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince, Clint Miller				
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 22.49 N Longitude: 82° 23.33 W		<b>Water Depth (in meters):</b> 24 M				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name:       Loggerhead Turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)		<b>Number of adults:</b>				
1		1				
		<b>Number of juveniles:</b>				
		0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>				
		No				
		<b>Direction of travel in relation to the ship:</b>				
Small loggerhead only saw the head and parts of the carapace briefly.						
<b>Behavior:</b>		<b>Direction of travel of animals:</b> (compass heading)				
Turtle was on the starboard side of boat and was swimming in a westerly direction as the boat was heading south		250°				
<b>Activity of Vessel:</b> Heading South West in transit	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>				
		10m				

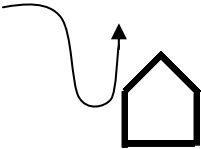
Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 9:30 ETD	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-04			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals: Spotted incidentally by you or someone else:		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince Clint Miller				
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 22.07' N Longitude: 82° 22.80' W		<b>Water Depth (in meters):</b>  37 M				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b>  1				
		<b>Number of juveniles:</b>  0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Adult with yellowish brown head, small beak, and large dark brown carapace.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Surface on the starboard side of the boat, took a few breaths, and then dove.		<b>Direction of travel in relation to the ship:</b>  <div style="text-align: center;">  </div>				
		<b>Direction of travel of animals:</b> (compass heading)  235°				
<b>Activity of Vessel:</b>  underway	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>  20 Meters				

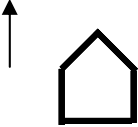
Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 10:00 ETD	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-05			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1" style="margin: auto;"> <tr><td style="text-align: center;">XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce	<b>Observer(s) who spotted the animal:</b> Justin Prince and Clint Miller					
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 22.03' N Longitude: 82° 23.13' W		<b>Water Depth (in meters):</b> 30 Meters				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  4		<b>Number of adults:</b>  4				
		<b>Number of juveniles:</b>  0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  4 Adult bottlenose ranging in size from approximately 6ft -7 1/2 ft not very acrobatic only briefly would breach the surface and then immediately dive again		<b>Photographs or Video:</b>  Yes				
		<b>Direction of travel in relation to the ship:</b>  <div style="text-align: center;">  </div>				
<b>Behavior:</b>  Moved behind the boat but maintained a good distance between the boat and themselves. Porpoised several times but did not spend much time on surface		<b>Direction of travel of animals:</b> (compass heading)  160°				
<b>Activity of Vessel:</b>  underway	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>  25M				

Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 10:45 ETD	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-06			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Clint Miller and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 22.17' N Longitude: 80° 55.39' W		<b>Water Depth (in meters):</b> 30M				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  4		<b>Number of adults:</b>  3				
		<b>Number of juveniles:</b>  1				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  3 adults approximately 7-8 ft in length with grayish backs, falcated dorsal fins, and dark grayish beaks. The juvenile was similar in appearance but was only approximately 3ft in length.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  2 of the adults stayed off the bow of the boat never coming within 10 meters, the juvenile and 1 adult circled the boat on the starboard side before swimming under the boat and then swimming in circles on the port side		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  2 adults were moving approximately 90° the juvenile and one adult were circling.				
<b>Activity of Vessel:</b> In Transit	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b> 9 m				

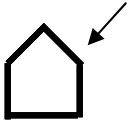
Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 13:12 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-07			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1" style="width: 100%; text-align: center;"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 21.89' N Longitude: 82° 23.10' W		<b>Water Depth (in meters):</b>  12m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name:      Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b>  1				
		<b>Number of juveniles:</b>  0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Large adult with a yellowish/brownish head and large dark brown carapace.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Basking above the surface and taking a few breaths and then dove.		<b>Direction of travel in relation to the ship:</b>  <div style="text-align: center;">  </div>				
		<b>Direction of travel of animals:</b> (compass heading)  150°				
<b>Activity of Vessel:</b>  underway	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>  40m				

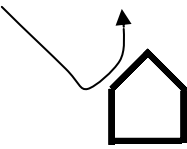
Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 13:19 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-08			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 22.04' N Longitude: 82° 23.05' W		<b>Water Depth (in meters):</b> 13m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose Dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  7		<b>Number of adults:</b>  7				
		<b>Number of juveniles:</b>  0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>  No				
Pod of adult dolphins ranging in length between 6-8ft with slight grayish capes and falcated dorsal fins. Definite crease between melon and beak.		<b>Direction of travel in relation to the ship:</b>  				
<b>Behavior:</b>  Came from behind boat and porpoised along side for 10 minutes and then left.		<b>Direction of travel of animals:</b> (compass heading)  323°				
<b>Activity of Vessel:</b>  Trawling	<b>Notes:</b>  3 of the dolphins bow rode.	<b>Closest distance of animal to vessel (in meters):</b>  5m				

Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 15:48 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-09			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince and Clint Miller				
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 23.17' N Longitude: 82° 23.47' W		<b>Water Depth (in meters):</b> 17m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Rough-Toothed dolphin Scientific Name: <i>Steno bredanensis</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  20 or more		<b>Number of adults:</b>  15 to 20				
		<b>Number of juveniles:</b>  3 to 5				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>  Yes to both				
Pod of dolphin with dark grayish cape that narrowed before the dorsal fin. Definite lack of crease between melon and beak. Whitish underside with white tipped beak. Adults 8 to 9 ft long with the juveniles ranging around 4 ft long.		<b>Direction of travel in relation to the ship:</b>  				
<b>Behavior:</b>  Pod noticed off in the distance. Few dolphins came up along side the boat to bow ride for 20 minutes.		<b>Direction of travel of animals:</b> (compass heading)  No definite direction of travel				
<b>Activity of Vessel:</b> underway	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b> 3 m				

Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 15-Jun-06	<b>Time (Include Time Zone):</b> 19:38 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-10			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals: Spotted incidentally by you or someone else:		<table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td>XXX</td></tr> </table>				XXX
XXX						
Other (Please specify on the line below): Spotted during hydrophone deployment.						
<b>Vessel Name:</b> R/V Thunderforce	<b>Observer(s) who spotted the animal:</b> Justin Prince and Clint Miller					
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 23.71' N Longitude: 82° 23.01' W		<b>Water Depth (in meters):</b> 13m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  2		<b>Number of adults:</b>  1				
		<b>Number of juveniles:</b>  1				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Adult was around 9 ft in length with a grayish cape and falcated dorsal fin. Juvenile was much smaller (4 ft in length) with a similar appearance.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Came up along side the boat during hydrophone deployment, surfaced 3 times, and then dove.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  179°				
<b>Activity of Vessel:</b>  getting a grab	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>  20m				



Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 16-Jun-06	<b>Time (Include Time Zone):</b> 11:00 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-11			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince and Clint Miller				
<b>Position of Vessel at time of sighting:</b> Latitude: 26° 22.26' N Longitude: 82° 21.40' W		<b>Water Depth (in meters):</b> 14m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b>  1				
		<b>Number of juveniles:</b>  0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  8 ft adult dolphin with a grayish back, crease between beak and melon, and falcated dorsal fin.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Came at the boat, taking a few breaths, and then dove under the boat and didn't reappear.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  200°				
<b>Activity of Vessel:</b>  On to next sampling site	<b>Notes:</b>  deployed hydrophones shortly after	<b>Closest distance of animal to vessel (in meters):</b>  5m				

Record of Sighting Form for MMS CT 39054 Spring 2006 Field Cruise						
<b>Date:</b> 16-Jun-06	<b>Time (Include Time Zone):</b> 16:48 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-12			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1" style="width: 100%; text-align: center;"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince and Clint Miller				
<b>Position of Vessel at time of sighting:</b> Latitude: 25° 23.09' N Longitude: 82° 06.42' W		<b>Water Depth (in meters):</b> 20m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Atlantic Spotted Dolphin Scientific Name: <i>Stenella frontalis</i>		<b>Certainty of Identification:</b>  Probable				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  5		<b>Number of adults:</b>  4				
		<b>Number of juveniles:</b>  1				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Dolphins had a dark grayish back with spots varying on body. The crease between melon and beak was not definite. The dolphins had a whitish belly with a tricolored background and white tipped beak.		<b>Photographs or Video:</b>  Yes				
<b>Behavior:</b>  Approached the boat and started to bow ride for around 8 minutes.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  Constantly changing due to avid swimming				
<b>Activity of Vessel:</b> transit	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>  5 m				



## **APPENDIX C**

### **Geologic Field Survey Data**

- C1. Sample Properties and Grain Size Statistics from the T1, T2, and Siesta Shoals
- C2. Granularmetric Report for the October 2005 Survey
- C3. Granularmetric Report for the June 2006 Survey



### 2005 Summary of Sample Properties and Grain Size Statistics from Siesta Shoal

2005 Siesta Shoal Sample ID	USCS	% Fine	Mean (mm)	Med. (mm)	St. Dev.	Skew.	Kurt.	% Organic	% CaO3
W1-S-01	SP	1.55	0.37	0.34	0.76	-0.41	3.02	2.54	86.61
W1-S-02	SP	1.65	0.33	0.31	0.76	-0.49	3.4	2.09	74.35
W1-S-03	SP	1.38	0.44	0.41	0.83	-0.55	3.63	2.16	86.24
W1-S-04	SP	1.46	0.56	0.56	0.74	0.25	2.94	2.79	62.59
W1-S-05	SP	1.48	0.42	0.41	0.75	-0.25	3.39	2.65	87.11
W1-S-06	SP	2.34	0.27	0.26	0.93	-0.1	2.48	2.27	69.64
W1-S-07	SP	3.06	0.59	0.56	0.77	-0.21	2.93	2.41	91.04
W1-S-08	SP	1.94	0.38	0.35	0.93	-0.49	3.27	2.76	88.98
W1-S-09	SP	2.17	0.27	0.25	0.73	-1.1	5.47	2.32	75.44
W1-S-10	SM	17.06	0.09	0.08	0.44	-3	19.38	1.78	57.49
W1-S-11	SP	1.01	0.51	0.50	0.79	-0.08	3.13	2.41	88.88
W1-S-12	SP	1.76	0.51	0.49	0.83	-0.13	3.22	3.19	95.16
W1-S-13	SP	0.62	0.30	0.29	0.7	-0.74	4.38	1.73	67.75
W1-S-14	SP	0.9	0.54	0.58	0.8	0.32	3.6	2.41	91.17
W1-S-15	SP	1.05	0.64	0.63	0.76	-0.12	3.98	2.33	90.87
W1-S-16	SP	1.86	0.47	0.49	0.77	0.58	4.28	2.14	84.56
W1-S-17	SM	14.46	0.13	0.10	0.93	-1.51	5.3	2.43	56.78



### 2006 Summary of Sample Properties and Grain Size Statistics from Siesta Shoal.

2006 Siesta Shoal Sample ID	USCS	% Fine	Mean (mm)	Med. (mm)	St. Dev.	Skew.	Kurt.	% Organic	% CaO3
W2-S-01	SP	0.22	0.50	0.48	0.75	-0.32	3.1	2.46	89.1
W2-S-02	SP	0.23	0.54	0.52	0.9	0.01	2.82	3.23	93.35
W2-S-03	SP	0.24	0.26	0.24	0.65	-0.49	3.88	1.83	63.9
W2-S-04	SP	0.02	0.59	0.62	0.92	0.24	2.87	2.51	88.29
W2-S-05	SP	1.97	0.15	0.13	0.72	-1.17	5.09	1.78	50.81
W2-S-06	SP	0.2	0.38	0.34	0.86	-0.57	3.13	2.42	81.47
W2-S-07	SP	14.39	0.09	0.08	0.53	-4	28.34	1.63	48.24
W2-S-08	SP	0.34	0.70	0.73	0.65	0.63	3.78	2.7	93.69
W2-S-09	SP	0.07	0.52	0.51	0.79	-0.19	3.01	2.74	90.31
W2-S-10	SP	0.06	0.25	0.23	0.65	-1.18	6.17	2.03	64.83
W2-S-11	SP	0.04	0.37	0.34	0.85	-0.74	3.8	1.99	75.41
W2-S-12	SP	0.04	0.48	0.47	0.71	-0.16	2.91	2.48	87.69
W2-S-13	SP	0.04	0.37	0.37	0.72	-0.14	2.87	2.17	79.85
W2-S-14	SP	0.11	0.32	0.31	0.65	-0.29	4.89	2.01	77.18
W2-S-15	SP	6.47	0.14	0.11	0.96	-2.17	8.71	1.8	50.94
W2-S-16	SP	18.93	0.11	0.08	0.84	-2.62	11.41	2.12	60.46
W2-S-17	SP	0.11	0.54	0.54	0.89	-0.02	2.71	2.51	86.33



**2005 Summary of Sample Properties and Grain Size Statistics from the T1 Shoal.**

<b>2005 T1 Shoal Sample ID</b>	<b>USCS</b>	<b>% Fine</b>	<b>Mean (mm)</b>	<b>Med. (mm)</b>	<b>St. Dev.</b>	<b>Skew.</b>	<b>Kurt.</b>	<b>% Organic</b>	<b>% CaO3</b>
W1-T1-01	SP	1.25	0.40	0.38	0.66	-0.71	4.54	7.5	17.2
W1-T1-02	NA								
W1-T1-03	SP	0.06	0.65	0.61	0.81	-0.05	3.17	16.1	37.19
W1-T1-04	SP	0.1	0.41	0.39	0.64	-0.84	4.25	10.23	23.46
W1-T1-05	NA								
W1-T1-06	SP	0.54	0.51	0.46	0.87	-0.66	3.6	16.36	37.71
W1-T1-07	SP	1.42	0.60	0.59	0.84	0.08	2.78	20.84	47.84
W1-T1-08	NA								
W1-T1-09	SP	0.34	0.58	0.51	0.95	-0.36	2.7	20.48	47.06
W1-T1-10	SP	1.42	0.26	0.24	0.56	-1.8	9.05	6.49	15.08
W1-T1-11	SP	0.23	0.66	0.64	0.88	-0.12	2.69	26.74	61.75
W1-T1-12	NA								
W1-T1-13	SP	1.65	0.30	0.28	0.67	-1.06	5.19	9.89	22.83
W1-T1-14	SP	0.24	0.29	0.28	0.57	-1.21	5.88	5.59	12.89
W1-T1-15	SP	1.45	0.42	0.41	0.68	-0.34	3.61	10.57	24.2
W1-T1-16	SP	1.52	0.29	0.28	0.56	-0.86	5.03	8.94	20.5
W1-T1-17	SP	0.43	0.42	0.40	0.67	-0.58	3.83	8.27	19.12
W1-T1-18	SP	1.92	0.46	0.42	0.89	-0.8	3.91	14.57	33.54
W1-T1-19	SP	1.6	0.45	0.41	1.03	-0.94	4.23	15.68	35.92
W1-T1-20	NA								
W1-T1-21	SP	0.36	0.32	0.30	0.61	-0.63	3.52	6.77	15.57
W1-T1-22	NA								
W1-T1-23	NA								
W1-T1-24	NA								
W1-T1-25	SP	1.68	0.51	0.47	0.79	-0.31	3.21	17.19	39.38
W1-T1-26	SP	0.96	0.38	0.31	0.95	-1.17	5.16	16.6	37.8
W1-T1-27	SP	4.99	0.24	0.22	0.62	-1.55	8.2	13.16	30.28
W1-T1-28	SP	2.07	0.36	0.30	0.86	-1.5	6.36	9.19	21.18
W1-T1-29	SP	3.32	0.43	0.45	0.8	0.18	2.78	12.27	28.42



### 2006 Summary of Sample Properties and Grain Size Statistics from the T1 Shoal.

2006 T1 Shoal									
Sample ID	USCS	% Fine	Mean (mm)	Med. (mm)	St. Dev.	Skew.	Kurt.	% Organic	% CaO3
W2-T1-01	SP	0.12	0.60	0.54	0.9	-0.64	3.4	1.12	46.9
W2-T1-02	SP		0.40	0.38	0.7	-0.99	4.56	0.73	22.17
W2-T1-03	SP	0.65	0.58	0.56	0.78	-0.31	3.46	1.02	35.44
W2-T1-04	SP	0.49	0.49	0.47	0.74	-0.48	3.55	0.91	29.23
W2-T1-05	SP	0.71	0.53	0.52	0.82	-0.19	3.28	1.28	41.34
W2-T1-06	SP	0.2	0.44	0.41	0.82	-0.84	3.93	0.87	28.94
W2-T1-07	SP	0.31	0.41	0.39	0.79	-0.82	4.1	0.99	24.59
W2-T1-08	SP	0.08	0.38	0.36	0.63	-1.01	4.75	0.79	21.86
W2-T1-09	SP	0.53	0.41	0.38	0.75	-1.11	4.58	0.97	24.88
W2-T1-10	SP	0.29	0.57	0.52	0.91	-0.55	3.14	1.3	40.97
W2-T1-11	SP	0.23	0.44	0.41	0.72	-0.8	3.73	0.85	24.91
W2-T1-12	SP	0.5	0.38	0.35	0.68	-1.06	4.77	0.85	22.07
W2-T1-13	SP	0.21	0.31	0.26	0.92	-1.34	4.71	1.63	39.92
W2-T1-14	SP	0.4	0.47	0.45	0.8	-0.24	3.47	1.08	35.66
W2-T1-17	SP	0.44	0.50	0.45	0.86	-0.72	3.62	0.95	26.64
W2-T1-18	SP	0.28	0.38	0.34	0.72	-0.94	3.94	0.74	20.4
W2-T1-19	SP	0.32	0.40	0.35	0.81	-1.05	4.38	0.92	24.38
W2-T1-20	SP	0.22	0.36	0.33	0.68	-1.01	4.64	0.85	21.63
W2-T1-21	SP	0.37	0.38	0.36	0.64	-0.8	4.46	0.68	16.5
W2-T1-22	SP	0.67	0.35	0.32	0.69	-1	4.66	0.97	21.99
W2-T1-24	SP	0.34	0.46	0.43	0.73	-0.73	3.63	0.8	24.09
W2-T1-26	SP	1.49	0.38	0.36	0.59	-0.66	4.07	0.72	19.66
W2-T1-27	SP	0.35	0.36	0.34	0.77	-1.01	4.96	0.86	26.25
W2-T1-28	SP	0.21	0.32	0.31	0.57	-1.15	5.81	0.58	13.22
W2-T1-31	SP	0.19	0.42	0.38	0.82	-0.86	3.9	1.11	30.23
W2-T1-32	SP	0.35	0.24	0.23	0.44	-1.55	10	0.66	11.68



### 2005 Summary of Sample Properties and Grain Size Statistics from the T2 Shoal.

2005 T2 Shoal									
Sample ID	USCS	% Fine	Mean (mm)	Med. (mm)	St. Dev.	Skew.	Kurt.	% Organic	% CaO3
W1-T2-01	SP	3.09	0.38	0.36	0.62	-0.96	4.94	7.12	16.43
W1-T2-02	SP	0.69	0.54	0.48	0.84	-0.77	4.38	13.66	31.65
W1-T2-03	SP		0.37	0.34	0.63	-0.91	4.32	7.57	17.49
W1-T2-04	SP	2.13	0.29	0.28	0.48	-0.55	4.61	5.76	13.29
W1-T2-05	SP	0.14	0.35	0.32	0.54	-0.91	5.39	5.89	13.39
W1-T2-06	SP	5.01	0.28	0.24	0.69	-1.59	7.22	11.28	25.86
W1-T2-07	SP	2.91	0.34	0.31	0.75	-1.21	5.1	0.94	27.27
W1-T2-08	SP	3.48	0.29	0.28	0.45	-0.58	5.53	0.7	12.69
W1-T2-09	SP	1.63	0.41	0.40	0.63	-0.91	5.17	0.53	15.88
W1-T2-10	SP		0.42	0.38	0.72	-1.15	4.64	0.95	24.92
W1-T2-11	SP	1.54	0.35	0.33	0.56	-0.75	4.73	0.68	13.79
W1-T2-12	SP		0.34	0.31	0.6	-1.34	6.55	0.74	14.51
W1-T2-13	SP		0.42	0.40	0.65	-0.43	3.46	0.97	29.94
W1-T2-14	SP		0.50	0.44	0.76	-1.25	5.5	0.9	25.16
W1-T2-15	SP	1.92	0.43	0.44	0.66	0.22	4.67	0.96	22.75
W1-T2-16	SP	4.09	0.37	0.33	0.72	-1.12	5.72	1.08	21.18
W1-T2-17	SP	1.36	0.26	0.26	0.47	-0.63	5.53	0.86	19.46





### 2006 Summary of Sample Properties and Grain Size Statistics from the T2 Shoal.

2006 T2 Shoal Sample ID	USCS	% Fine	Mean (mm)	Med. (mm)	St. Dev.	Skew.	Kurt.	% Organic	% CaO3
W2-T2-01	SP	0.18	0.37	0.34	0.6	-1.24	5.89	0.7	14.0
W2-T2-02	SP	0.69	0.34	0.32	0.56	-1.49	7.13	0.7	12.4
W2-T2-03	SP	0.04	0.38	0.36	0.67	-1.1	5.12	0.8	14.6
W2-T2-04	SP	2.13	0.41	0.38	0.7	-1.44	5.97	0.8	15.4
W2-T2-05	SP	2.13	0.37	0.35	0.59	-1.11	5.3	0.7	16.9
W2-T2-06	SP	0.23	0.39	0.37	0.63	-0.94	4.53	0.7	13.8
W2-T2-07	SP	0.59	0.54	0.49	0.77	-0.8	3.97	1.5	36.6
W2-T2-08	SP	3.48	0.44	0.41	0.71	-0.93	4.27	0.9	20.9
W2-T2-09	SP	0.53	0.40	0.38	0.63	-0.91	4.41	0.8	14.7
W2-T2-10	SP	0.13	0.37	0.35	0.59	-0.83	4.34	0.8	12.8
W2-T2-11	SP	0.01	0.36	0.33	0.6	-1.3	6.32	0.7	15.8
W2-T2-12	SP	0.54	0.37	0.35	0.59	-1.24	5.71	0.6	12.3
W2-T2-13	SP	0.32	0.29	0.28	0.55	-1.12	5.87	1.2	15.9
W2-T2-14	SP	1.54	0.40	0.38	0.6	-1.07	5.3	0.9	16.4
W2-T2-15	SP	2.17	0.51	0.45	0.73	-1.53	5.99	0.9	25.6
W2-T2-16	SP	0.11	0.38	0.35	0.74	-0.83	3.88	1.4	33.8
W2-T2-17	SP	0.14	0.31	0.29	0.59	-1.34	6.69	1.1	16.5



## **APPENDIX C**

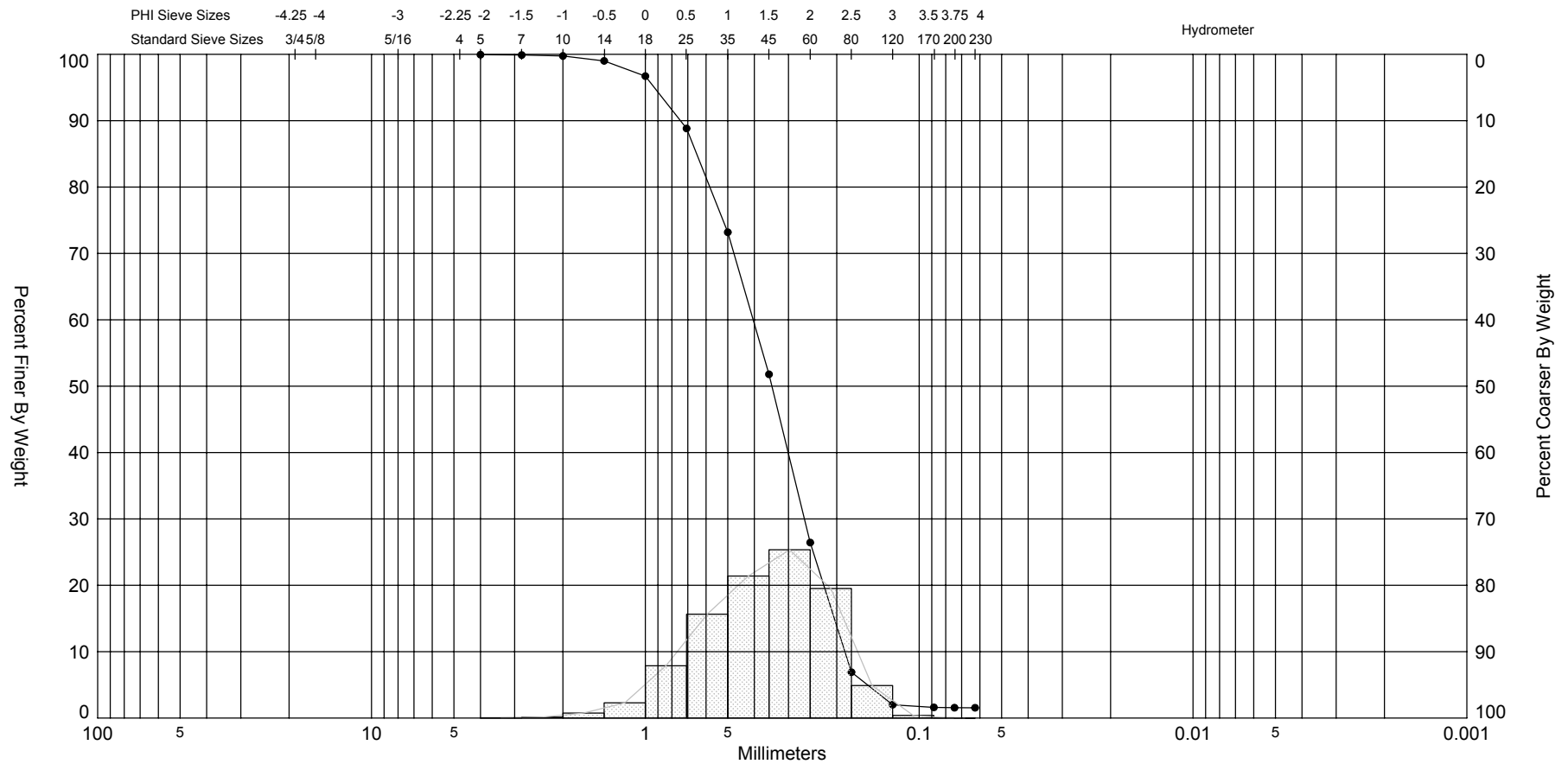
### **Geologic Field Survey Data**

C2. Granularmetric Report for the October 2005 Survey

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-01							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft): 199,704		Northing (ft): 747,849		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 30.00	Wash Weight (g): 29.46	Pan Retained (g): 0.00	Sieve Loss (%): -0.24	Fines (%): #200 - 1.56 #230 - 1.55	Organics (%): 2.54	Carbonates (%): 86.61	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.02	0.06	0.02	0.06	
7	-1.50	2.83	0.02	0.05	0.03	0.11	
10	-1.00	2.00	0.04	0.14	0.07	0.25	
14	-0.50	1.41	0.22	0.74	0.30	0.99	
18	0.00	1.00	0.69	2.30	0.99	3.29	
25	0.50	0.71	2.36	7.88	3.35	11.17	
35	1.00	0.50	4.69	15.64	8.04	26.81	
45	1.50	0.35	6.42	21.40	14.46	48.21	
60	2.00	0.25	7.61	25.35	22.07	73.56	
80	2.50	0.18	5.86	19.53	27.93	93.09	
120	3.00	0.13	1.47	4.90	29.40	97.99	
170	3.50	0.09	0.12	0.40	29.52	98.39	
200	3.75	0.07	0.02	0.05	29.53	98.44	
230	4.00	0.06	0.00	0.01	29.54	98.45	
Phi 5		Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.69		2.27	2.04	1.54	0.94	0.65	0.11
Moment		Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics		1.44	0.37	0.76	-0.41	3.02	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-01	—●—		SP	#200 - 1.56 #230 - 1.55	2.54	86.61	1.54	1.44	-0.41	3.02	0.76	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	199,704
												Northing (ft):	747,849
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-02							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft): 204,137		Northing (ft): 740,417		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 30.00	Wash Weight (g): 29.59	Pan Retained (g): 0.00	Sieve Loss (%): 0.24	Fines (%): #200 - 1.68 #230 - 1.65	Organics (%): 2.09	Carbonates (%): 74.35	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.01	0.04	0.01	0.04	
7	-1.50	2.83	0.02	0.05	0.03	0.09	
10	-1.00	2.00	0.05	0.18	0.08	0.27	
14	-0.50	1.41	0.20	0.65	0.27	0.92	
18	0.00	1.00	0.47	1.56	0.74	2.48	
25	0.50	0.71	1.67	5.56	2.41	8.04	
35	1.00	0.50	3.68	12.25	6.09	20.29	
45	1.50	0.35	5.99	19.97	12.08	40.26	
60	2.00	0.25	7.95	26.50	20.03	66.76	
80	2.50	0.18	6.79	22.62	26.82	89.38	
120	3.00	0.13	2.29	7.62	29.11	97.00	
170	3.50	0.09	0.36	1.21	29.47	98.21	
200	3.75	0.07	0.03	0.11	29.50	98.32	
230	4.00	0.06	0.01	0.03	29.51	98.35	
Phi 5		Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.87		2.38	2.18	1.68	1.12	0.82	0.23
Moment		Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics		1.6	0.33	0.76	-0.49	3.4	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-03							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
201,288		743,466		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.12	29.79	0.01	0.27	#200 - 1.45 #230 - 1.38	2.16	86.24	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.03	0.08	0.03	0.08	
7	-1.50	2.83	0.08	0.27	0.11	0.35	
10	-1.00	2.00	0.33	1.08	0.43	1.43	
14	-0.50	1.41	0.76	2.53	1.19	3.96	
18	0.00	1.00	1.19	3.95	2.38	7.91	
25	0.50	0.71	2.89	9.60	5.27	17.51	
35	1.00	0.50	5.41	17.97	10.69	35.48	
45	1.50	0.35	7.41	24.59	18.10	60.07	
60	2.00	0.25	7.51	24.95	25.61	85.02	
80	2.50	0.18	3.19	10.58	28.80	95.60	
120	3.00	0.13	0.70	2.34	29.50	97.94	
170	3.50	0.09	0.15	0.49	29.65	98.43	
200	3.75	0.07	0.04	0.12	29.68	98.55	
230	4.00	0.06	0.02	0.07	29.70	98.62	
Phi 5		Phi 16		Phi 25		Phi 50	
2.47		1.98		1.80		1.30	
Phi 75		Phi 84		Phi 95			
0.71		0.42		-0.37			
Moment		Mean Phi		Mean mm		Sorting	
Statistics		1.2		0.44		0.83	
Skewness		Kurtosis					
-0.55		3.63					

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

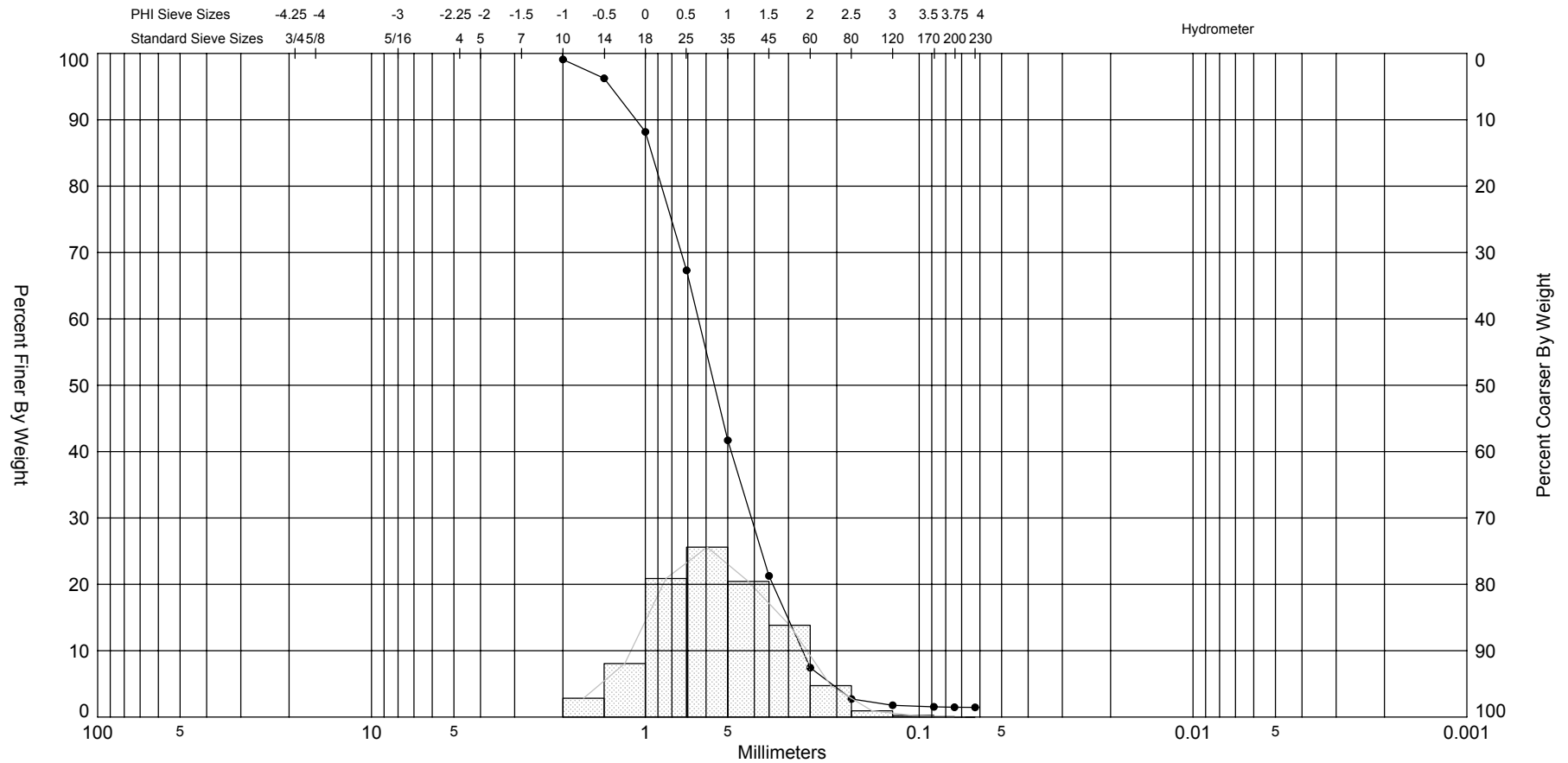




Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-04							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
200,318		745,512		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.21	29.95	0.00	0.58	#200 - 1.48 #230 - 1.46	2.79	62.59	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.28	0.91	0.28	0.91	
14	-0.50	1.41	0.86	2.84	1.13	3.75	
18	0.00	1.00	2.44	8.07	3.57	11.82	
25	0.50	0.71	6.30	20.87	9.88	32.69	
35	1.00	0.50	7.74	25.61	17.61	58.30	
45	1.50	0.35	6.17	20.43	23.78	78.73	
60	2.00	0.25	4.18	13.83	27.96	92.56	
80	2.50	0.18	1.43	4.72	29.39	97.28	
120	3.00	0.13	0.29	0.94	29.67	98.22	
170	3.50	0.09	0.07	0.24	29.74	98.46	
200	3.75	0.07	0.02	0.06	29.76	98.52	
230	4.00	0.06	0.01	0.02	29.77	98.54	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.26	1.69	1.41	0.84	0.32	0.10	-0.42	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.84	0.56	0.74	0.25	2.94		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



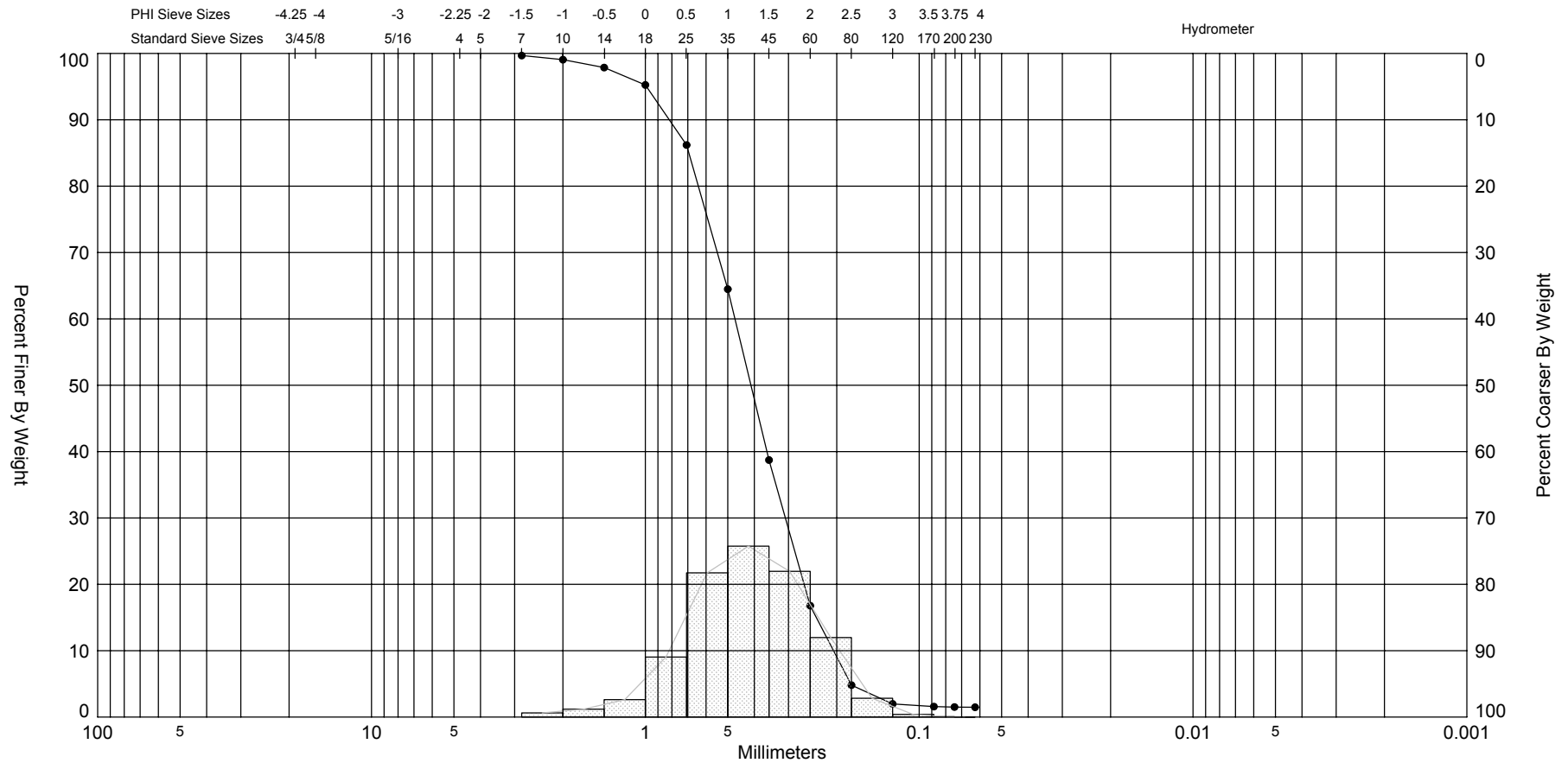
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-04	—●—		SP	#200 - 1.48 #230 - 1.46	2.79	62.59	0.84	0.84	0.25	2.94	0.74	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	200,318
												Northing (ft):	745,512
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-05							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft): 199,922		Northing (ft): 746,793		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 30.03	Wash Weight (g): 29.65	Pan Retained (g): 0.00	Sieve Loss (%): 0.24	Fines (%): #200 - 1.51 #230 - 1.48	Organics (%): 2.65	Carbonates (%): 87.11	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.10	0.32	0.09	0.32	
10	-1.00	2.00	0.19	0.62	0.28	0.94	
14	-0.50	1.41	0.36	1.19	0.64	2.13	
18	0.00	1.00	0.79	2.62	1.42	4.75	
25	0.50	0.71	2.72	9.05	4.14	13.80	
35	1.00	0.50	6.52	21.72	10.66	35.52	
45	1.50	0.35	7.73	25.75	18.40	61.27	
60	2.00	0.25	6.59	21.95	24.99	83.22	
80	2.50	0.18	3.59	11.97	28.58	95.19	
120	3.00	0.13	0.85	2.83	29.43	98.02	
170	3.50	0.09	0.12	0.40	29.55	98.42	
200	3.75	0.07	0.02	0.07	29.57	98.49	
230	4.00	0.06	0.01	0.03	29.58	98.52	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.49	2.03	1.81	1.28	0.76	0.55	0.01	
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	1.24	0.42	0.75	-0.25	3.39		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



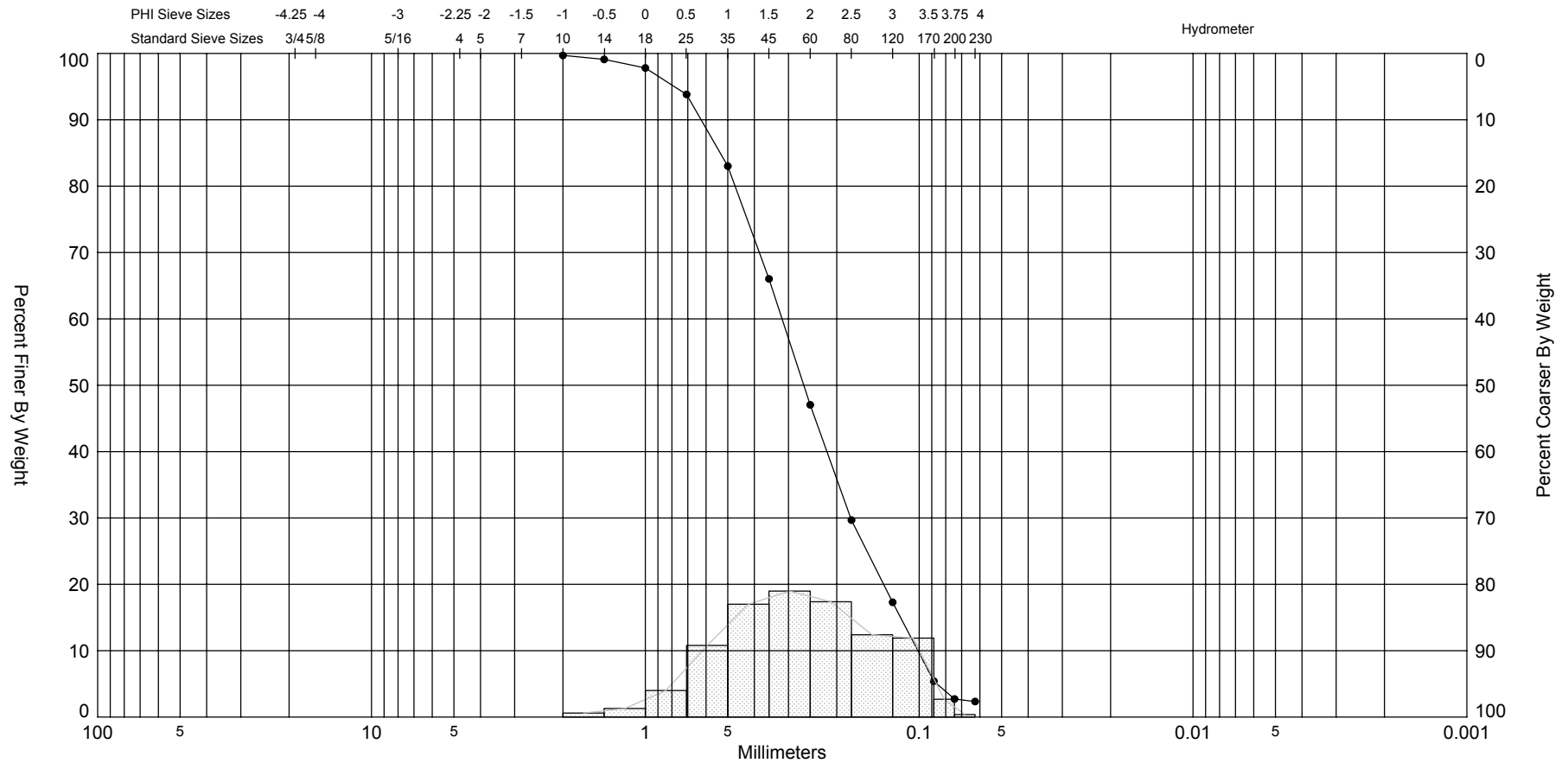
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-05	—●—		SP	#200 - 1.51 #230 - 1.48	2.65	87.11	1.28	1.24	-0.25	3.39	0.75	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708							Easting (ft):	199,922					
							Northing (ft):	746,793					
							Horizontal System:	NAD 1983					
							Vertical System:	NGVD					

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-06							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
202,423		740,930		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.00	29.38	0.07	0.00	#200 - 2.72 #230 - 2.34	2.27	69.64	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.09	0.30	0.09	0.30	
14	-0.50	1.41	0.18	0.60	0.27	0.90	
18	0.00	1.00	0.39	1.29	0.66	2.19	
25	0.50	0.71	1.20	3.99	1.86	6.18	
35	1.00	0.50	3.24	10.80	5.10	16.98	
45	1.50	0.35	5.10	16.99	10.19	33.97	
60	2.00	0.25	5.70	18.98	15.89	52.95	
80	2.50	0.18	5.21	17.37	21.10	70.32	
120	3.00	0.13	3.72	12.39	24.82	82.71	
170	3.50	0.09	3.57	11.89	28.38	94.60	
200	3.75	0.07	0.81	2.68	29.19	97.28	
230	4.00	0.06	0.12	0.38	29.30	97.66	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.54	3.05	2.69	1.92	1.24	0.95	0.35	
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	1.9	0.27	0.93	-0.1	2.48		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

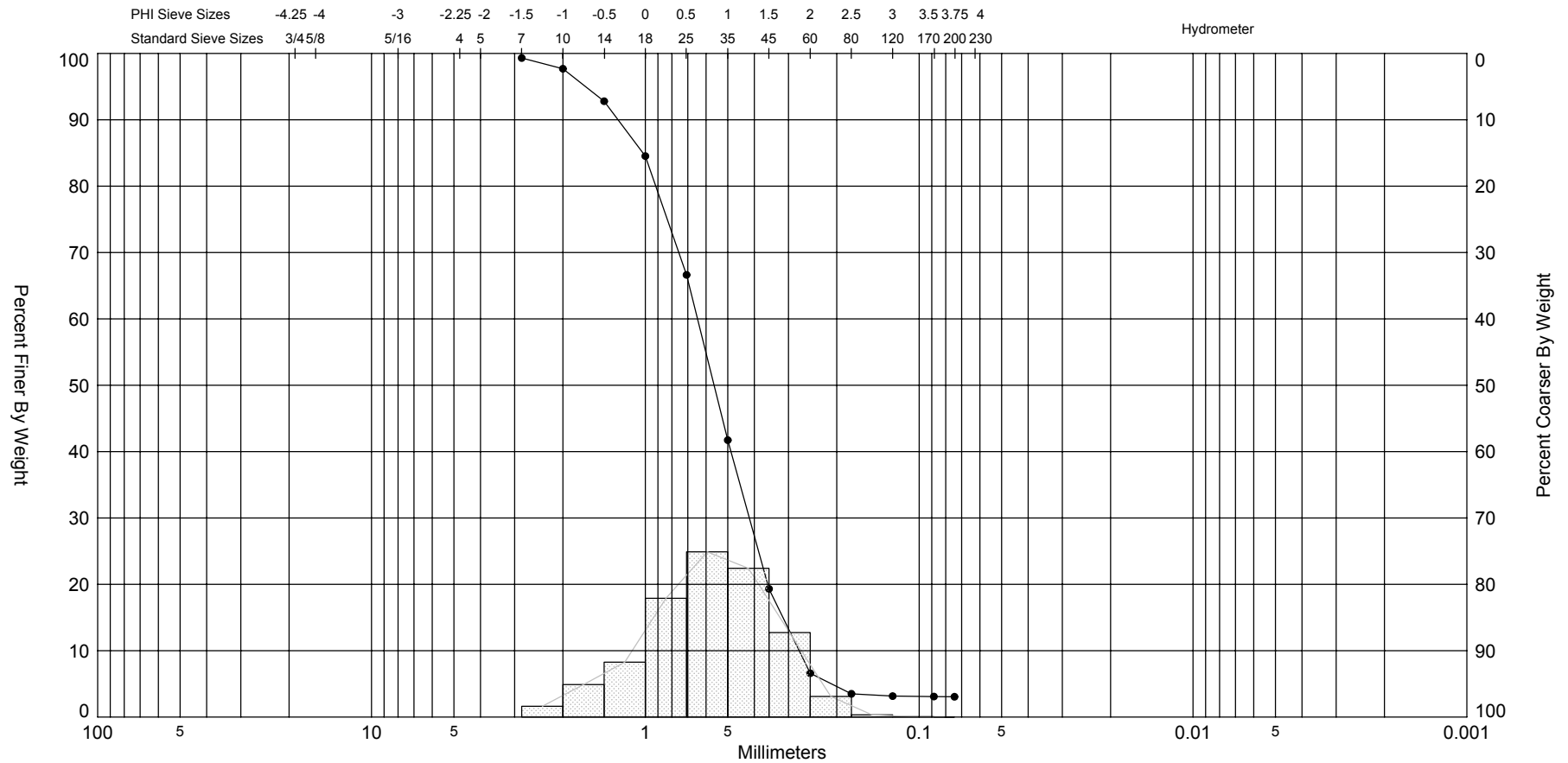
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-06	—●—		SP	#200 - 2.72 #230 - 2.34	2.27	69.64	1.92	1.9	-0.1	2.48	0.93	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	202,423
												Northing (ft):	740,930
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-07							
Analysis Date: 11-08-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
203,162		740,439		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.00	29.67	0.00	1.93	#200 - 3.06 #230 - 3.06	2.41	91.04	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.21	0.69	0.21	0.69	
10	-1.00	2.00	0.49	1.62	0.69	2.31	
14	-0.50	1.41	1.47	4.89	2.16	7.20	
18	0.00	1.00	2.48	8.27	4.64	15.47	
25	0.50	0.71	5.37	17.90	10.01	33.37	
35	1.00	0.50	7.47	24.90	17.48	58.27	
45	1.50	0.35	6.72	22.41	24.20	80.68	
60	2.00	0.25	3.82	12.72	28.02	93.40	
80	2.50	0.18	0.93	3.10	28.95	96.50	
120	3.00	0.13	0.10	0.34	29.05	96.84	
170	3.50	0.09	0.02	0.07	29.08	96.91	
200	3.75	0.07	0.01	0.03	29.08	96.94	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.26	1.63	1.37	0.83	0.27	0.01	-0.72	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.75	0.59	0.77	-0.21	2.93		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



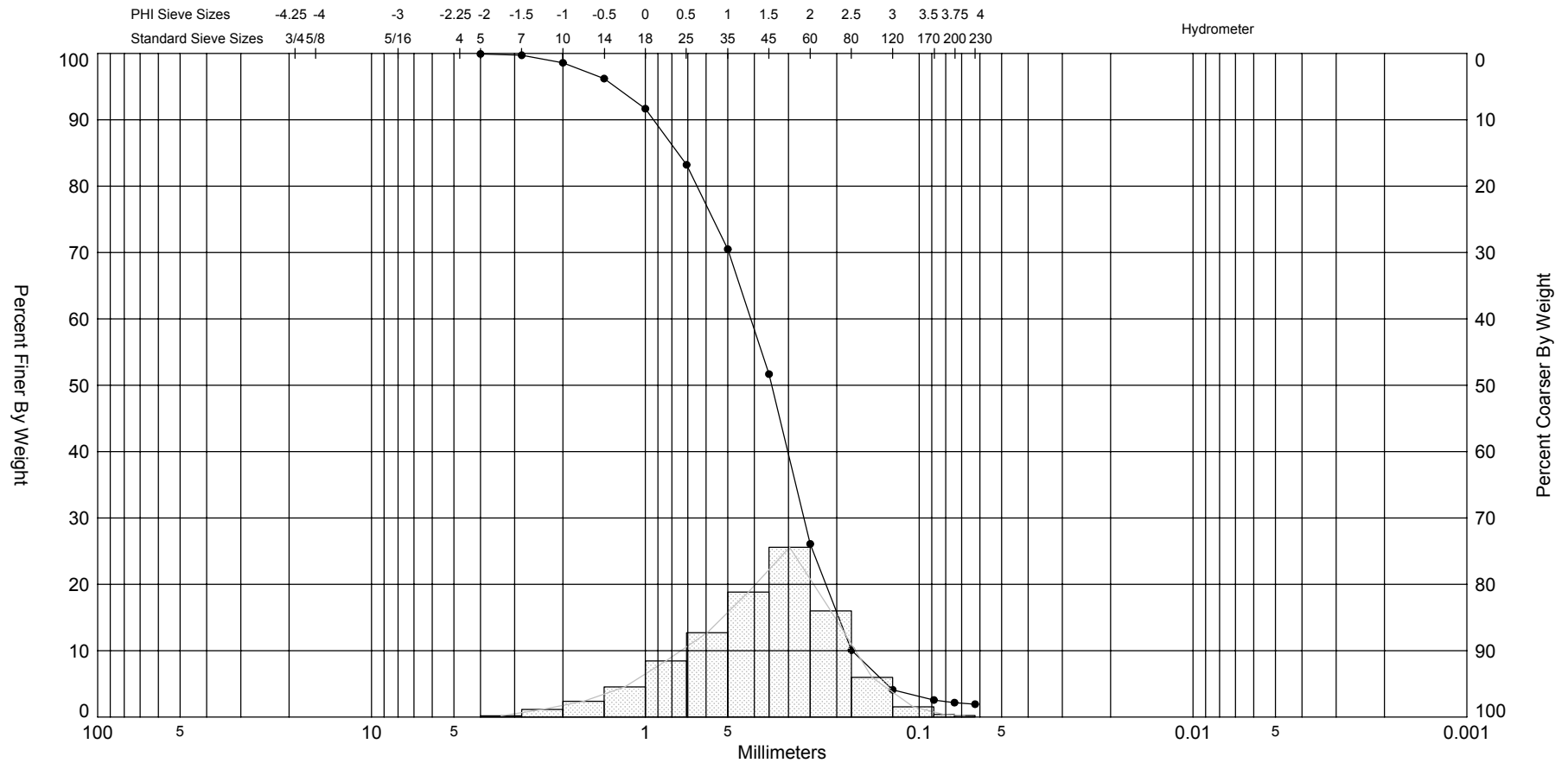
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-07	—●—		SP	#200 - 3.06 #230 - 3.06	2.41	91.04	0.83	0.75	-0.21	2.93	0.77	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708							Easting (ft):		203,162				
							Northing (ft):		740,439				
							Horizontal System:		NAD 1983				
							Vertical System:		NGVD				

Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2005 CT-39054				Melbourne, FL 32934			
Sample Name: W1-S-08				ph 321 254-2708			
Analysis Date: 11-08-05				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
198,955		747,247		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.03	29.30	0.00	-0.52	#200 - 2.17 #230 - 1.94	2.76	88.98	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.02	0.08	0.02	0.08	
7	-1.50	2.83	0.06	0.19	0.08	0.27	
10	-1.00	2.00	0.34	1.14	0.42	1.41	
14	-0.50	1.41	0.71	2.38	1.14	3.79	
18	0.00	1.00	1.36	4.54	2.50	8.33	
25	0.50	0.71	2.54	8.45	5.04	16.78	
35	1.00	0.50	3.82	12.71	8.86	29.49	
45	1.50	0.35	5.65	18.83	14.51	48.32	
60	2.00	0.25	7.69	25.59	22.20	73.91	
80	2.50	0.18	4.81	16.01	27.00	89.92	
120	3.00	0.13	1.79	5.97	28.80	95.89	
170	3.50	0.09	0.46	1.54	29.26	97.43	
200	3.75	0.07	0.12	0.40	29.38	97.83	
230	4.00	0.06	0.07	0.23	29.45	98.06	
Phi 5		Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93		2.32	2.03	1.53	0.82	0.45	-0.37
Moment		Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics		1.38	0.38	0.93	-0.49	3.27	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

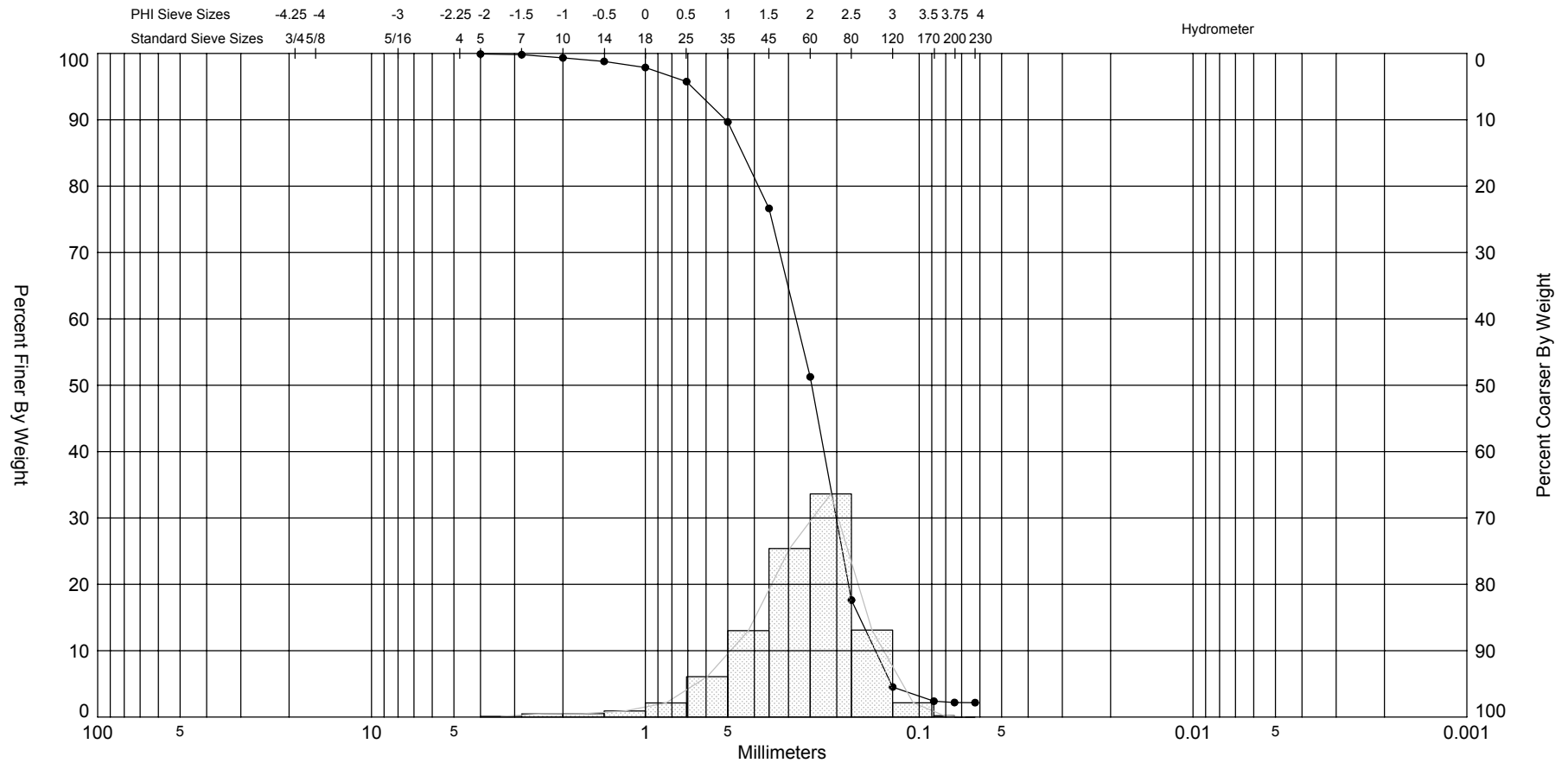


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-08	—●—		SP	#200 - 2.17 #230 - 1.94	2.76	88.98	1.53	1.38	-0.49	3.27	0.93	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	198,955
												Northing (ft):	747,247
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-09	—●—		SP	#200 - 2.19 #230 - 2.17	2.32	75.44	2.02	1.88	-1.1	5.47	0.73	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	201,404
												Northing (ft):	745,130
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-10							
Analysis Date: 11-08-05							
Analyzed By: SEA Inc.							
Easting (ft): 203,045		Northing (ft): 742,422		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SM		Munsell:		Comments:			
Dry Weight (g): 30.00	Wash Weight (g): 26.49	Pan Retained (g): 1.66	Sieve Loss (%): -0.16	Fines (%): #200 - 42.91 #230 - 17.06	Organics (%): 1.78	Carbonates (%): 57.49	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
14	-0.50	1.41	0.04	0.12	0.04	0.12	
18	0.00	1.00	0.02	0.08	0.06	0.20	
25	0.50	0.71	0.05	0.17	0.11	0.37	
35	1.00	0.50	0.05	0.16	0.16	0.53	
45	1.50	0.35	0.09	0.31	0.25	0.84	
60	2.00	0.25	0.13	0.45	0.39	1.29	
80	2.50	0.18	0.24	0.81	0.63	2.10	
120	3.00	0.13	0.98	3.26	1.61	5.36	
170	3.50	0.09	8.09	26.95	9.69	32.31	
200	3.75	0.07	7.43	24.78	17.13	57.09	
230	4.00	0.06	7.76	25.85	24.88	82.94	
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
		3.92	3.68	3.36	3.20	2.94	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.49	0.09	0.44	-3	19.38		

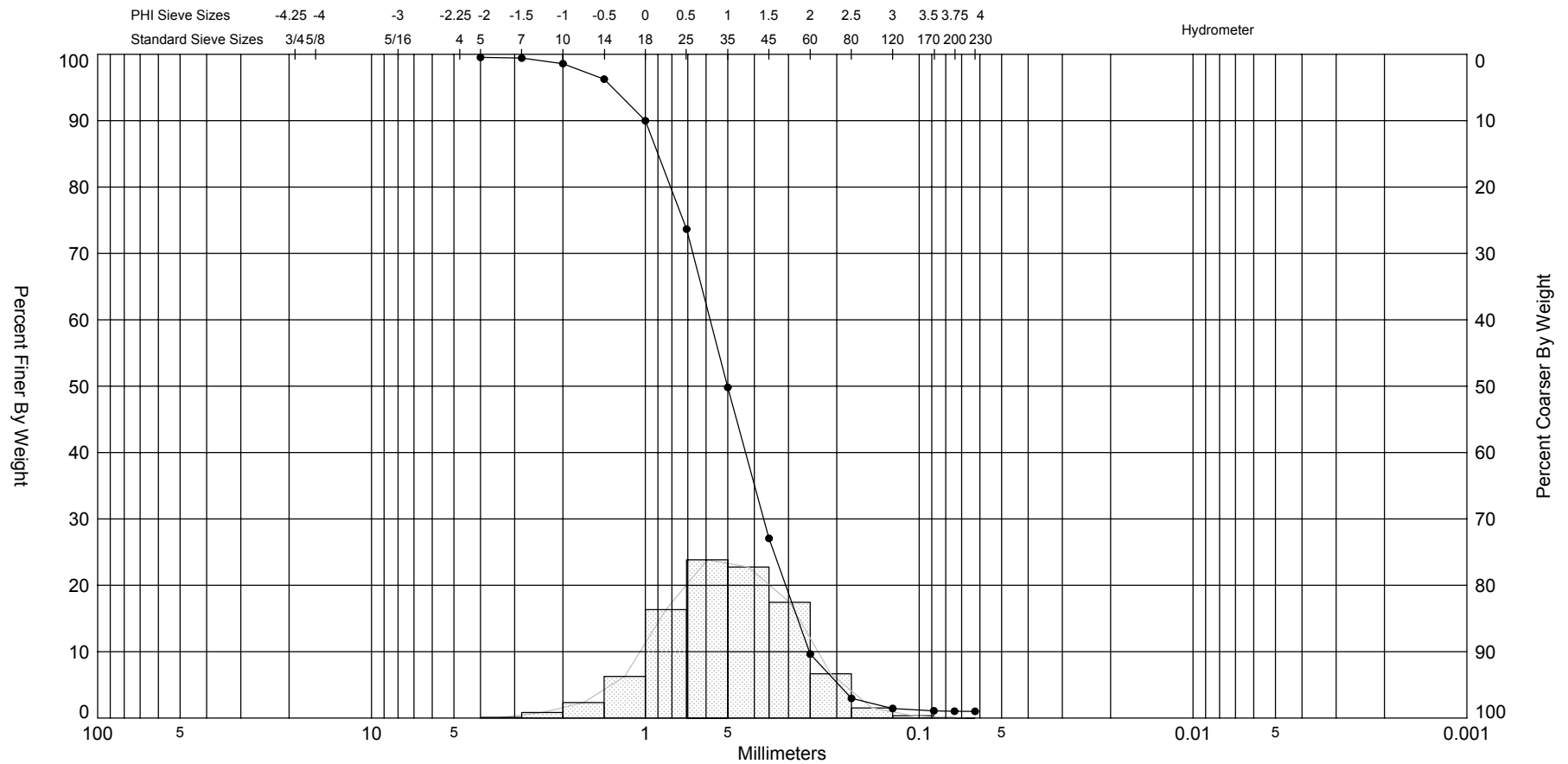


Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2005 CT-39054				Melbourne, FL 32934			
Sample Name: W1-S-11				ph 321 254-2708			
Analysis Date: 11-08-05				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
200,793		746,183		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.00	29.70	0.00	0.00	#200 - 1.03 #230 - 1.01	2.41	88.88	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.14	0.46	0.14	0.46	
7	-1.50	2.83	0.03	0.11	0.17	0.57	
10	-1.00	2.00	0.25	0.84	0.42	1.41	
14	-0.50	1.41	0.70	2.33	1.12	3.74	
18	0.00	1.00	1.88	6.27	3.00	10.01	
25	0.50	0.71	4.90	16.33	7.90	26.34	
35	1.00	0.50	7.15	23.84	15.06	50.18	
45	1.50	0.35	6.83	22.75	21.88	72.93	
60	2.00	0.25	5.23	17.43	27.11	90.36	
80	2.50	0.18	2.00	6.67	29.11	97.03	
120	3.00	0.13	0.46	1.53	29.57	98.56	
170	3.50	0.09	0.10	0.35	29.68	98.91	
200	3.75	0.07	0.02	0.06	29.69	98.97	
230	4.00	0.06	0.01	0.02	29.70	98.99	
Phi 5		Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.35		1.82	1.56	1.00	0.46	0.18	-0.40
Moment		Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics		0.97	0.51	0.79	-0.08	3.13	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



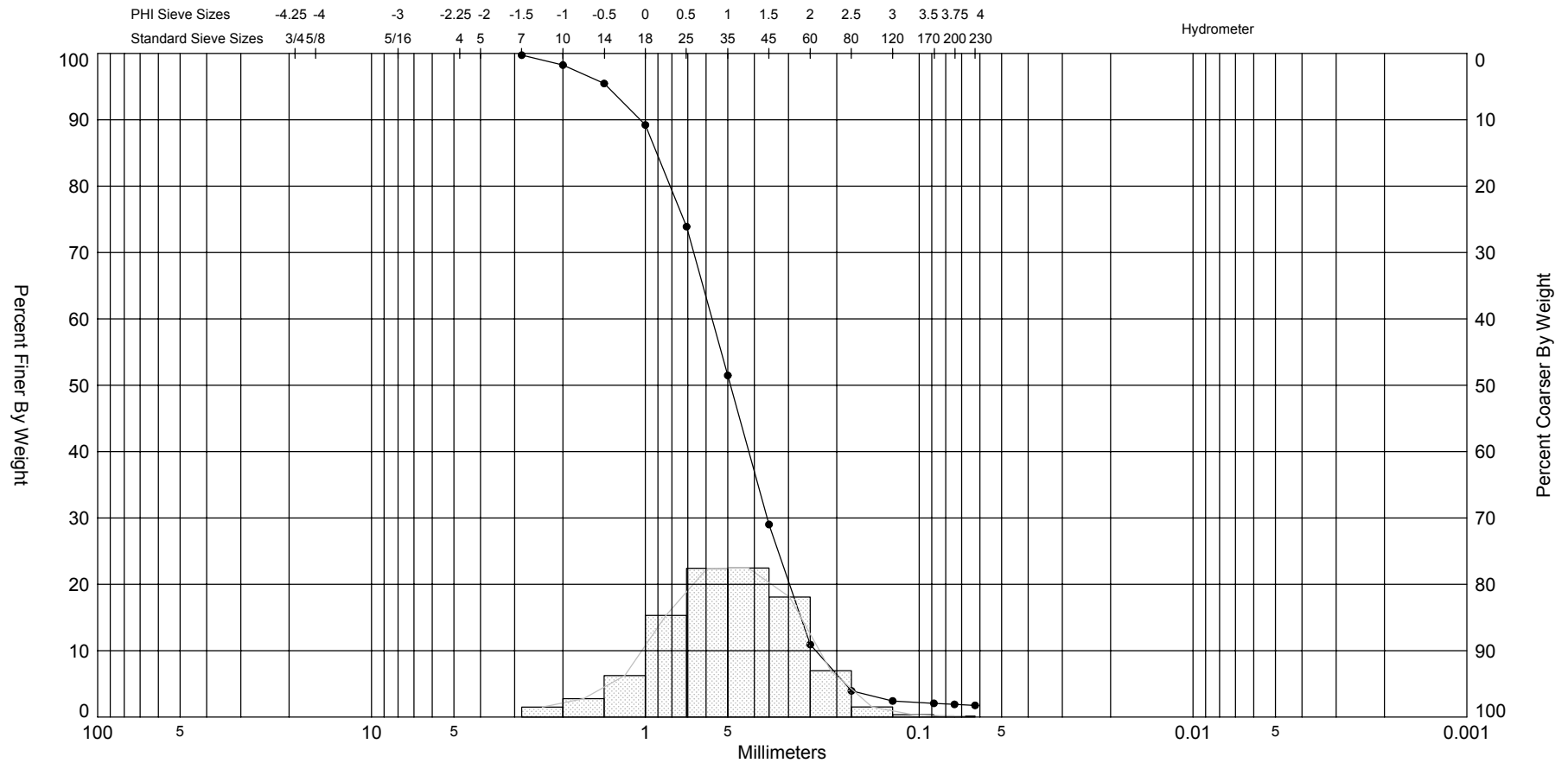
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-11	—●—		SP	#200 - 1.03 #230 - 1.01	2.41	88.88	1	0.97	-0.08	3.13	0.79	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	200,793
												Northing (ft):	746,183
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-12							
Analysis Date: 11-08-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
202,241		742,285		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.02	29.48	0.01	-0.07	#200 - 1.91 #230 - 1.76	3.19	95.16	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.08	0.26	0.08	0.26	
10	-1.00	2.00	0.45	1.49	0.53	1.75	
14	-0.50	1.41	0.84	2.78	1.36	4.53	
18	0.00	1.00	1.88	6.25	3.24	10.78	
25	0.50	0.71	4.60	15.32	7.83	26.10	
35	1.00	0.50	6.73	22.42	14.57	48.52	
45	1.50	0.35	6.74	22.46	21.31	70.98	
60	2.00	0.25	5.43	18.09	26.74	89.07	
80	2.50	0.18	2.09	6.98	28.83	96.05	
120	3.00	0.13	0.46	1.53	29.29	97.58	
170	3.50	0.09	0.10	0.35	29.39	97.93	
200	3.75	0.07	0.05	0.16	29.44	98.09	
230	4.00	0.06	0.04	0.15	29.49	98.24	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.42	1.86	1.61	1.03	0.46	0.17	-0.46	
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	0.98	0.51	0.83	-0.13	3.22		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

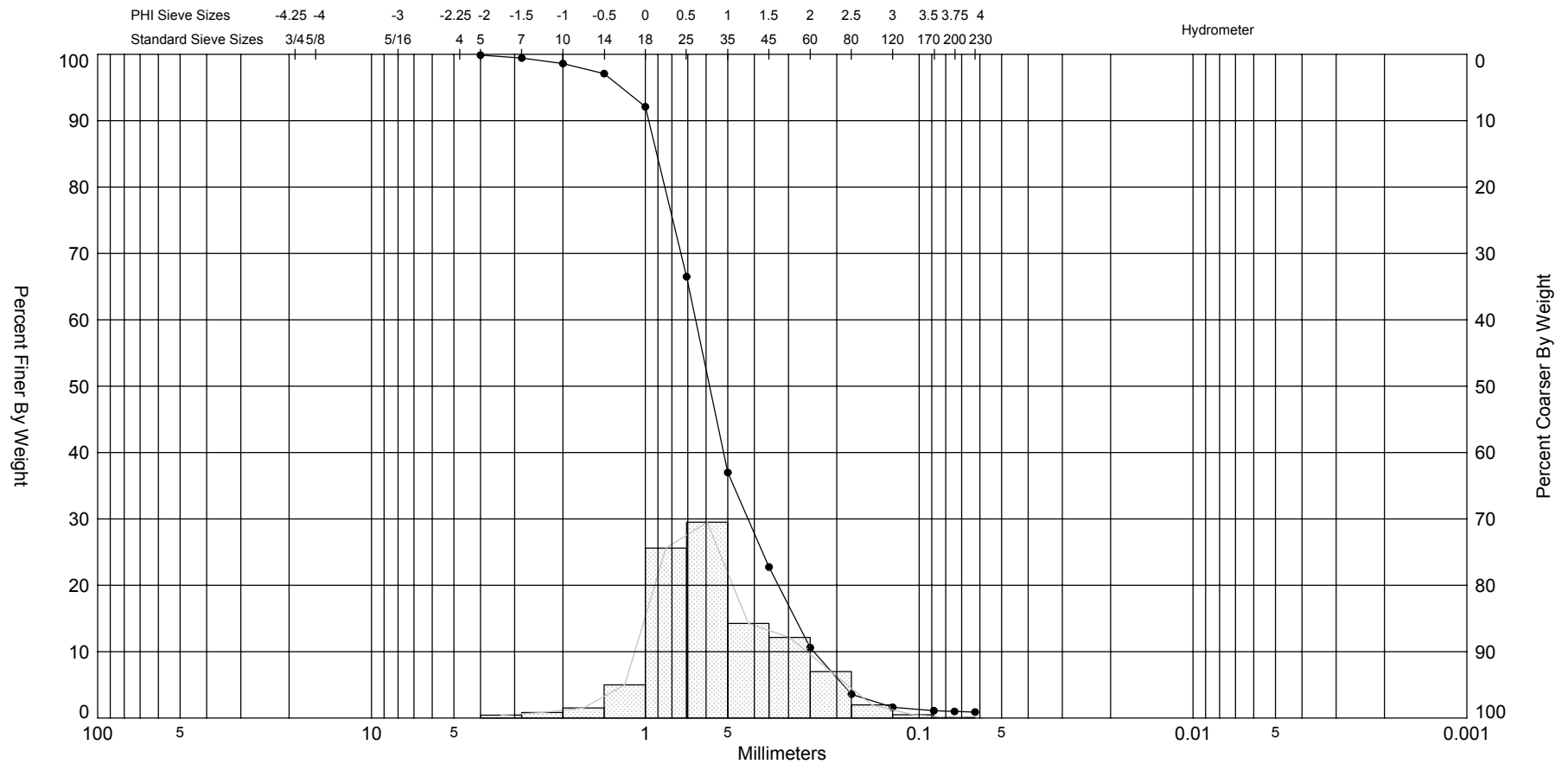
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-12	—●—		SP	#200 - 1.91 #230 - 1.76	3.19	95.16	1.03	0.98	-0.13	3.22	0.83	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	202,241
												Northing (ft):	742,285
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-13							
Analysis Date: 11-08-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
202,573		739,565		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.01	29.72	0.01	-0.36	#200 - 0.73 #230 - 0.62	1.73	67.75	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.03	0.09	0.03	0.09	
10	-1.00	2.00	0.09	0.29	0.11	0.38	
14	-0.50	1.41	0.17	0.57	0.28	0.95	
18	0.00	1.00	0.31	1.03	0.59	1.98	
25	0.50	0.71	0.96	3.20	1.55	5.18	
35	1.00	0.50	2.59	8.64	4.15	13.82	
45	1.50	0.35	5.23	17.41	9.37	31.23	
60	2.00	0.25	9.26	30.86	18.63	62.09	
80	2.50	0.18	8.52	28.39	27.15	90.48	
120	3.00	0.13	2.24	7.48	29.39	97.96	
170	3.50	0.09	0.33	1.11	29.73	99.07	
200	3.75	0.07	0.06	0.20	29.79	99.27	
230	4.00	0.06	0.03	0.11	29.82	99.38	
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.80	2.39	2.23	1.80	1.32	1.06	0.47	
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	1.72	0.30	0.7	-0.74	4.38		





SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

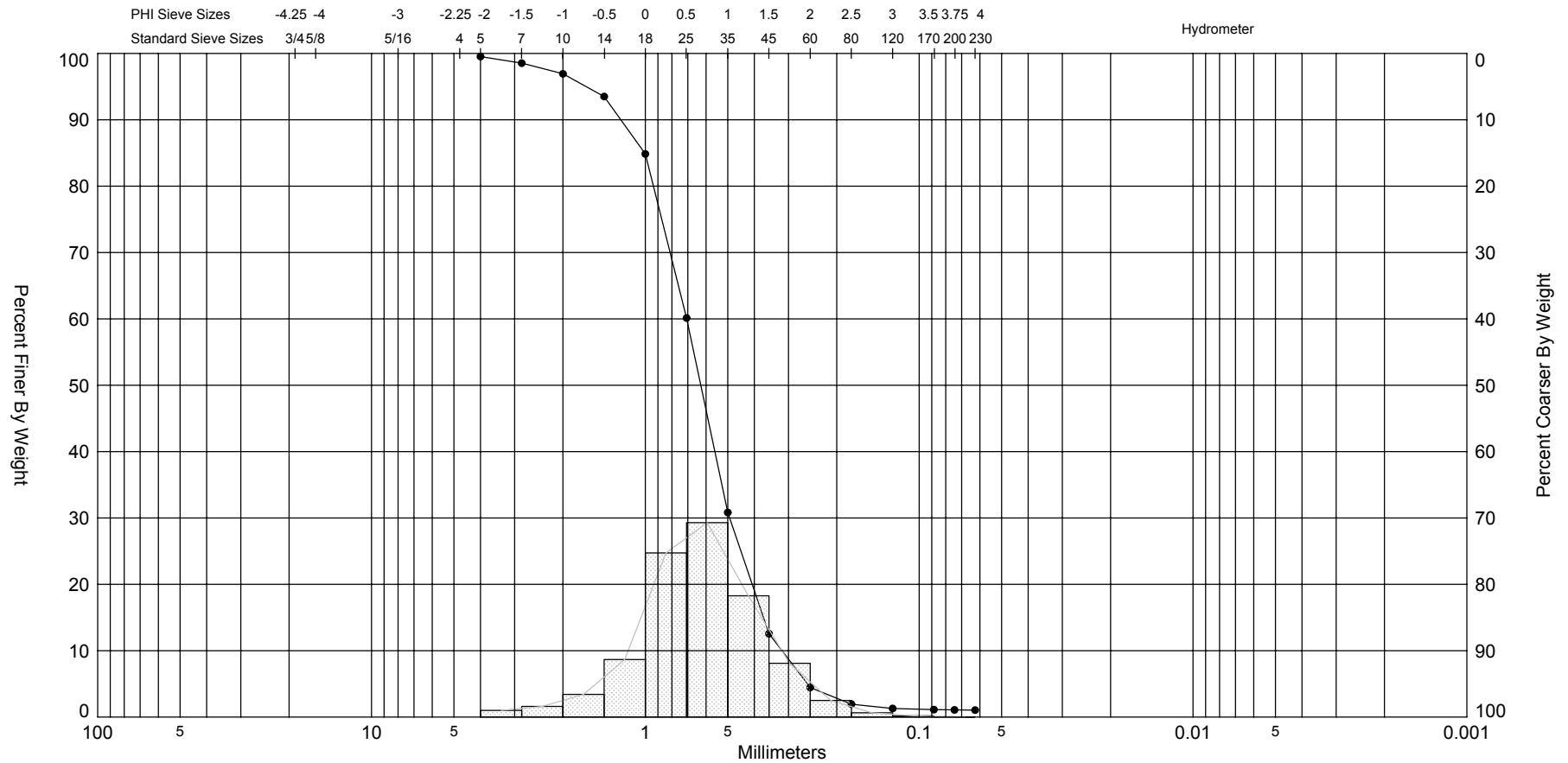
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-14	—●—		SP	#200 - 0.99 #230 - 0.90	2.41	91.17	0.78	0.88	0.32	3.6	0.8	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	201,782
												Northing (ft):	746,198
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-15							
Analysis Date: 11-08-05							
Analyzed By: SEA Inc.							
Easting (ft): 204,478		Northing (ft): 742,224		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 30.02	Wash Weight (g): 29.67	Pan Retained (g): 0.00	Sieve Loss (%): -0.10	Fines (%): #200 - 1.08 #230 - 1.05	Organics (%): 2.33	Carbonates (%): 90.87	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.14	0.47	0.14	0.47	
7	-1.50	2.83	0.30	0.99	0.44	1.46	
10	-1.00	2.00	0.48	1.61	0.92	3.07	
14	-0.50	1.41	1.03	3.42	1.95	6.49	
18	0.00	1.00	2.60	8.66	4.55	15.15	
25	0.50	0.71	7.42	24.72	11.97	39.87	
35	1.00	0.50	8.79	29.30	20.76	69.17	
45	1.50	0.35	5.48	18.27	26.25	87.44	
60	2.00	0.25	2.44	8.11	28.68	95.55	
80	2.50	0.18	0.75	2.51	29.43	98.06	
120	3.00	0.13	0.19	0.64	29.62	98.70	
170	3.50	0.09	0.06	0.18	29.68	98.88	
200	3.75	0.07	0.01	0.04	29.69	98.92	
230	4.00	0.06	0.01	0.03	29.70	98.95	
Phi 5		Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
1.97		1.41	1.16	0.67	0.20	0.02	-0.72
Moment		Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics		0.65	0.64	0.76	-0.12	3.98	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

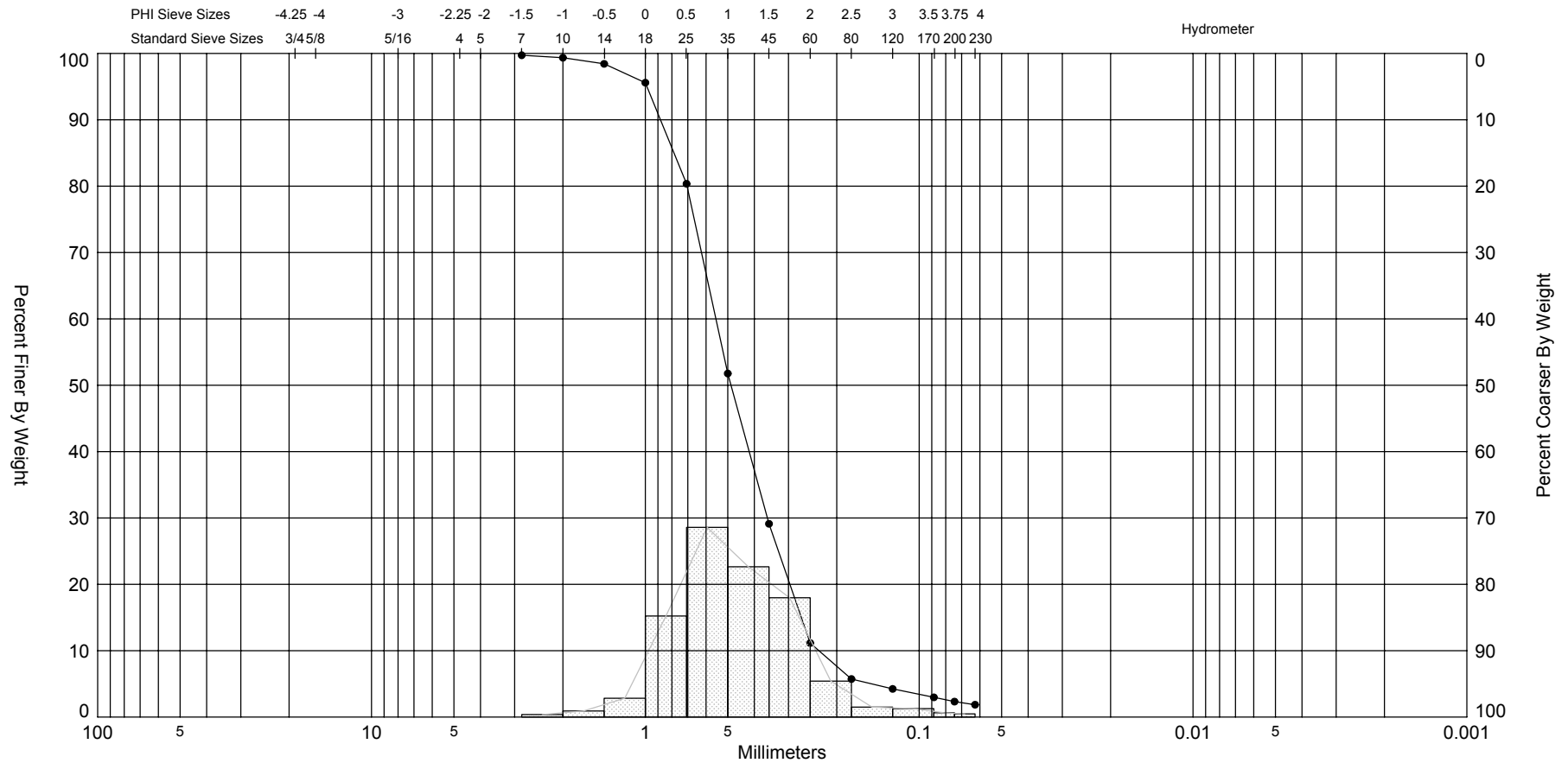


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-15	—●—		SP	#200 - 1.08 #230 - 1.05	2.33	90.87	0.67	0.65	-0.12	3.98	0.76	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	204,478
												Northing (ft):	742,224
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



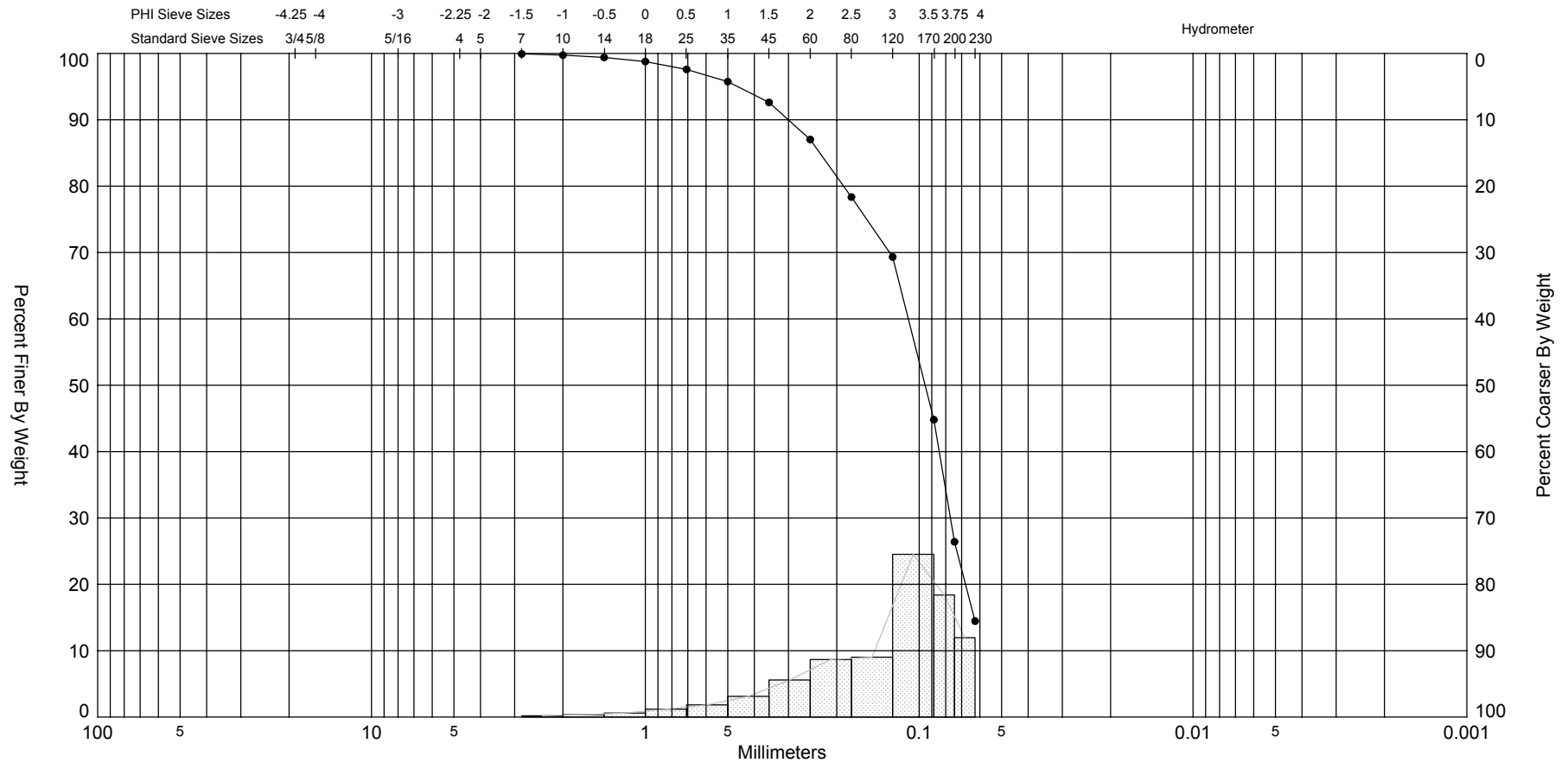
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-16	—●—		SP	#200 - 2.33 #230 - 1.86	2.14	84.56	1.04	1.09	0.58	4.28	0.77	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	199,332
												Northing (ft):	749,741
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-S-17							
Analysis Date: 11-08-05							
Analyzed By: SEA Inc.							
Easting (ft): 199,624		Northing (ft): 742,524		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SM		Munsell:		Comments:			
Dry Weight (g): 30.01	Wash Weight (g): 26.79	Pan Retained (g): 0.91	Sieve Loss (%): 0.69	Fines (%): #200 - 26.41 #230 - 14.46	Organics (%): 2.43	Carbonates (%): 56.78	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.02	0.07	0.02	0.07	
10	-1.00	2.00	0.06	0.19	0.08	0.26	
14	-0.50	1.41	0.11	0.35	0.18	0.61	
18	0.00	1.00	0.18	0.61	0.37	1.22	
25	0.50	0.71	0.36	1.19	0.72	2.41	
35	1.00	0.50	0.55	1.84	1.27	4.25	
45	1.50	0.35	0.94	3.13	2.21	7.38	
60	2.00	0.25	1.68	5.59	3.89	12.97	
80	2.50	0.18	2.60	8.67	6.49	21.64	
120	3.00	0.13	2.71	9.03	9.20	30.67	
170	3.50	0.09	7.36	24.52	16.56	55.19	
200	3.75	0.07	5.52	18.40	22.08	73.59	
230	4.00	0.06	3.59	11.95	25.67	85.54	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.97	3.78	3.39	2.69	2.17	1.12	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.94	0.13	0.93	-1.51	5.3		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



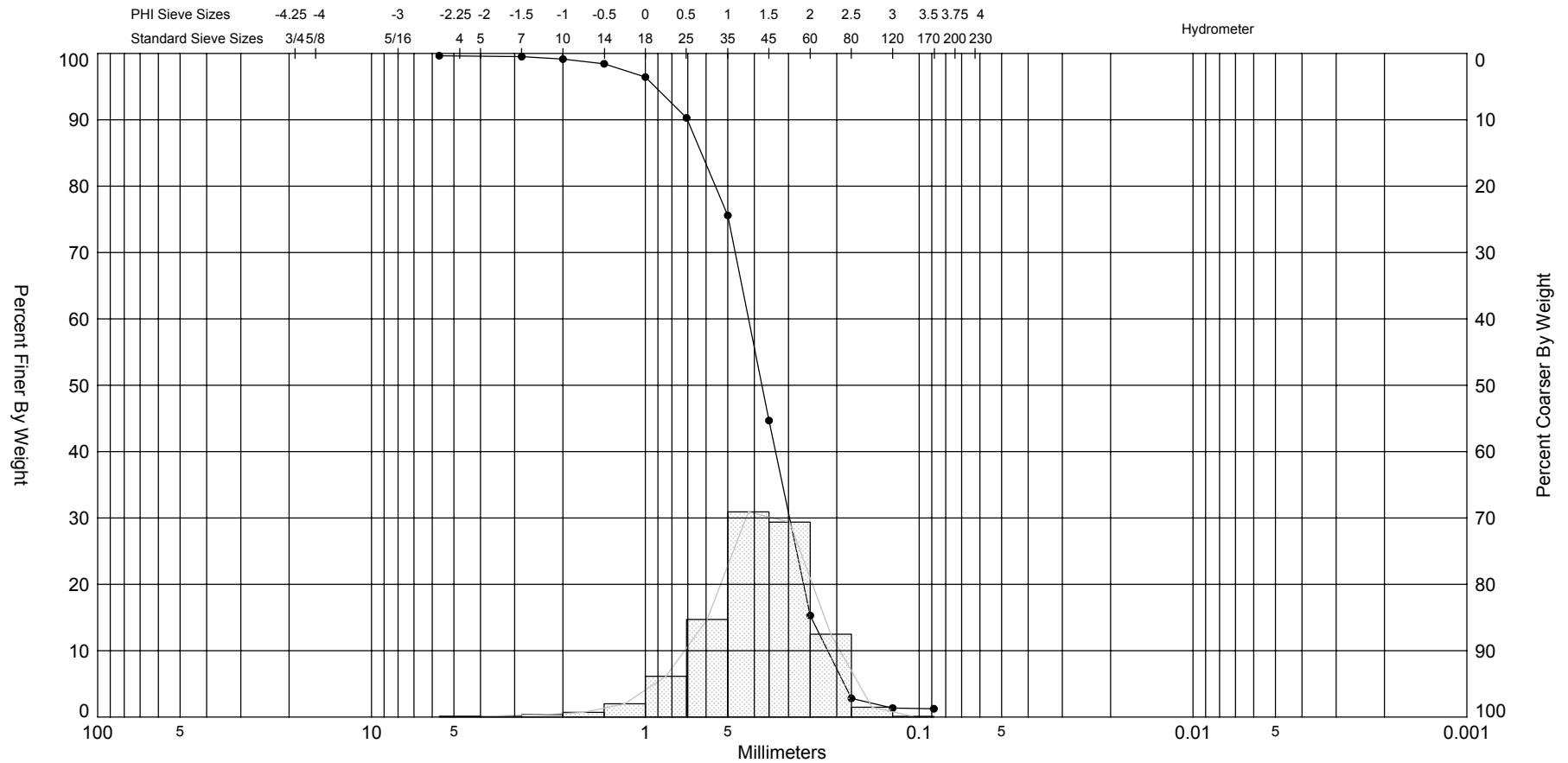
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-S-17	—●—		SM	#200 - 26.41 #230 - 14.46	2.43	56.78	3.39	2.94	-1.51	5.3	0.93	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	11-08-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	199,624
												Northing (ft):	742,524
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-01							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
206,936		748,877		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
32.90	32.58	0.00	0.26	#230 - 1.25	7.50	17.20	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.12	0.35	0.12	0.35	
7	-1.50	2.83	0.04	0.13	0.16	0.48	
10	-1.00	2.00	0.13	0.38	0.28	0.86	
14	-0.50	1.41	0.23	0.70	0.51	1.56	
18	0.00	1.00	0.66	2.00	1.17	3.56	
25	0.50	0.71	2.02	6.15	3.19	9.71	
35	1.00	0.50	4.84	14.70	8.03	24.41	
45	1.50	0.35	10.17	30.91	18.20	55.32	
60	2.00	0.25	9.67	29.38	27.87	84.70	
80	2.50	0.18	4.11	12.48	31.97	97.18	
120	3.00	0.13	0.48	1.47	32.46	98.65	
170	3.50	0.09	0.03	0.10	32.49	98.75	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.41	1.99	1.83	1.41	1.01	0.71	0.12	
Moment Statistics	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis	
	1.34	0.40	0.66		-0.71	4.54	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

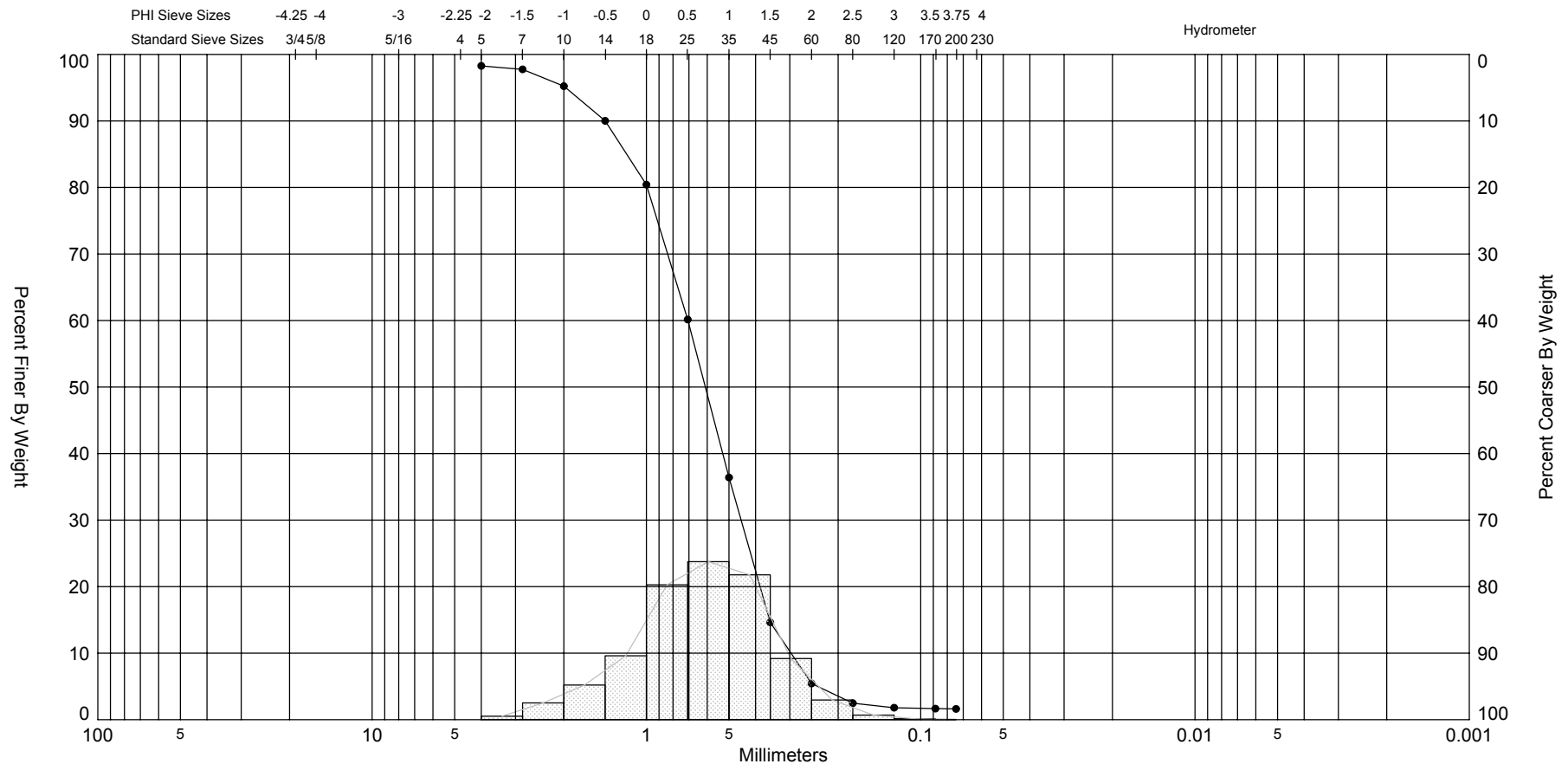
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-01	—●—		SP	#230 - 1.25	7.50	17.20	1.41	1.34	-0.71	4.54	0.66	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	206,936
												Northing (ft):	748,877
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-03							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
209,057		749,691		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
32.25	31.88	0.00	0.47	#200 - 1.62 #230 - 0.06	16.10	37.19	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.56	1.72	0.56	1.72	
7	-1.50	2.83	0.17	0.52	0.72	2.24	
10	-1.00	2.00	0.82	2.53	1.54	4.77	
14	-0.50	1.41	1.68	5.21	3.22	9.98	
18	0.00	1.00	3.10	9.60	6.32	19.58	
25	0.50	0.71	6.54	20.27	12.85	39.85	
35	1.00	0.50	7.66	23.74	20.51	63.59	
45	1.50	0.35	7.03	21.78	27.53	85.37	
60	2.00	0.25	2.96	9.19	30.50	94.56	
80	2.50	0.18	0.95	2.96	31.45	97.52	
120	3.00	0.13	0.22	0.68	31.67	98.20	
170	3.50	0.09	0.04	0.14	31.71	98.34	
200	3.75	0.07	0.01	0.04	31.73	98.38	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.07	1.47	1.26	0.71	0.13	-0.19	-0.98	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.62	0.65	0.81	-0.05	3.17		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



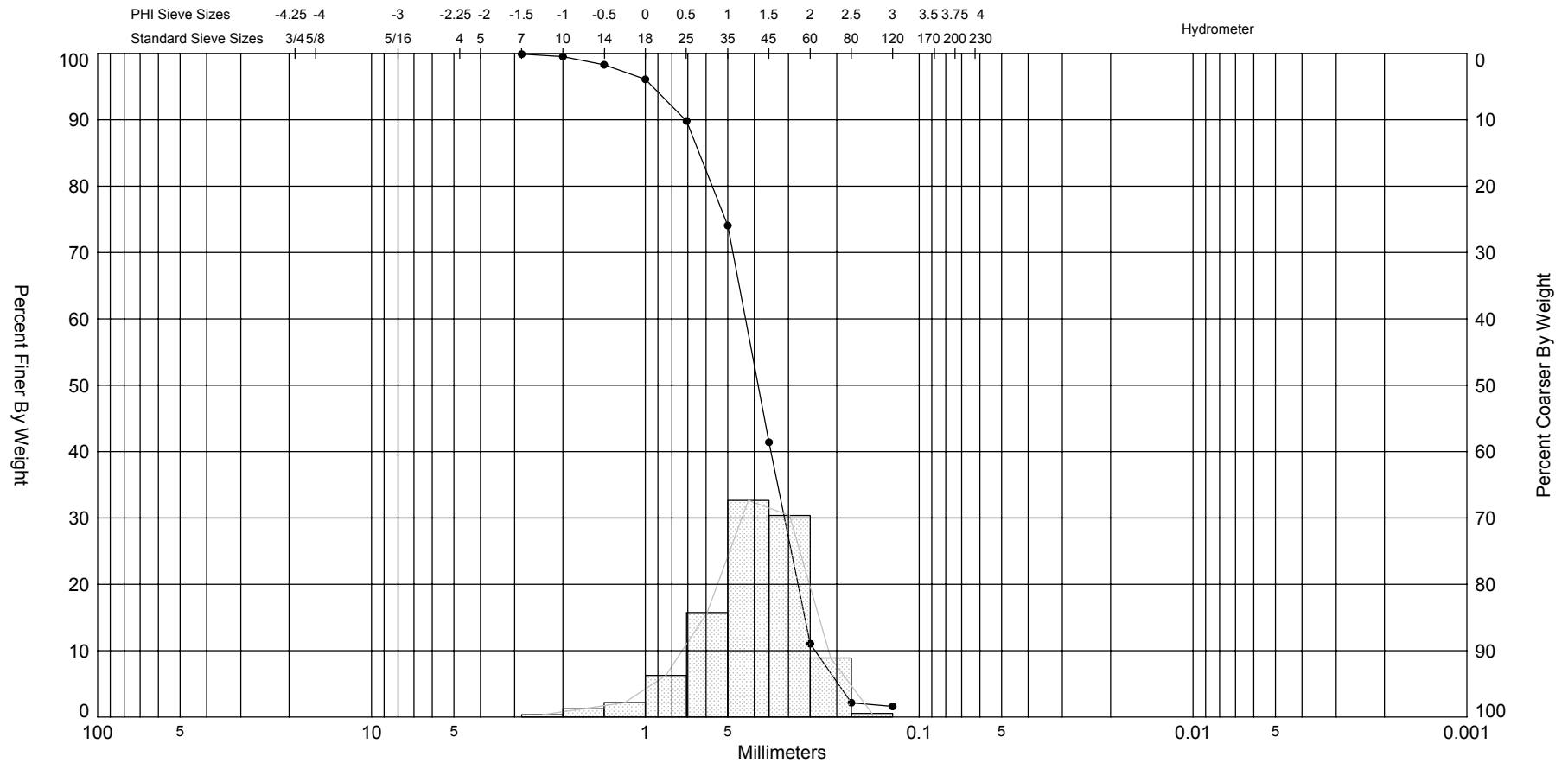
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-03	—●—		SP	#200 - 1.62 #230 - 0.06	16.10	37.19	0.71	0.62	-0.05	3.17	0.81	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	209,057
												Northing (ft):	749,691
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-04							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
207,241		746,405		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.18	29.75	0.00	0.18	#230 - 0.10	10.23	23.46	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.03	0.11	0.03	0.11	
10	-1.00	2.00	0.11	0.36	0.14	0.47	
14	-0.50	1.41	0.38	1.24	0.52	1.71	
18	0.00	1.00	0.66	2.19	1.18	3.90	
25	0.50	0.71	1.89	6.28	3.07	10.18	
35	1.00	0.50	4.76	15.76	7.83	25.94	
45	1.50	0.35	9.85	32.65	17.68	58.59	
60	2.00	0.25	9.16	30.37	26.85	88.96	
80	2.50	0.18	2.68	8.89	29.53	97.85	
120	3.00	0.13	0.17	0.55	29.70	98.40	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.34	1.92	1.77	1.37	0.97	0.68	0.09	
Moment Statistics	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis	
	1.29	0.41	0.64		-0.84	4.25	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

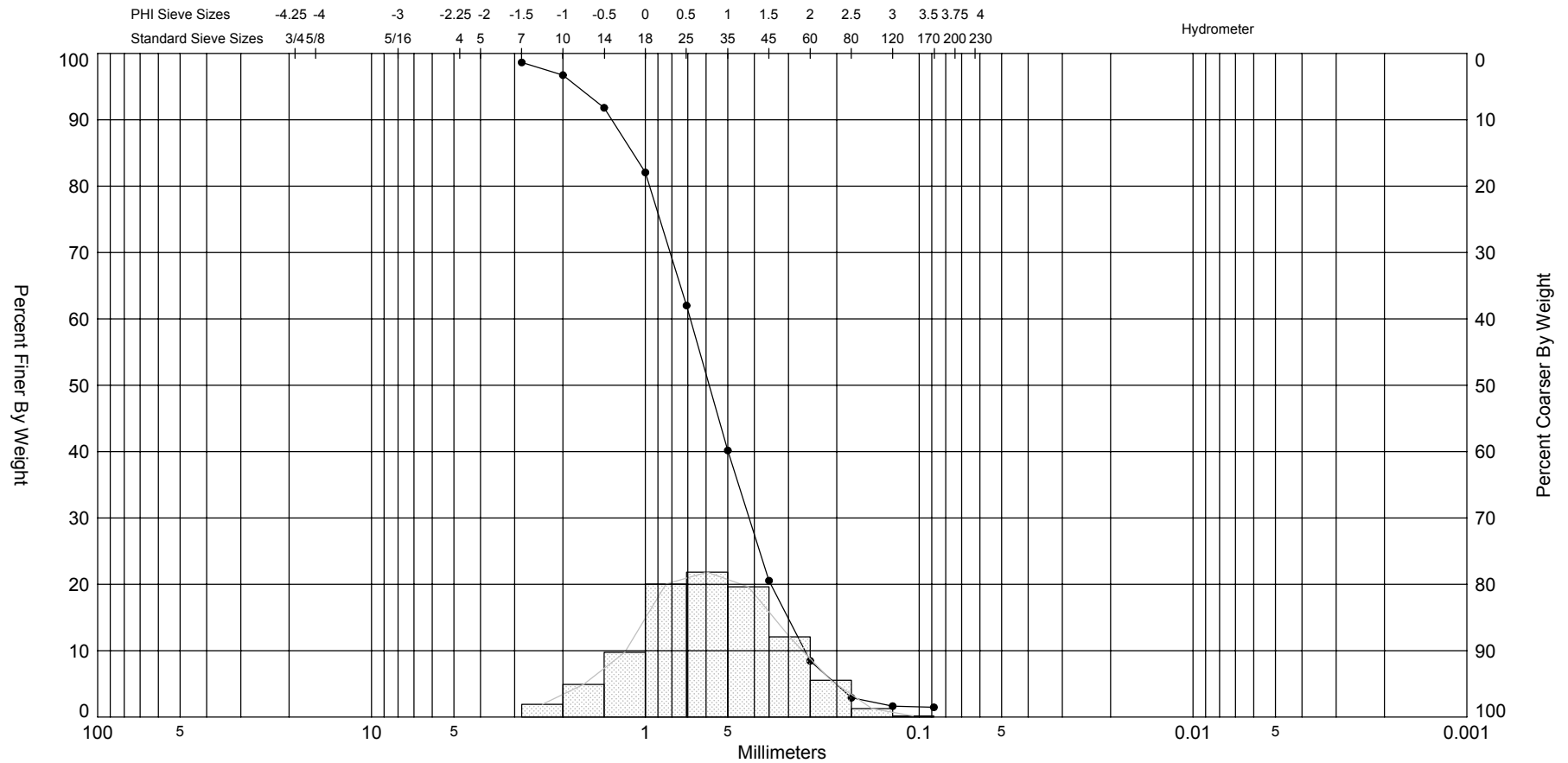
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-04	—●—		SP	#230 - 0.10	10.23	23.46	1.37	1.29	-0.84	4.25	0.64	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	207,241
												Northing (ft):	746,405
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-06							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
210,288		746,587		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.65	30.36	0.00	0.25	#200 - 1.22 #230 - 0.54	16.36	37.71	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.15	0.48	0.15	0.48	
5	-2.00	4.00	0.06	0.20	0.21	0.68	
7	-1.50	2.83	0.32	1.06	0.53	1.74	
10	-1.00	2.00	0.41	1.32	0.94	3.06	
14	-0.50	1.41	1.15	3.75	2.09	6.81	
18	0.00	1.00	2.00	6.52	4.09	13.33	
25	0.50	0.71	3.60	11.75	7.69	25.08	
35	1.00	0.50	5.67	18.50	13.36	43.58	
45	1.50	0.35	8.16	26.61	21.52	70.19	
60	2.00	0.25	6.11	19.94	27.63	90.13	
80	2.50	0.18	2.26	7.37	29.89	97.50	
120	3.00	0.13	0.35	1.14	30.24	98.64	
170	3.50	0.09	0.04	0.12	30.27	98.76	
200	3.75	0.07	0.01	0.02	30.28	98.78	
<div style="writing-mode: vertical-rl; transform: rotate(180deg); position: absolute; left: -100px; top: 50%; font-size: 8px;">             GRANULOMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07           </div>							
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.33	1.85	1.62	1.12	0.50	0.11	-0.74	
Moment	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis	
Statistics	0.97	0.51	0.87		-0.66	3.6	



Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-07							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
212,193		741,826		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.77	30.40	0.00	0.25	#230 - 1.42	20.84	47.84	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.42	1.36	0.42	1.36	
10	-1.00	2.00	0.59	1.91	1.01	3.27	
14	-0.50	1.41	1.51	4.92	2.52	8.19	
18	0.00	1.00	3.00	9.75	5.52	17.94	
25	0.50	0.71	6.17	20.05	11.69	37.99	
35	1.00	0.50	6.72	21.84	18.41	59.83	
45	1.50	0.35	6.04	19.62	24.45	79.45	
60	2.00	0.25	3.72	12.09	28.17	91.54	
80	2.50	0.18	1.71	5.55	29.88	97.09	
120	3.00	0.13	0.39	1.27	30.27	98.36	
170	3.50	0.09	0.05	0.17	30.32	98.53	
<div style="writing-mode: vertical-rl; transform: rotate(180deg); position: absolute; left: -100px; top: 50%; font-size: 8px;">             GRANULOMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07           </div>							
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.31	1.69	1.39	0.77	0.18	-0.10	-0.82	
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	0.74	0.60	0.84	0.08	2.78		

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



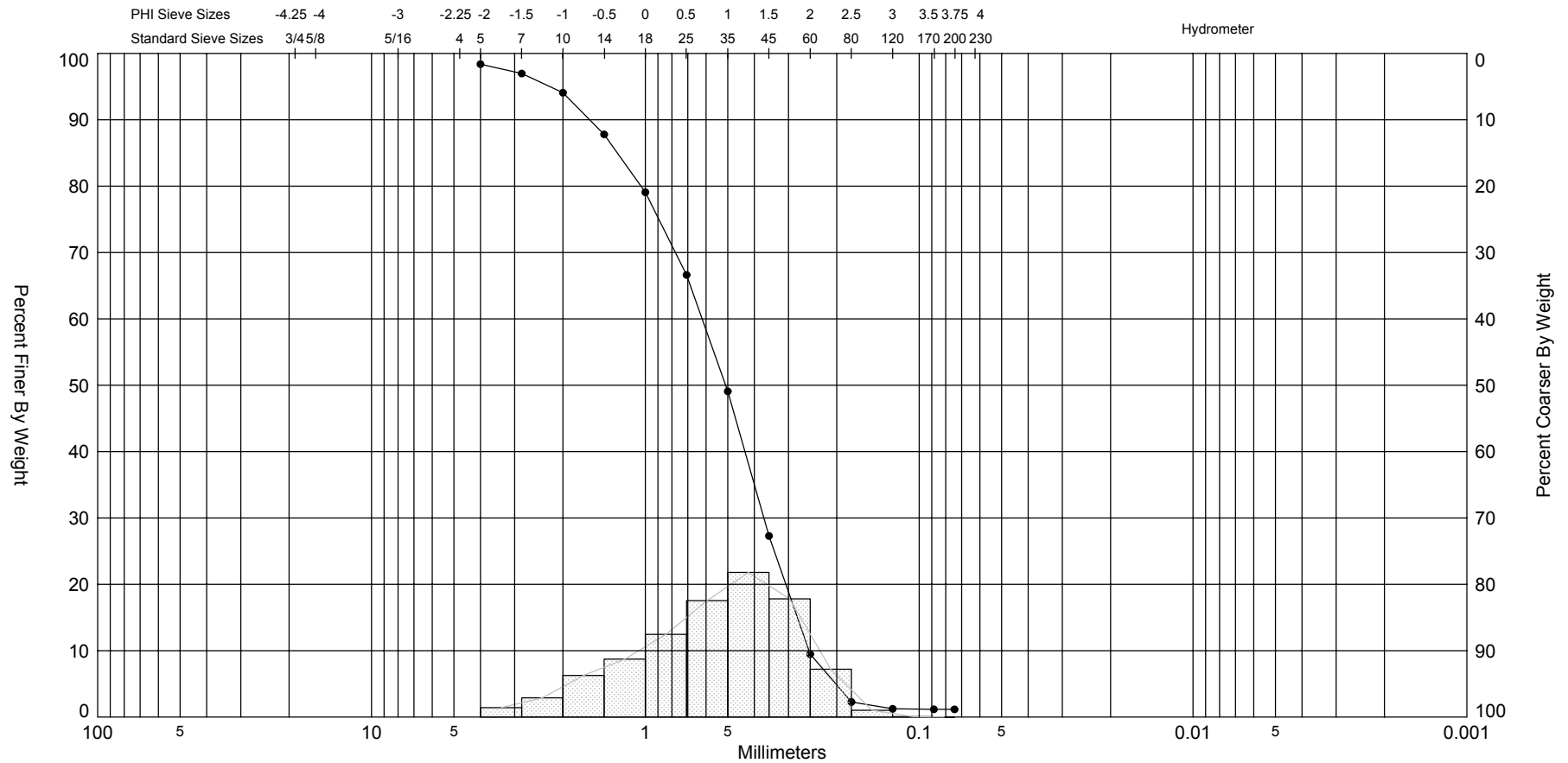
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-07	—●—		SP	#230 - 1.42	20.84	47.84	0.77	0.74	0.08	2.78	0.84	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	212,193
												Northing (ft):	741,826
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-09							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
209,525		747,206		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
31.39	31.07	0.00	0.14	#200 - 1.16 #230 - 0.34	20.48	47.06	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.51	1.62	0.51	1.62	
7	-1.50	2.83	0.44	1.41	0.95	3.03	
10	-1.00	2.00	0.91	2.89	1.86	5.92	
14	-0.50	1.41	1.97	6.28	3.83	12.20	
18	0.00	1.00	2.74	8.72	6.57	20.92	
25	0.50	0.71	3.91	12.46	10.48	33.38	
35	1.00	0.50	5.51	17.54	15.98	50.92	
45	1.50	0.35	6.84	21.79	22.82	72.71	
60	2.00	0.25	5.59	17.82	28.42	90.53	
80	2.50	0.18	2.26	7.20	30.68	97.73	
120	3.00	0.13	0.32	1.03	31.00	98.76	
170	3.50	0.09	0.02	0.07	31.02	98.83	
200	3.75	0.07	0.00	0.01	31.02	98.84	
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07</div>							
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.31	1.82	1.56	0.97	0.16	-0.28	-1.16	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.78	0.58	0.95	-0.36	2.7		



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

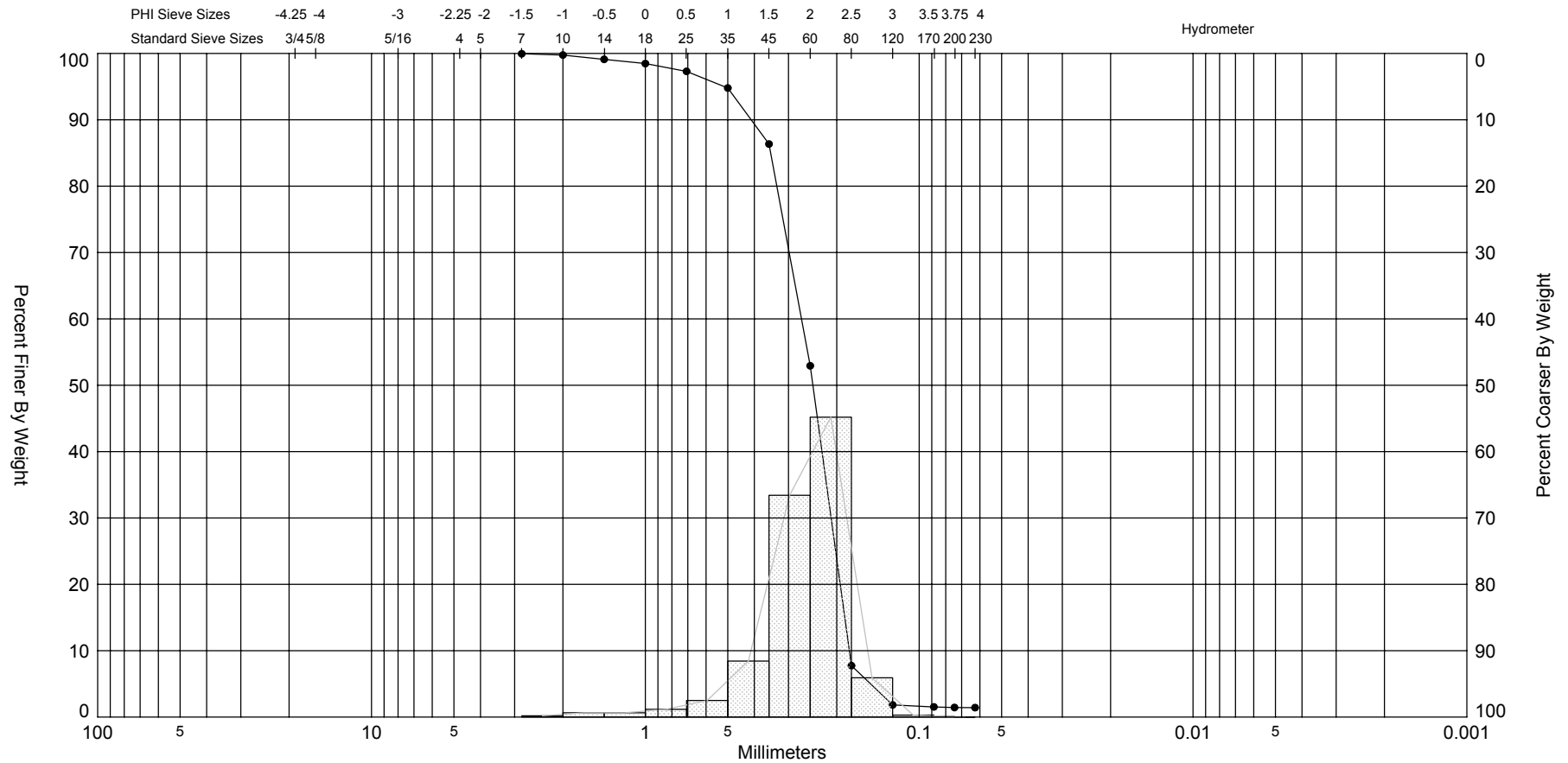


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-09	—●—		SP	#200 - 1.16 #230 - 0.34	20.48	47.06	0.97	0.78	-0.36	2.7	0.95	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	209,525
												Northing (ft):	747,206
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-10							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
206,191		753,913		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.40	29.95	0.01	-0.09	#200 - 1.44 #230 - 1.42	6.49	15.08	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.01	0.05	0.01	0.05	
10	-1.00	2.00	0.06	0.19	0.07	0.24	
14	-0.50	1.41	0.20	0.65	0.27	0.89	
18	0.00	1.00	0.19	0.64	0.46	1.53	
25	0.50	0.71	0.36	1.17	0.82	2.70	
35	1.00	0.50	0.76	2.51	1.58	5.21	
45	1.50	0.35	2.57	8.44	4.15	13.65	
60	2.00	0.25	10.16	33.42	14.31	47.07	
80	2.50	0.18	13.73	45.18	28.04	92.25	
120	3.00	0.13	1.80	5.92	29.84	98.17	
170	3.50	0.09	0.09	0.30	29.93	98.47	
200	3.75	0.07	0.03	0.09	29.96	98.56	
230	4.00	0.06	0.01	0.02	29.96	98.58	
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.73	2.41	2.31	2.03	1.67	1.54	0.96	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.92	0.26	0.56	-1.8	9.05		

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



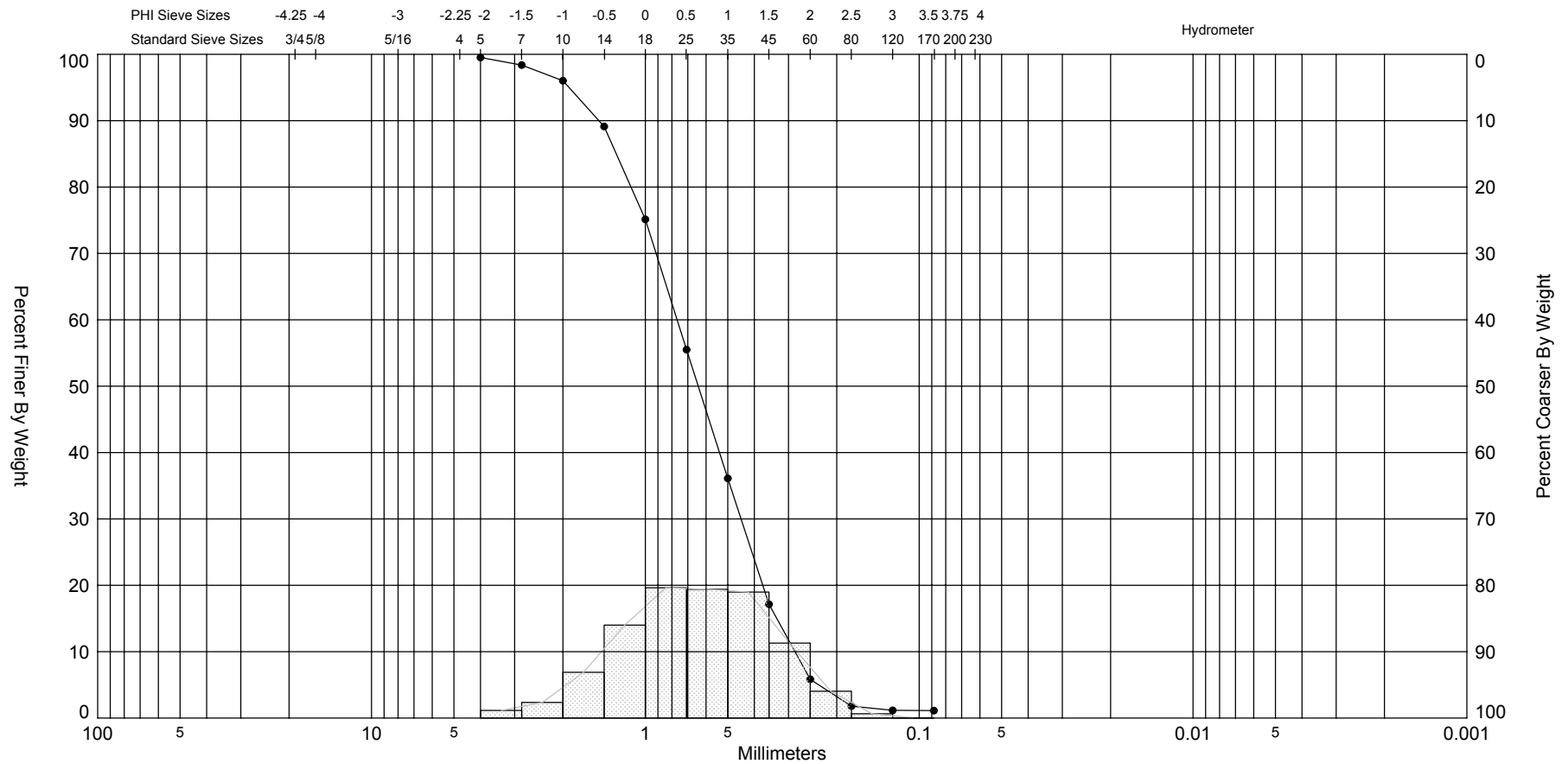
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-10	—●—		SP	#200 - 1.44 #230 - 1.42	6.49	15.08	2.03	1.92	-1.8	9.05	0.56	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	206,191
												Northing (ft):	753,913
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-11							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
210,472		744,150		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.37	30.12	0.00	0.27	#230 - 0.23	26.74	61.75	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.15	0.48	0.15	0.48	
7	-1.50	2.83	0.35	1.14	0.49	1.62	
10	-1.00	2.00	0.72	2.36	1.21	3.98	
14	-0.50	1.41	2.09	6.89	3.30	10.87	
18	0.00	1.00	4.25	14.00	7.56	24.87	
25	0.50	0.71	5.96	19.63	13.52	44.50	
35	1.00	0.50	5.89	19.39	19.40	63.89	
45	1.50	0.35	5.76	18.97	25.17	82.86	
60	2.00	0.25	3.43	11.30	28.60	94.16	
80	2.50	0.18	1.23	4.04	29.82	98.20	
120	3.00	0.13	0.20	0.64	30.02	98.84	
170	3.50	0.09	0.01	0.04	30.03	98.88	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.10	1.55	1.29	0.64	0.00	-0.32	-0.93	
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	0.6	0.66	0.88	-0.12	2.69		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



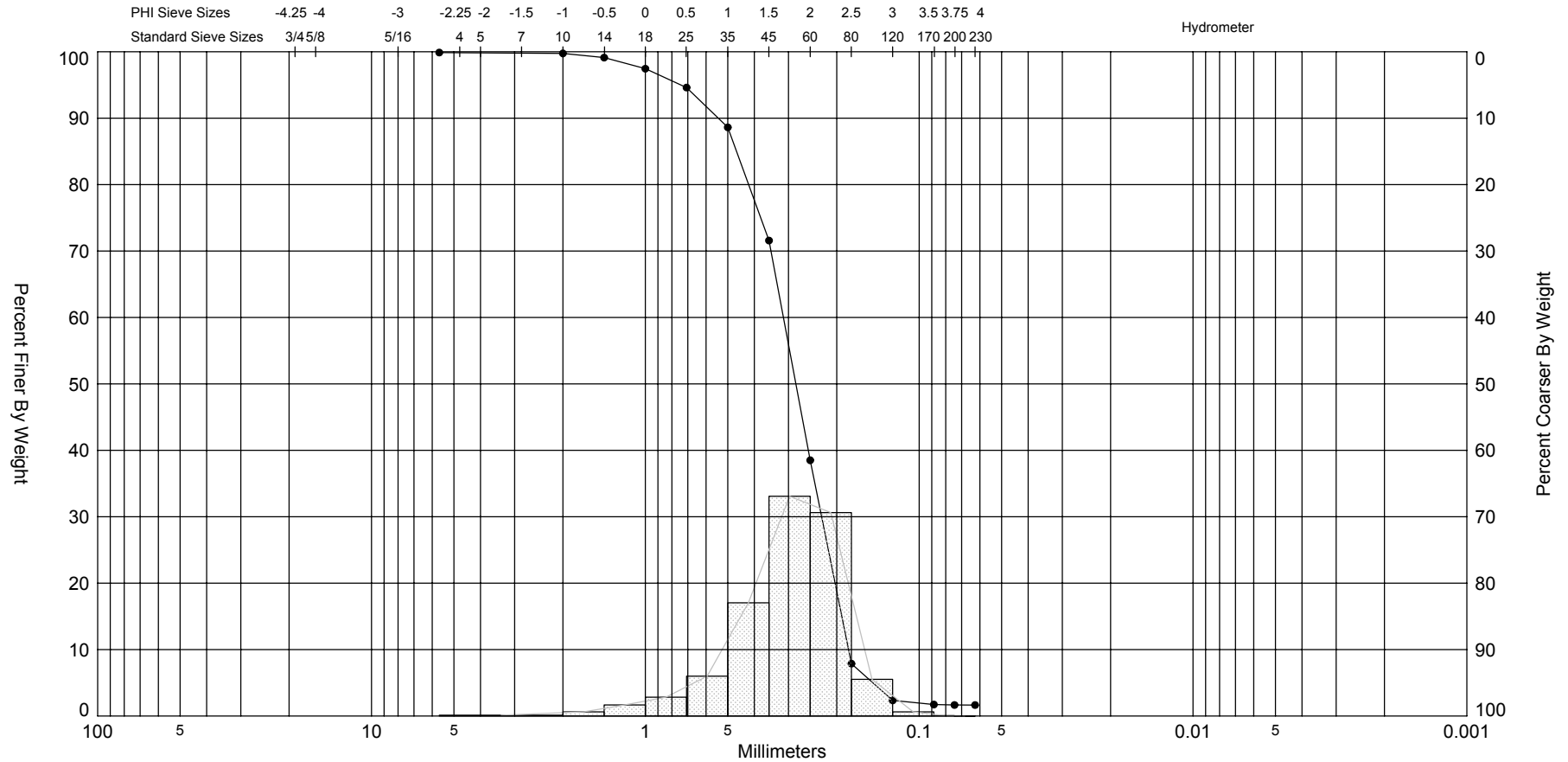
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-11	—●—		SP	#230 - 0.23	26.74	61.75	0.64	0.6	-0.12	2.69	0.88	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	210,472
												Northing (ft):	744,150
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-13							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc,							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
204,916		751,091		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SW							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.46	30.02	0.00	0.22	#200 - 1.66 #230 - 1.65	9.89	22.83	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.04	0.12	0.04	0.12	
10	-1.00	2.00	0.04	0.13	0.08	0.25	
14	-0.50	1.41	0.19	0.63	0.27	0.88	
18	0.00	1.00	0.51	1.67	0.78	2.55	
25	0.50	0.71	0.87	2.84	1.64	5.39	
35	1.00	0.50	1.82	5.99	3.47	11.38	
45	1.50	0.35	5.19	17.04	8.66	28.42	
60	2.00	0.25	10.08	33.08	18.73	61.50	
80	2.50	0.18	9.33	30.62	28.06	92.12	
120	3.00	0.13	1.68	5.53	29.74	97.65	
170	3.50	0.09	0.19	0.62	29.93	98.27	
200	3.75	0.07	0.02	0.07	29.95	98.34	
230	4.00	0.06	0.00	0.01	29.96	98.35	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.76	2.37	2.22	1.83	1.40	1.14	0.43	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.72	0.30	0.67	-1.06	5.19		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



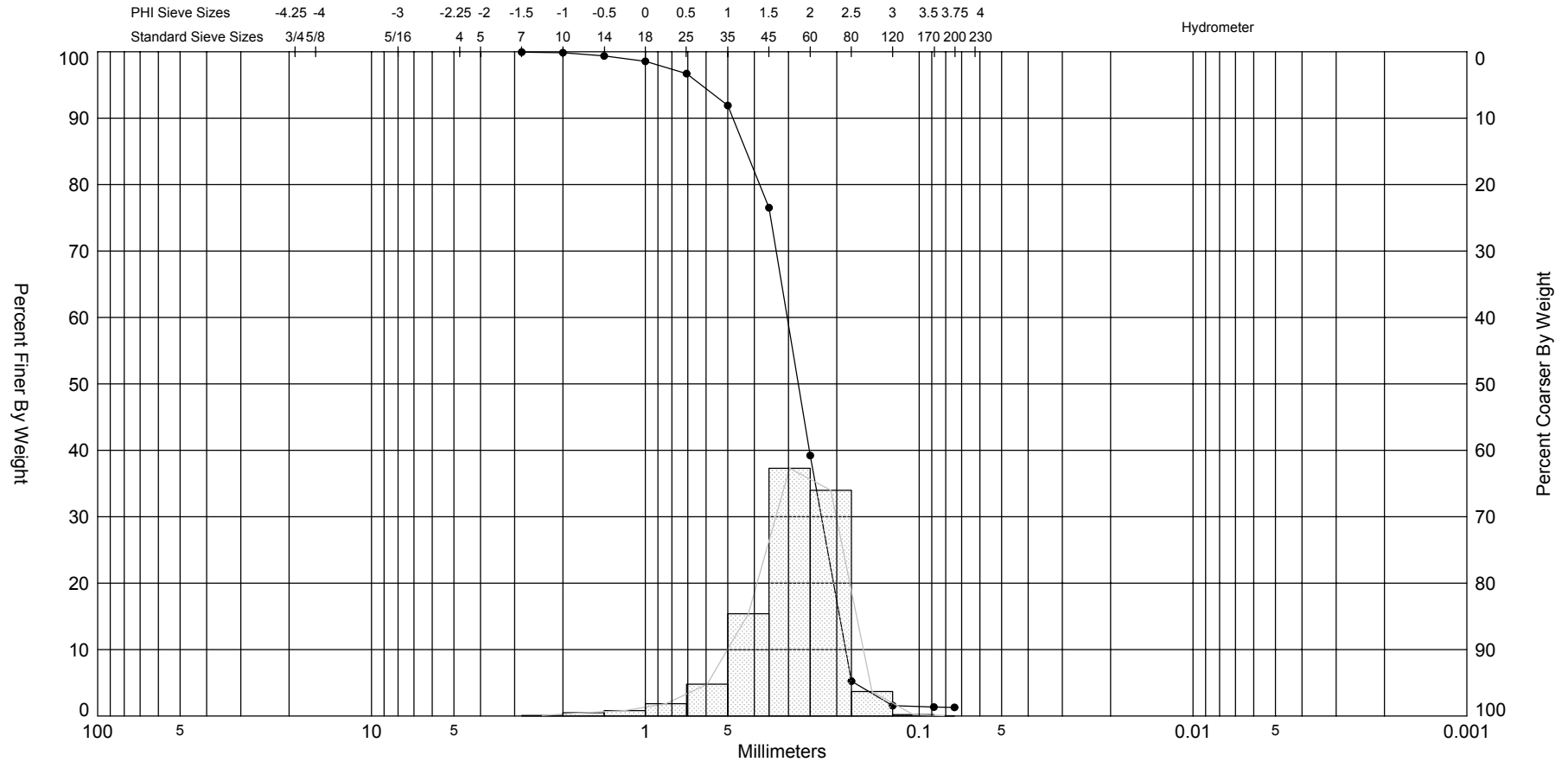
Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-13	—●—		SW	#200 - 1.66 #230 - 1.65	9.89	22.83	1.83	1.72	-1.06	5.19	0.67	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc,
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708							Easting (ft):	204,916					
							Northing (ft):	751,091					
							Horizontal System:	NAD 1983					
							Vertical System:	NGVD					





SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



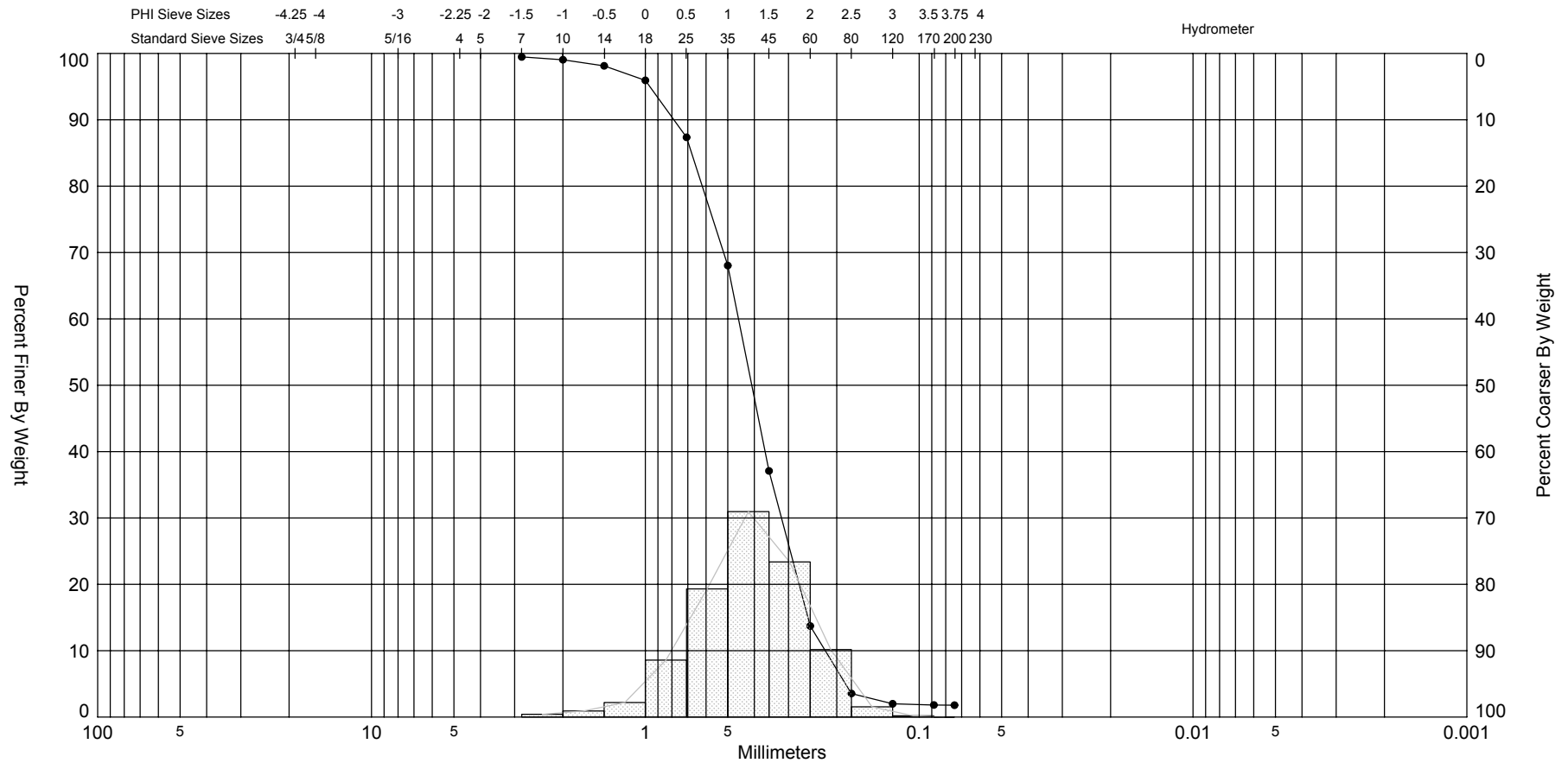
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-14	—●—		SP	#200 - 1.30 #230 - 0.24	5.59	12.89	1.86	1.78	-1.21	5.88	0.57	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	205,684
												Northing (ft):	752,781
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-15							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
202,914		753,705		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.62	30.21	0.00	0.44	#200 - 1.79 #230 - 1.45	10.57	24.20	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.16	0.53	0.16	0.53	
10	-1.00	2.00	0.13	0.42	0.29	0.95	
14	-0.50	1.41	0.28	0.92	0.57	1.87	
18	0.00	1.00	0.67	2.19	1.24	4.06	
25	0.50	0.71	2.63	8.58	3.87	12.64	
35	1.00	0.50	5.92	19.32	9.79	31.96	
45	1.50	0.35	9.48	30.95	19.26	62.91	
60	2.00	0.25	7.16	23.37	26.42	86.28	
80	2.50	0.18	3.11	10.17	29.53	96.45	
120	3.00	0.13	0.48	1.55	30.01	98.00	
170	3.50	0.09	0.06	0.18	30.06	98.18	
200	3.75	0.07	0.01	0.03	30.07	98.21	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.43	1.95	1.76	1.29	0.82	0.59	0.05	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.24	0.42	0.68	-0.34	3.61		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



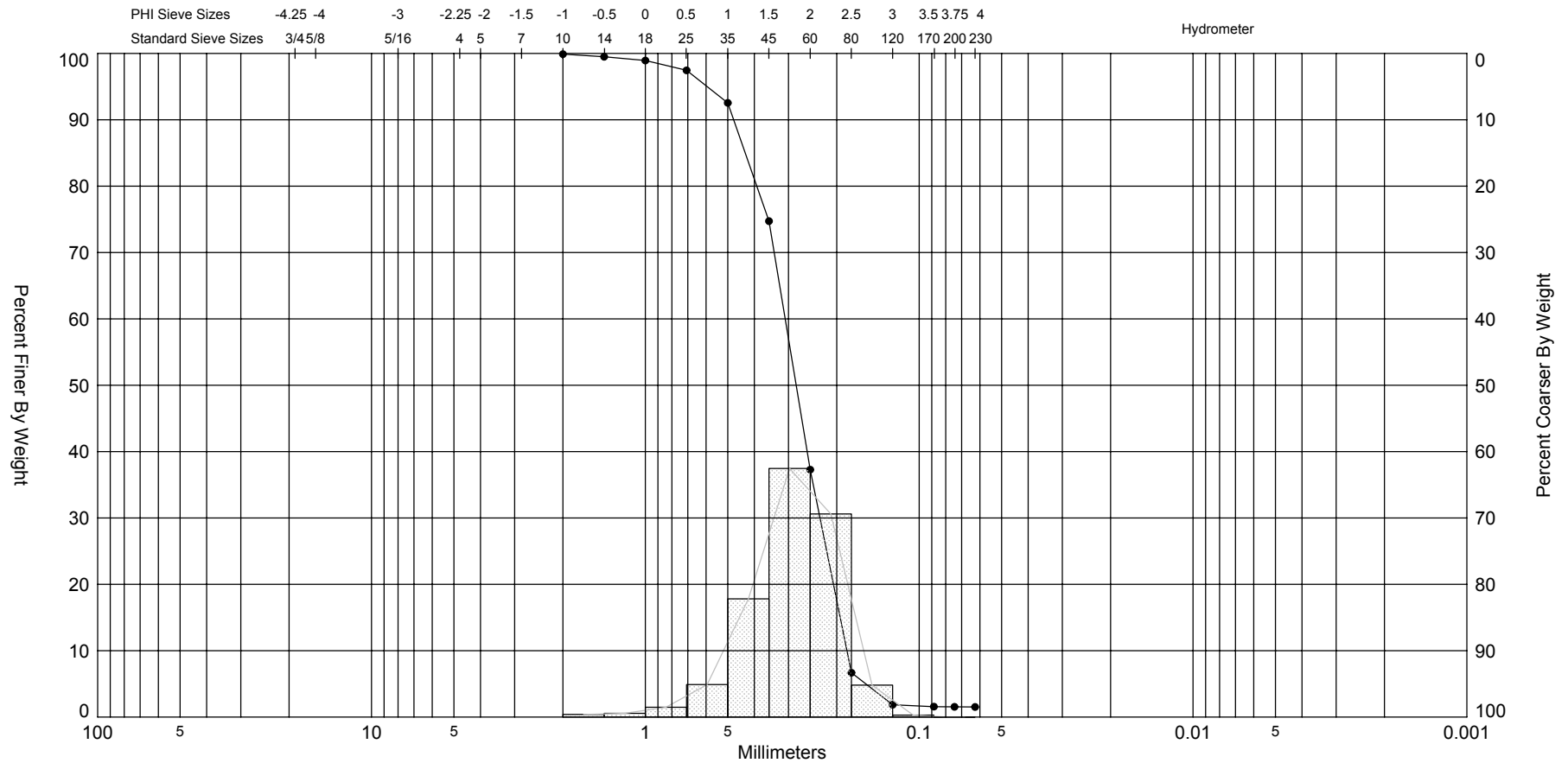
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-15	—●—		SP	#200 - 1.79 #230 - 1.45	10.57	24.20	1.29	1.24	-0.34	3.61	0.68	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	202,914
												Northing (ft):	753,705
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2005 CT-39054				Melbourne, FL 32934			
Sample Name: W1-T1-16				ph 321 254-2708			
Analysis Date: 10-02-05				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
205,241		750,222		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.50	30.04	0.00	0.02	#200 - 1.54 #230 - 1.52	8.94	20.50	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.03	0.11	0.03	0.11	
14	-0.50	1.41	0.12	0.39	0.15	0.50	
18	0.00	1.00	0.18	0.57	0.33	1.07	
25	0.50	0.71	0.45	1.48	0.78	2.55	
35	1.00	0.50	1.50	4.90	2.27	7.45	
45	1.50	0.35	5.43	17.82	7.71	25.27	
60	2.00	0.25	11.42	37.45	19.13	62.72	
80	2.50	0.18	9.33	30.60	28.46	93.32	
120	3.00	0.13	1.47	4.82	29.93	98.14	
170	3.50	0.09	0.09	0.29	30.02	98.43	
200	3.75	0.07	0.01	0.03	30.03	98.46	
230	4.00	0.06	0.01	0.02	30.04	98.48	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.67	2.35	2.20	1.83	1.49	1.24	0.75	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.77	0.29	0.56	-0.86	5.03		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



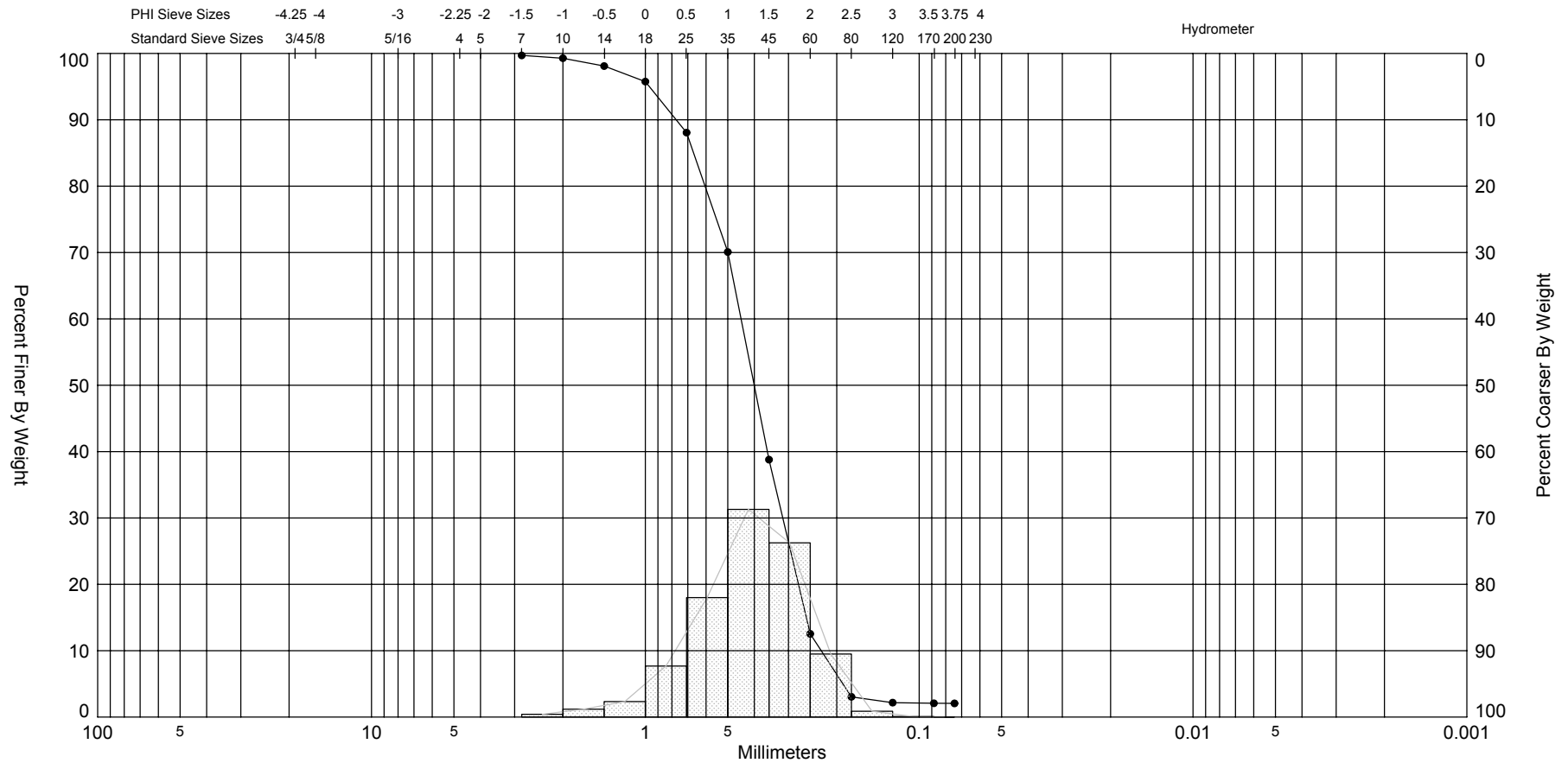
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-16	—●—		SP	#200 - 1.54 #230 - 1.52	8.94	20.50	1.83	1.77	-0.86	5.03	0.56	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-02-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	205,241
												Northing (ft):	750,222
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-17							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
204,098		753,525		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
31.03	30.46	0.00	0.22	#200 - 2.06 #230 - 0.43	8.27	19.12	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.09	0.30	0.09	0.30	
10	-1.00	2.00	0.13	0.42	0.22	0.72	
14	-0.50	1.41	0.37	1.18	0.59	1.90	
18	0.00	1.00	0.73	2.34	1.32	4.24	
25	0.50	0.71	2.39	7.69	3.70	11.93	
35	1.00	0.50	5.58	17.99	9.28	29.92	
45	1.50	0.35	9.71	31.29	18.99	61.21	
60	2.00	0.25	8.15	26.25	27.14	87.46	
80	2.50	0.18	2.94	9.49	30.08	96.95	
120	3.00	0.13	0.27	0.88	30.35	97.83	
170	3.50	0.09	0.03	0.09	30.38	97.92	
200	3.75	0.07	0.01	0.02	30.39	97.94	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.40	1.93	1.76	1.32	0.86	0.61	0.05	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.25	0.42	0.67	-0.58	3.83		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

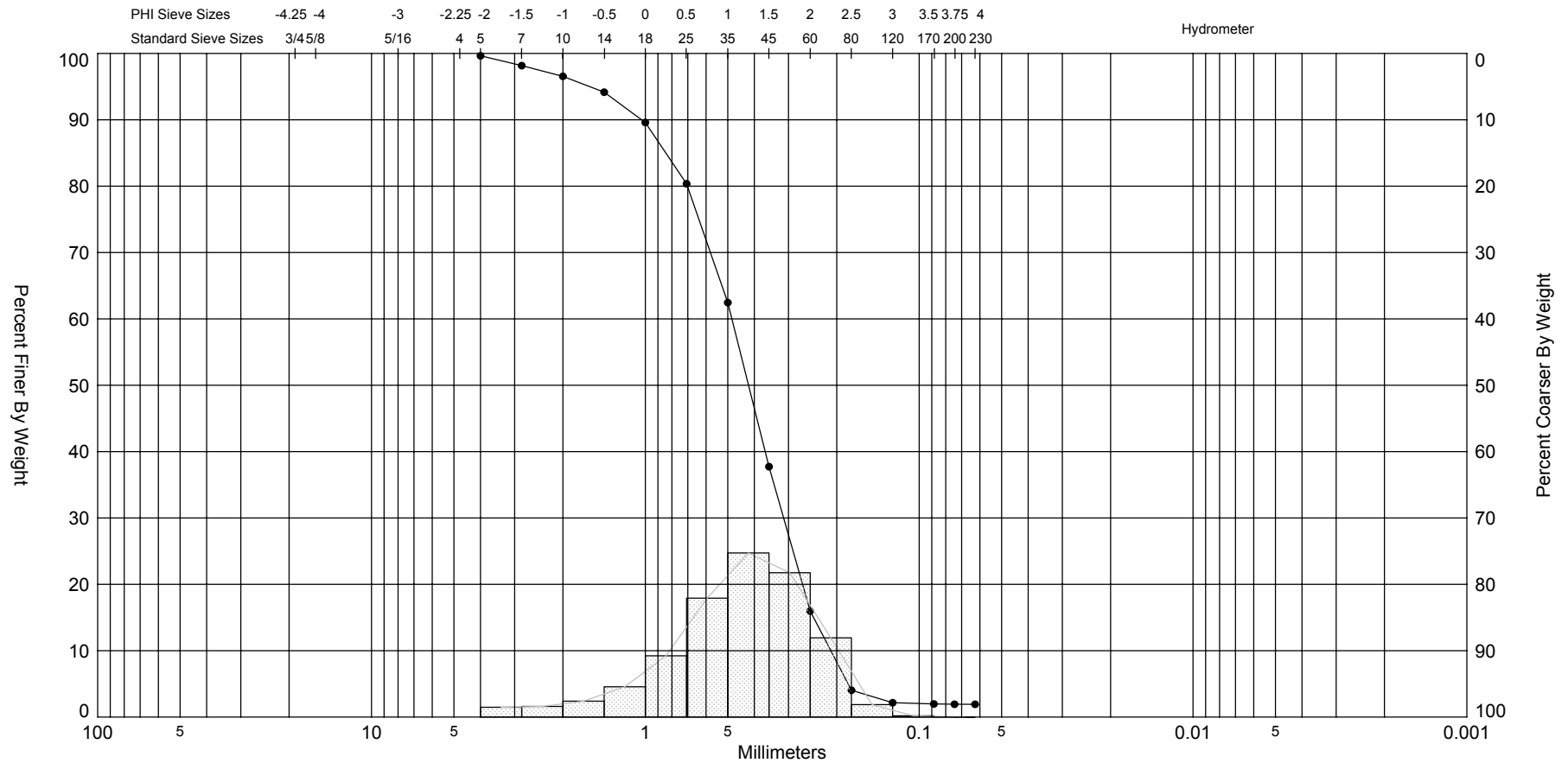
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-17	—●—		SP	#200 - 2.06 #230 - 0.43	8.27	19.12	1.32	1.25	-0.58	3.83	0.67	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	204,098
												Northing (ft):	753,525
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-18							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft): 207,569		Northing (ft): 751,106		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 30.18	Wash Weight (g): 29.71	Pan Retained (g): 0.00	Sieve Loss (%): 0.38	Fines (%): #200 - 1.93 #230 - 1.92	Organics (%): 14.57	Carbonates (%): 33.54	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.11	0.36	0.11	0.36	
7	-1.50	2.83	0.45	1.48	0.56	1.84	
10	-1.00	2.00	0.49	1.61	1.04	3.45	
14	-0.50	1.41	0.72	2.39	1.77	5.84	
18	0.00	1.00	1.38	4.57	3.14	10.41	
25	0.50	0.71	2.79	9.23	5.93	19.64	
35	1.00	0.50	5.41	17.91	11.34	37.55	
45	1.50	0.35	7.46	24.72	18.79	62.27	
60	2.00	0.25	6.56	21.75	25.36	84.02	
80	2.50	0.18	3.60	11.94	28.96	95.96	
120	3.00	0.13	0.57	1.88	29.53	97.84	
170	3.50	0.09	0.06	0.19	29.58	98.03	
200	3.75	0.07	0.01	0.04	29.60	98.07	
230	4.00	0.06	0.00	0.01	29.60	98.08	
Phi 5		Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.46		2.00	1.79	1.25	0.65	0.30	-0.68
Moment		Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics		1.11	0.46	0.89	-0.8	3.91	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



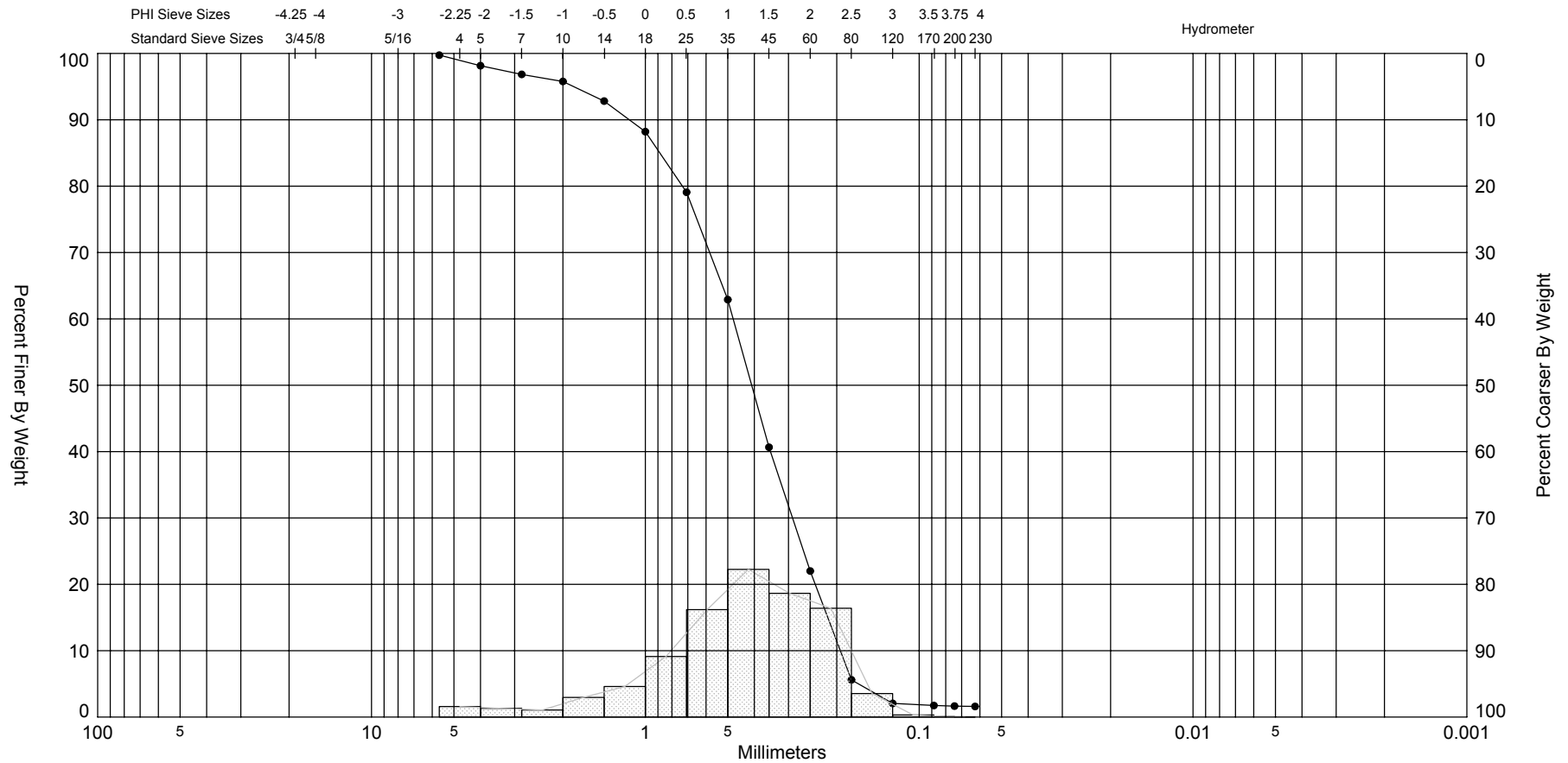
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-18	—●—		SP	#200 - 1.93 #230 - 1.92	14.57	33.54	1.25	1.11	-0.8	3.91	0.89	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	207,569
												Northing (ft):	751,106
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-19							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft): 206,886		Northing (ft): 751,579		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 30.41	Wash Weight (g): 30.01	Pan Retained (g): 0.01	Sieve Loss (%): 0.27	Fines (%): #200 - 1.65 #230 - 1.60	Organics (%): 15.68	Carbonates (%): 35.92	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.08	0.26	0.08	0.26	
5	-2.00	4.00	0.48	1.59	0.56	1.85	
7	-1.50	2.83	0.40	1.31	0.96	3.16	
10	-1.00	2.00	0.32	1.06	1.29	4.22	
14	-0.50	1.41	0.90	2.96	2.19	7.18	
18	0.00	1.00	1.40	4.61	3.59	11.79	
25	0.50	0.71	2.78	9.13	6.36	20.92	
35	1.00	0.50	4.92	16.18	11.28	37.10	
45	1.50	0.35	6.76	22.24	18.05	59.34	
60	2.00	0.25	5.67	18.65	23.72	77.99	
80	2.50	0.18	4.99	16.40	28.71	94.39	
120	3.00	0.13	1.08	3.55	29.78	97.94	
170	3.50	0.09	0.10	0.32	29.88	98.26	
200	3.75	0.07	0.03	0.09	29.91	98.35	
230	4.00	0.06	0.02	0.05	29.92	98.40	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.59	2.18	1.92	1.29	0.63	0.23	-0.87	
Moment Statistics	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis	
	1.14	0.45	1.03		-0.94	4.23	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

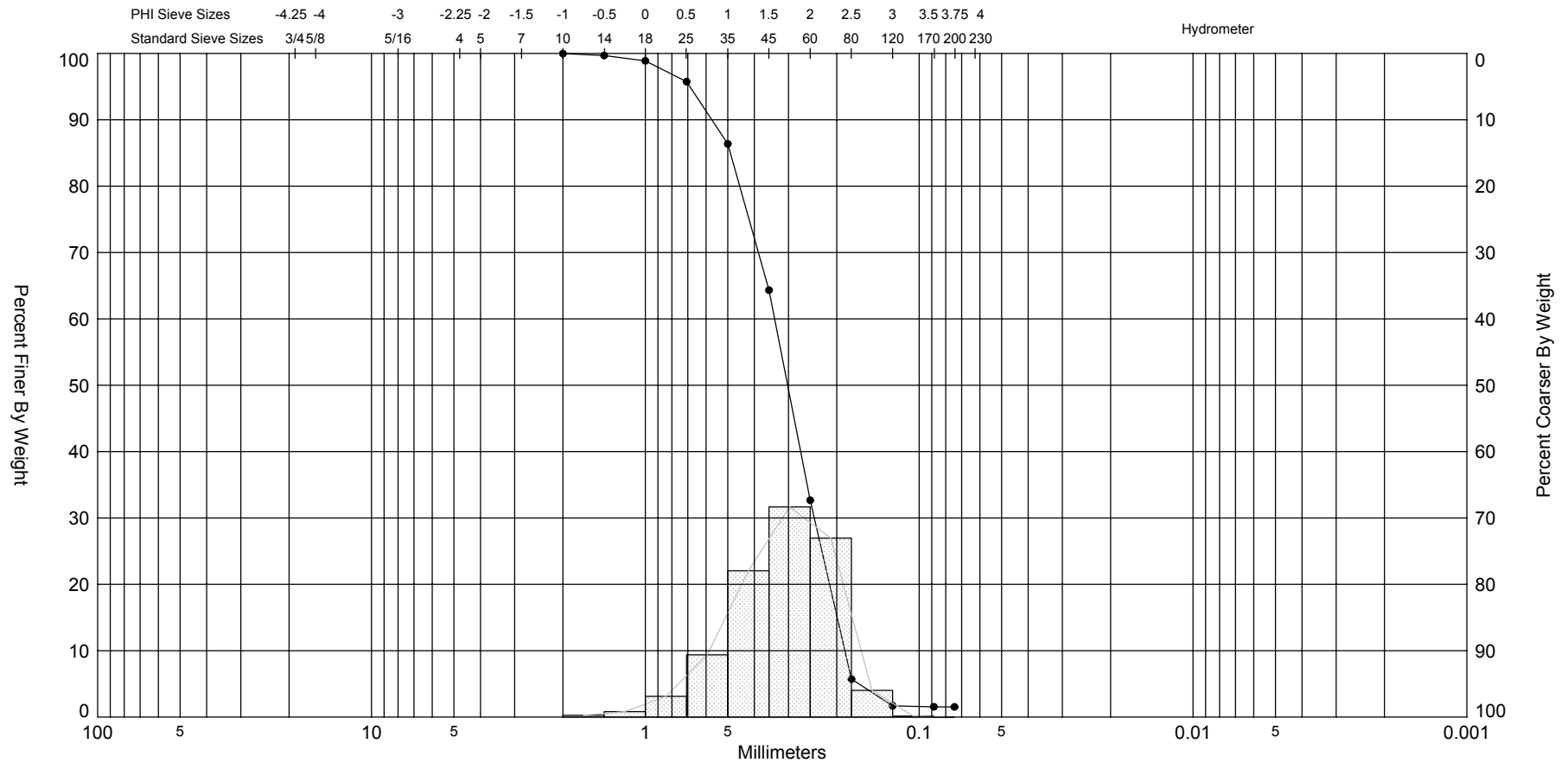


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-19	—●—		SP	#200 - 1.65 #230 - 1.60	15.68	35.92	1.29	1.14	-0.94	4.23	1.03	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	206,886
												Northing (ft):	751,579
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

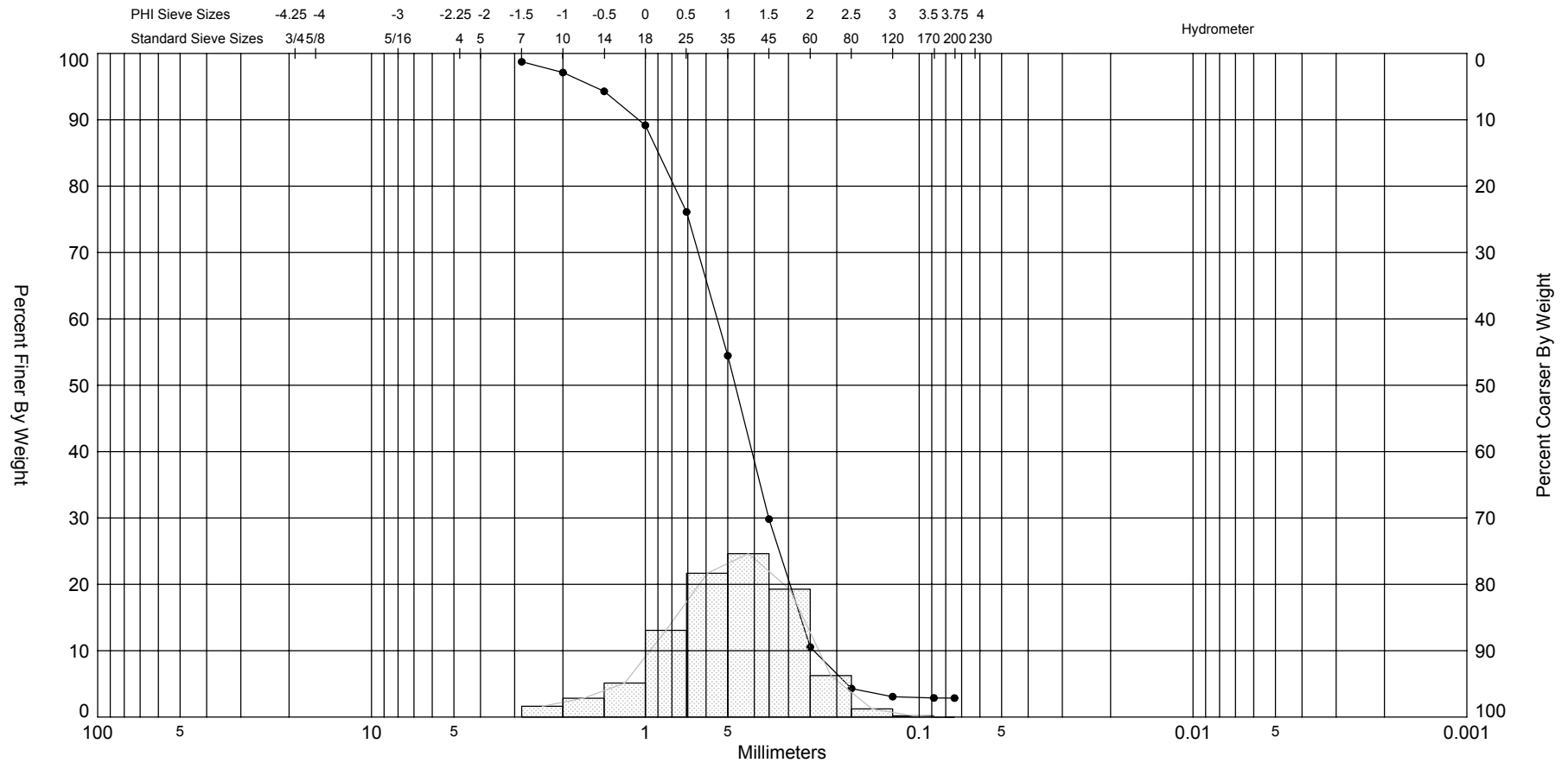
Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2005 CT-39054				Melbourne, FL 32934			
Sample Name: W1-T1-21				ph 321 254-2708			
Analysis Date: 10-25-05				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
203,736		750,904		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
31.10	30.71	0.00	0.28	#200 - 1.53 #230 - 0.36	6.77	15.57	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.01	0.03	0.01	0.03	
14	-0.50	1.41	0.09	0.28	0.10	0.31	
18	0.00	1.00	0.25	0.81	0.35	1.12	
25	0.50	0.71	0.97	3.13	1.32	4.25	
35	1.00	0.50	2.92	9.38	4.24	13.63	
45	1.50	0.35	6.85	22.04	11.09	35.67	
60	2.00	0.25	9.85	31.66	20.94	67.33	
80	2.50	0.18	8.38	26.95	29.32	94.28	
120	3.00	0.13	1.25	4.03	30.58	98.31	
170	3.50	0.09	0.04	0.14	30.62	98.45	
200	3.75	0.07	0.01	0.02	30.63	98.47	
<p>GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07</p>							
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.59	2.31	2.14	1.73	1.26	1.05	0.54	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.65	0.32	0.61	-0.63	3.52		

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07





SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

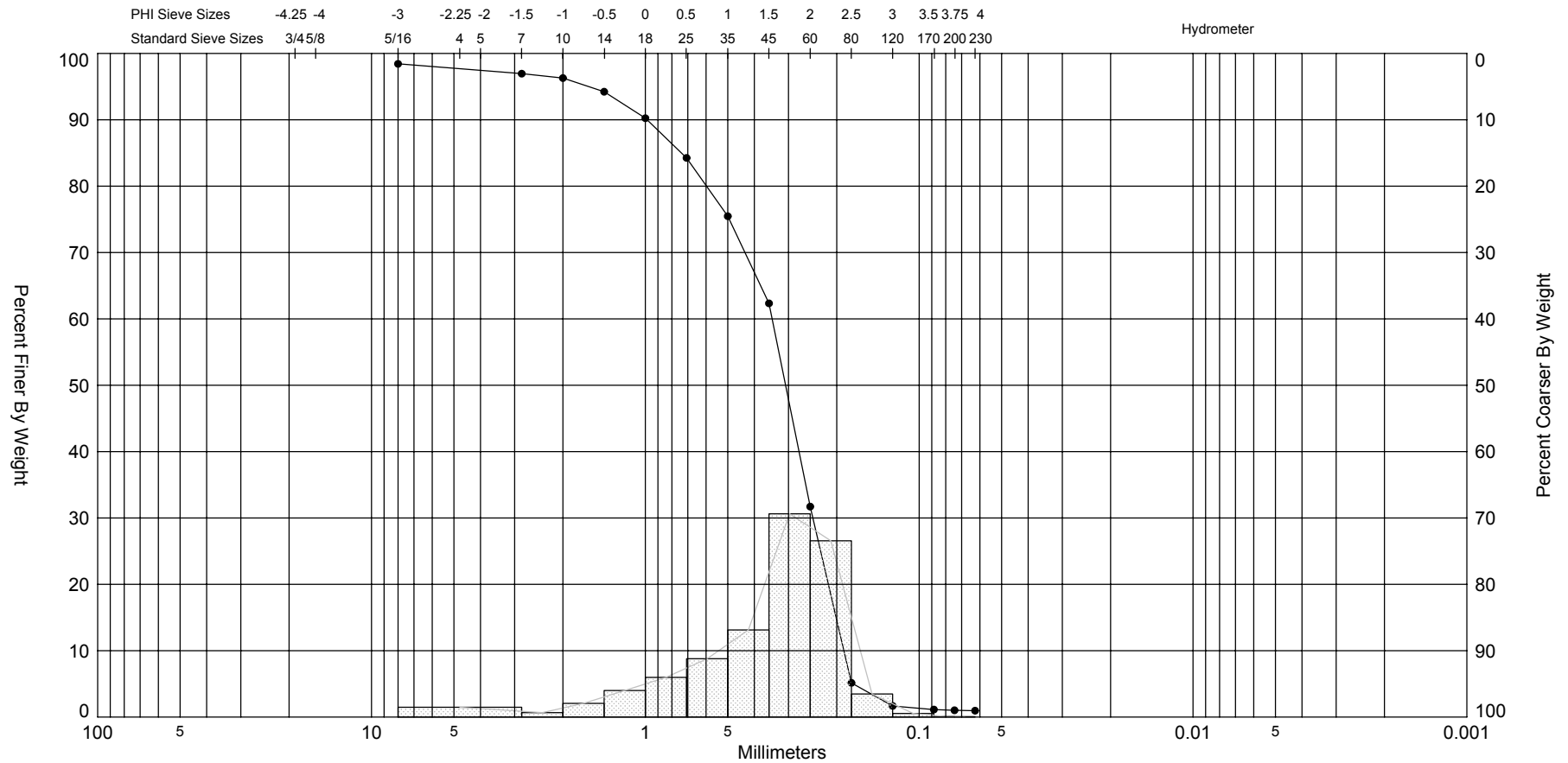
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-25	—●—		SP	#200 - 2.86 #230 - 1.68	17.19	39.38	1.09	0.97	-0.31	3.21	0.79	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	213,543
												Northing (ft):	742,503
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-26							
Analysis Date: 09-29-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
207,158		754,078		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.57	30.28	0.01	-0.02	#200 - 1.02 #230 - 0.96	16.60	37.80	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5/16"	-3.00	8.00	0.48	1.57	0.48	1.57	
7	-1.50	2.83	0.45	1.48	0.94	3.05	
10	-1.00	2.00	0.20	0.66	1.14	3.71	
14	-0.50	1.41	0.63	2.06	1.77	5.77	
18	0.00	1.00	1.22	3.99	2.99	9.76	
25	0.50	0.71	1.83	5.98	4.82	15.74	
35	1.00	0.50	2.69	8.79	7.50	24.53	
45	1.50	0.35	4.01	13.13	11.52	37.66	
60	2.00	0.25	9.36	30.63	20.88	68.29	
80	2.50	0.18	8.12	26.56	29.00	94.85	
120	3.00	0.13	1.06	3.48	30.06	98.33	
170	3.50	0.09	0.17	0.54	30.23	98.87	
200	3.75	0.07	0.04	0.11	30.27	98.98	
230	4.00	0.06	0.02	0.06	30.28	99.04	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.52	2.30	2.13	1.70	1.02	0.51	-0.69	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.39	0.38	0.95	-1.17	5.16		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



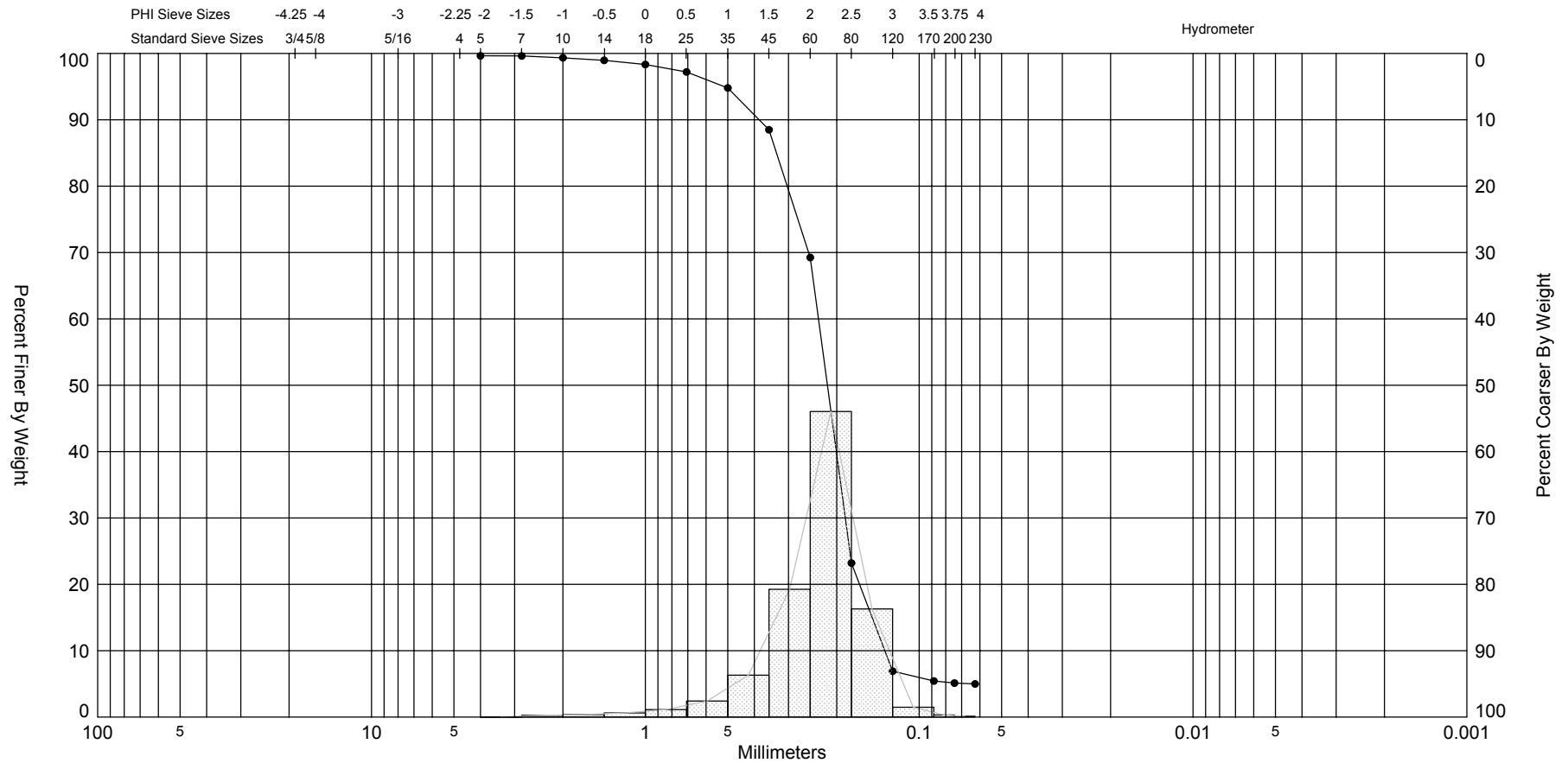
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-26	—●—		SP	#200 - 1.02 #230 - 0.96	16.60	37.80	1.7	1.39	-1.17	5.16	0.95	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	09-29-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	207,158
												Northing (ft):	754,078
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-27							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
205,916		745,965		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.38	28.89	0.04	-0.02	#200 - 5.12 #230 - 4.99	13.16	30.28	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.11	0.36	0.11	0.36	
7	-1.50	2.83	0.01	0.02	0.11	0.38	
10	-1.00	2.00	0.09	0.28	0.20	0.66	
14	-0.50	1.41	0.12	0.38	0.32	1.04	
18	0.00	1.00	0.19	0.63	0.51	1.67	
25	0.50	0.71	0.34	1.12	0.84	2.79	
35	1.00	0.50	0.73	2.41	1.58	5.20	
45	1.50	0.35	1.92	6.31	3.50	11.51	
60	2.00	0.25	5.85	19.24	9.34	30.75	
80	2.50	0.18	13.99	46.05	23.33	76.80	
120	3.00	0.13	4.95	16.29	28.28	93.09	
170	3.50	0.09	0.45	1.48	28.73	94.57	
200	3.75	0.07	0.09	0.31	28.82	94.88	
230	4.00	0.06	0.04	0.13	28.86	95.01	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.98	2.72	2.48	2.21	1.85	1.62	0.96	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.07	0.24	0.62	-1.55	8.2		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

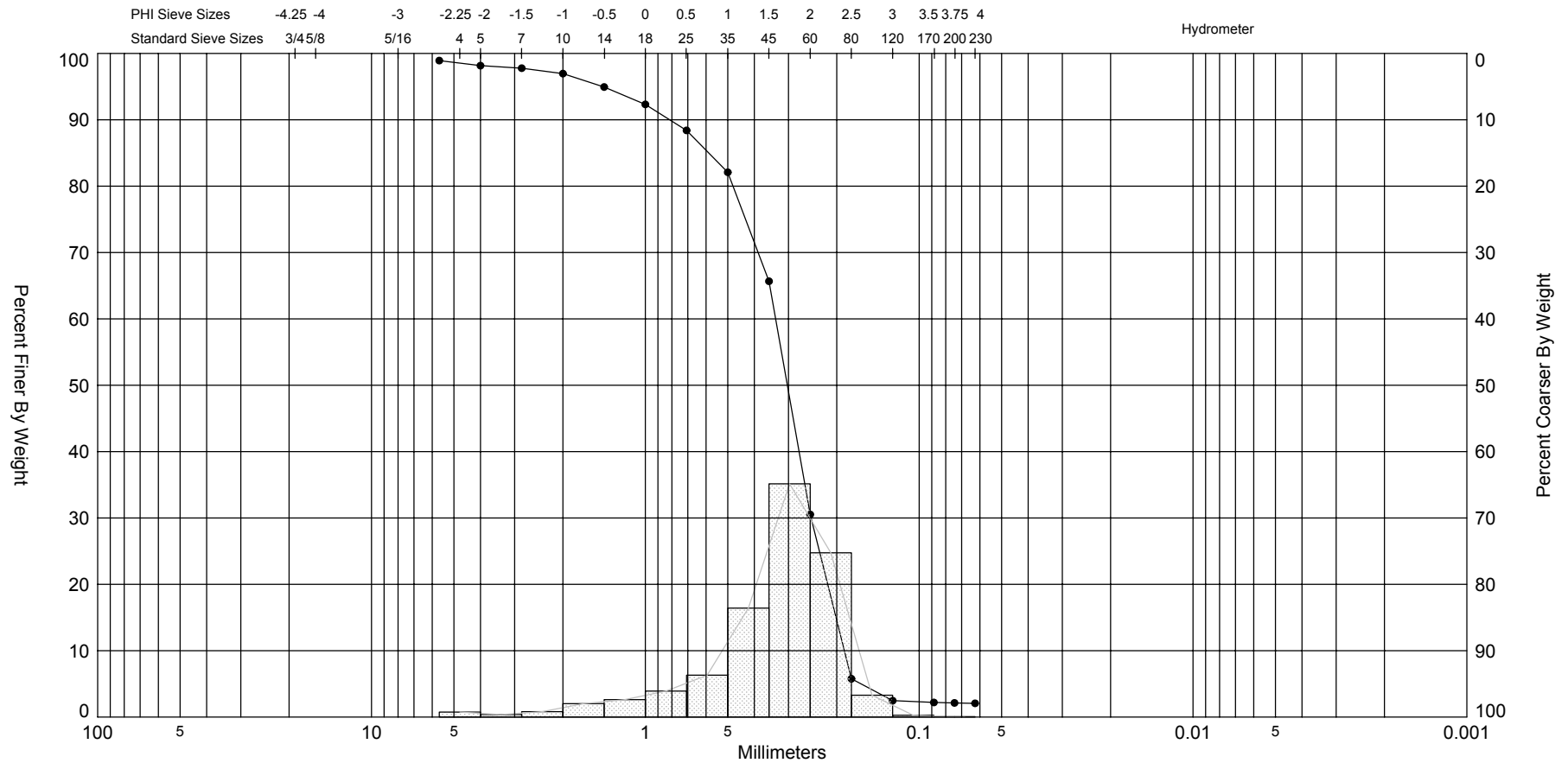


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-27	—●—		SP	#200 - 5.12 #230 - 4.99	13.16	30.28	2.21	2.07	-1.55	8.2	0.62	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
												Easting (ft):	205,916
												Northing (ft):	745,965
												Horizontal System:	NAD 1983
												Vertical System:	NGVD
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708													



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

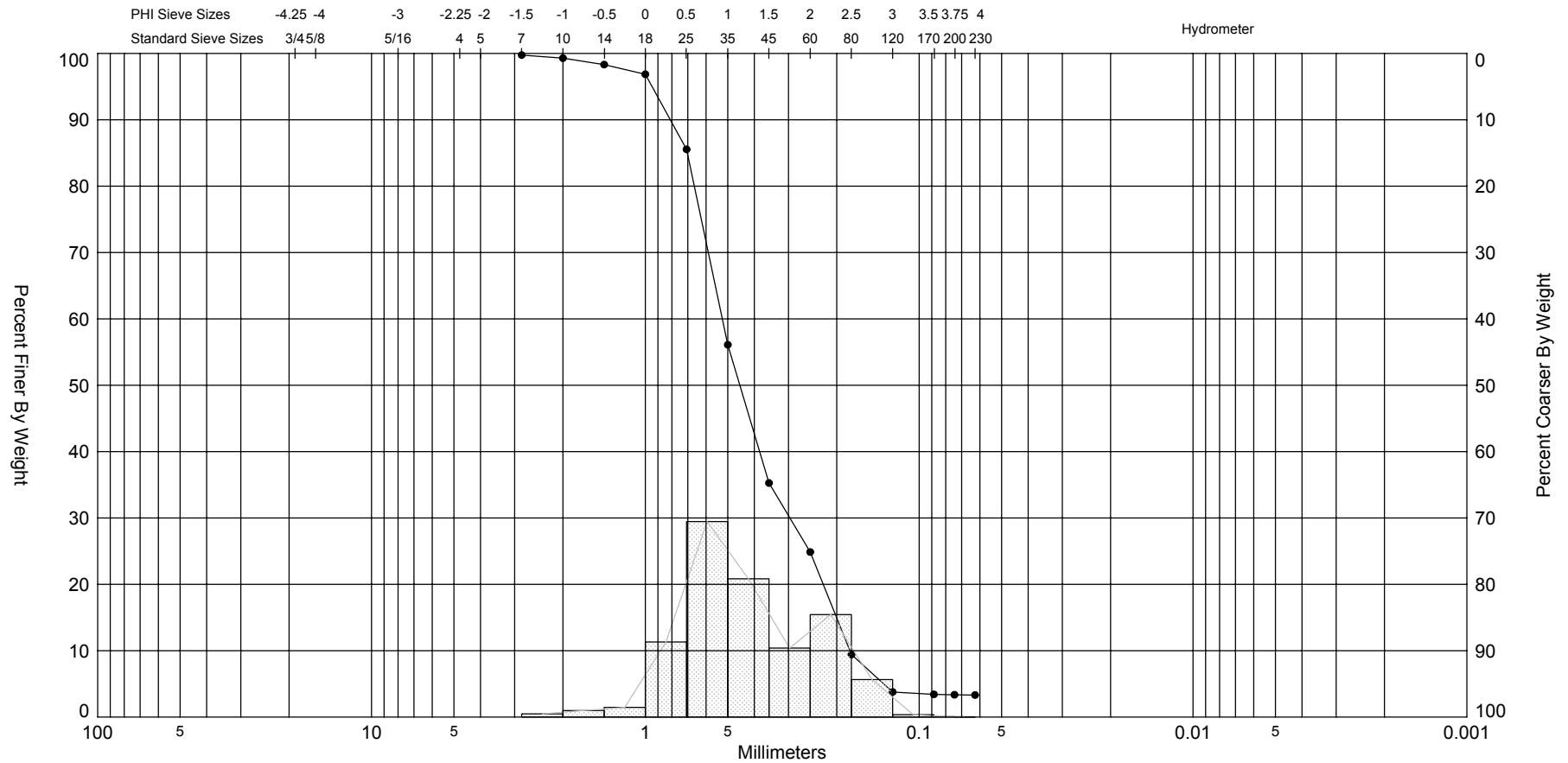


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-28	—●—		SP	#200 - 2.13 #230 - 2.07	9.19	21.18	1.72	1.48	-1.5	6.36	0.86	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	206,570
												Northing (ft):	754,480
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T1-29							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
212,252		743,731		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.80	29.98	0.01	0.63	#200 - 3.36 #230 - 3.32	12.27	28.42	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.08	0.24	0.08	0.24	
10	-1.00	2.00	0.14	0.47	0.22	0.71	
14	-0.50	1.41	0.30	0.97	0.52	1.68	
18	0.00	1.00	0.45	1.46	0.97	3.14	
25	0.50	0.71	3.48	11.31	4.45	14.45	
35	1.00	0.50	9.07	29.45	13.52	43.90	
45	1.50	0.35	6.42	20.83	19.94	64.73	
60	2.00	0.25	3.20	10.40	23.14	75.13	
80	2.50	0.18	4.76	15.44	27.90	90.57	
120	3.00	0.13	1.74	5.65	29.64	96.22	
170	3.50	0.09	0.11	0.36	29.75	96.58	
200	3.75	0.07	0.02	0.06	29.77	96.64	
230	4.00	0.06	0.01	0.04	29.78	96.68	
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.89	2.29	1.99	1.15	0.68	0.53	0.08	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.23	0.43	0.8	0.18	2.78		

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T1-29	—●—		SP	#200 - 3.36 #230 - 3.32	12.27	28.42	1.15	1.23	0.18	2.78	0.8	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	212,252
												Northing (ft):	743,731
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-01							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
67,578		1,074,560		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.60	29.69	0.00	0.10	#200 - 3.10 #230 - 3.09	7.12	16.43	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.05	0.16	0.05	0.16	
10	-1.00	2.00	0.09	0.29	0.14	0.45	
14	-0.50	1.41	0.35	1.15	0.49	1.60	
18	0.00	1.00	0.62	2.01	1.10	3.61	
25	0.50	0.71	1.45	4.75	2.56	8.36	
35	1.00	0.50	3.25	10.62	5.81	18.98	
45	1.50	0.35	9.85	32.17	15.65	51.15	
60	2.00	0.25	10.77	35.18	26.42	86.33	
80	2.50	0.18	2.92	9.53	29.34	95.86	
120	3.00	0.13	0.28	0.92	29.62	96.78	
170	3.50	0.09	0.03	0.10	29.65	96.88	
200	3.75	0.07	0.01	0.02	29.66	96.90	
230	4.00	0.06	0.00	0.01	29.66	96.91	
<div style="display: flex; justify-content: space-between;"> <span>Phi 5</span> <span>Phi 16</span> <span>Phi 25</span> <span>Phi 50</span> <span>Phi 75</span> <span>Phi 84</span> <span>Phi 95</span> </div> <div style="display: flex; justify-content: space-between;"> <span>2.45</span> <span>1.97</span> <span>1.84</span> <span>1.48</span> <span>1.09</span> <span>0.86</span> <span>0.15</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Moment</span> <span>Mean Phi</span> <span>Mean mm</span> <span>Sorting</span> <span>Skewness</span> <span>Kurtosis</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Statistics</span> <span>1.38</span> <span>0.38</span> <span>0.62</span> <span>-0.96</span> <span>4.94</span> </div>							
<div style="display: flex; justify-content: space-between;"> <span>Phi 5</span> <span>Phi 16</span> <span>Phi 25</span> <span>Phi 50</span> <span>Phi 75</span> <span>Phi 84</span> <span>Phi 95</span> </div> <div style="display: flex; justify-content: space-between;"> <span>2.45</span> <span>1.97</span> <span>1.84</span> <span>1.48</span> <span>1.09</span> <span>0.86</span> <span>0.15</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Moment</span> <span>Mean Phi</span> <span>Mean mm</span> <span>Sorting</span> <span>Skewness</span> <span>Kurtosis</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Statistics</span> <span>1.38</span> <span>0.38</span> <span>0.62</span> <span>-0.96</span> <span>4.94</span> </div>							

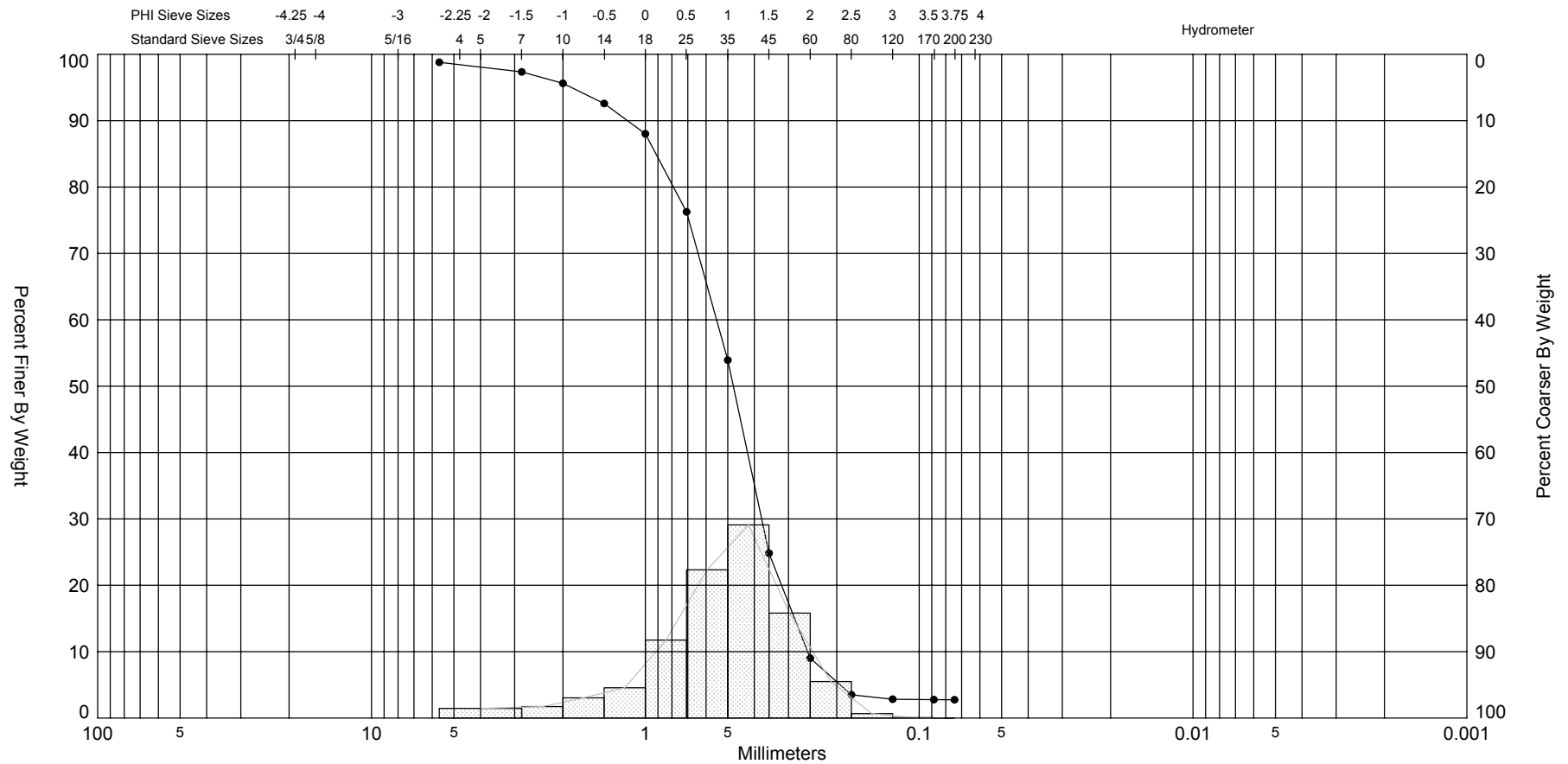
GRANULOMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07





Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-02							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
69,108		1,074,720		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.42	29.77	0.00	0.63	#200 - 2.76 #230 - 0.69	13.66	31.65	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.37	1.20	0.37	1.20	
7	-1.50	2.83	0.44	1.45	0.81	2.65	
10	-1.00	2.00	0.52	1.72	1.33	4.37	
14	-0.50	1.41	0.93	3.04	2.25	7.41	
18	0.00	1.00	1.39	4.57	3.64	11.98	
25	0.50	0.71	3.58	11.76	7.22	23.74	
35	1.00	0.50	6.79	22.33	14.01	46.07	
45	1.50	0.35	8.85	29.10	22.87	75.17	
60	2.00	0.25	4.81	15.81	27.68	90.98	
80	2.50	0.18	1.68	5.51	29.35	96.49	
120	3.00	0.13	0.20	0.67	29.56	97.16	
170	3.50	0.09	0.02	0.06	29.58	97.22	
200	3.75	0.07	0.01	0.02	29.58	97.24	
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.36	1.78	1.50	1.07	0.53	0.17	-0.90	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.89	0.54	0.84	-0.77	4.38		

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



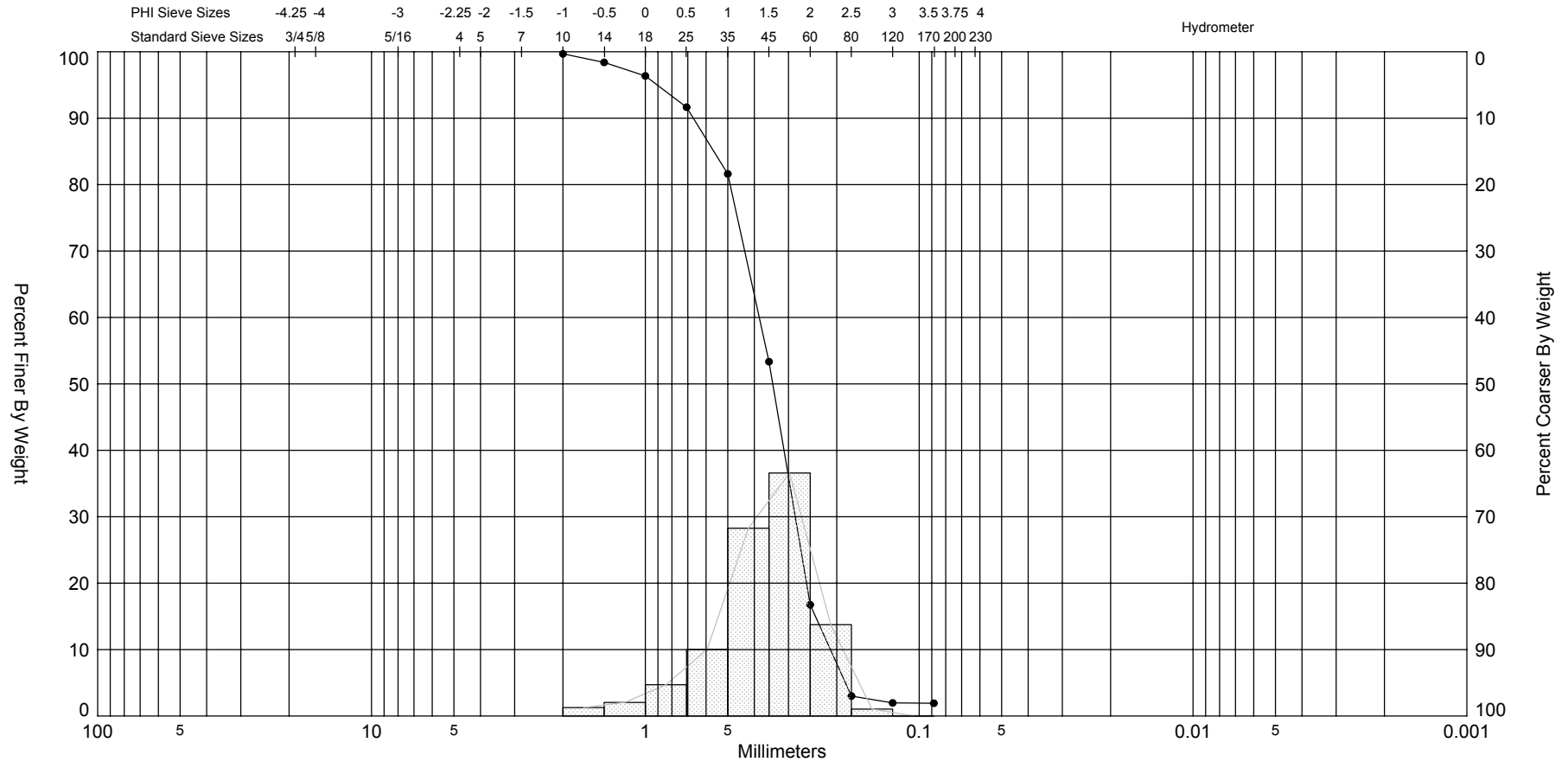
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-02	—●—		SP	#200 - 2.76 #230 - 0.69	13.66	31.65	1.07	0.89	-0.77	4.38	0.84	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	69,108
												Northing (ft):	1,074,720
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-03							
Analysis Date: 10-25-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
73,207		1,070,514		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.42	29.92	0.00	0.29		7.57	17.49	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.10	0.32	0.10	0.32	
14	-0.50	1.41	0.39	1.28	0.48	1.60	
18	0.00	1.00	0.62	2.04	1.11	3.64	
25	0.50	0.71	1.43	4.71	2.54	8.35	
35	1.00	0.50	3.05	10.04	5.59	18.39	
45	1.50	0.35	8.60	28.27	14.19	46.66	
60	2.00	0.25	11.13	36.59	25.32	83.25	
80	2.50	0.18	4.18	13.74	29.50	96.99	
120	3.00	0.13	0.32	1.04	29.81	98.03	
170	3.50	0.09	0.02	0.05	29.83	98.08	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.43	2.03	1.89	1.55	1.12	0.88	0.14	
Moment Statistics	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis	
	1.43	0.37	0.63		-0.91	4.32	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



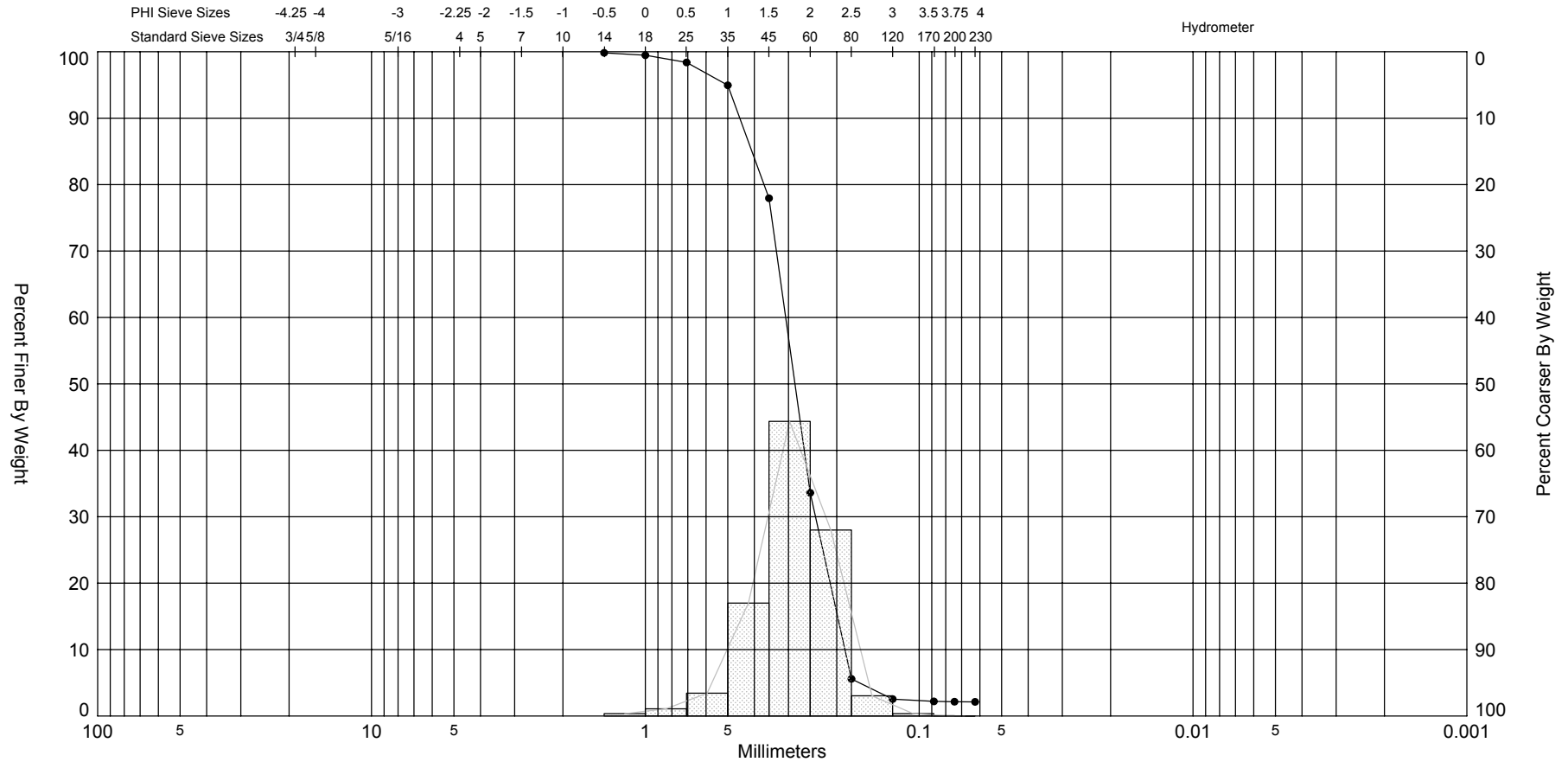
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-03	—●—		SP		7.57	17.49	1.55	1.43	-0.91	4.32	0.63	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-25-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	73,207
												Northing (ft):	1,070,514
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2005 CT-39054				Melbourne, FL 32934			
Sample Name: W1-T2-04				ph 321 254-2708			
Analysis Date: 10-27-05				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
74,551		1,070,168		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.16	29.42	0.00	-0.32	#200 - 2.15 #230 - 2.13	5.76	13.29	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
14	-0.50	1.41	0.05	0.16	0.05	0.16	
18	0.00	1.00	0.11	0.36	0.16	0.52	
25	0.50	0.71	0.33	1.09	0.48	1.61	
35	1.00	0.50	1.04	3.44	1.52	5.05	
45	1.50	0.35	5.13	17.00	6.65	22.05	
60	2.00	0.25	13.38	44.35	20.02	66.40	
80	2.50	0.18	8.45	28.01	28.47	94.41	
120	3.00	0.13	0.92	3.04	29.39	97.45	
170	3.50	0.09	0.11	0.35	29.50	97.80	
200	3.75	0.07	0.02	0.05	29.51	97.85	
230	4.00	0.06	0.01	0.02	29.52	97.87	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.60	2.31	2.15	1.82	1.53	1.32	0.99	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.78	0.29	0.48	-0.55	4.61		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



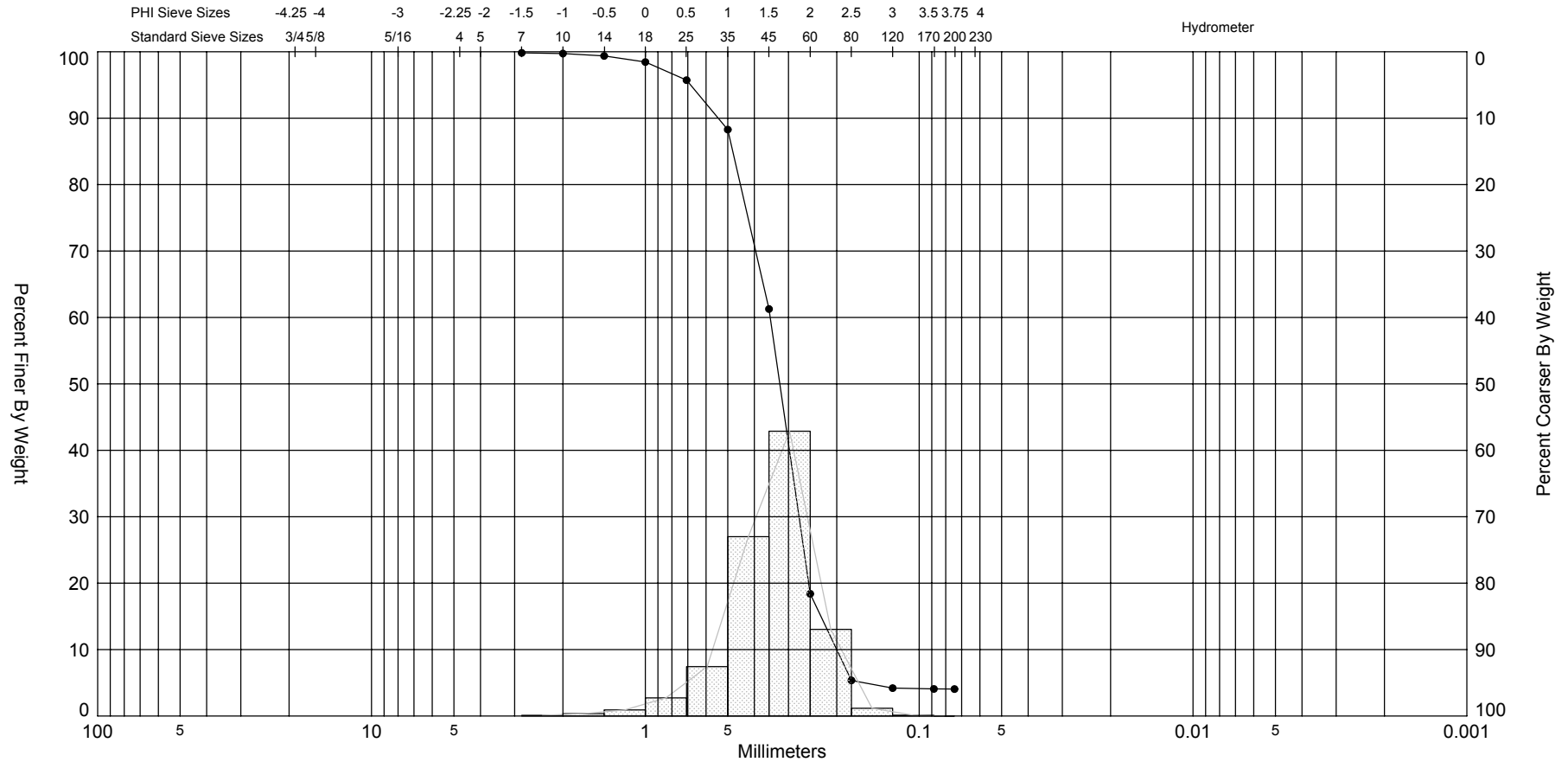
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-04	—●—		SP	#200 - 2.15 #230 - 2.13	5.76	13.29	1.82	1.78	-0.55	4.61	0.48	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-27-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	74,551
												Northing (ft):	1,070,168
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-05							
Analysis Date: 10-27-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
70,631		1,074,014		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.10	28.88	0.00	0.00	#200 - 4.06 #230 - 0.14	5.89	13.39	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.05	0.17	0.05	0.17	
10	-1.00	2.00	0.03	0.10	0.08	0.27	
14	-0.50	1.41	0.11	0.36	0.19	0.63	
18	0.00	1.00	0.28	0.92	0.47	1.55	
25	0.50	0.71	0.82	2.73	1.29	4.28	
35	1.00	0.50	2.24	7.44	3.53	11.72	
45	1.50	0.35	8.13	27.01	11.66	38.73	
60	2.00	0.25	12.90	42.87	24.56	81.60	
80	2.50	0.18	3.93	13.04	28.49	94.64	
120	3.00	0.13	0.35	1.16	28.84	95.80	
170	3.50	0.09	0.04	0.12	28.87	95.92	
200	3.75	0.07	0.01	0.02	28.88	95.94	
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.66	2.09	1.92	1.63	1.25	1.08	0.55	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.53	0.35	0.54	-0.91	5.39		



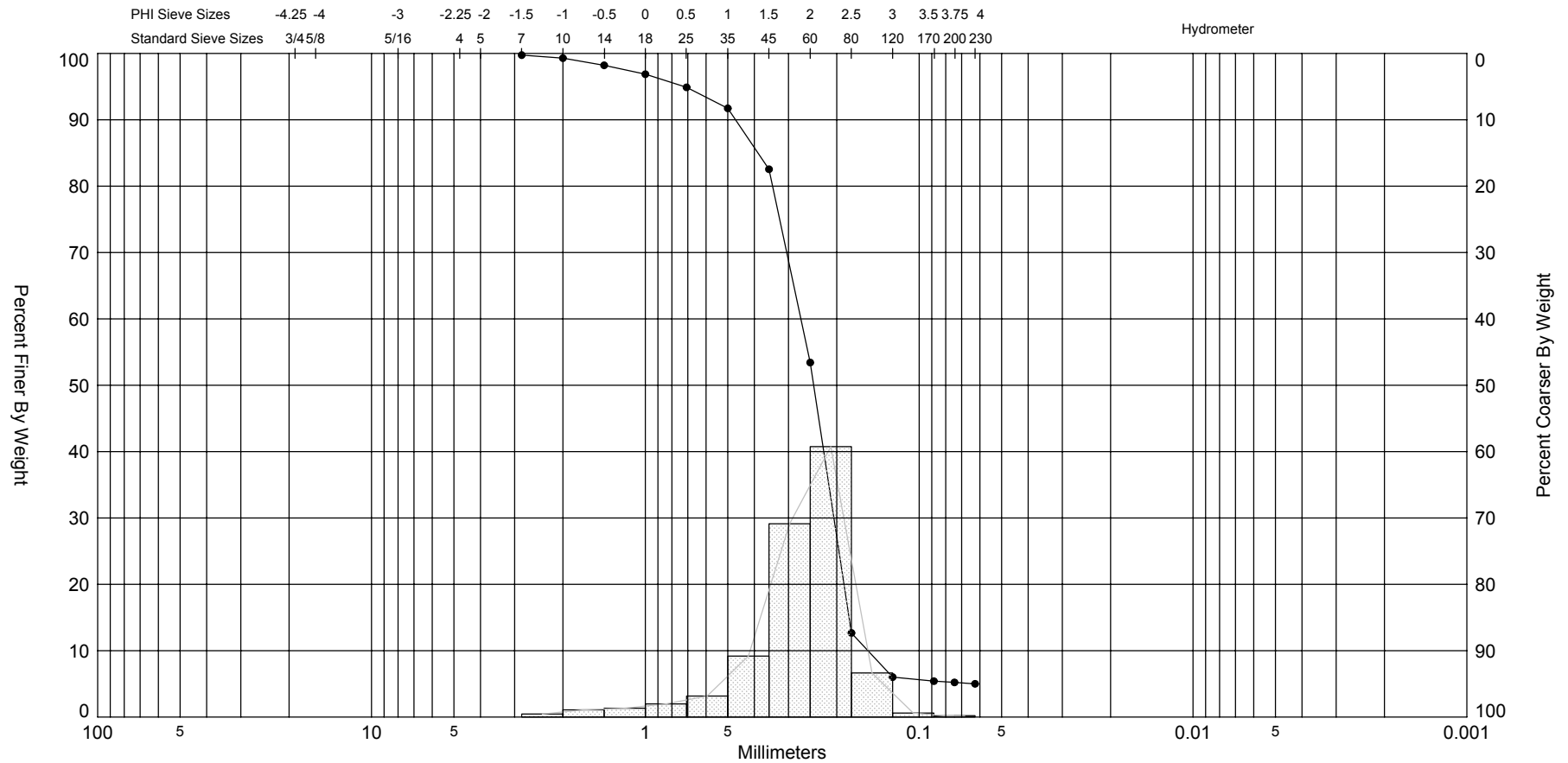
SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-06							
Analysis Date: 10-27-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
69,224		1,073,070		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.07	28.65	0.08	0.02	#200 - 5.22 #230 - 5.01	11.28	25.86	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.08	0.25	0.08	0.25	
10	-1.00	2.00	0.14	0.46	0.21	0.71	
14	-0.50	1.41	0.32	1.08	0.54	1.79	
18	0.00	1.00	0.40	1.34	0.94	3.13	
25	0.50	0.71	0.60	1.98	1.54	5.11	
35	1.00	0.50	0.95	3.16	2.49	8.27	
45	1.50	0.35	2.76	9.18	5.25	17.45	
60	2.00	0.25	8.76	29.13	14.01	46.58	
80	2.50	0.18	12.25	40.75	26.26	87.33	
120	3.00	0.13	2.00	6.65	28.26	93.98	
170	3.50	0.09	0.18	0.61	28.44	94.59	
200	3.75	0.07	0.06	0.19	28.50	94.78	
230	4.00	0.06	0.06	0.21	28.56	94.99	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	2.46	2.35	2.04	1.63	1.42	0.47	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.86	0.28	0.69	-1.59	7.22		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



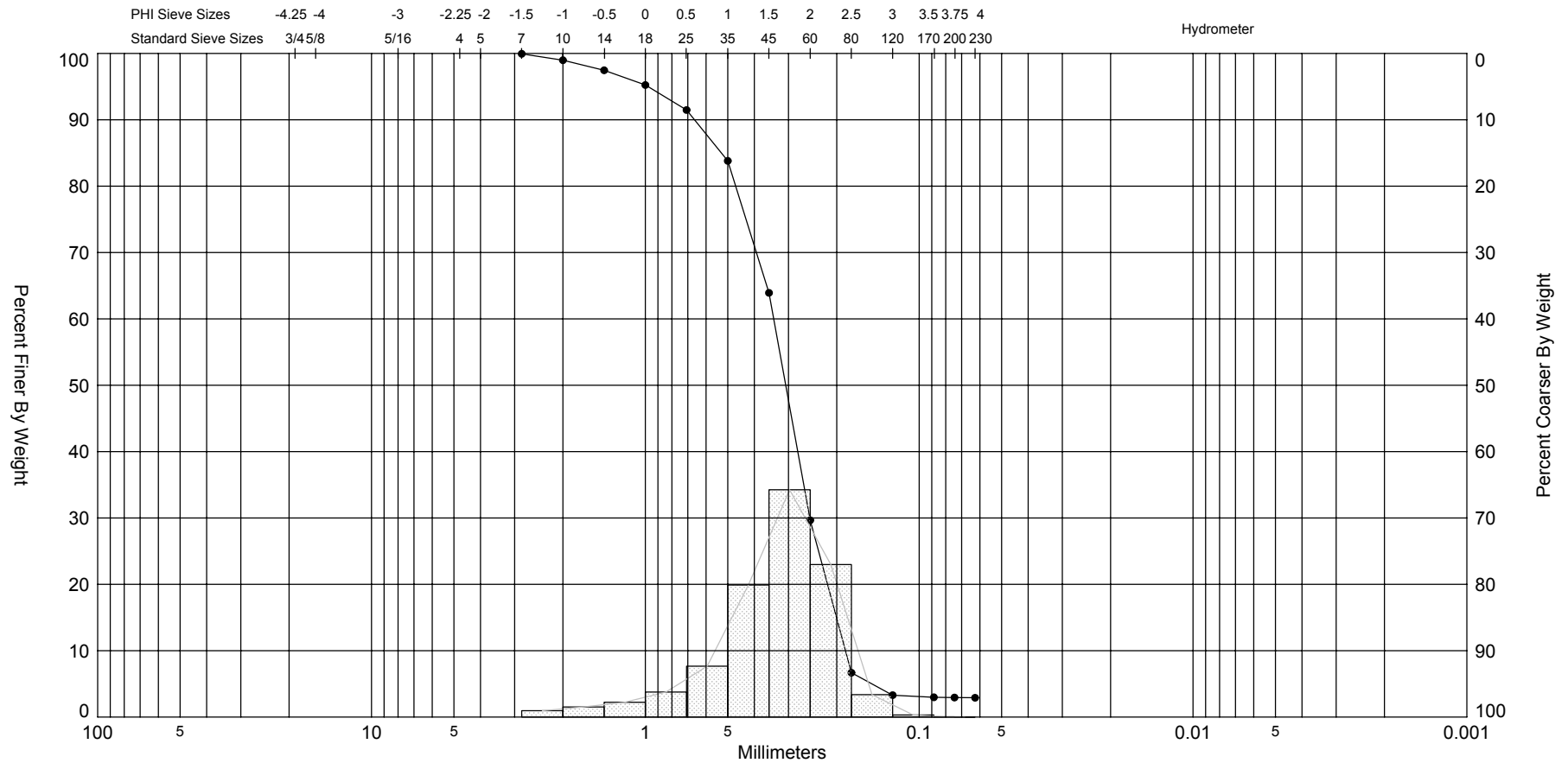
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-06	—●—		SP	#200 - 5.22 #230 - 5.01	11.28	25.86	2.04	1.86	-1.59	7.22	0.69	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-27-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications                      5575 Willoughby Drive                      Melbourne, FL 32934                      ph 321 254-2708                      fax 321 254-2708</p>												Easting (ft):	69,224
												Northing (ft):	1,073,070
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-07							
Analysis Date: 10-27-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
72,799		1,071,517		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.33	29.45	0.00	0.00	#200 - 2.94 #230 - 2.91	0.94	27.27	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.02	0.06	0.02	0.06	
10	-1.00	2.00	0.29	0.96	0.31	1.02	
14	-0.50	1.41	0.46	1.52	0.77	2.54	
18	0.00	1.00	0.67	2.22	1.44	4.76	
25	0.50	0.71	1.14	3.77	2.59	8.53	
35	1.00	0.50	2.32	7.66	4.91	16.19	
45	1.50	0.35	6.03	19.89	10.94	36.08	
60	2.00	0.25	10.39	34.26	21.33	70.34	
80	2.50	0.18	6.97	22.98	28.30	93.32	
120	3.00	0.13	1.03	3.38	29.33	96.70	
170	3.50	0.09	0.10	0.32	29.43	97.02	
200	3.75	0.07	0.01	0.04	29.44	97.06	
230	4.00	0.06	0.01	0.03	29.45	97.09	
(Large empty space for notes or additional data)							
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.75	2.30	2.10	1.70	1.22	0.99	0.03	
Moment Statistics	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis	
	1.55	0.34	0.75		-1.21	5.1	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



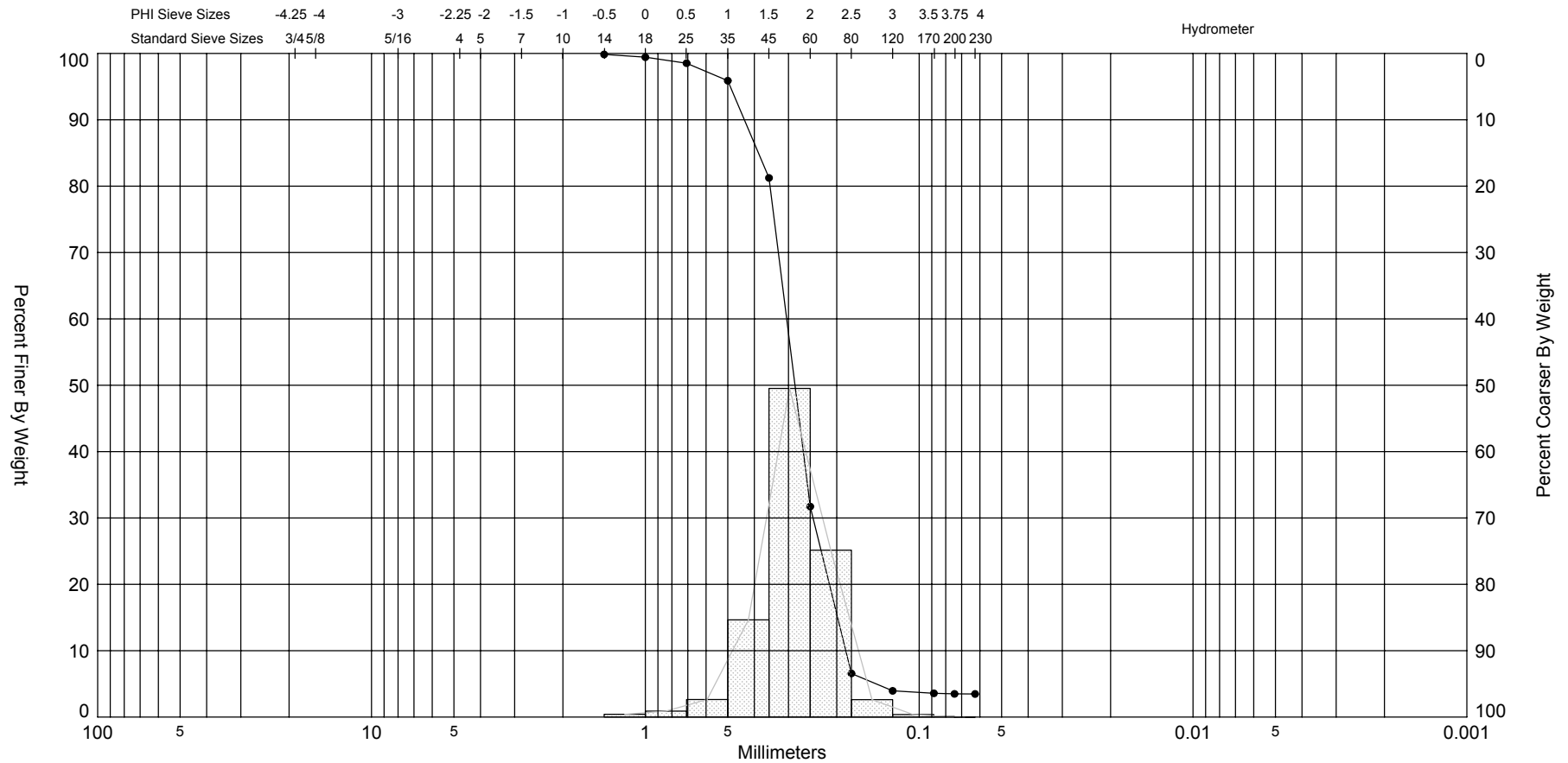
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-07	—●—		SP	#200 - 2.94 #230 - 2.91	0.94	27.27	1.7	1.55	-1.21	5.1	0.75	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-27-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	72,799
												Northing (ft):	1,071,517
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2005 CT-39054				Melbourne, FL 32934			
Sample Name: W1-T2-08				ph 321 254-2708			
Analysis Date: 10-30-05				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
73,890		1,068,959		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.42	29.42	0.00	0.17	#200 - 3.49	0.70	12.69	
				#230 - 3.48			
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
14	-0.50	1.41	0.05	0.15	0.05	0.15	
18	0.00	1.00	0.13	0.42	0.17	0.57	
25	0.50	0.71	0.28	0.90	0.45	1.47	
35	1.00	0.50	0.80	2.64	1.25	4.11	
45	1.50	0.35	4.46	14.65	5.71	18.76	
60	2.00	0.25	15.07	49.52	20.77	68.28	
80	2.50	0.18	7.65	25.15	28.42	93.43	
120	3.00	0.13	0.80	2.62	29.22	96.05	
170	3.50	0.09	0.11	0.37	29.33	96.42	
200	3.75	0.07	0.03	0.09	29.36	96.51	
230	4.00	0.06	0.00	0.01	29.36	96.52	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.80	2.31	2.13	1.82	1.56	1.41	1.03	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.79	0.29	0.45	-0.58	5.53		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

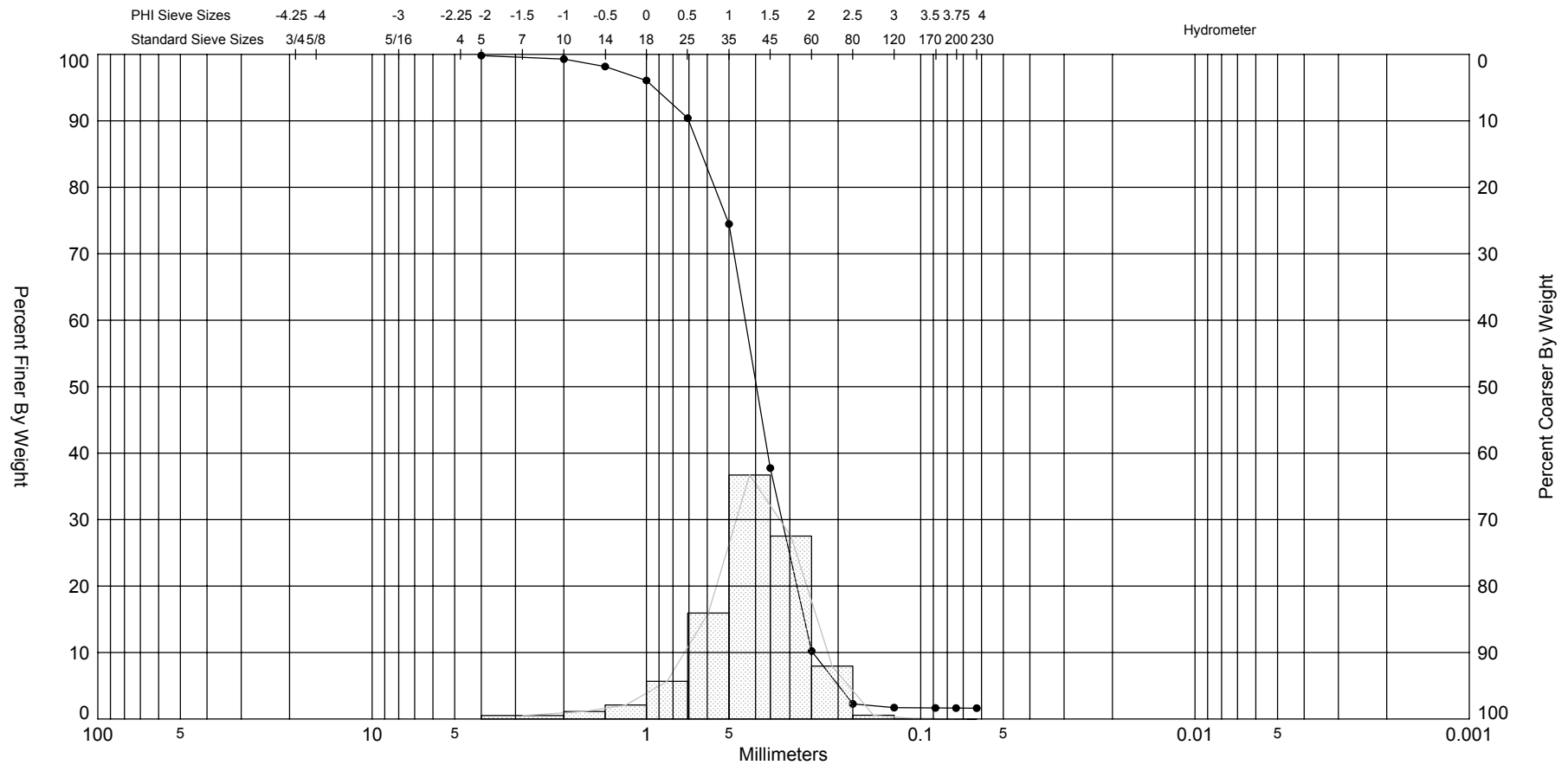
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-08	—●—		SP	#200 - 3.49 #230 - 3.48	0.70	12.69	1.82	1.79	-0.58	5.53	0.45	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	73,890
												Northing (ft):	1,068,959
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-09							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
68,524		1,075,463		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.42	30.07	0.00	0.51	#200 - 1.64 #230 - 1.63	0.53	15.88	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.06	0.18	0.06	0.18	
10	-1.00	2.00	0.16	0.53	0.22	0.71	
14	-0.50	1.41	0.34	1.12	0.56	1.83	
18	0.00	1.00	0.64	2.10	1.20	3.93	
25	0.50	0.71	1.72	5.66	2.92	9.59	
35	1.00	0.50	4.85	15.94	7.76	25.53	
45	1.50	0.35	11.17	36.71	18.93	62.24	
60	2.00	0.25	8.37	27.53	27.30	89.77	
80	2.50	0.18	2.42	7.96	29.72	97.73	
120	3.00	0.13	0.17	0.56	29.89	98.29	
170	3.50	0.09	0.02	0.05	29.91	98.34	
200	3.75	0.07	0.01	0.02	29.91	98.36	
230	4.00	0.06	0.00	0.01	29.92	98.37	
(Large empty space for notes or additional data)							
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.33	1.90	1.73	1.33	0.98	0.70	0.09	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.27	0.41	0.63	-0.91	5.17		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

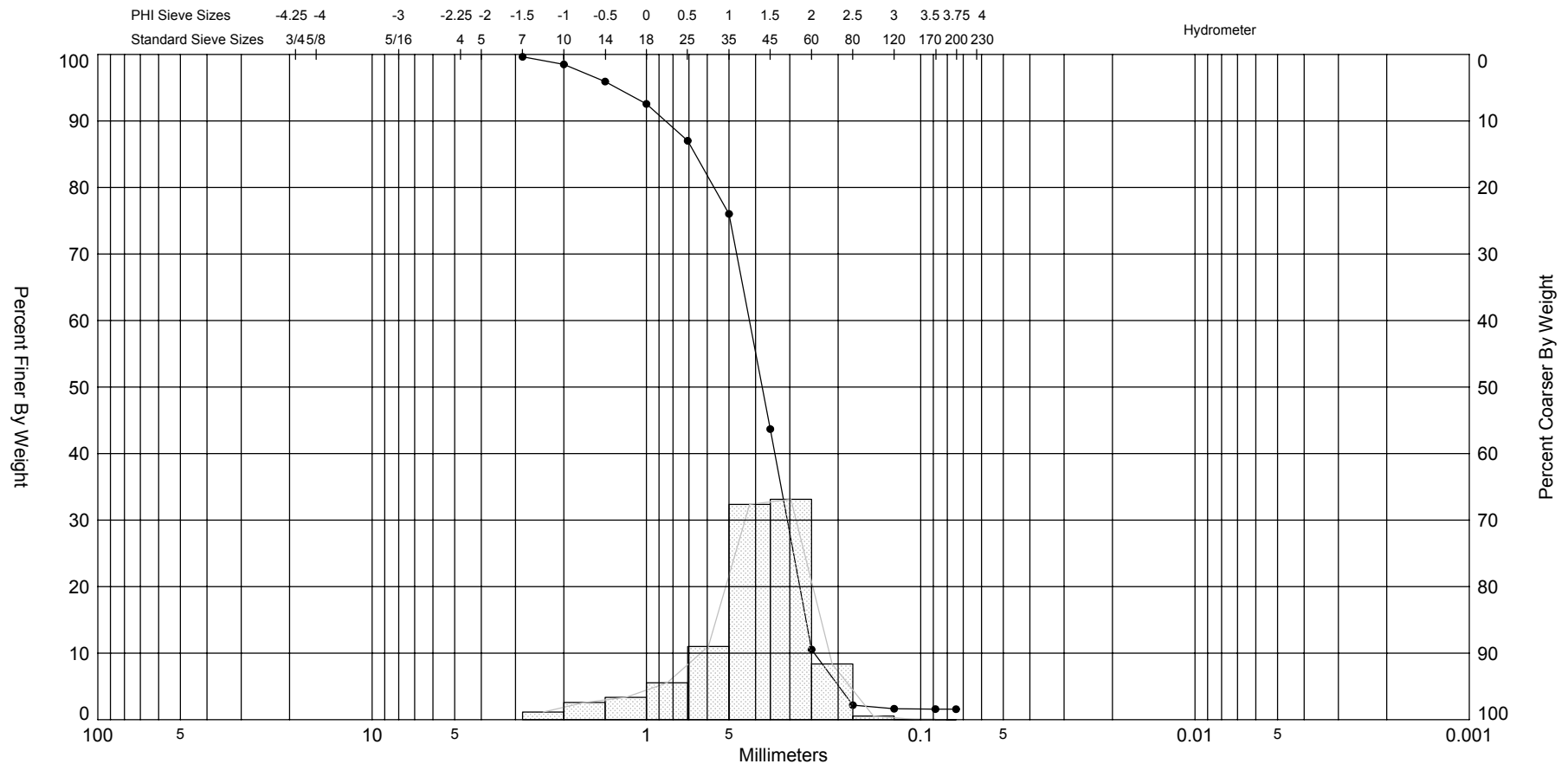


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-09	—●—		SP	#200 - 1.64 #230 - 1.63	0.53	15.88	1.33	1.27	-0.91	5.17	0.63	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	68,524
												Northing (ft):	1,075,463
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-10							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
72,174		1,070,562		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.53	30.22	0.00	0.55	#200 - 1.58	0.95	24.92	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.11	0.36	0.11	0.36	
10	-1.00	2.00	0.35	1.14	0.46	1.50	
14	-0.50	1.41	0.79	2.58	1.25	4.08	
18	0.00	1.00	1.03	3.36	2.27	7.44	
25	0.50	0.71	1.69	5.54	3.97	12.98	
35	1.00	0.50	3.35	10.99	7.32	23.97	
45	1.50	0.35	9.88	32.35	17.20	56.32	
60	2.00	0.25	10.12	33.13	27.31	89.45	
80	2.50	0.18	2.56	8.37	29.87	97.82	
120	3.00	0.13	0.17	0.54	30.03	98.36	
170	3.50	0.09	0.02	0.05	30.05	98.41	
200	3.75	0.07	0.00	0.01	30.05	98.42	
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.33	1.92	1.78	1.40	1.02	0.64	-0.36	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.26	0.42	0.72	-1.15	4.64		

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



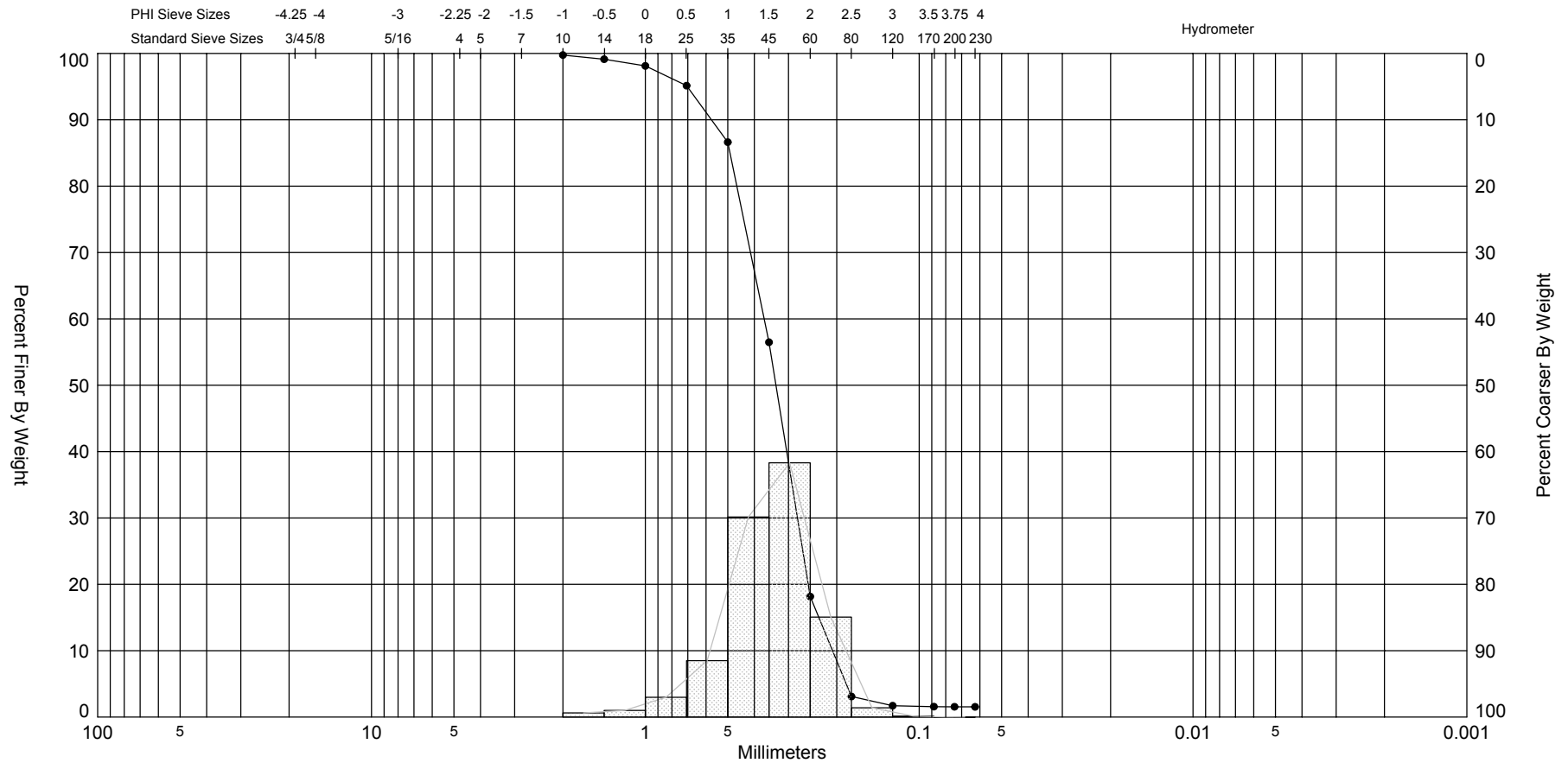
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-10	—●—		SP	#200 - 1.58	0.95	24.92	1.4	1.26	-1.15	4.64	0.72	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	72,174
												Northing (ft):	1,070,562
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2005 CT-39054				Melbourne, FL 32934			
Sample Name: W1-T2-11				ph 321 254-2708			
Analysis Date: 10-30-05				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
74,783		1,069,353		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.39	29.97	0.00	0.15	#200 - 1.55 #230 - 1.54	0.68	13.79	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.07	0.24	0.07	0.24	
14	-0.50	1.41	0.19	0.63	0.26	0.87	
18	0.00	1.00	0.31	1.01	0.57	1.88	
25	0.50	0.71	0.91	2.98	1.48	4.86	
35	1.00	0.50	2.59	8.51	4.06	13.37	
45	1.50	0.35	9.16	30.15	13.23	43.52	
60	2.00	0.25	11.65	38.32	24.87	81.84	
80	2.50	0.18	4.58	15.06	29.45	96.90	
120	3.00	0.13	0.42	1.39	29.87	98.29	
170	3.50	0.09	0.04	0.14	29.92	98.43	
200	3.75	0.07	0.01	0.02	29.92	98.45	
230	4.00	0.06	0.00	0.01	29.92	98.46	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.44	2.07	1.91	1.58	1.19	1.04	0.51	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.51	0.35	0.56	-0.75	4.73		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



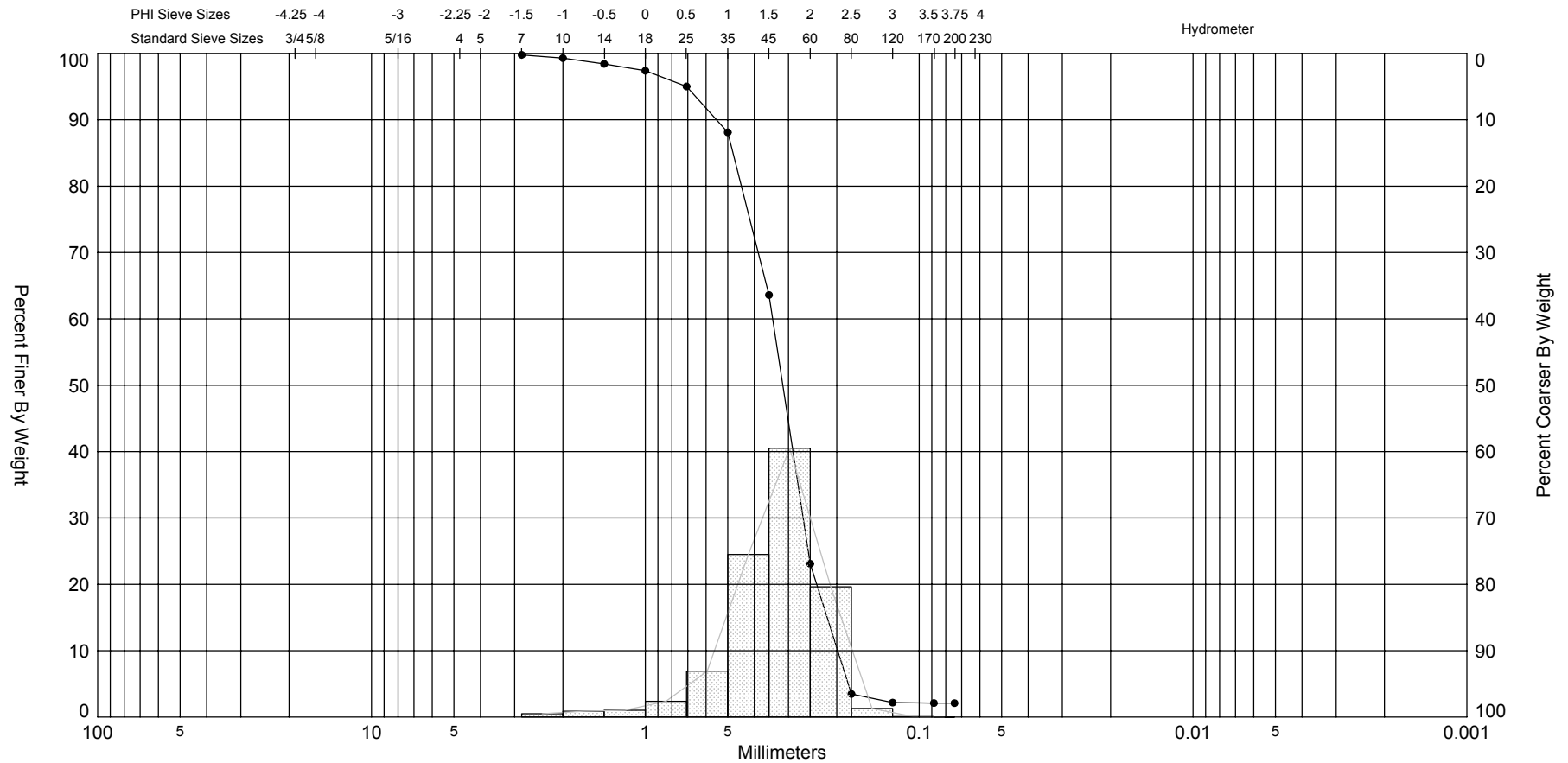
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-11	—●—		SP	#200 - 1.55 #230 - 1.54	0.68	13.79	1.58	1.51	-0.75	4.73	0.56	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	74,783
												Northing (ft):	1,069,353
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-12							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
72,092		1,072,764		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.68	30.10	0.00	0.19	#200 - 2.10	0.74	14.51	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.07	0.22	0.07	0.22	
10	-1.00	2.00	0.15	0.49	0.22	0.71	
14	-0.50	1.41	0.27	0.87	0.49	1.58	
18	0.00	1.00	0.32	1.03	0.80	2.61	
25	0.50	0.71	0.73	2.37	1.53	4.98	
35	1.00	0.50	2.12	6.91	3.65	11.89	
45	1.50	0.35	7.52	24.51	11.17	36.40	
60	2.00	0.25	12.43	40.51	23.60	76.91	
80	2.50	0.18	6.02	19.62	29.62	96.53	
120	3.00	0.13	0.40	1.29	30.02	97.82	
170	3.50	0.09	0.02	0.07	30.04	97.89	
200	3.75	0.07	0.00	0.01	30.04	97.90	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.46	2.18	1.98	1.67	1.27	1.08	0.50	
Moment Statistics	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis	
	1.57	0.34	0.6		-1.34	6.55	

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

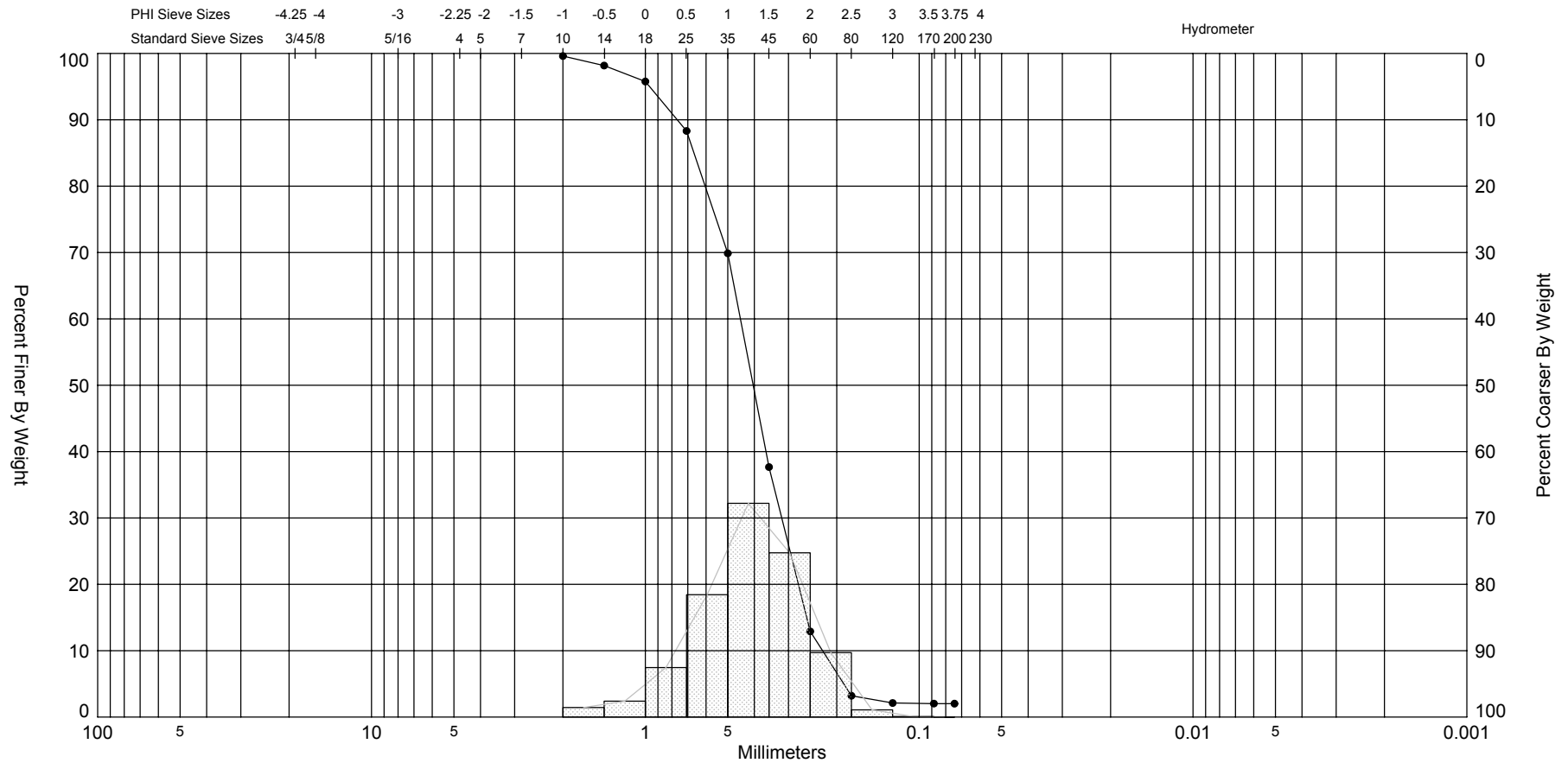
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-12	—●—		SP	#200 - 2.10	0.74	14.51	1.67	1.57	-1.34	6.55	0.6	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	72,092
												Northing (ft):	1,072,764
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-13							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
71,563		1,073,739		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.25	29.82	0.00	0.60	#200 - 2.02	0.97	29.94	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.12	0.39	0.12	0.39	
14	-0.50	1.41	0.44	1.44	0.55	1.83	
18	0.00	1.00	0.73	2.40	1.28	4.23	
25	0.50	0.71	2.26	7.45	3.53	11.68	
35	1.00	0.50	5.58	18.44	9.11	30.12	
45	1.50	0.35	9.74	32.21	18.85	62.33	
60	2.00	0.25	7.49	24.76	26.34	87.09	
80	2.50	0.18	2.93	9.70	29.28	96.79	
120	3.00	0.13	0.33	1.09	29.61	97.88	
170	3.50	0.09	0.03	0.09	29.63	97.97	
200	3.75	0.07	0.00	0.01	29.64	97.98	
<div style="display: flex; justify-content: space-between; width: 100%;"> <span>Phi 5</span> <span>Phi 16</span> <span>Phi 25</span> <span>Phi 50</span> <span>Phi 75</span> <span>Phi 84</span> <span>Phi 95</span> </div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>2.41</span> <span>1.94</span> <span>1.76</span> <span>1.31</span> <span>0.86</span> <span>0.62</span> <span>0.05</span> </div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Moment</span> <span>Mean Phi</span> <span>Mean mm</span> <span>Sorting</span> <span>Skewness</span> <span>Kurtosis</span> </div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Statistics</span> <span>1.25</span> <span>0.42</span> <span>0.65</span> <span>-0.43</span> <span>3.46</span> </div>							

GRANULOMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



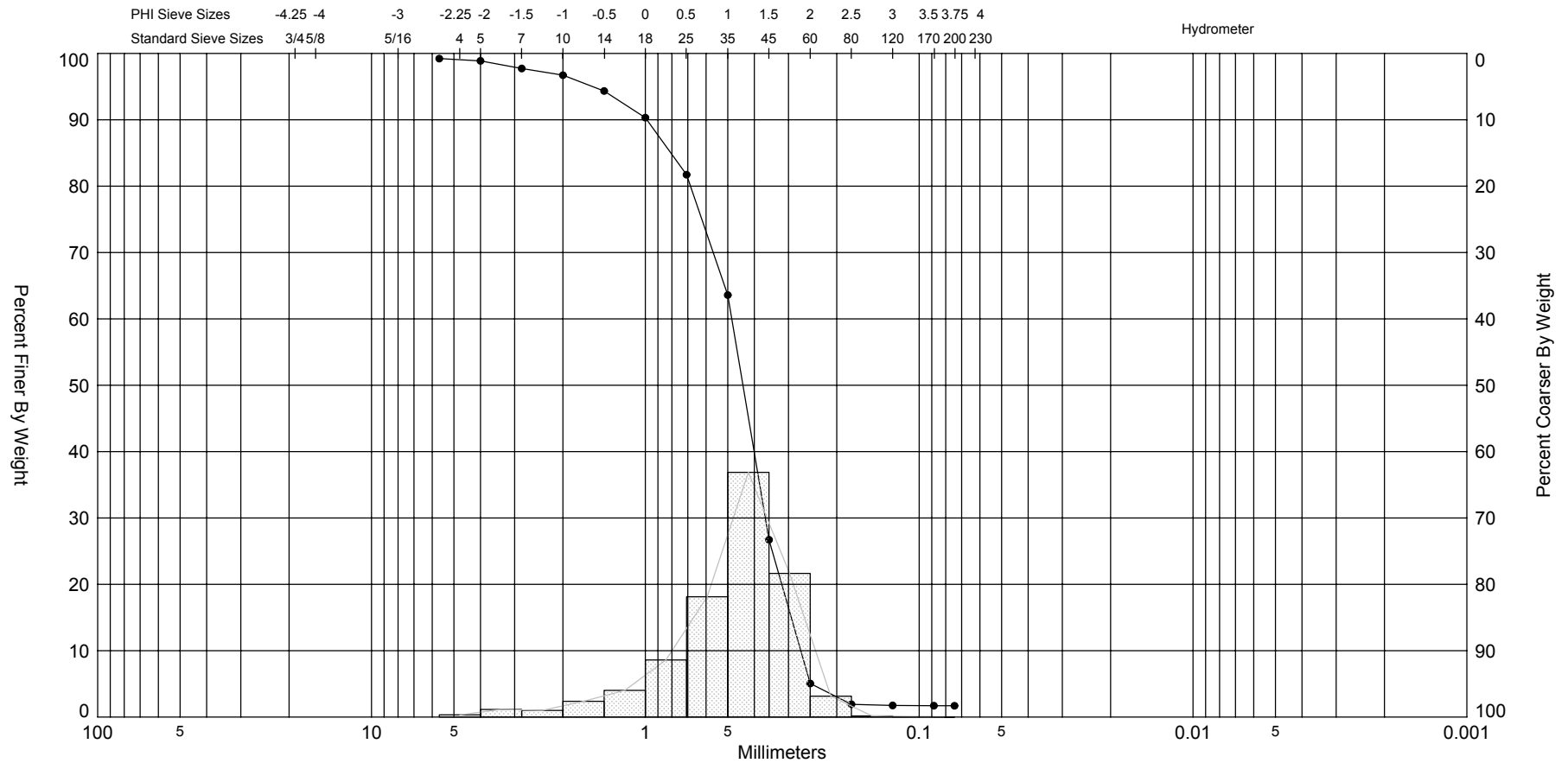
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-13	—●—		SP	#200 - 2.02	0.97	29.94	1.31	1.25	-0.43	3.46	0.65	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	71,563
												Northing (ft):	1,073,739
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-14							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
76,153		1,070,814		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.28	29.96	0.00	0.66	#200 - 1.70	0.90	25.16	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.24	0.78	0.24	0.78	
5	-2.00	4.00	0.10	0.34	0.34	1.12	
7	-1.50	2.83	0.35	1.15	0.69	2.27	
10	-1.00	2.00	0.31	1.01	0.99	3.28	
14	-0.50	1.41	0.72	2.38	1.71	5.66	
18	0.00	1.00	1.22	4.02	2.93	9.68	
25	0.50	0.71	2.60	8.60	5.53	18.28	
35	1.00	0.50	5.49	18.13	11.02	36.41	
45	1.50	0.35	11.17	36.88	22.19	73.29	
60	2.00	0.25	6.56	21.65	28.75	94.94	
80	2.50	0.18	0.95	3.14	29.70	98.08	
120	3.00	0.13	0.05	0.17	29.75	98.25	
170	3.50	0.09	0.01	0.04	29.76	98.29	
200	3.75	0.07	0.00	0.01	29.76	98.30	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.01	1.75	1.54	1.18	0.69	0.37	-0.64	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1	0.50	0.76	-1.25	5.5		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

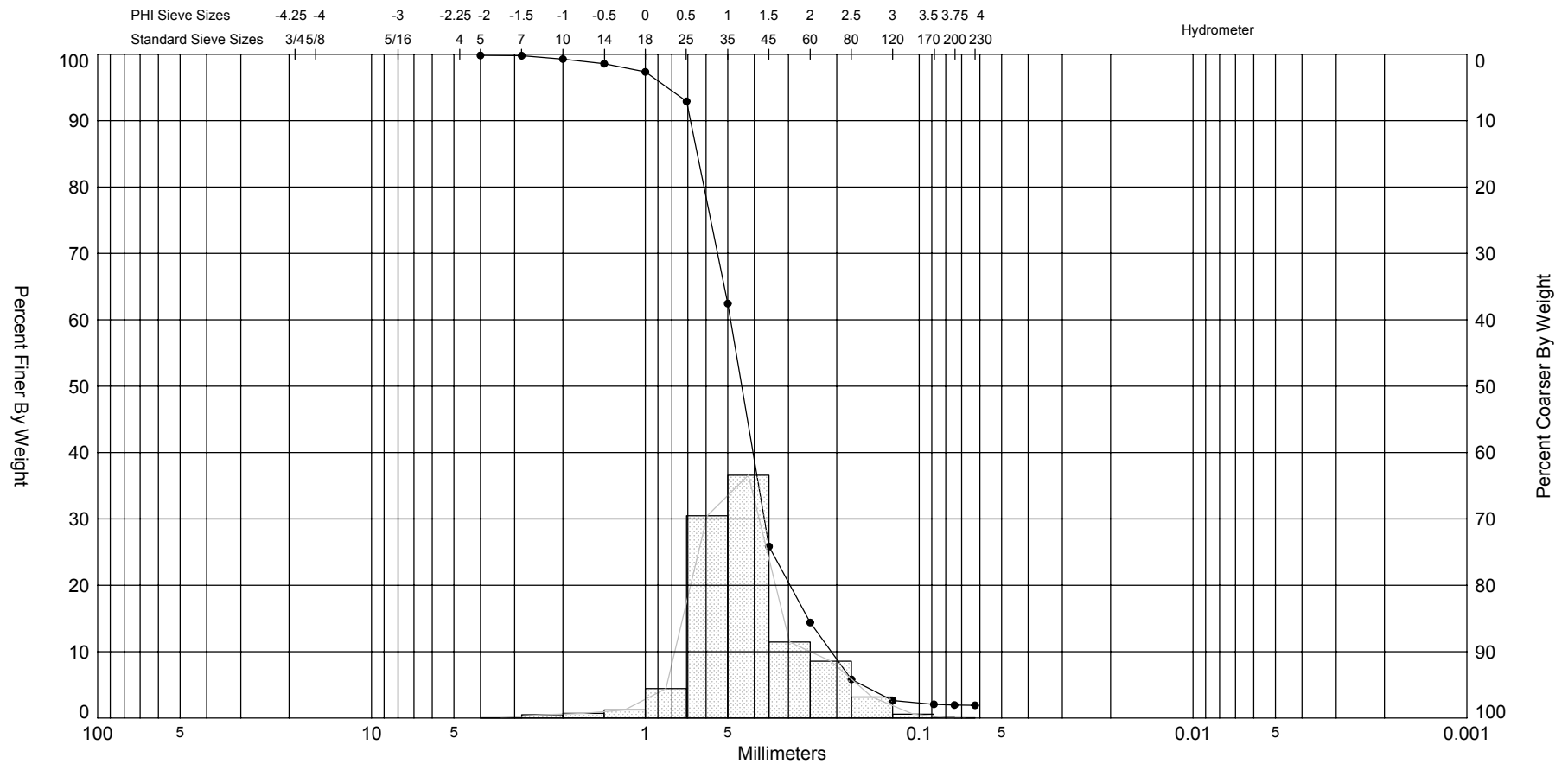
SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-15							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
72,846		1,073,229		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.11	29.71	0.01	0.53	#200 - 1.96 #230 - 1.92	0.96	22.75	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.05	0.17	0.05	0.17	
7	-1.50	2.83	0.01	0.04	0.06	0.21	
10	-1.00	2.00	0.15	0.51	0.21	0.72	
14	-0.50	1.41	0.21	0.70	0.42	1.42	
18	0.00	1.00	0.37	1.23	0.79	2.65	
25	0.50	0.71	1.34	4.44	2.13	7.09	
35	1.00	0.50	9.18	30.47	11.31	37.56	
45	1.50	0.35	11.02	36.59	22.32	74.15	
60	2.00	0.25	3.45	11.46	25.77	85.61	
80	2.50	0.18	2.58	8.57	28.36	94.18	
120	3.00	0.13	0.96	3.17	29.31	97.35	
170	3.50	0.09	0.18	0.58	29.49	97.93	
200	3.75	0.07	0.03	0.11	29.52	98.04	
230	4.00	0.06	0.01	0.04	29.53	98.08	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.63	1.93	1.54	1.17	0.79	0.65	0.26	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.21	0.43	0.66	0.22	4.67		

GRANULARMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

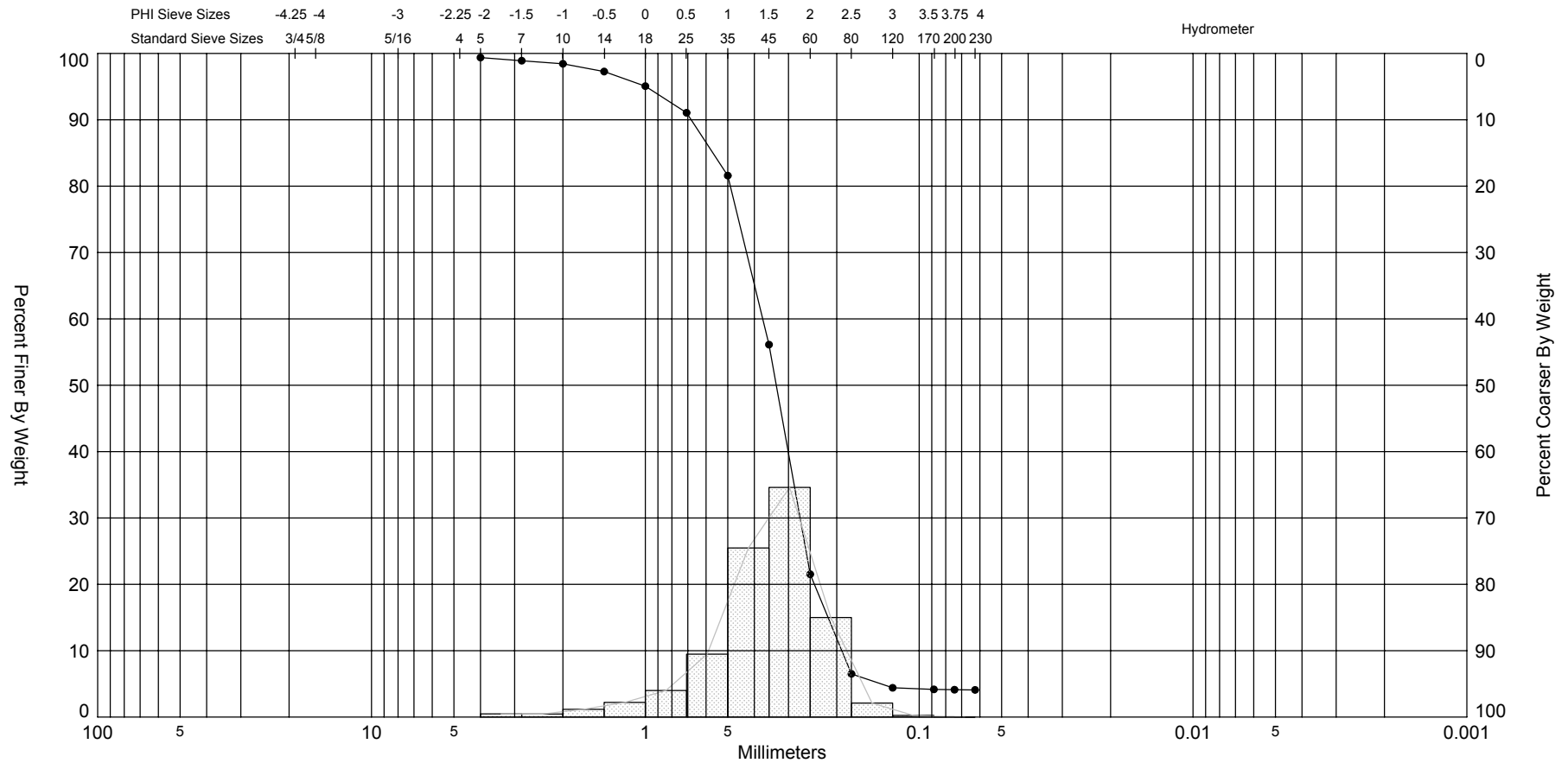


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-15	—●—		SP	#200 - 1.96 #230 - 1.92	0.96	22.75	1.17	1.21	0.22	4.67	0.66	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	72,846
												Northing (ft):	1,073,229
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07

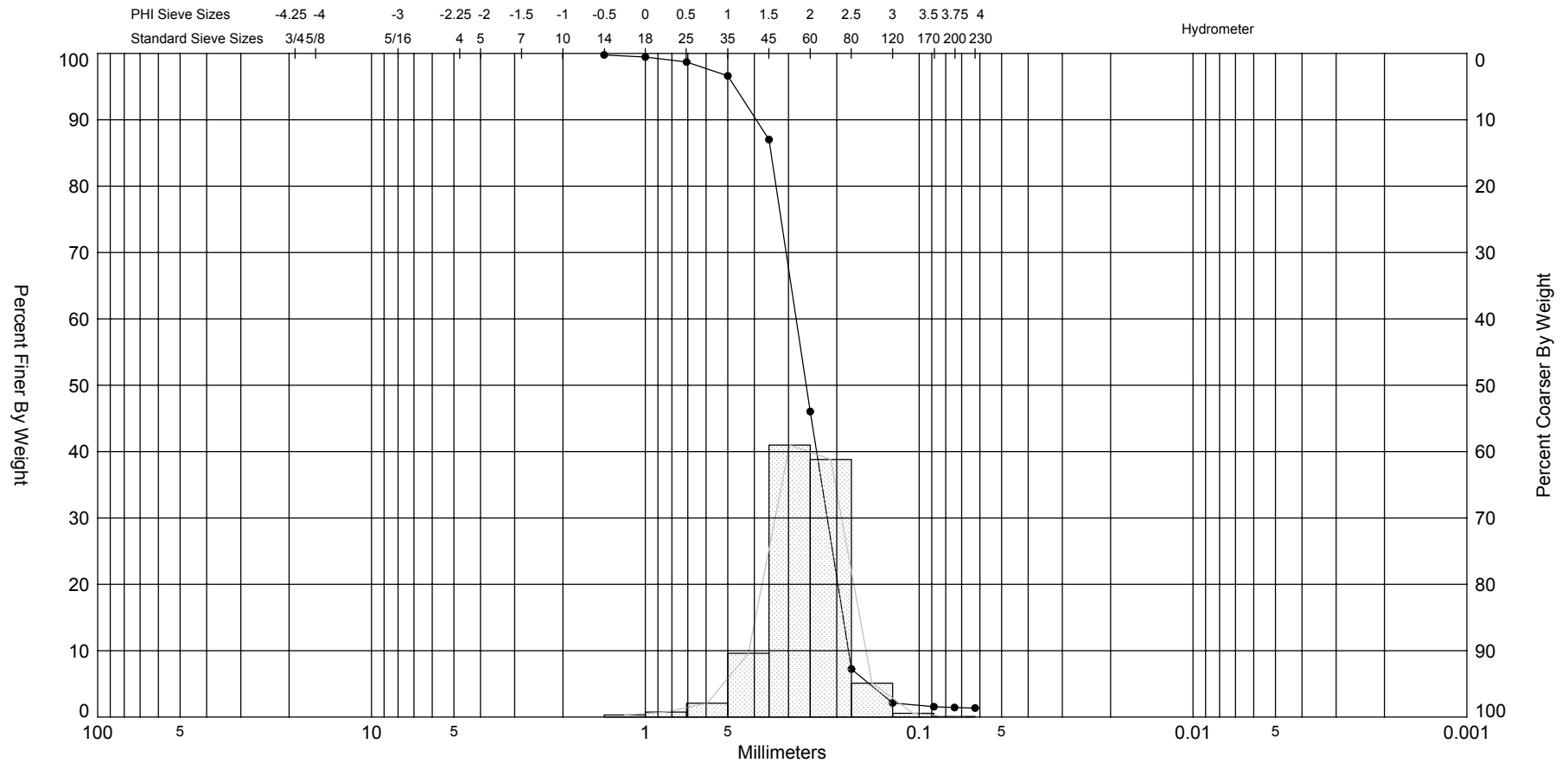


Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2005 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W1-T2-17							
Analysis Date: 10-30-05							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
66,552		1,074,375		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
30.10	29.74	0.01	0.15	#200 - 1.44 #230 - 1.36	0.86	19.46	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
14	-0.50	1.41	0.07	0.22	0.07	0.22	
18	0.00	1.00	0.10	0.32	0.16	0.54	
25	0.50	0.71	0.23	0.76	0.39	1.30	
35	1.00	0.50	0.63	2.08	1.02	3.38	
45	1.50	0.35	2.89	9.60	3.90	12.98	
60	2.00	0.25	12.34	40.98	16.24	53.96	
80	2.50	0.18	11.68	38.81	27.92	92.77	
120	3.00	0.13	1.54	5.10	29.46	97.87	
170	3.50	0.09	0.17	0.57	29.63	98.44	
200	3.75	0.07	0.04	0.12	29.67	98.56	
230	4.00	0.06	0.02	0.08	29.69	98.64	
<div style="display: flex; justify-content: space-between;"> <span>Phi 5</span> <span>Phi 16</span> <span>Phi 25</span> <span>Phi 50</span> <span>Phi 75</span> <span>Phi 84</span> <span>Phi 95</span> </div> <div style="display: flex; justify-content: space-between;"> <span>2.72</span> <span>2.39</span> <span>2.27</span> <span>1.95</span> <span>1.65</span> <span>1.54</span> <span>1.08</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Moment</span> <span>Mean Phi</span> <span>Mean mm</span> <span>Sorting</span> <span>Skewness</span> <span>Kurtosis</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Statistics</span> <span>1.92</span> <span>0.26</span> <span>0.47</span> <span>-0.63</span> <span>5.53</span> </div>							

GRANULOMETRIC REPORT MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



SIEVE ANALYSIS: MMS WEST FALL 05.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W1-T2-17	—●—		SP	#200 - 1.44 #230 - 1.36	0.86	19.46	1.95	1.92	-0.63	5.53	0.47	Project Name:	MMS - Field Study 2005 CT-39054
Comments:												Analysis Date:	10-30-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	66,552
												Northing (ft):	1,074,375
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



## **APPENDIX C**

### **Geologic Field Survey Data**

#### **C3. Granularmetric Report for the June 2006 Survey**





# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-S-02

Analysis Date: 09-08-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>69,113</b>	Northing (ft): <b>1,073,612</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>23.61</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.24</b>	Fines (%): #200 - 0.26 #230 - 0.23	Organics (%): <b>3.23</b>	Carbonates (%): <b>93.35</b>	Shells (%):
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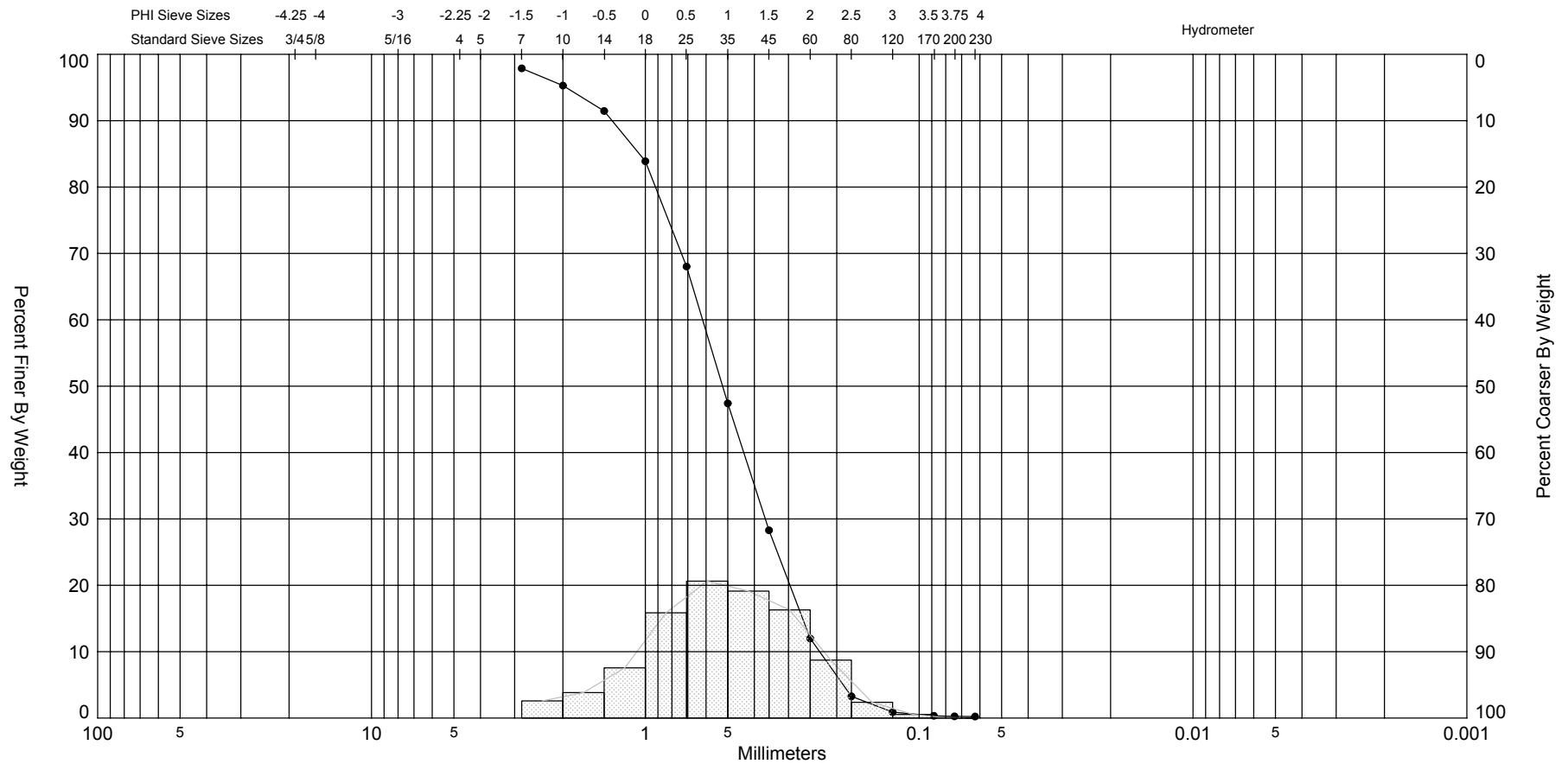
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.50	2.12	0.50	2.12
10	-1.00	2.00	0.61	2.59	1.11	4.71
14	-0.50	1.41	0.90	3.83	2.01	8.54
18	0.00	1.00	1.79	7.57	3.80	16.11
25	0.50	0.71	3.75	15.86	7.55	31.97
35	1.00	0.50	4.87	20.62	12.42	52.59
45	1.50	0.35	4.52	19.12	16.93	71.71
60	2.00	0.25	3.85	16.30	20.78	88.01
80	2.50	0.18	2.06	8.72	22.84	96.73
120	3.00	0.13	0.56	2.38	23.40	99.11
170	3.50	0.09	0.13	0.55	23.53	99.66
200	3.75	0.07	0.02	0.08	23.55	99.74
230	4.00	0.06	0.01	0.03	23.55	99.77

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.40	1.88	1.60	0.94	0.28	-0.01	-0.96
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	0.89	0.54	0.9	0.01	2.82	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



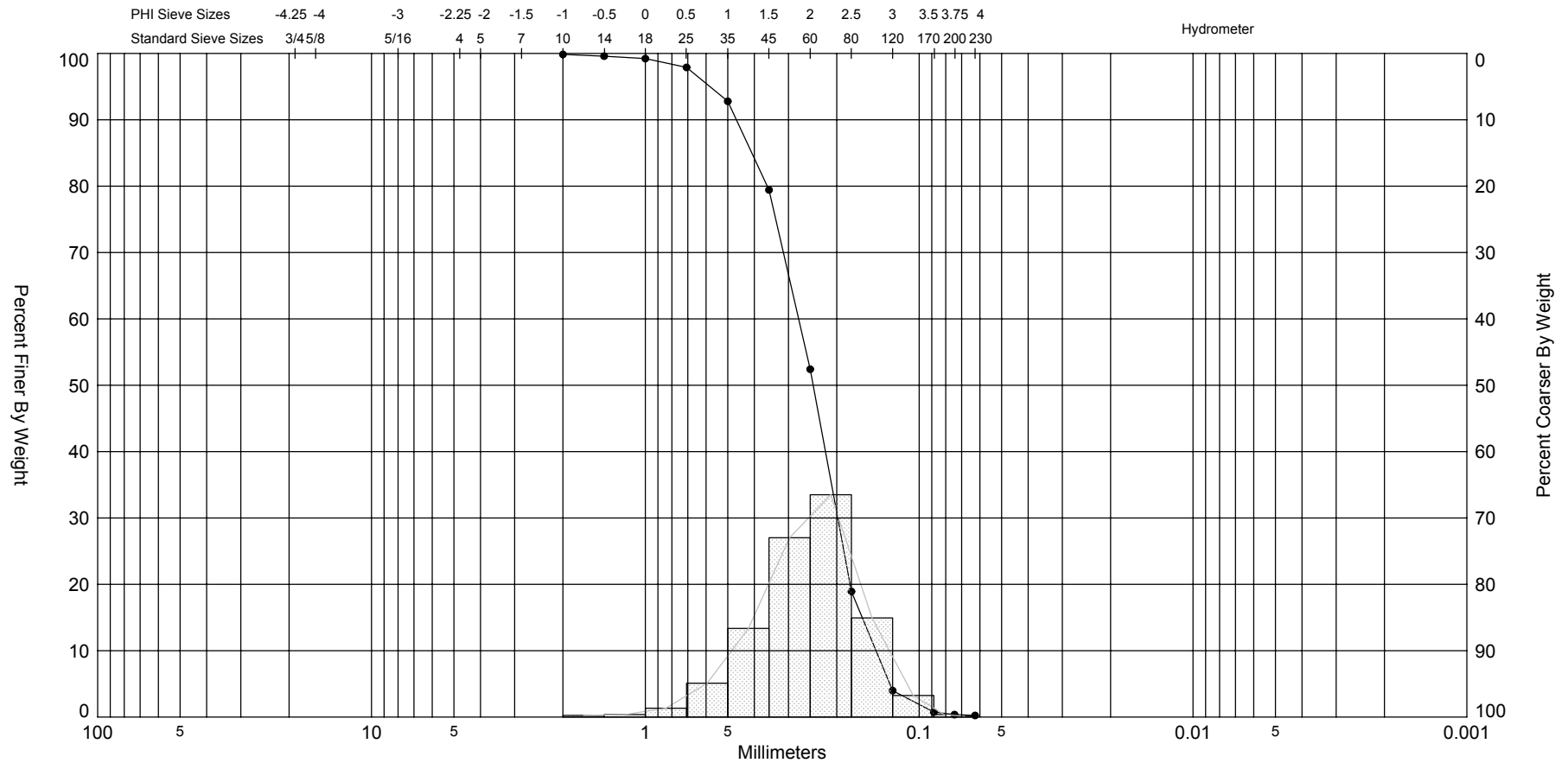
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-02	—●—		SP	#200 - 0.26 #230 - 0.23	3.23	93.35	0.94	0.89	0.01	2.82	0.9	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-08-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	69,113
												Northing (ft):	1,073,612
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-S-03							
Analysis Date: 09-08-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
68,556		1,075,117		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
45.78		0.04	0.27	#200 - 0.37 #230 - 0.24	1.83	63.90	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.07	0.15	0.07	0.15	
14	-0.50	1.41	0.12	0.26	0.19	0.41	
18	0.00	1.00	0.17	0.37	0.36	0.78	
25	0.50	0.71	0.61	1.33	0.96	2.11	
35	1.00	0.50	2.33	5.10	3.30	7.21	
45	1.50	0.35	6.12	13.36	9.41	20.57	
60	2.00	0.25	12.37	27.02	21.78	47.59	
80	2.50	0.18	15.33	33.49	37.11	81.08	
120	3.00	0.13	6.84	14.94	43.95	96.02	
170	3.50	0.09	1.48	3.24	45.43	99.26	
200	3.75	0.07	0.17	0.37	45.60	99.63	
230	4.00	0.06	0.06	0.13	45.66	99.76	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.97	2.60	2.41	2.04	1.58	1.33	0.78	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.97	0.26	0.65	-0.49	3.88		

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-03	—●—		SP	#200 - 0.37 #230 - 0.24	1.83	63.90	2.04	1.97	-0.49	3.88	0.65	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-08-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	68,556
												Northing (ft):	1,075,117
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-S-04

Analysis Date: 09-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>67,380</b>	Northing (ft): <b>1,075,467</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>39.59</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.58</b>	Fines (%): #200 - 0.05 #230 - 0.02	Organics (%): <b>2.51</b>	Carbonates (%): <b>88.29</b>	Shells (%):
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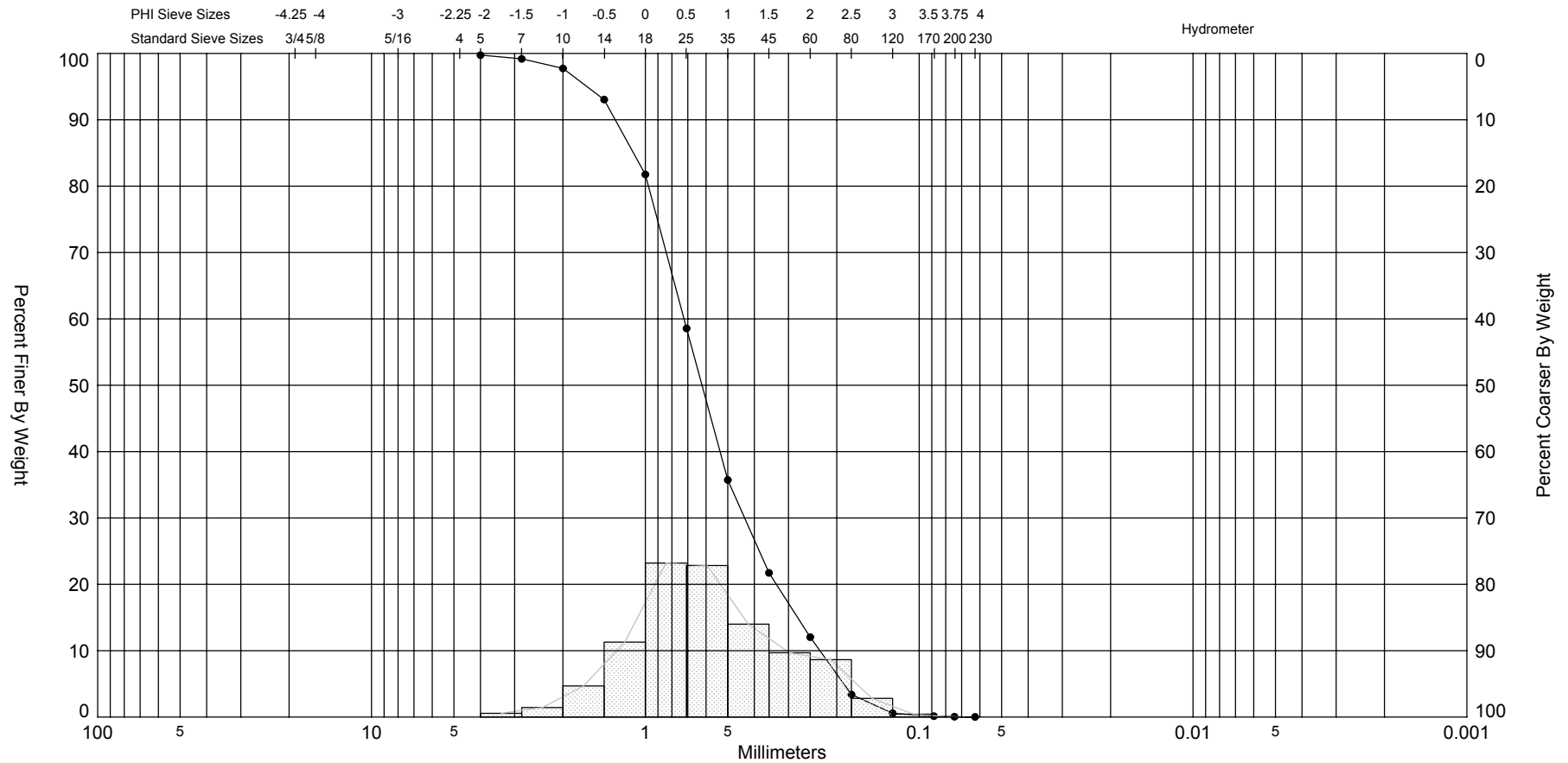
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.10	0.26	0.10	0.26
7	-1.50	2.83	0.22	0.56	0.33	0.82
10	-1.00	2.00	0.57	1.44	0.90	2.26
14	-0.50	1.41	1.86	4.69	2.75	6.95
18	0.00	1.00	4.47	11.29	7.22	18.24
25	0.50	0.71	9.18	23.20	16.40	41.44
35	1.00	0.50	9.04	22.83	25.44	64.27
45	1.50	0.35	5.54	14.00	30.98	78.27
60	2.00	0.25	3.84	9.69	34.82	87.96
80	2.50	0.18	3.42	8.65	38.25	96.61
120	3.00	0.13	1.12	2.82	39.36	99.43
170	3.50	0.09	0.17	0.43	39.53	99.86
200	3.75	0.07	0.04	0.09	39.57	99.95
230	4.00	0.06	0.01	0.03	39.58	99.98

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.41	1.80	1.38	0.69	0.15	-0.10	-0.71
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.77	0.59	0.92	0.24	2.87	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-04	—●—		SP	#200 - 0.05 #230 - 0.02	2.51	88.29	0.69	0.77	0.24	2.87	0.92	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-02-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	67,380
												Northing (ft):	1,075,467
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-S-05							
Analysis Date: 09-08-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
72,405		1,070,873		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
26.54		0.52	0.24	#200 - 4.40 #230 - 1.97	1.78	50.81	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.03	0.09	0.03	0.09	
10	-1.00	2.00	0.01	0.02	0.03	0.11	
14	-0.50	1.41	0.05	0.18	0.08	0.29	
18	0.00	1.00	0.08	0.31	0.16	0.60	
25	0.50	0.71	0.18	0.67	0.34	1.27	
35	1.00	0.50	0.28	1.04	0.62	2.31	
45	1.50	0.35	0.67	2.53	1.29	4.84	
60	2.00	0.25	2.55	9.59	3.83	14.43	
80	2.50	0.18	3.90	14.70	7.73	29.13	
120	3.00	0.13	6.50	24.48	14.23	53.61	
170	3.50	0.09	8.53	32.12	22.76	85.73	
200	3.75	0.07	2.62	9.87	25.38	95.60	
230	4.00	0.06	0.65	2.43	26.02	98.03	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.73	3.47	3.33	2.93	2.36	2.05	1.51	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.76	0.15	0.72	-1.17	5.09		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-S-06

Analysis Date: 09-08-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>68,859</b>	Northing (ft): <b>1,075,525</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>39.97</b>	Wash Weight (g):	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): #200 - 0.23 #230 - 0.20	Organics (%): <b>2.42</b>	Carbonates (%): <b>81.47</b>	Shells (%):
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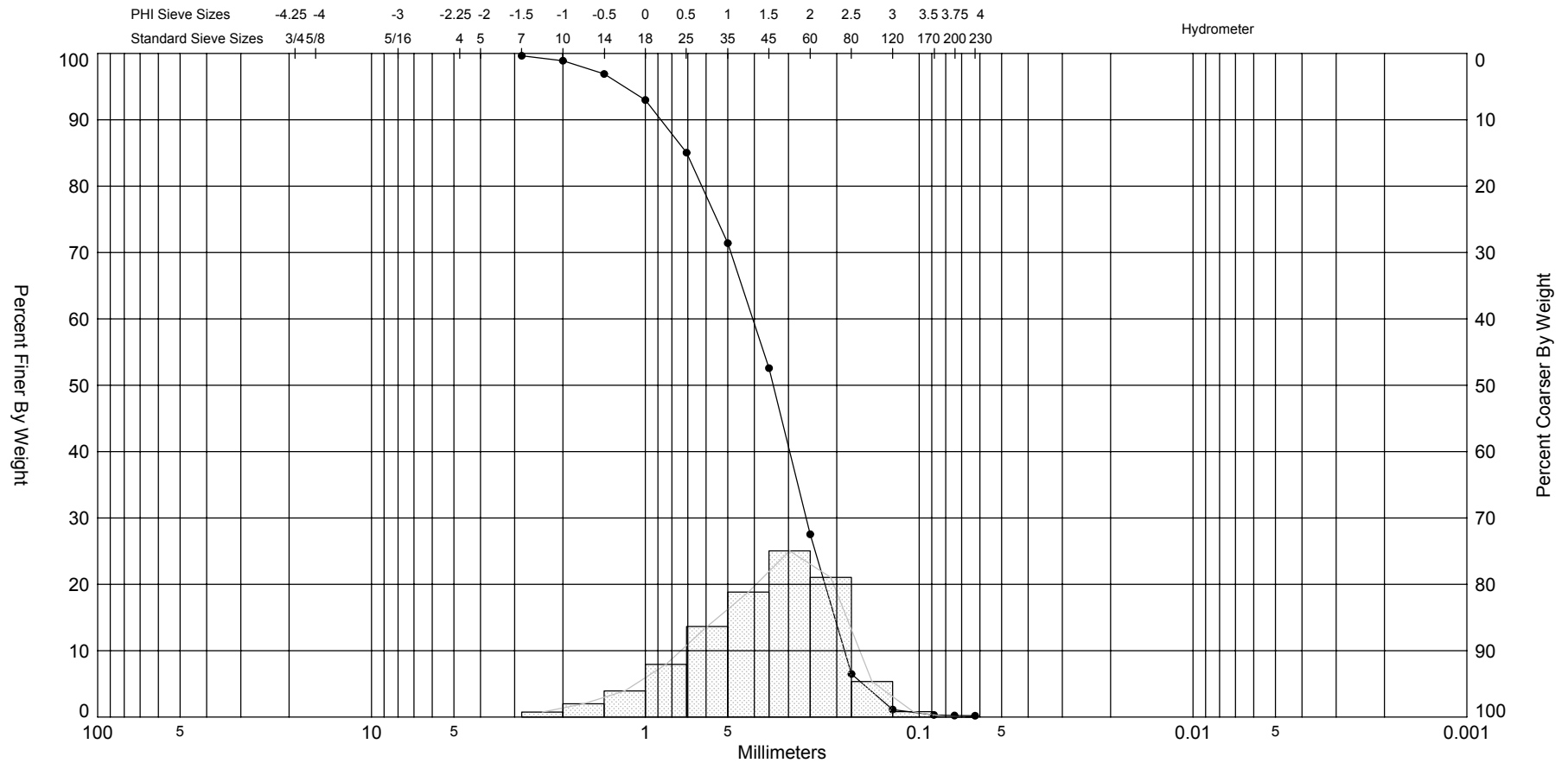
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.14	0.35	0.14	0.35
10	-1.00	2.00	0.30	0.75	0.44	1.10
14	-0.50	1.41	0.80	1.99	1.24	3.09
18	0.00	1.00	1.57	3.93	2.81	7.02
25	0.50	0.71	3.17	7.93	5.97	14.95
35	1.00	0.50	5.45	13.64	11.42	28.59
45	1.50	0.35	7.52	18.83	18.95	47.42
60	2.00	0.25	10.01	25.04	28.95	72.46
80	2.50	0.18	8.41	21.05	37.37	93.51
120	3.00	0.13	2.14	5.36	39.51	98.87
170	3.50	0.09	0.32	0.81	39.83	99.68
200	3.75	0.07	0.03	0.09	39.86	99.77
230	4.00	0.06	0.01	0.03	39.88	99.80

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.64	2.27	2.06	1.55	0.87	0.54	-0.26
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.41	0.38	0.86	-0.57	3.13	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-06	—●—		SP	#200 - 0.23 #230 - 0.20	2.42	81.47	1.55	1.41	-0.57	3.13	0.86	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-08-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	68,859
												Northing (ft):	1,075,525
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-S-07

Analysis Date: 09-11-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>72,274</b>	Northing (ft): <b>1,070,450</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>19.80</b>	Wash Weight (g): <b>17.16</b>	Pan Retained (g): <b>0.15</b>	Sieve Loss (%): <b>0.35</b>	Fines (%): #200 - <b>31.46</b> #230 - <b>14.39</b>	Organics (%): <b>1.63</b>	Carbonates (%): <b>48.24</b>	Shells (%):
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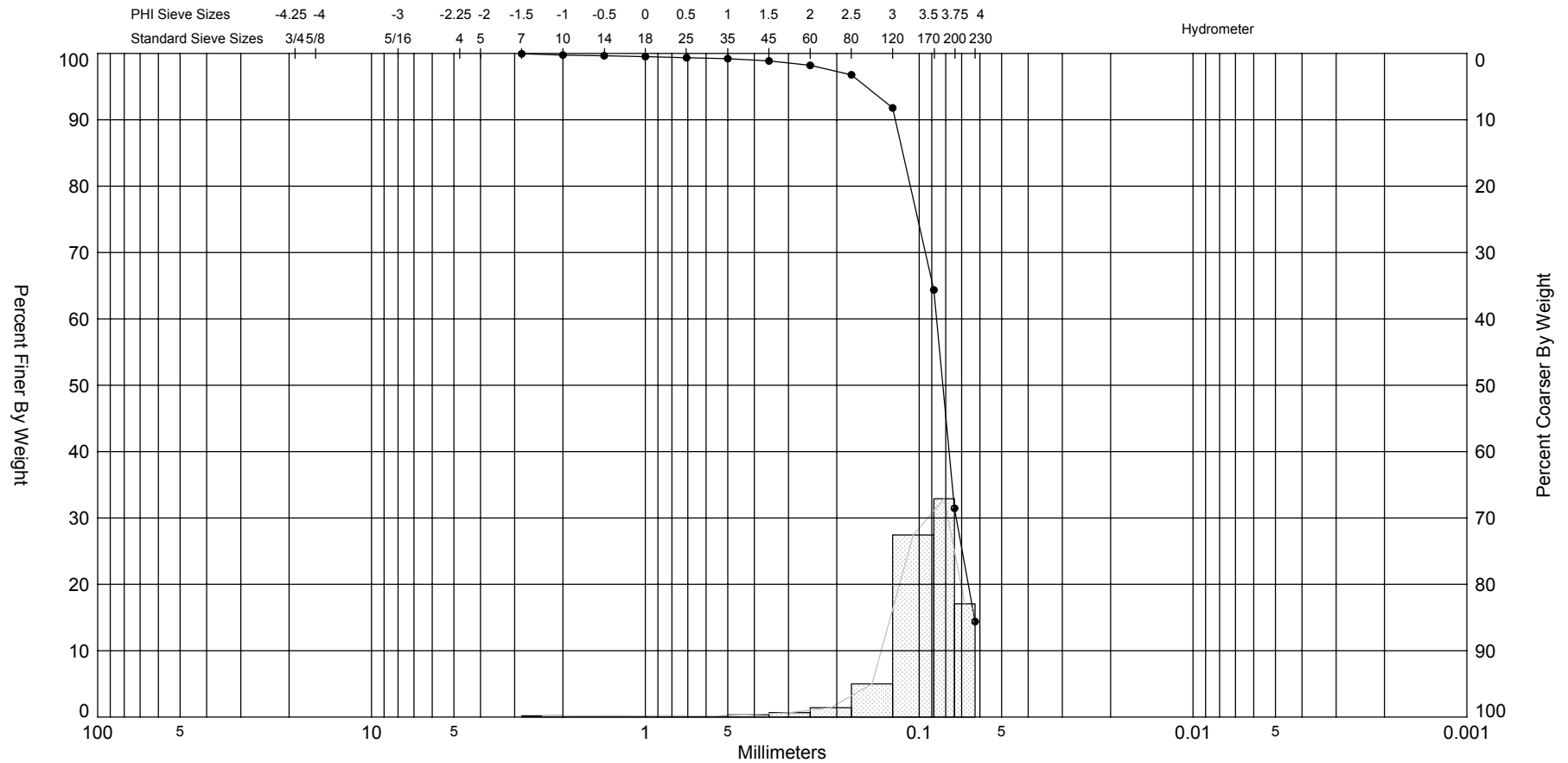
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.01	0.05	0.01	0.05
10	-1.00	2.00	0.04	0.19	0.05	0.24
14	-0.50	1.41	0.02	0.11	0.07	0.35
18	0.00	1.00	0.03	0.13	0.09	0.48
25	0.50	0.71	0.03	0.17	0.13	0.65
35	1.00	0.50	0.03	0.14	0.15	0.79
45	1.50	0.35	0.07	0.34	0.22	1.13
60	2.00	0.25	0.13	0.67	0.35	1.80
80	2.50	0.18	0.28	1.42	0.63	3.22
120	3.00	0.13	0.99	4.99	1.62	8.21
170	3.50	0.09	5.43	27.43	7.05	35.64
200	3.75	0.07	6.51	32.90	13.57	68.54
230	4.00	0.06	3.38	17.07	16.95	85.61

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.98	3.84	3.61	3.31	3.14	2.68
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	3.42	0.09	0.53	-4	28.34	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



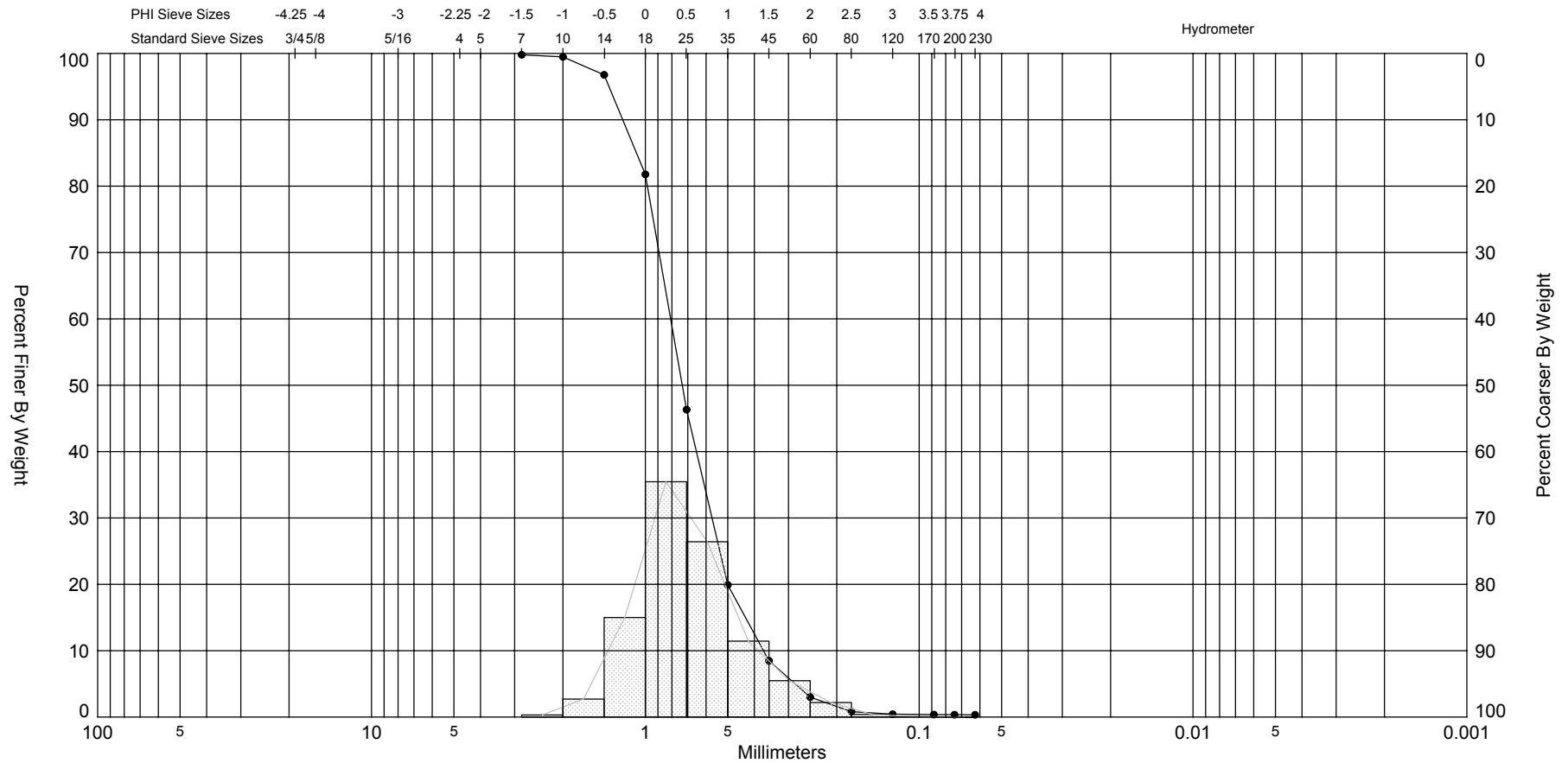
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-07	—●—		SP	#200 - 31.46 #230 - 14.39	1.63	48.24	3.61	3.42	-4	28.34	0.53	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	72,274
												Northing (ft):	1,070,450
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



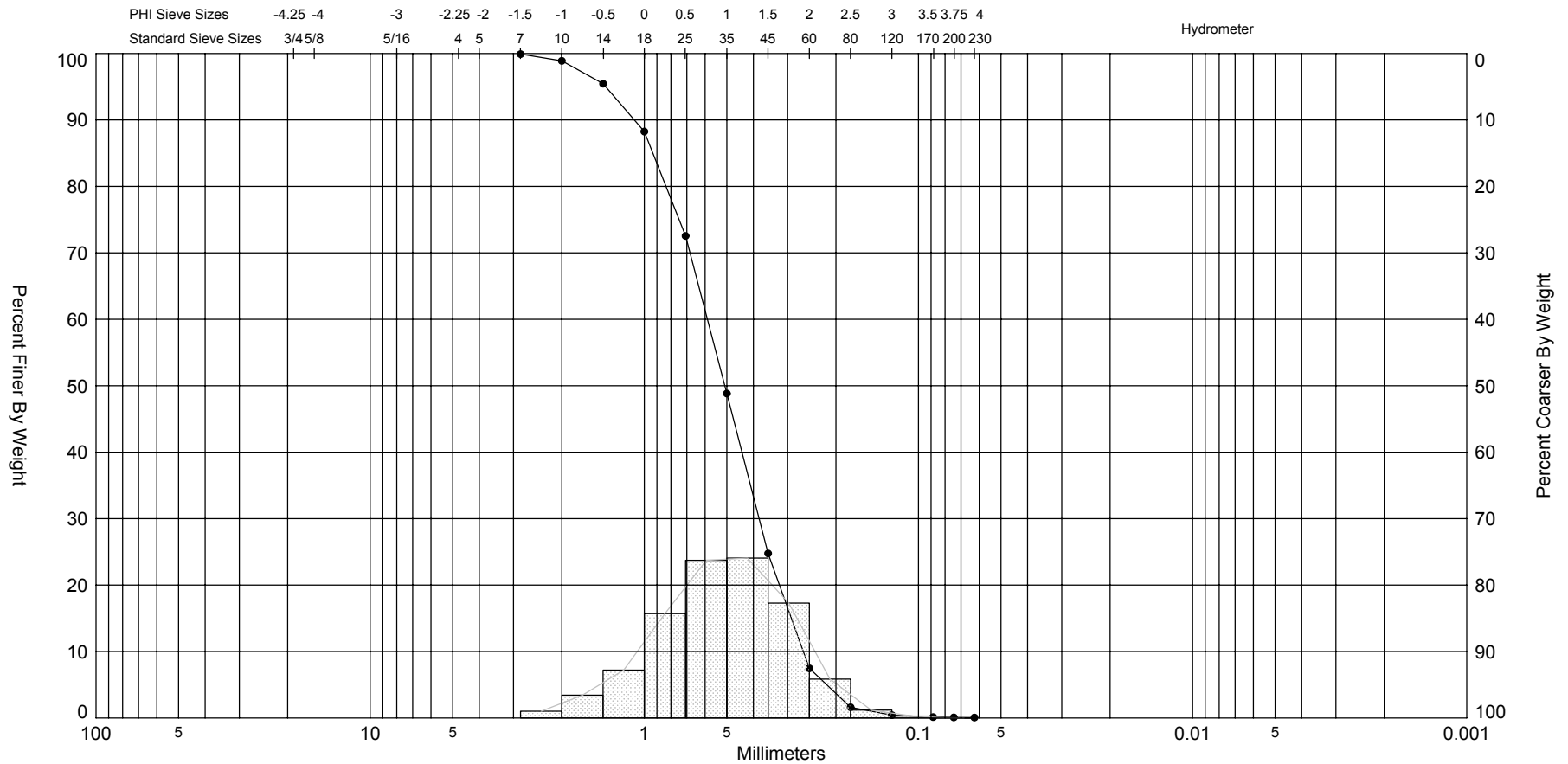
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-08	—●—		SP	#200 - 0.35 #230 - 0.34	2.70	93.69	0.45	0.52	0.63	3.78	0.65	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-08-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	69,637
												Northing (ft):	1,074,640
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-S-09							
Analysis Date: 09-08-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
73,351		1,070,726		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
43.42		0.01	0.99	#200 - 0.09 #230 - 0.07	2.74	90.31	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.04	0.09	0.04	0.09	
10	-1.00	2.00	0.44	1.02	0.48	1.11	
14	-0.50	1.41	1.49	3.43	1.97	4.54	
18	0.00	1.00	3.13	7.21	5.10	11.75	
25	0.50	0.71	6.82	15.70	11.92	27.45	
35	1.00	0.50	10.30	23.72	22.22	51.17	
45	1.50	0.35	10.45	24.07	32.67	75.24	
60	2.00	0.25	7.51	17.29	40.18	92.53	
80	2.50	0.18	2.55	5.86	42.72	98.39	
120	3.00	0.13	0.51	1.18	43.23	99.57	
170	3.50	0.09	0.12	0.29	43.36	99.86	
200	3.75	0.07	0.02	0.05	43.38	99.91	
230	4.00	0.06	0.01	0.02	43.39	99.93	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.21	1.75	1.50	0.98	0.42	0.14	-0.47	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.94	0.52	0.79	-0.19	3.01		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

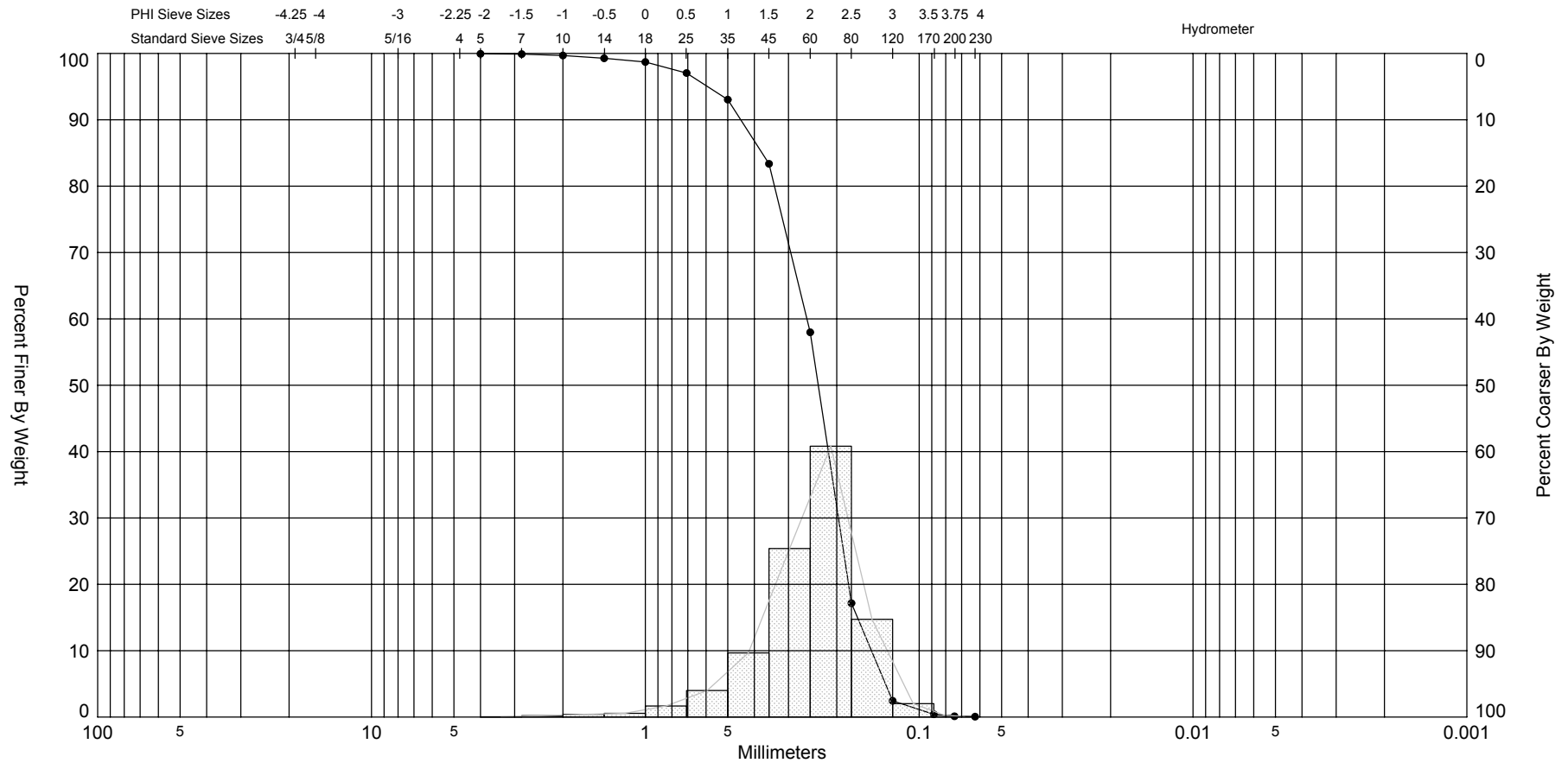


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-09	—●—		SP	#200 - 0.09 #230 - 0.07	2.74	90.31	0.98	0.94	-0.19	3.01	0.79	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-08-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	73,351
												Northing (ft):	1,070,726
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

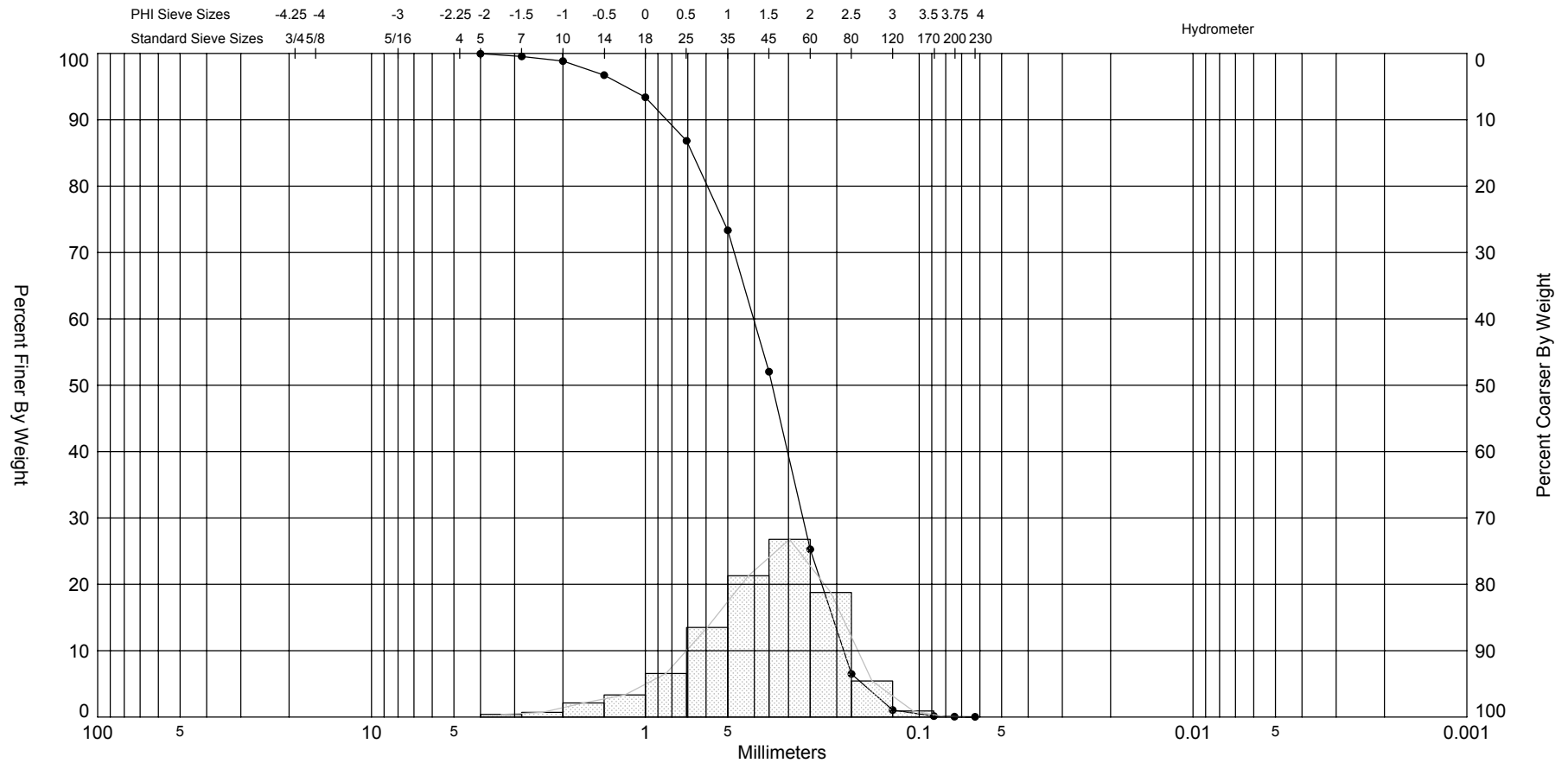


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-10	—●—		SP	#200 - 0.12 #230 - 0.06	2.03	64.83	2.1	1.99	-1.18	6.17	0.65	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
												Easting (ft):	67,793
												Northing (ft):	1,074,055
												Horizontal System:	NAD 1983
												Vertical System:	NGVD
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708													



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

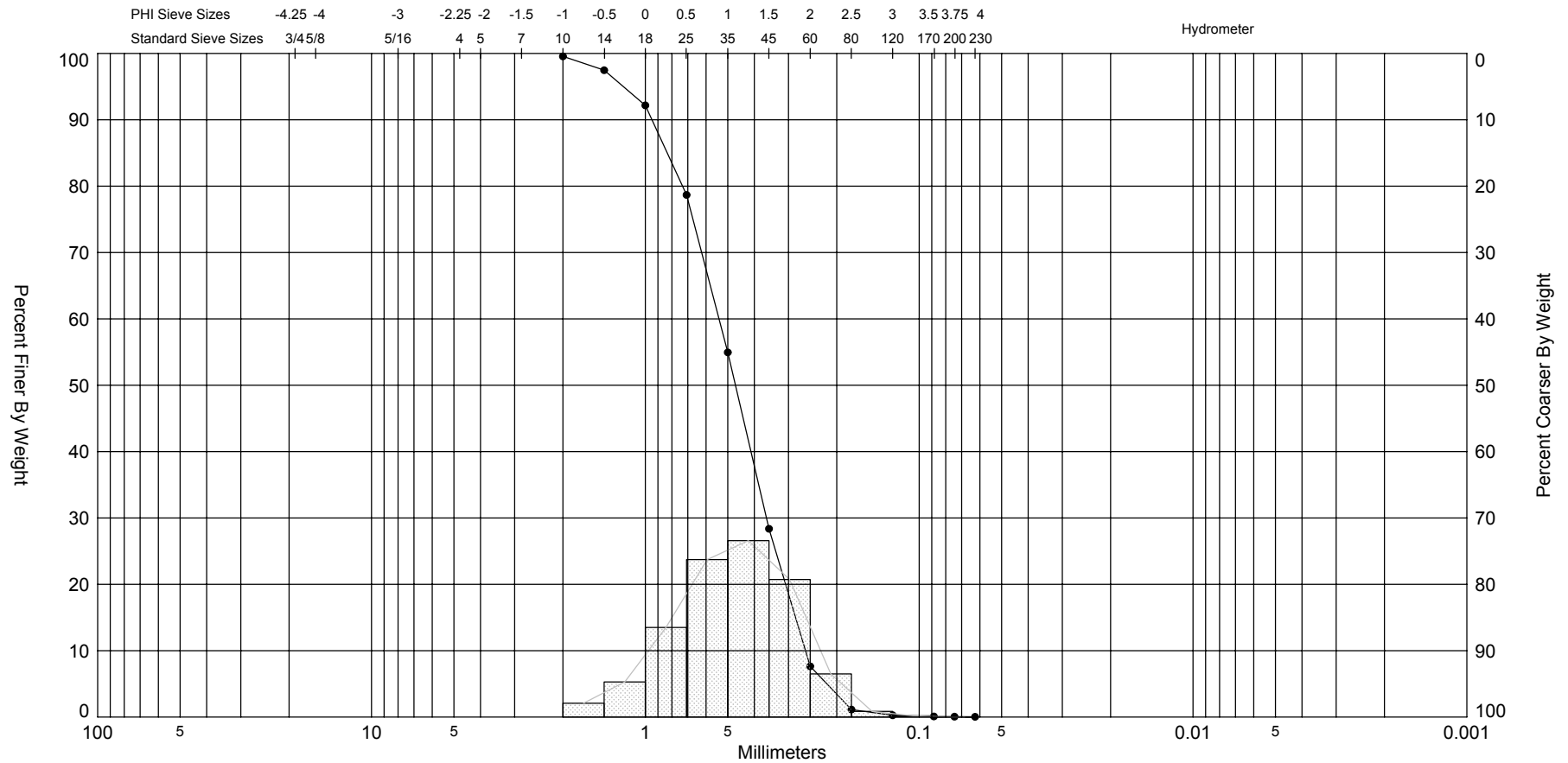
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-11	—●—		SP	#200 - 0.06 #230 - 0.04	1.99	75.41	1.54	1.42	-0.74	3.8	0.85	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-20-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	68,859
												Northing (ft):	1,074,761
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



Granulometric Report				Scientific Environmental Applications			
Depths and elevations based on measured values				5575 Willoughby Drive			
Project Name: MMS - Field Study 2006 CT-39054				Melbourne, FL 32934			
Sample Name: W2-S-12				ph 321 254-2708			
Analysis Date: 09-13-06				fax 321 254-2708			
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
72,723		1,071,893		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
47.91		0.01	-0.07	#200 - 0.06 #230 - 0.04	2.48	87.69	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.21	0.44	0.21	0.44	
14	-0.50	1.41	1.00	2.09	1.21	2.53	
18	0.00	1.00	2.54	5.30	3.75	7.83	
25	0.50	0.71	6.47	13.49	10.21	21.32	
35	1.00	0.50	11.37	23.73	21.59	45.05	
45	1.50	0.35	12.73	26.58	34.32	71.63	
60	2.00	0.25	9.93	20.73	44.25	92.36	
80	2.50	0.18	3.12	6.51	47.38	98.87	
120	3.00	0.13	0.41	0.86	47.79	99.73	
170	3.50	0.09	0.08	0.18	47.87	99.91	
200	3.75	0.07	0.02	0.03	47.89	99.94	
230	4.00	0.06	0.01	0.02	47.89	99.96	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.20	1.80	1.58	1.09	0.58	0.30	-0.27	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.05	0.48	0.71	-0.16	2.91		

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



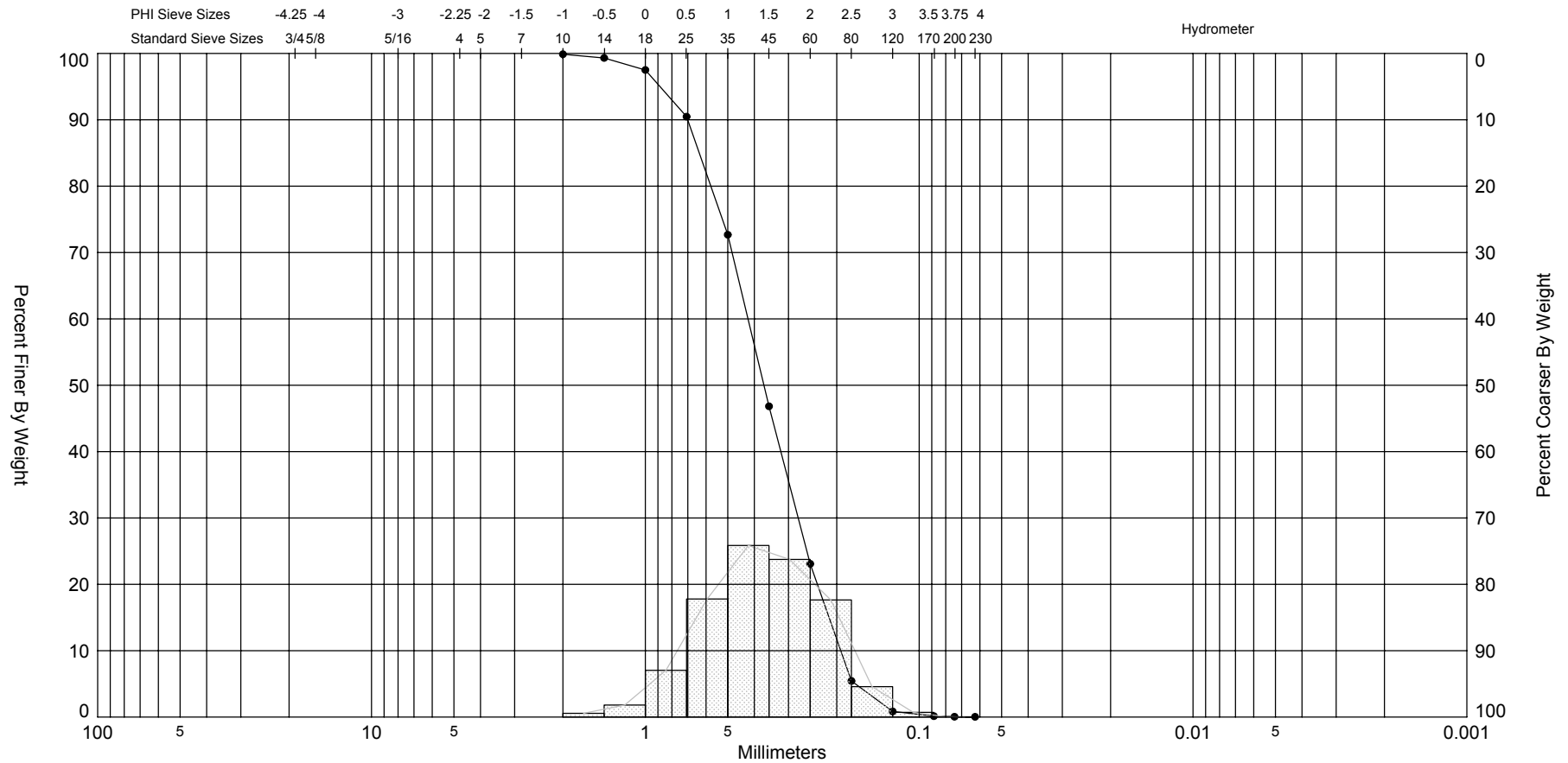
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-12	—●—		SP	#200 - 0.06 #230 - 0.04	2.48	87.69	1.09	1.05	-0.16	2.91	0.71	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	72,723
												Northing (ft):	1,071,893
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-S-13							
Analysis Date: 09-20-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
67,987		1,076,598		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.05 #230 - 0.04	Organics (%):	Carbonates (%):	Shells (%):
36.78		0.01	-0.36		2.17	79.85	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.04	0.12	0.04	0.12	
14	-0.50	1.41	0.21	0.56	0.25	0.68	
18	0.00	1.00	0.67	1.81	0.91	2.49	
25	0.50	0.71	2.59	7.04	3.50	9.53	
35	1.00	0.50	6.54	17.79	10.05	27.32	
45	1.50	0.35	9.51	25.85	19.55	53.17	
60	2.00	0.25	8.73	23.74	28.29	76.91	
80	2.50	0.18	6.49	17.65	34.78	94.56	
120	3.00	0.13	1.69	4.59	36.47	99.15	
170	3.50	0.09	0.26	0.71	36.73	99.86	
200	3.75	0.07	0.03	0.09	36.76	99.95	
230	4.00	0.06	0.01	0.01	36.77	99.96	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.55	2.20	1.96	1.44	0.93	0.68	0.18	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.43	0.37	0.72	-0.14	2.87		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



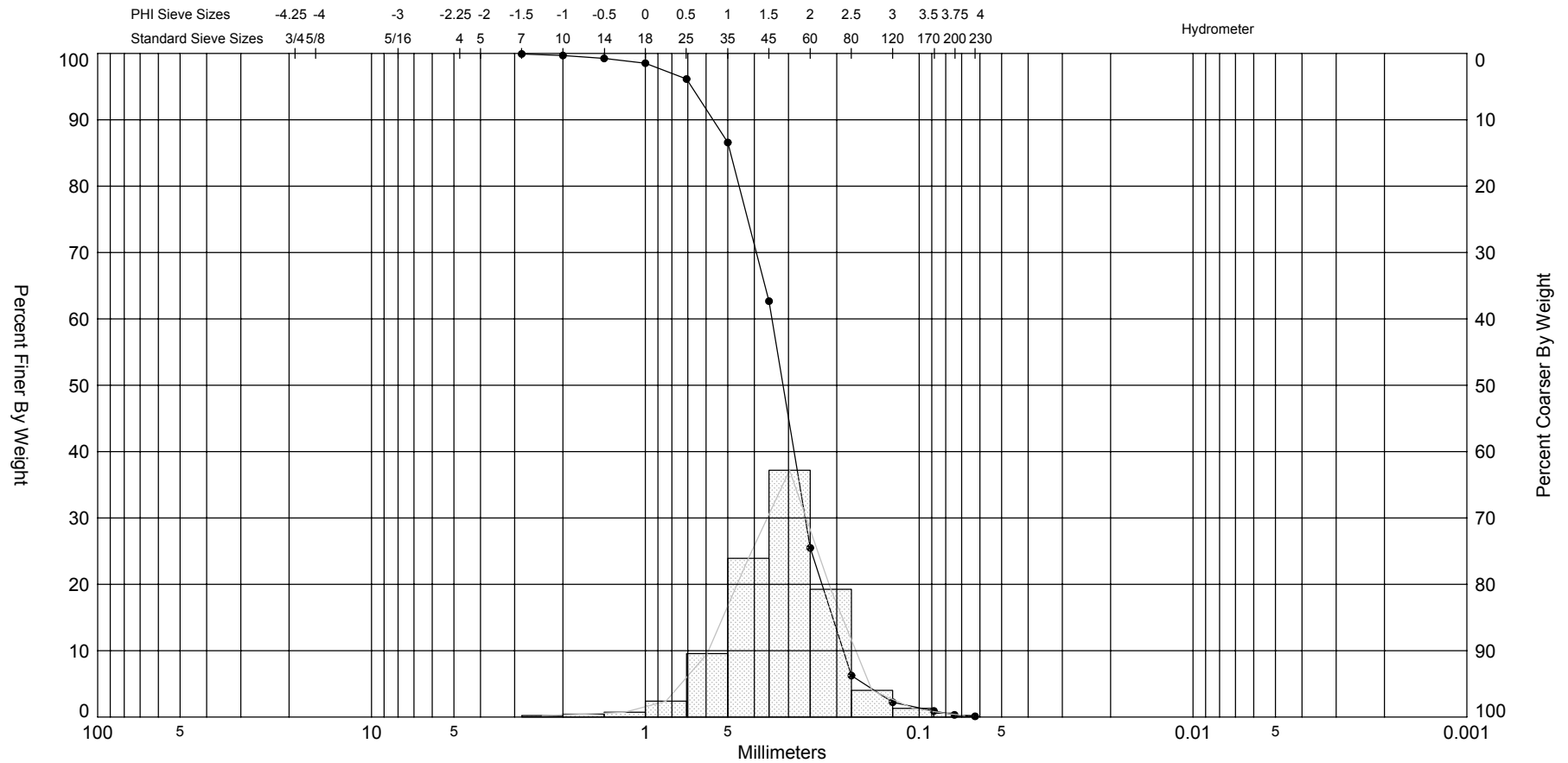
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-13	—●—		SP	#200 - 0.05 #230 - 0.04	2.17	79.85	1.44	1.43	-0.14	2.87	0.72	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-20-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	67,987
												Northing (ft):	1,076,598
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-S-14							
Analysis Date: 09-13-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
72,126		1,069,537		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
58.45		0.09	-0.05	#200 - 0.33 #230 - 0.11	2.01	77.18	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.05	0.08	0.05	0.08	
10	-1.00	2.00	0.14	0.23	0.18	0.31	
14	-0.50	1.41	0.26	0.44	0.44	0.75	
18	0.00	1.00	0.42	0.72	0.86	1.47	
25	0.50	0.71	1.39	2.39	2.25	3.86	
35	1.00	0.50	5.59	9.56	7.84	13.42	
45	1.50	0.35	13.98	23.91	21.82	37.33	
60	2.00	0.25	21.73	37.18	43.55	74.51	
80	2.50	0.18	11.25	19.24	54.79	93.75	
120	3.00	0.13	2.35	4.02	57.14	97.77	
170	3.50	0.09	0.77	1.31	57.91	99.08	
200	3.75	0.07	0.35	0.59	58.25	99.67	
230	4.00	0.06	0.13	0.22	58.38	99.89	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.66	2.25	2.01	1.67	1.24	1.05	0.56	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.64	0.32	0.65	-0.29	4.89		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

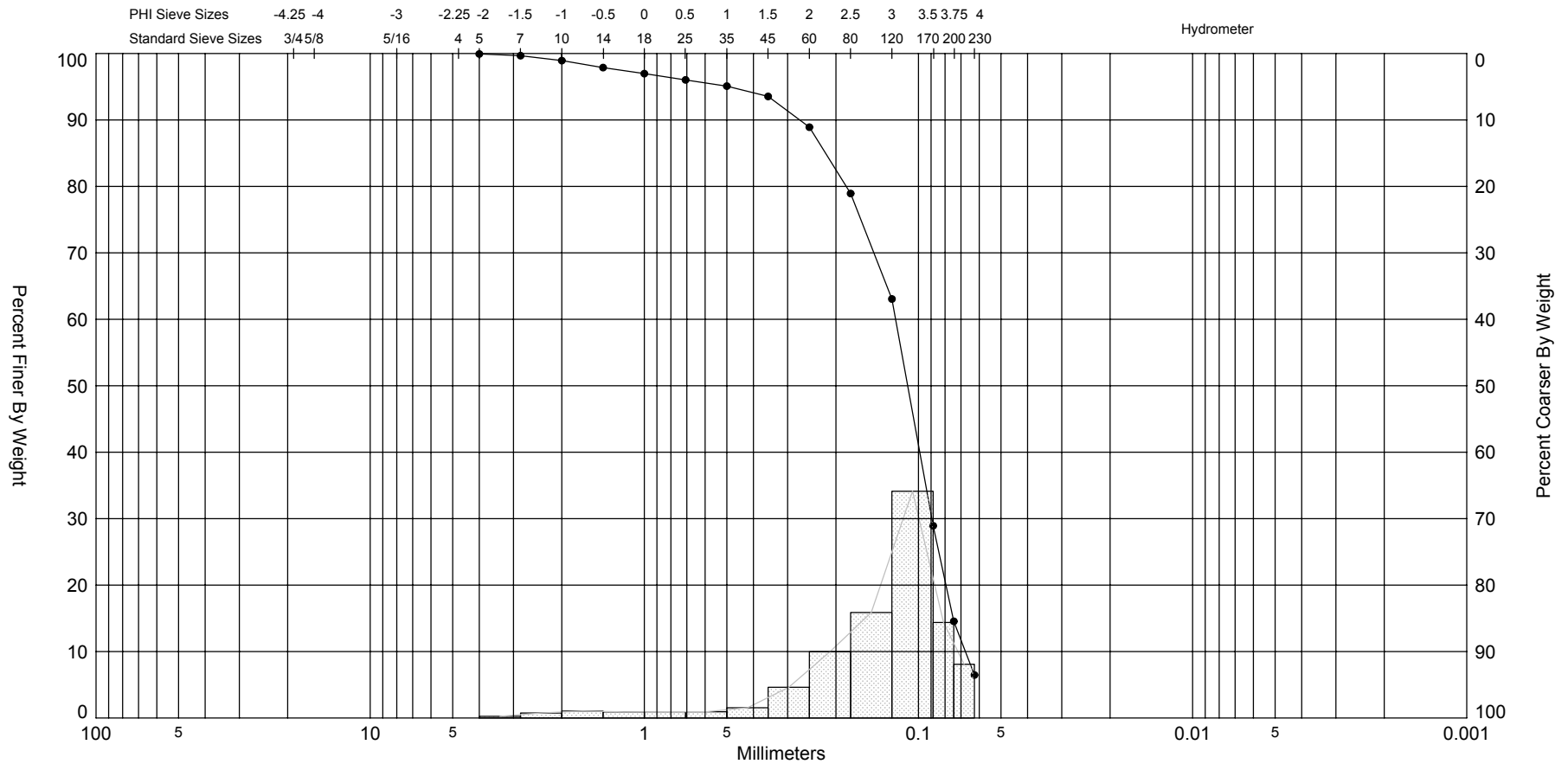


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-14	—●—		SP	#200 - 0.33 #230 - 0.11	2.01	77.18	1.67	1.64	-0.29	4.89	0.65	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	72,126
												Northing (ft):	1,069,537
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

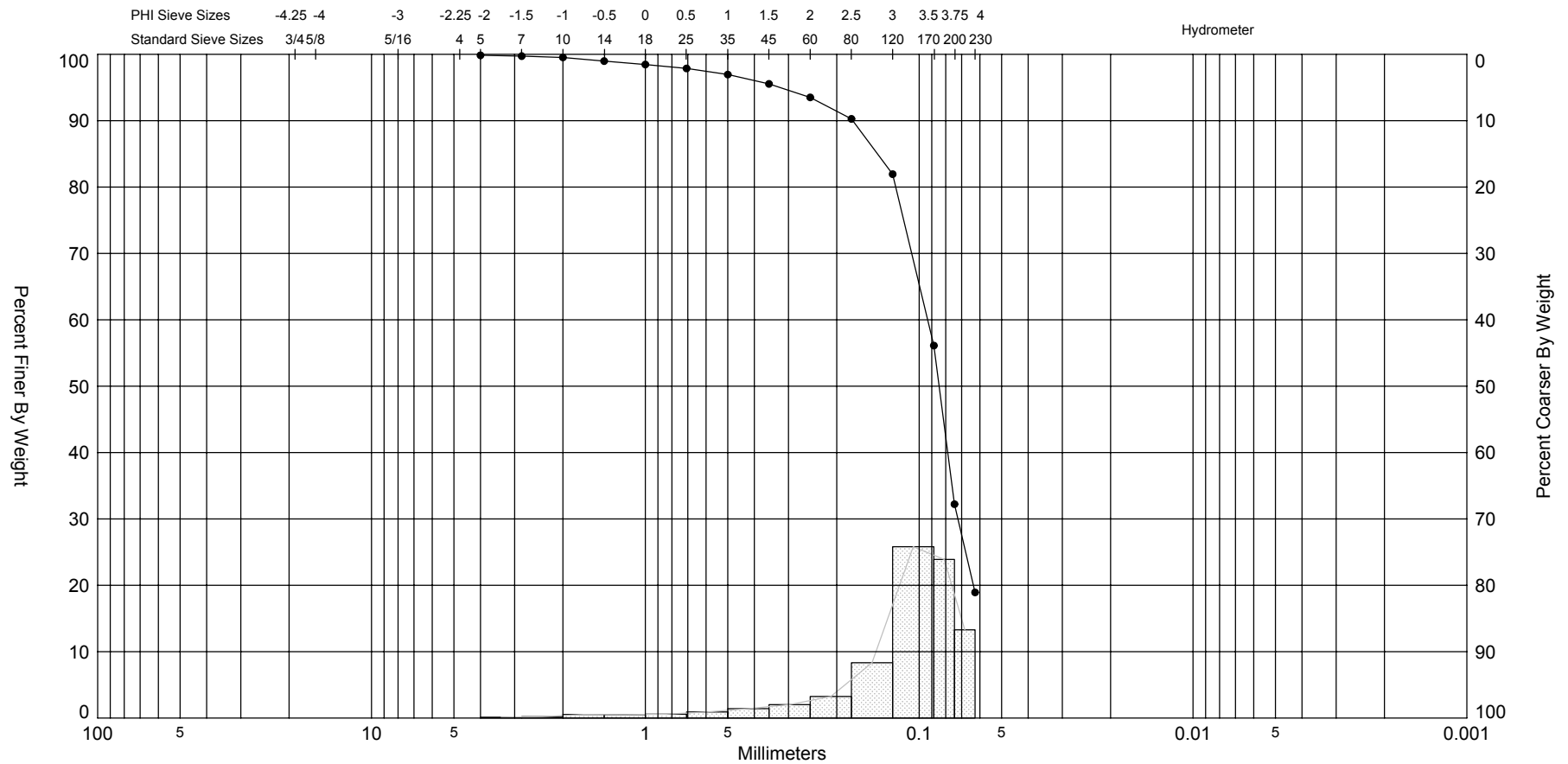
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-15	—●—		SP	#200 - 14.55 #230 - 6.47	1.80	50.94	3.19	2.87	-2.17	8.71	0.96	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	68,320
												Northing (ft):	1,072,671
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



Granulometric Report						
Depths and elevations based on measured values						
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708		
Sample Name: W2-S-16						
Analysis Date: 09-11-06						
Analyzed By: SEA Inc.						
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):
74,740		1,068,239		Geographic (Latitude/Longitude)		
USCS:		Munsell:		Comments:		
SP						
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):
23.28	19.13	0.25	0.02	#200 - 32.22 #230 - 18.93	2.12	60.46
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.04	0.15	0.04	0.15
7	-1.50	2.83	0.03	0.12	0.06	0.27
10	-1.00	2.00	0.05	0.20	0.11	0.47
14	-0.50	1.41	0.13	0.55	0.24	1.02
18	0.00	1.00	0.12	0.52	0.36	1.54
25	0.50	0.71	0.14	0.59	0.50	2.13
35	1.00	0.50	0.22	0.92	0.71	3.05
45	1.50	0.35	0.33	1.41	1.04	4.46
60	2.00	0.25	0.47	2.03	1.52	6.49
80	2.50	0.18	0.76	3.24	2.27	9.73
120	3.00	0.13	1.94	8.33	4.21	18.06
170	3.50	0.09	6.01	25.82	10.22	43.88
200	3.75	0.07	5.56	23.90	15.78	67.78
230	4.00	0.06	3.09	13.29	18.88	81.07
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.89	3.56	3.13	2.88	1.63
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	3.17	0.11	0.84	-2.62	11.41	

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-16	—●—		SP	#200 - 32.22 #230 - 18.93	2.12	60.46	3.56	3.17	-2.62	11.41	0.84	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	74,740
												Northing (ft):	1,068,239
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-S-17

Analysis Date: 09-13-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>71,671</b>	Northing (ft): <b>1,074,429</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>47.59</b>	Wash Weight (g):	Pan Retained (g): <b>0.05</b>	Sieve Loss (%): <b>0.69</b>	Fines (%): #200 - 0.17 #230 - 0.11	Organics (%): <b>2.51</b>	Carbonates (%): <b>86.33</b>	Shells (%):
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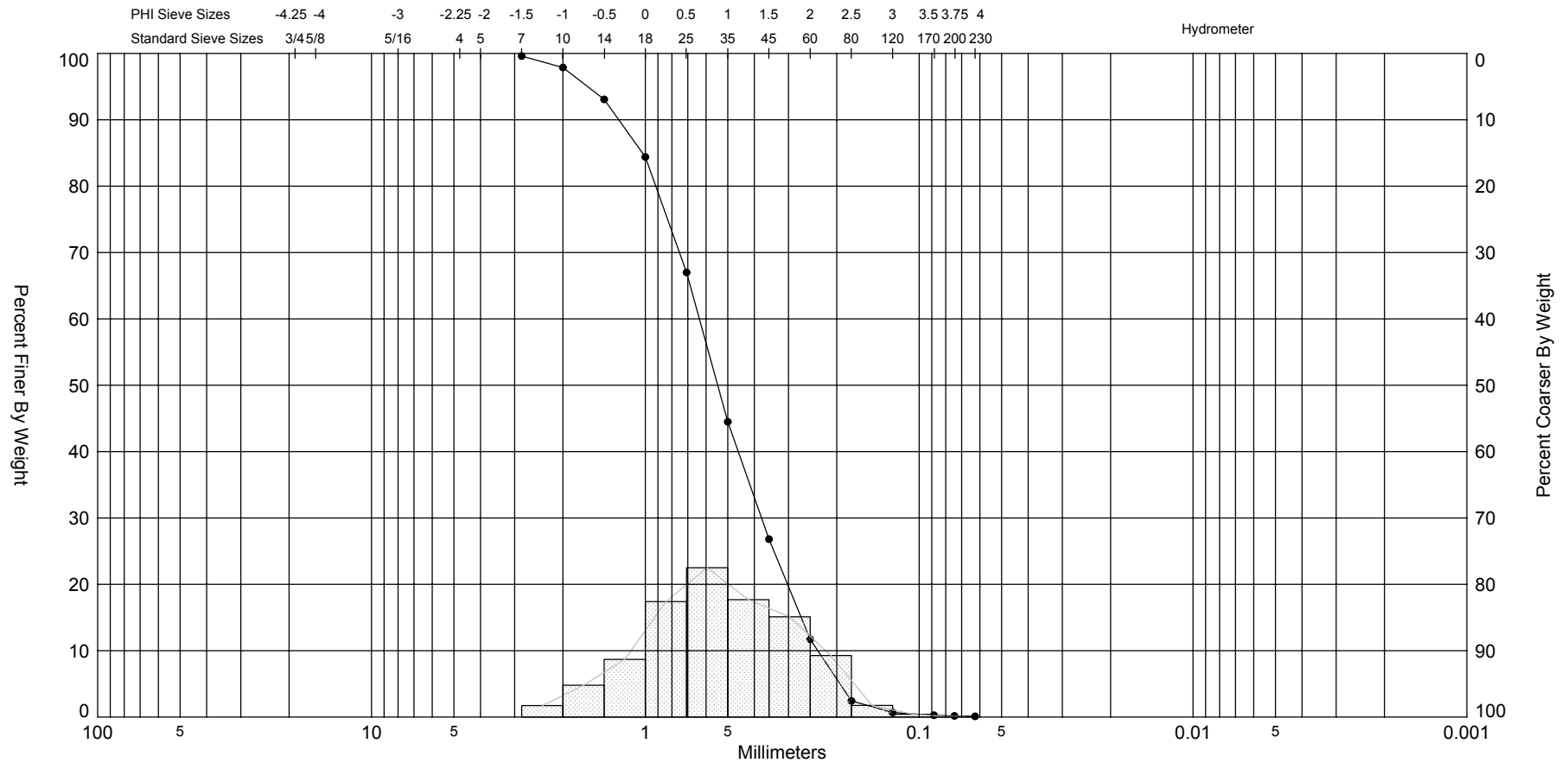
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.19	0.39	0.19	0.39
10	-1.00	2.00	0.82	1.73	1.01	2.12
14	-0.50	1.41	2.28	4.80	3.29	6.92
18	0.00	1.00	4.13	8.68	7.42	15.60
25	0.50	0.71	8.28	17.40	15.70	33.00
35	1.00	0.50	10.71	22.51	26.41	55.51
45	1.50	0.35	8.41	17.68	34.83	73.19
60	2.00	0.25	7.19	15.10	42.01	88.29
80	2.50	0.18	4.42	9.28	46.43	97.57
120	3.00	0.13	0.83	1.74	47.25	99.31
170	3.50	0.09	0.19	0.41	47.45	99.72
200	3.75	0.07	0.05	0.11	47.50	99.83
230	4.00	0.06	0.03	0.06	47.53	99.89

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.36	1.86	1.56	0.88	0.27	0.01	-0.70
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	0.89	0.54	0.89	-0.02	2.71	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

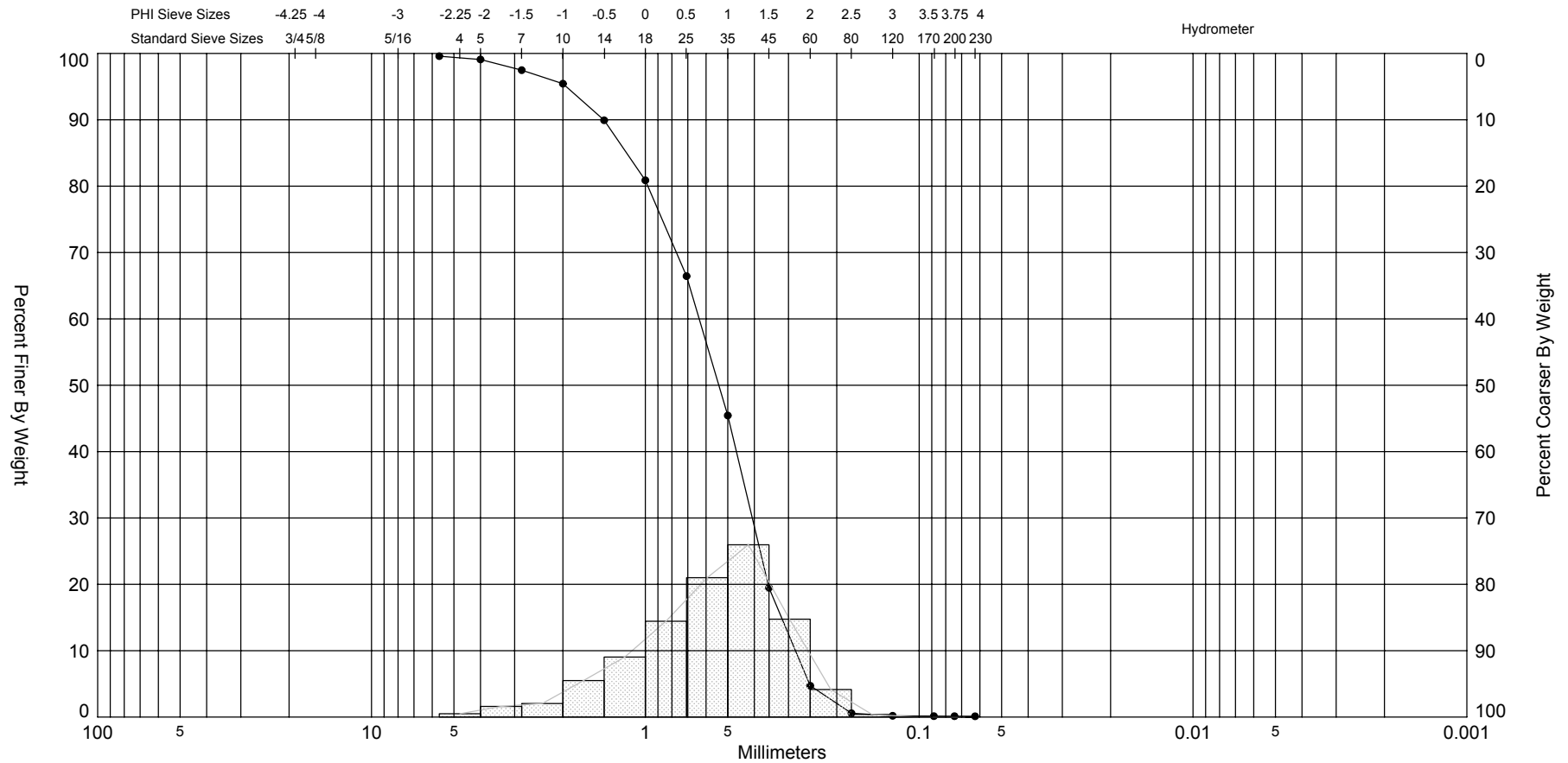


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-S-17	—●—		SP	#200 - 0.17 #230 - 0.11	2.51	86.33	0.88	0.89	-0.02	2.71	0.89	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	71,671
												Northing (ft):	1,074,429
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



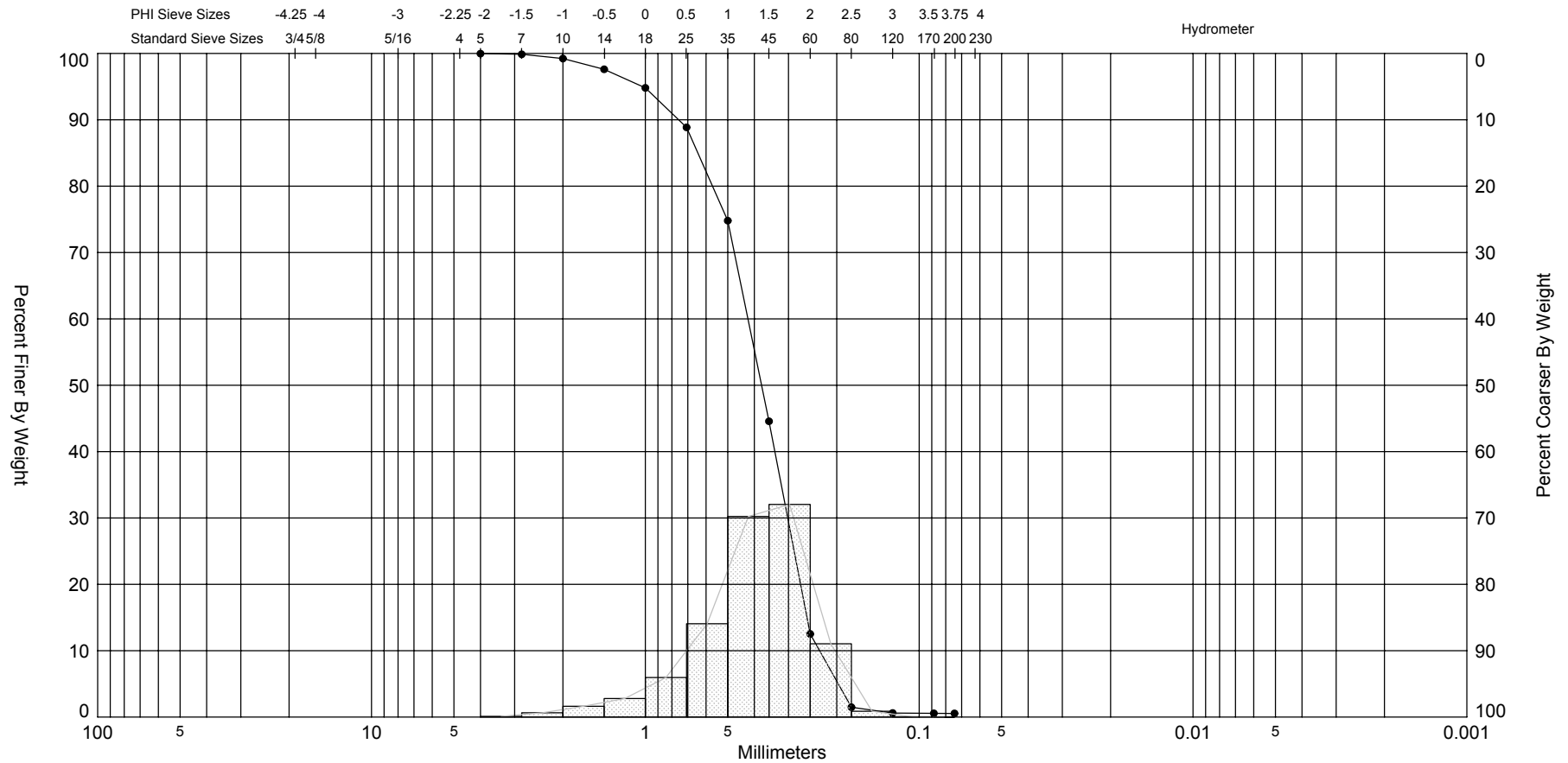
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-01	—●—		SP	#200 - 0.13 #230 - 0.12	1.12	46.90	0.89	0.74	-0.64	3.4	0.9	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	210,681
												Northing (ft):	745,994
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

<b>Granulometric Report</b> Depths and elevations based on measured values				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Project Name: MMS - Field Study 2006 CT-39054							
Sample Name: W2-T1-02							
Analysis Date: 09-11-06							
Analyzed By: SEA Inc.							
Easting (ft): 205,823		Northing (ft): 749,045		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 48.16	Wash Weight (g):	Pan Retained (g): 0.00	Sieve Loss (%):	Fines (%): #200 - 0.55	Organics (%): 0.73	Carbonates (%): 22.17	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.01	0.03	0.01	0.03	
7	-1.50	2.83	0.05	0.10	0.06	0.13	
10	-1.00	2.00	0.31	0.64	0.37	0.77	
14	-0.50	1.41	0.78	1.62	1.15	2.39	
18	0.00	1.00	1.35	2.80	2.50	5.19	
25	0.50	0.71	2.86	5.95	5.37	11.14	
35	1.00	0.50	6.77	14.06	12.14	25.20	
45	1.50	0.35	14.56	30.23	26.70	55.43	
60	2.00	0.25	15.44	32.05	42.14	87.48	
80	2.50	0.18	5.32	11.04	47.45	98.52	
120	3.00	0.13	0.42	0.87	47.88	99.39	
170	3.50	0.09	0.03	0.05	47.90	99.44	
200	3.75	0.07	0.01	0.01	47.91	99.45	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.34	1.95	1.81	1.41	0.99	0.67	-0.03	
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	1.31	0.40	0.7	-0.99	4.56		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

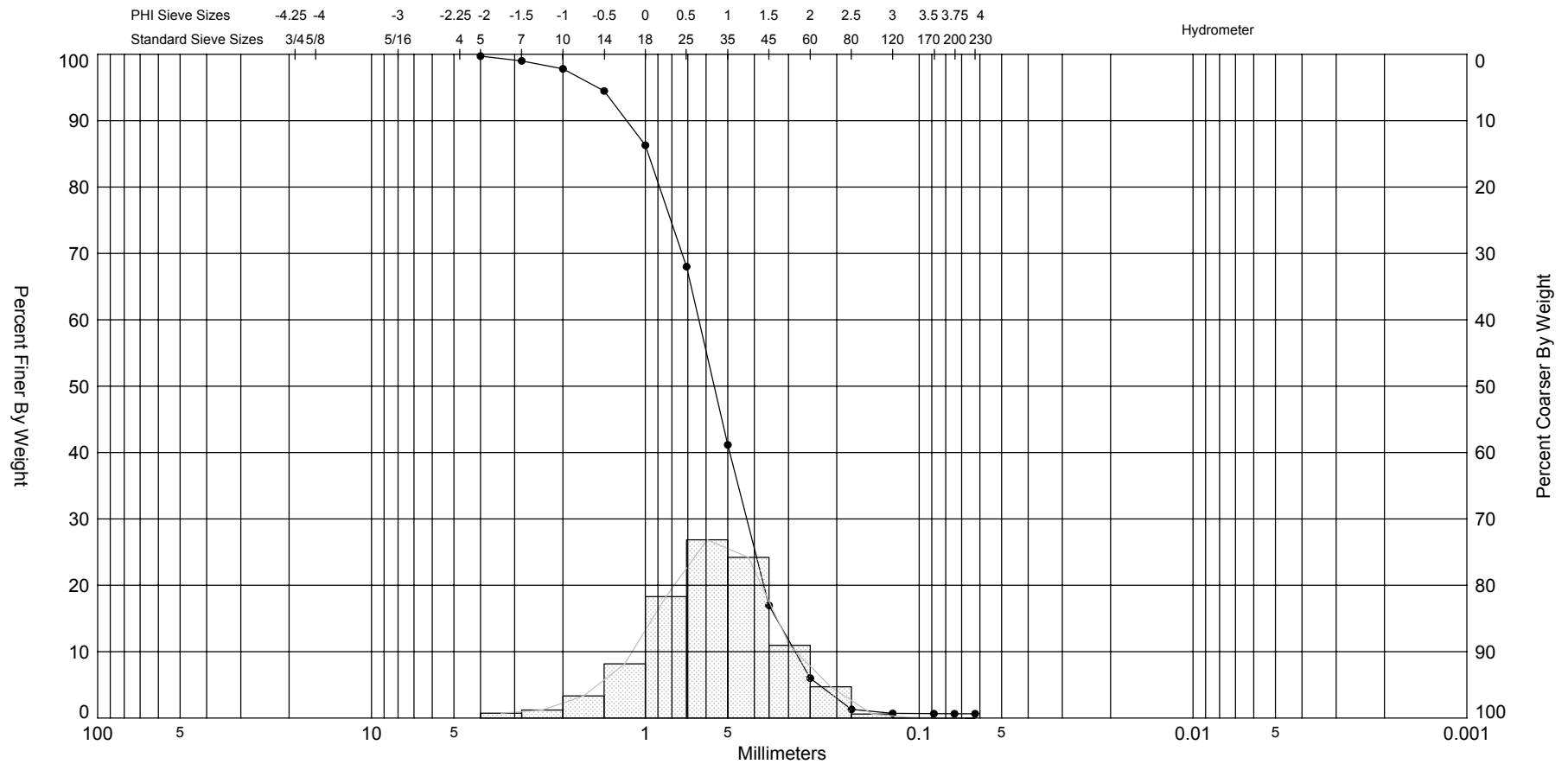
SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07







SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

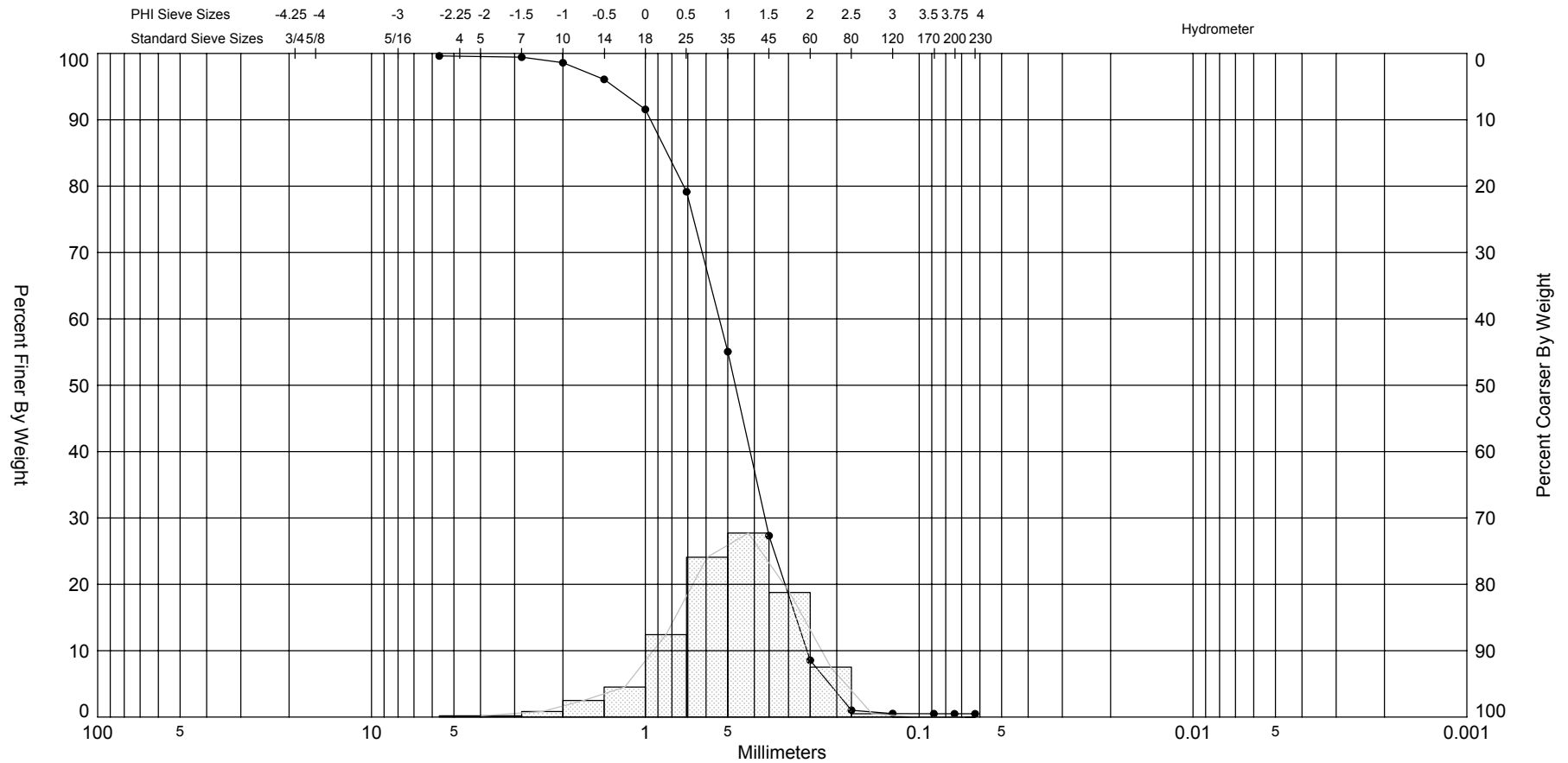


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-03	—●—		SP	#200 - 0.65 #230 - 0.65	1.02	35.44	0.84	0.79	-0.31	3.46	0.78	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	211,160
												Northing (ft):	743,808
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

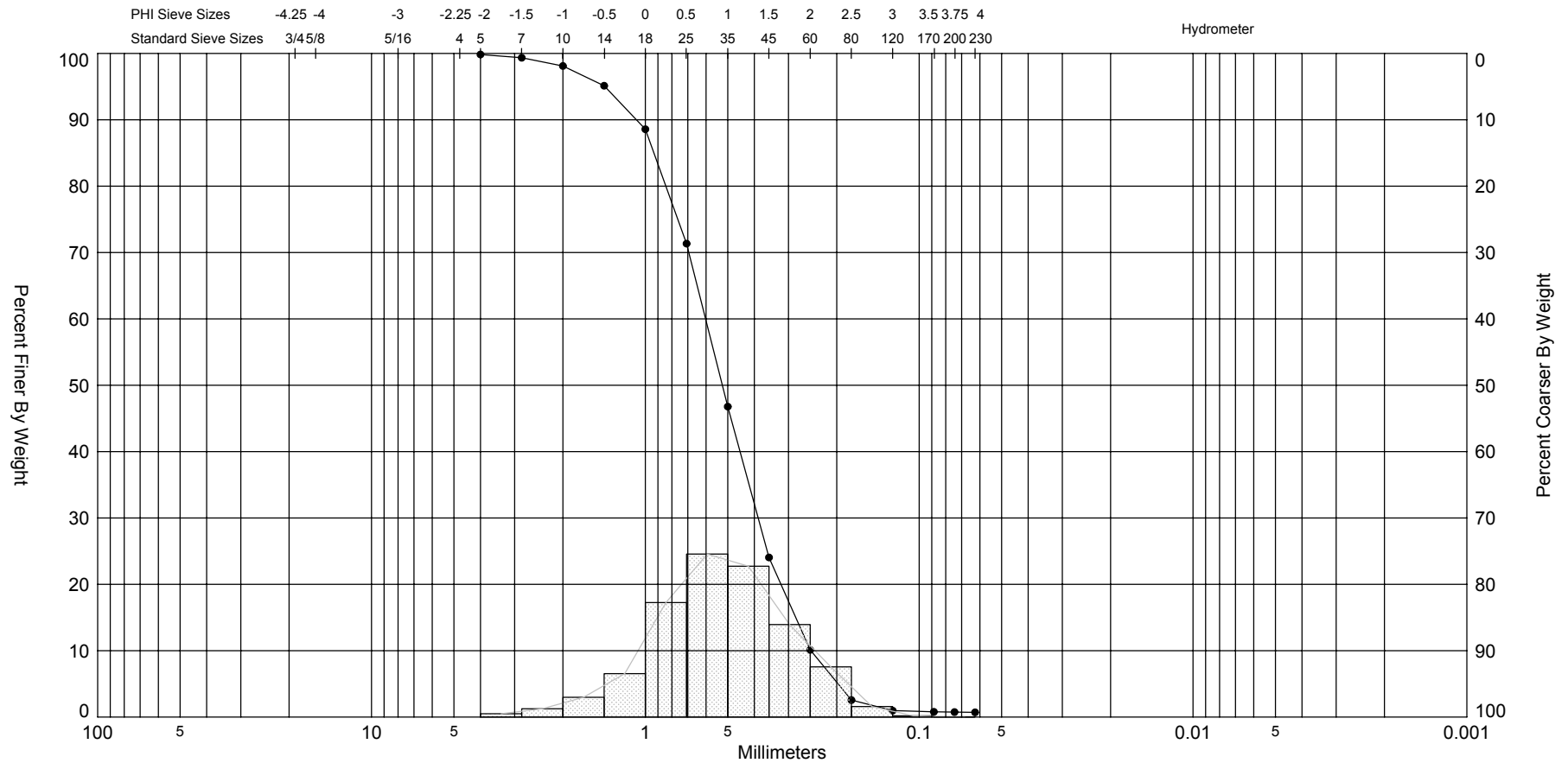


SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-05	—●—		SP	#200 - 0.75 #230 - 0.71	1.28	41.34	0.93	0.92	-0.19	3.28	0.82	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-20-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	212,372
												Northing (ft):	742,268
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-06

Analysis Date: 09-20-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>207,669</b>	Northing (ft): <b>749,092</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>46.44</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.25</b>	Fines (%): #200 - 0.21 #230 - 0.20	Organics (%): <b>0.87</b>	Carbonates (%): <b>28.94</b>	Shells (%):
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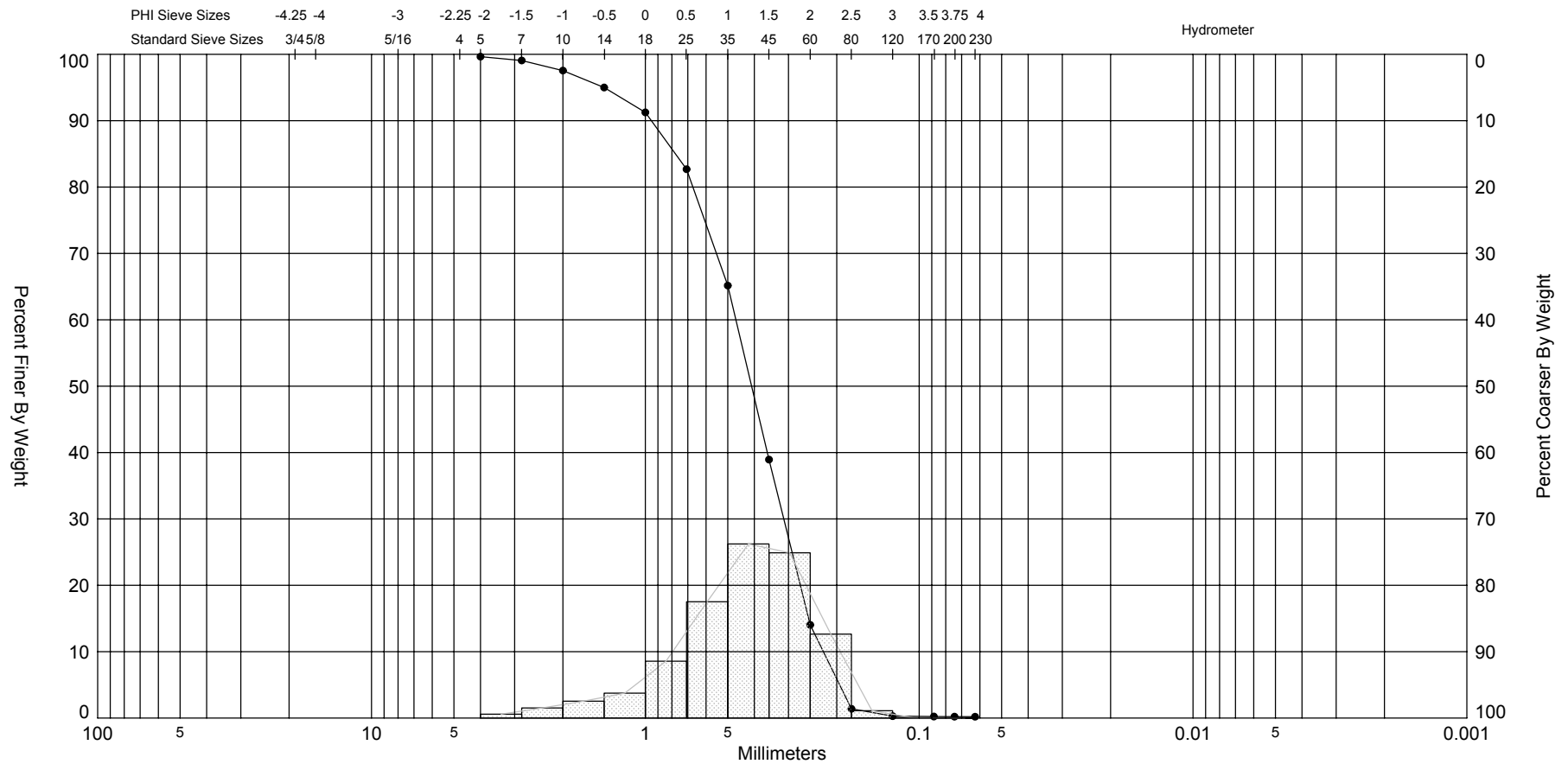
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.16	0.35	0.16	0.35
7	-1.50	2.83	0.27	0.58	0.43	0.93
10	-1.00	2.00	0.71	1.52	1.14	2.45
14	-0.50	1.41	1.18	2.55	2.32	5.00
18	0.00	1.00	1.74	3.75	4.06	8.75
25	0.50	0.71	3.97	8.56	8.04	17.31
35	1.00	0.50	8.14	17.53	16.18	34.84
45	1.50	0.35	12.18	26.22	28.35	61.06
60	2.00	0.25	11.57	24.90	39.92	85.96
80	2.50	0.18	5.87	12.65	45.79	98.61
120	3.00	0.13	0.51	1.10	46.30	99.71
170	3.50	0.09	0.03	0.06	46.33	99.77
200	3.75	0.07	0.01	0.02	46.34	99.79
230	4.00	0.06	0.01	0.01	46.35	99.80

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.36	1.96	1.78	1.29	0.72	0.42	-0.50
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.17	0.44	0.82	-0.84	3.93	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



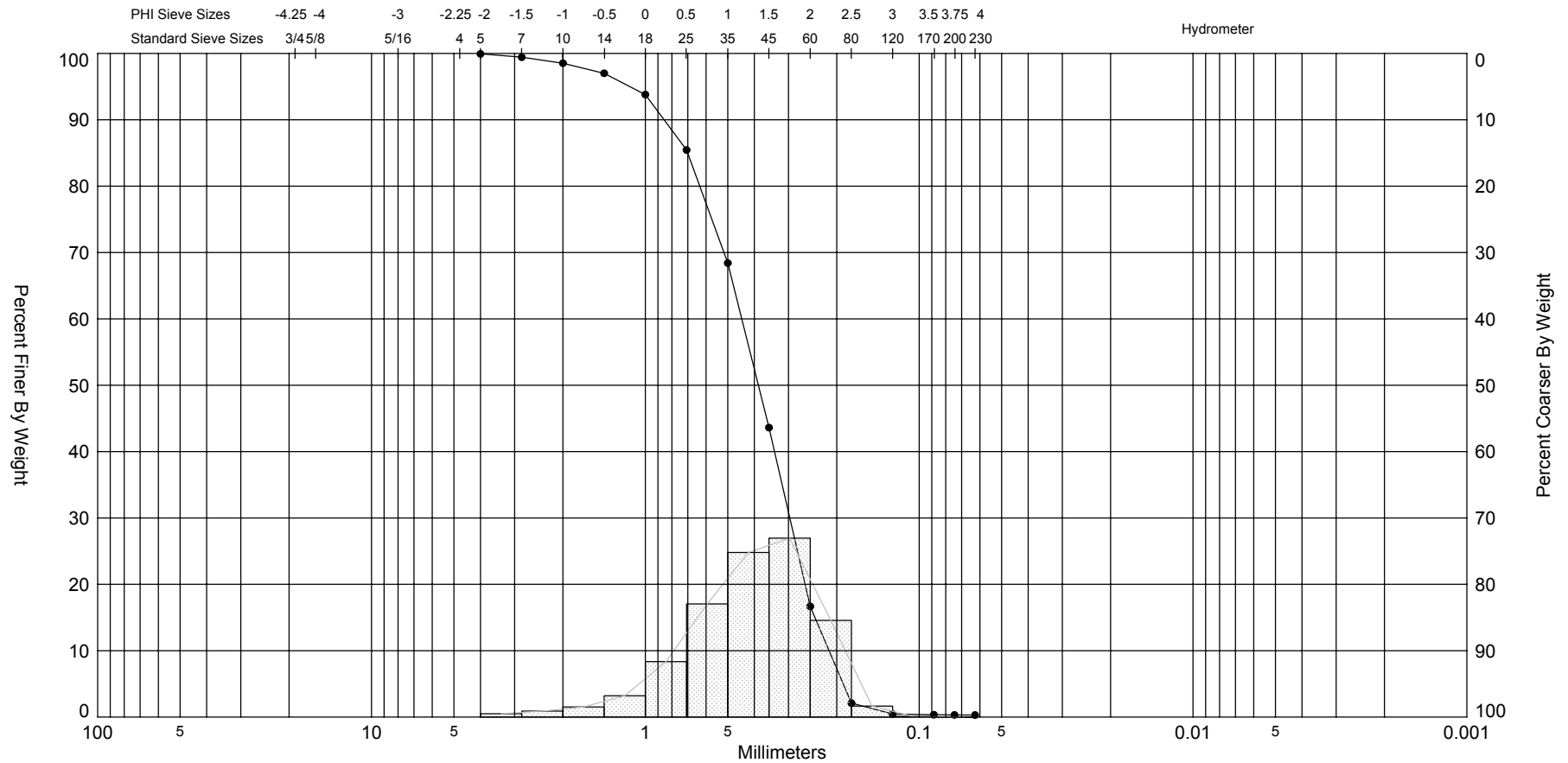
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-06	—●—		SP	#200 - 0.21 #230 - 0.20	0.87	28.94	1.29	1.17	-0.84	3.93	0.82	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-20-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	207,669
												Northing (ft):	749,092
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-07	—●—		SP	#200 - 0.32 #230 - 0.31	0.99	24.59	1.37	1.27	-0.82	4.1	0.79	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	207,669
												Northing (ft):	749,633
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-08

Analysis Date: 09-18-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>208,155</b>	Northing (ft): <b>748,255</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>51.55</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%):	Fines (%): #200 - 0.09 #230 - 0.08	Organics (%): <b>0.79</b>	Carbonates (%): <b>21.86</b>	Shells (%):
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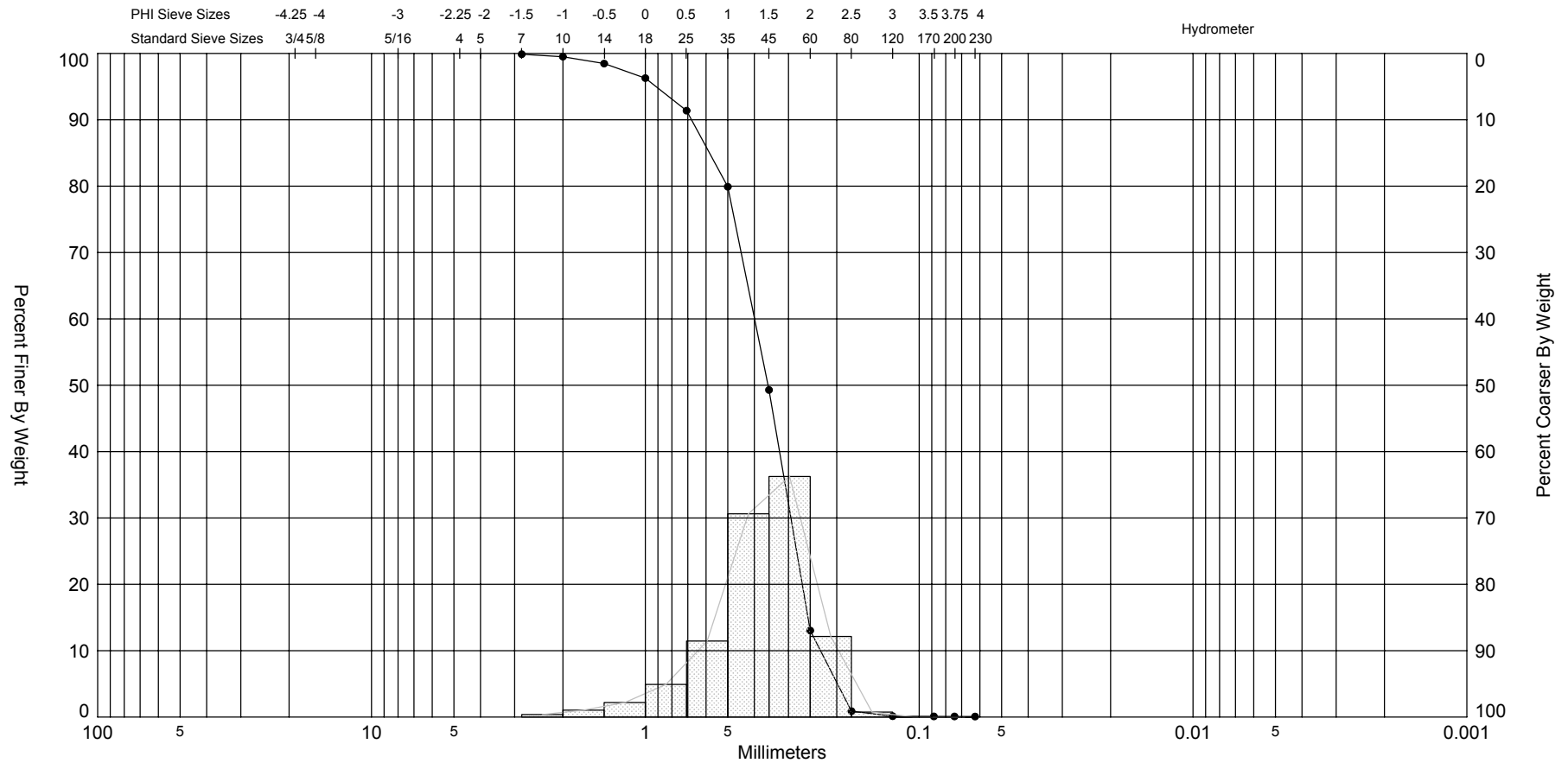
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.06	0.12	0.06	0.12
10	-1.00	2.00	0.19	0.37	0.25	0.49
14	-0.50	1.41	0.54	1.04	0.79	1.53
18	0.00	1.00	1.13	2.19	1.92	3.72
25	0.50	0.71	2.53	4.91	4.45	8.63
35	1.00	0.50	5.91	11.46	10.36	20.09
45	1.50	0.35	15.79	30.62	26.14	50.71
60	2.00	0.25	18.69	36.25	44.83	86.96
80	2.50	0.18	6.26	12.15	51.09	99.11
120	3.00	0.13	0.39	0.76	51.49	99.87
170	3.50	0.09	0.02	0.03	51.50	99.90
200	3.75	0.07	0.00	0.01	51.50	99.91
230	4.00	0.06	0.00	0.01	51.51	99.92

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.33	1.96	1.84	1.49	1.08	0.82	0.13
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.39	0.38	0.63	-1.01	4.75	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



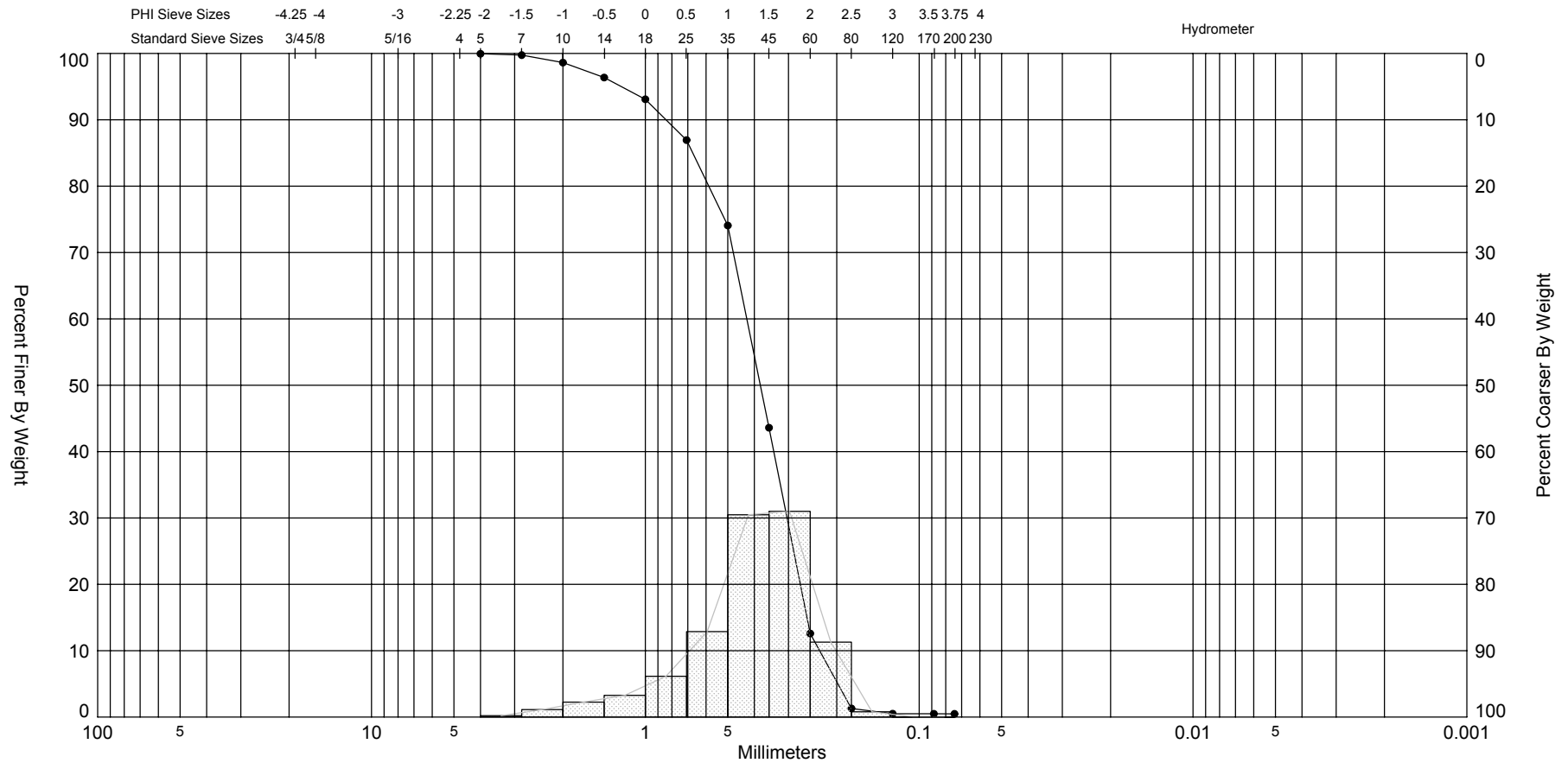
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-08	—●—		SP	#200 - 0.09 #230 - 0.08	0.79	21.86	1.49	1.39	-1.01	4.75	0.63	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	208,155
												Northing (ft):	748,255
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-T1-09							
Analysis Date: 09-18-06							
Analyzed By: SEA Inc.							
Easting (ft): 207,233		Northing (ft): 747,170		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 52.25	Wash Weight (g):	Pan Retained (g): 0.00	Sieve Loss (%): 0.14	Fines (%): #200 - 0.48 #230 - 0.53	Organics (%): 0.97	Carbonates (%): 24.88	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.03	0.05	0.03	0.05	
7	-1.50	2.83	0.10	0.20	0.13	0.25	
10	-1.00	2.00	0.59	1.13	0.72	1.38	
14	-0.50	1.41	1.18	2.25	1.89	3.63	
18	0.00	1.00	1.72	3.28	3.61	6.91	
25	0.50	0.71	3.22	6.15	6.83	13.06	
35	1.00	0.50	6.73	12.87	13.55	25.93	
45	1.50	0.35	15.92	30.47	29.47	56.40	
60	2.00	0.25	16.20	31.01	45.67	87.41	
80	2.50	0.18	5.90	11.29	51.58	98.70	
120	3.00	0.13	0.42	0.79	51.99	99.49	
170	3.50	0.09	0.01	0.02	52.00	99.51	
200	3.75	0.07	0.00	0.01	52.01	99.52	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.34	1.95	1.80	1.39	0.96	0.61	-0.29	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.27	0.41	0.75	-1.11	4.58		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-09	—●—		SP	#200 - 0.48 #230 - 0.53	0.97	24.88	1.39	1.27	-1.11	4.58	0.75	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	207,233
												Northing (ft):	747,170
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-10

Analysis Date: 09-20-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>210,230</b>	Northing (ft): <b>747,193</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>54.72</b>	Wash Weight (g):	Pan Retained (g): <b>0.07</b>	Sieve Loss (%): <b>-0.09</b>	Fines (%): #200 - 0.32 #230 - 0.29	Organics (%): <b>1.30</b>	Carbonates (%): <b>40.97</b>	Shells (%):
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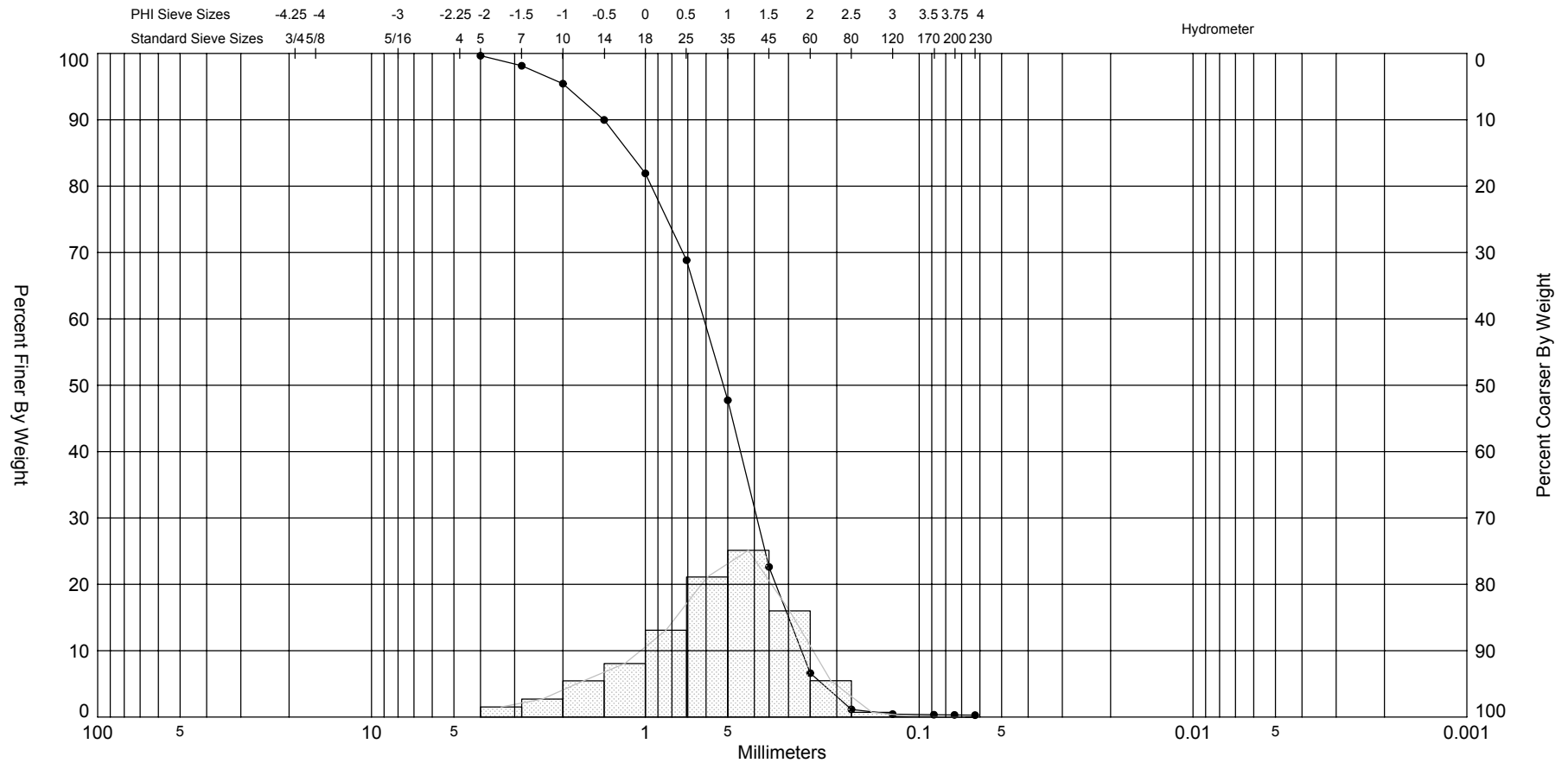
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.19	0.34	0.19	0.34
7	-1.50	2.83	0.83	1.52	1.02	1.86
10	-1.00	2.00	1.48	2.70	2.50	4.56
14	-0.50	1.41	2.99	5.46	5.48	10.02
18	0.00	1.00	4.41	8.06	9.89	18.08
25	0.50	0.71	7.16	13.08	17.05	31.16
35	1.00	0.50	11.55	21.10	28.59	52.26
45	1.50	0.35	13.75	25.12	42.34	77.38
60	2.00	0.25	8.76	16.00	51.10	93.38
80	2.50	0.18	2.99	5.47	54.09	98.85
120	3.00	0.13	0.39	0.71	54.48	99.56
170	3.50	0.09	0.05	0.09	54.52	99.65
200	3.75	0.07	0.02	0.03	54.54	99.68
230	4.00	0.06	0.01	0.03	54.56	99.71

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.15	1.71	1.45	0.95	0.26	-0.13	-0.96
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.81	0.57	0.91	-0.55	3.14	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



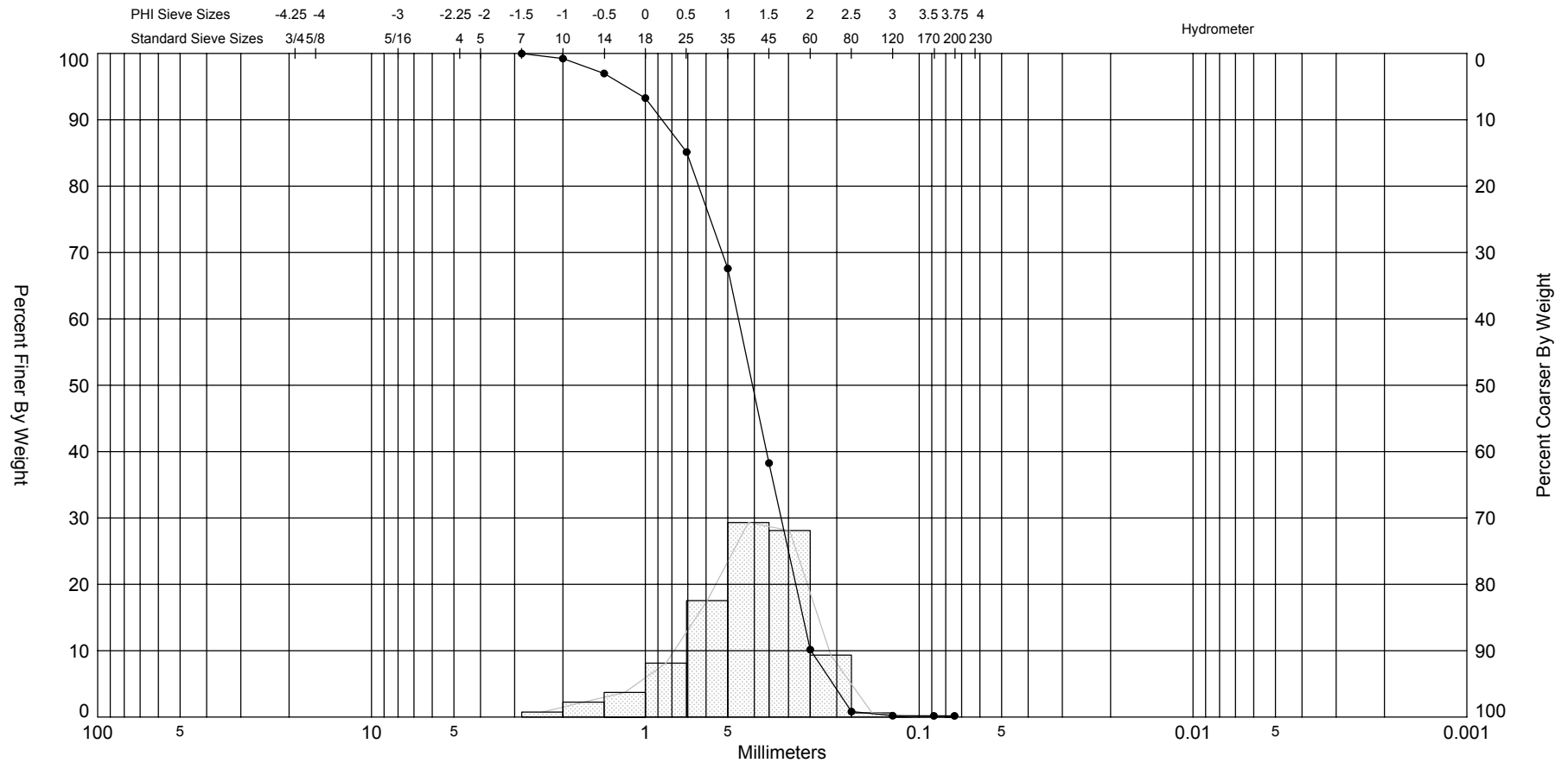
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-10	—●—		SP	#200 - 0.32 #230 - 0.29	1.30	40.97	0.95	0.81	-0.55	3.14	0.91	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-20-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	210,230
												Northing (ft):	747,193
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



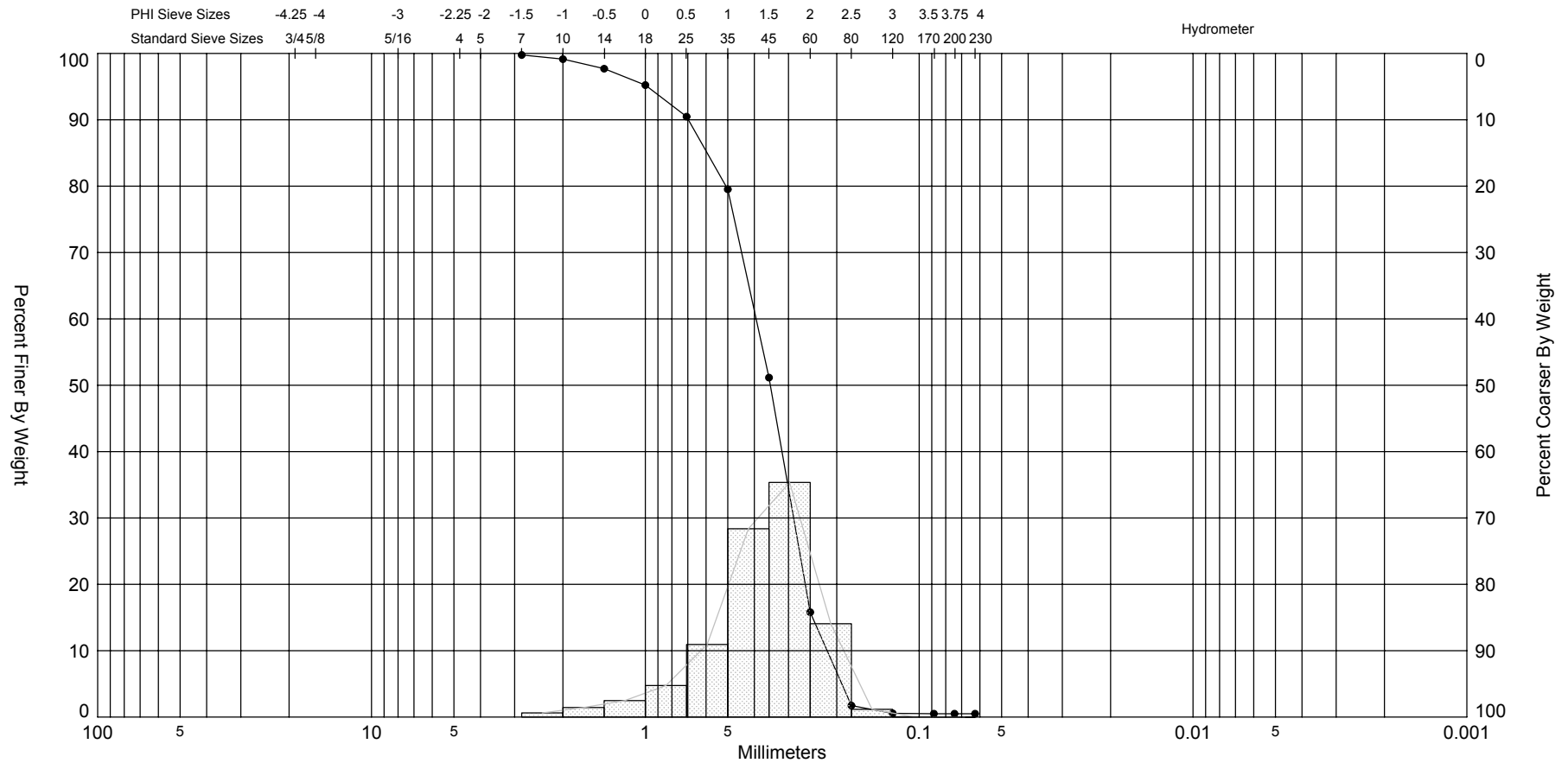
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-11	—●—		SP	#200 - 0.18 #230 - 0.23	0.85	24.91	1.3	1.2	-0.8	3.73	0.72	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	208,611
												Northing (ft):	745,810
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-T1-12							
Analysis Date: 09-13-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
209,744		745,095		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.50 #230 - 0.50	Organics (%):	Carbonates (%):	Shells (%):
48.66		0.00			0.85	22.07	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.11	0.23	0.11	0.23	
10	-1.00	2.00	0.31	0.63	0.42	0.86	
14	-0.50	1.41	0.70	1.44	1.12	2.30	
18	0.00	1.00	1.20	2.47	2.32	4.77	
25	0.50	0.71	2.32	4.76	4.64	9.53	
35	1.00	0.50	5.32	10.94	9.96	20.47	
45	1.50	0.35	13.81	28.38	23.77	48.85	
60	2.00	0.25	17.20	35.35	40.97	84.20	
80	2.50	0.18	6.85	14.07	47.82	98.27	
120	3.00	0.13	0.57	1.17	48.39	99.44	
170	3.50	0.09	0.03	0.05	48.41	99.49	
200	3.75	0.07	0.00	0.01	48.42	99.50	
230	4.00	0.06	0.00	0.00	48.42	99.50	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.38	2.00	1.87	1.52	1.08	0.80	0.02	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.4	0.38	0.68	-1.06	4.77		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-12	—●—		SP	#200 - 0.50 #230 - 0.50	0.85	22.07	1.52	1.4	-1.06	4.77	0.68	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	209,744
												Northing (ft):	745,095
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-13

Analysis Date: 09-13-06

Analyzed By: SEA Inc,

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>207,192</b>	Northing (ft): <b>744,347</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>41.48</b>	Wash Weight (g):	Pan Retained (g): <b>0.06</b>	Sieve Loss (%): <b>0.22</b>	Fines (%): #200 - 0.31 #230 - 0.21	Organics (%): <b>1.63</b>	Carbonates (%): <b>39.92</b>	Shells (%):
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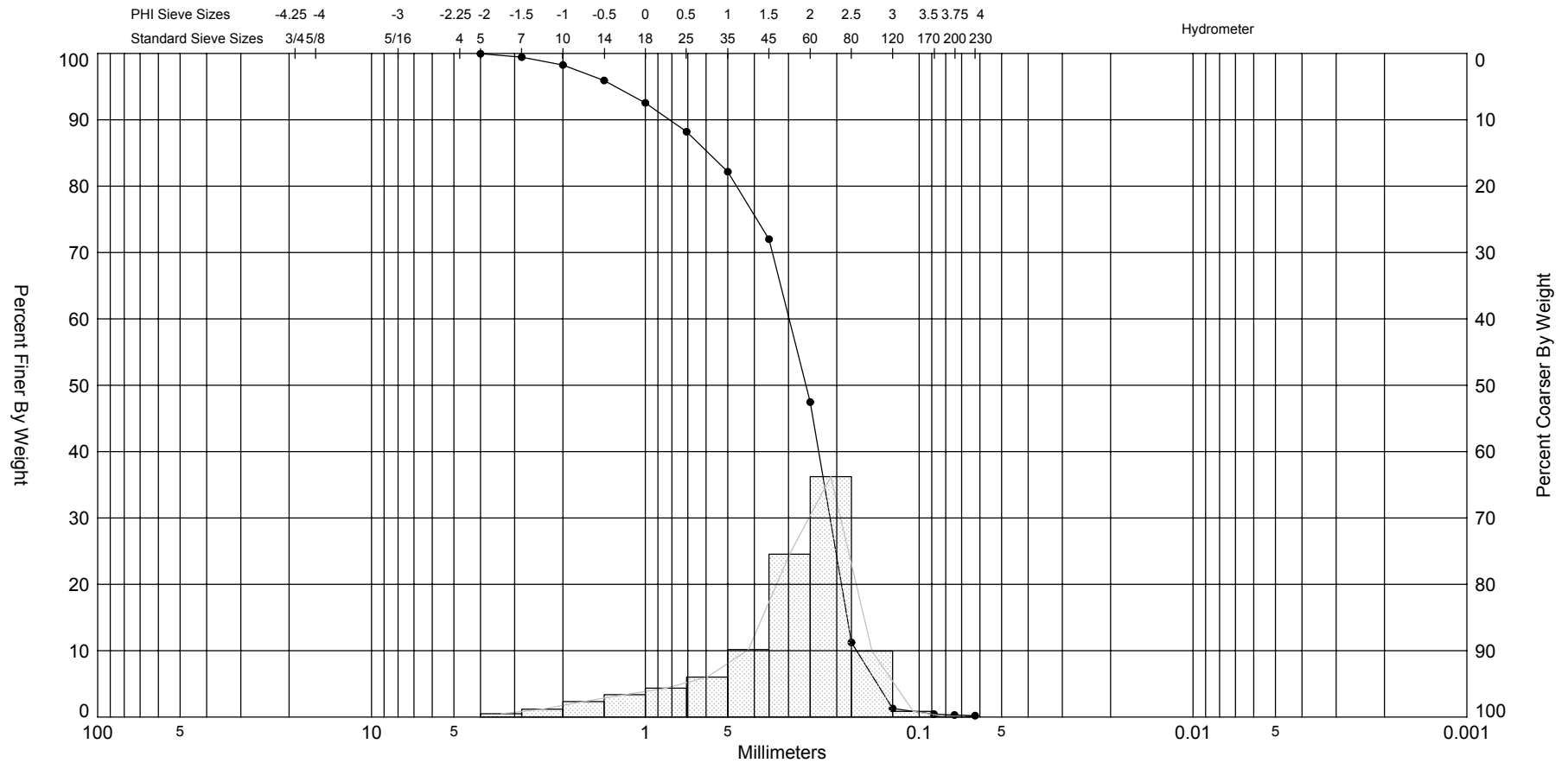
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.02	0.05	0.02	0.05
7	-1.50	2.83	0.21	0.51	0.23	0.56
10	-1.00	2.00	0.49	1.18	0.72	1.74
14	-0.50	1.41	0.97	2.34	1.69	4.08
18	0.00	1.00	1.40	3.37	3.09	7.45
25	0.50	0.71	1.80	4.35	4.89	11.80
35	1.00	0.50	2.50	6.03	7.39	17.83
45	1.50	0.35	4.21	10.16	11.61	27.99
60	2.00	0.25	10.18	24.55	21.79	52.54
80	2.50	0.18	15.03	36.22	36.82	88.76
120	3.00	0.13	4.13	9.94	40.94	98.70
170	3.50	0.09	0.36	0.86	41.30	99.56
200	3.75	0.07	0.05	0.13	41.35	99.69
230	4.00	0.06	0.04	0.10	41.39	99.79

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.81	2.43	2.31	1.95	1.35	0.85	-0.36
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.69	0.31	0.92	-1.34	4.71	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-13	—●—		SP	#200 - 0.31 #230 - 0.21	1.63	39.92	1.95	1.69	-1.34	4.71	0.92	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc,
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	207,192
												Northing (ft):	744,347
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-14

Analysis Date: 09-13-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>213,314</b>	Northing (ft): <b>742,543</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>50.38</b>	Wash Weight (g):	Pan Retained (g): <b>0.10</b>	Sieve Loss (%): <b>-0.02</b>	Fines (%): #200 - 0.50 #230 - 0.40	Organics (%): <b>1.08</b>	Carbonates (%): <b>35.66</b>	Shells (%):
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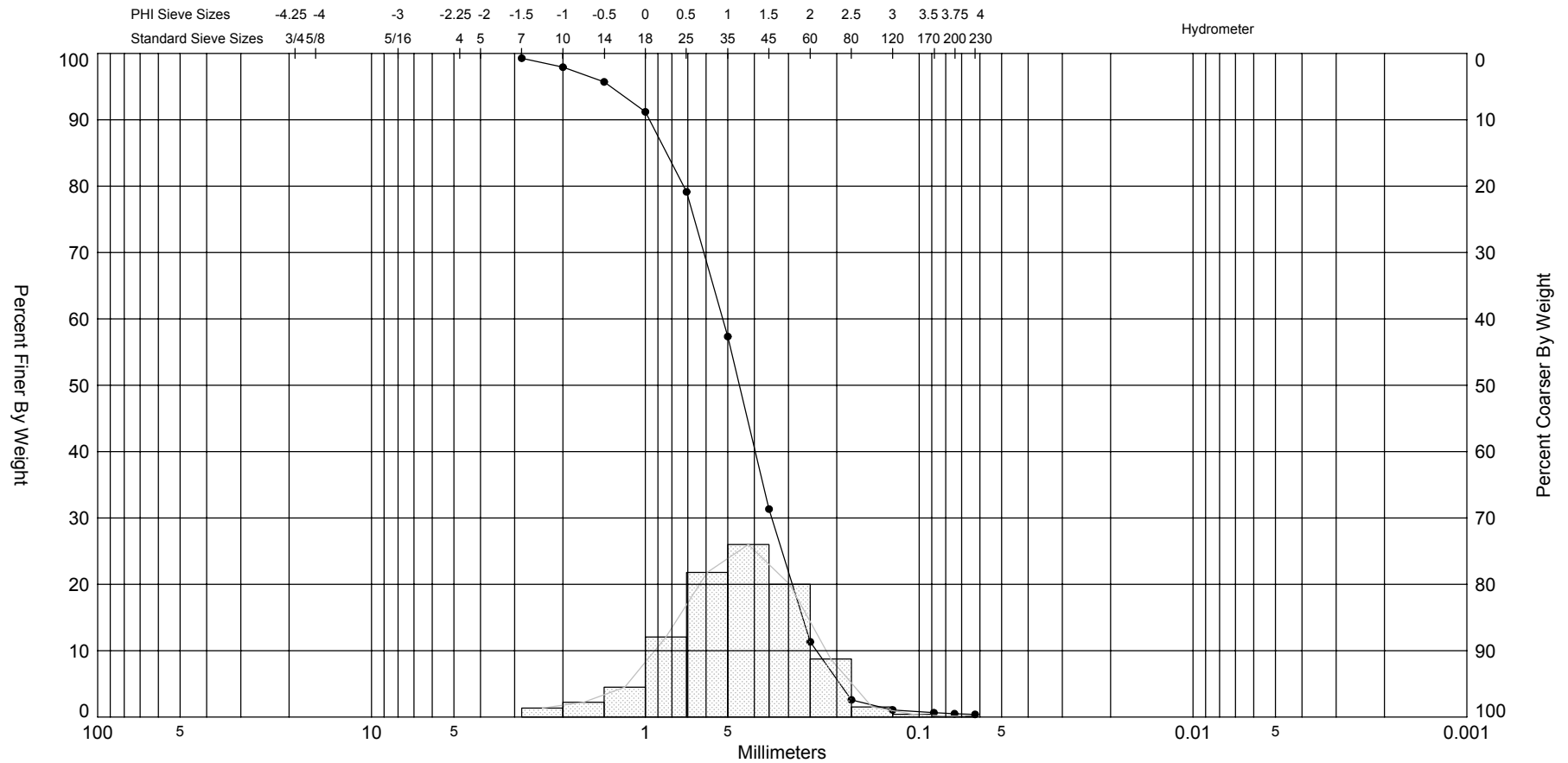
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.36	0.72	0.36	0.72
10	-1.00	2.00	0.68	1.35	1.04	2.07
14	-0.50	1.41	1.12	2.22	2.16	4.29
18	0.00	1.00	2.27	4.51	4.43	8.80
25	0.50	0.71	6.08	12.06	10.51	20.86
35	1.00	0.50	10.99	21.80	21.49	42.66
45	1.50	0.35	13.10	26.00	34.59	68.66
60	2.00	0.25	10.08	20.00	44.67	88.66
80	2.50	0.18	4.41	8.75	49.08	97.41
120	3.00	0.13	0.77	1.52	49.84	98.93
170	3.50	0.09	0.21	0.41	50.05	99.34
200	3.75	0.07	0.08	0.16	50.13	99.50
230	4.00	0.06	0.05	0.10	50.18	99.60

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.36	1.88	1.66	1.14	0.59	0.30	-0.42
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.08	0.47	0.8	-0.24	3.47	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



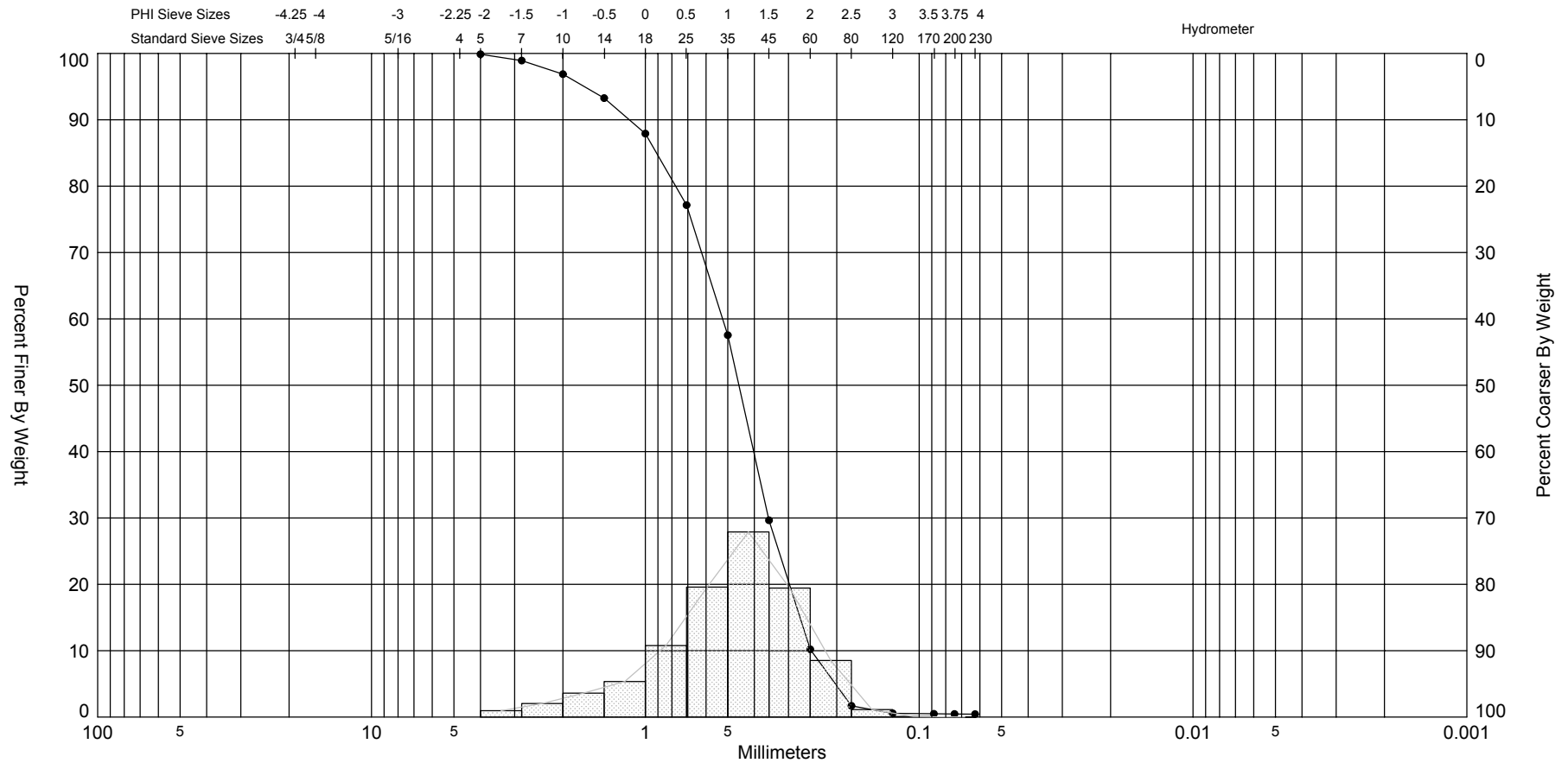
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-14	—●—		SP	#200 - 0.50 #230 - 0.40	1.08	35.66	1.14	1.08	-0.24	3.47	0.8	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	213,314
												Northing (ft):	742,543
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

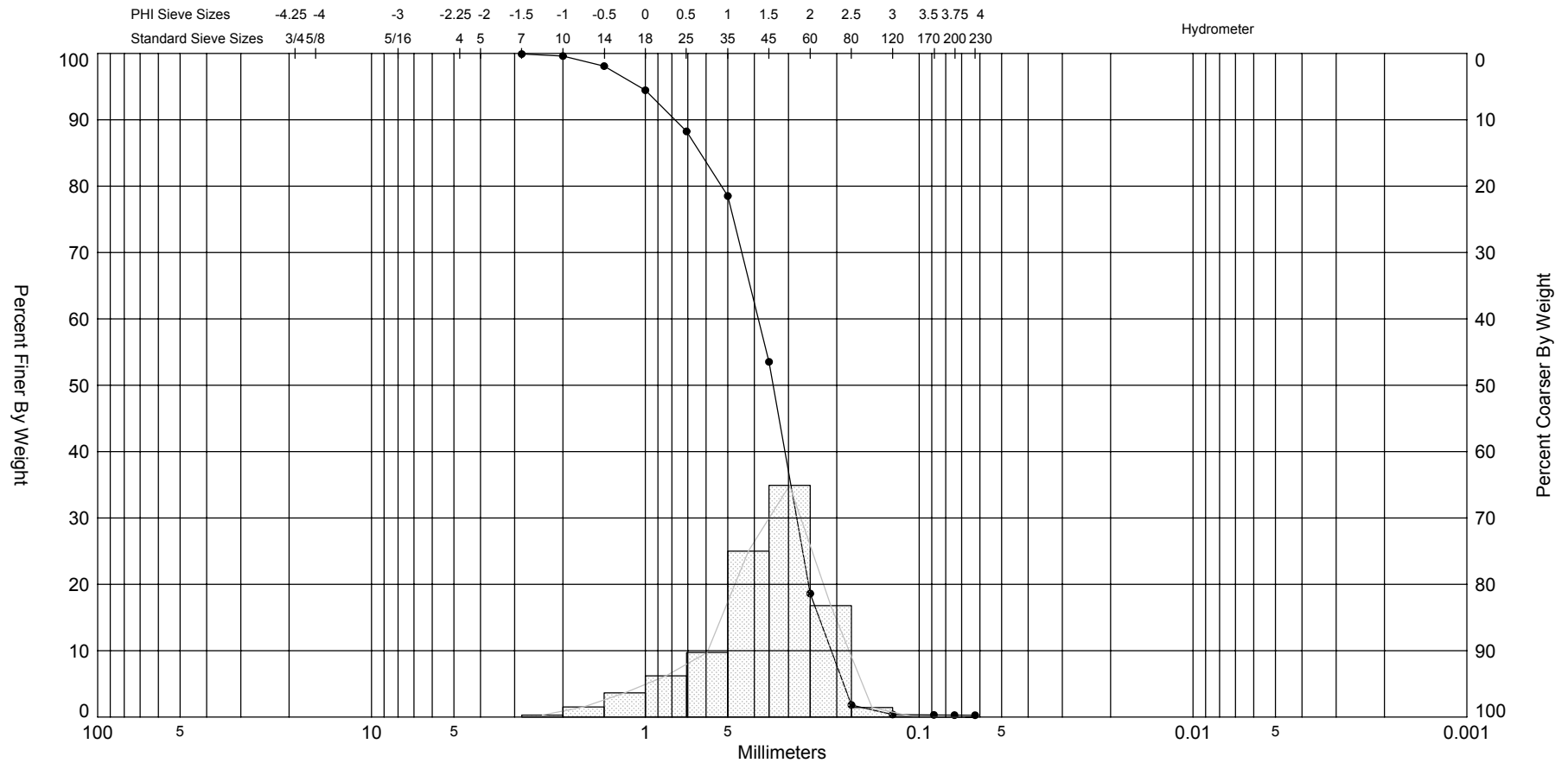


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-17	—●—		SP	#200 - 0.46 #230 - 0.44	0.95	26.64	1.14	1.01	-0.72	3.62	0.86	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	205,155
												Northing (ft):	754,943
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-18	—●—		SP	#200 - 0.29 #230 - 0.28	0.74	20.40	1.55	1.41	-0.94	3.94	0.72	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	202,327
												Northing (ft):	753,258
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-19

Analysis Date: 09-13-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>205,249</b>	Northing (ft): <b>753,002</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>50.70</b>	Wash Weight (g):	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.27</b>	Fines (%): #200 - 0.34 #230 - 0.32	Organics (%): <b>0.92</b>	Carbonates (%): <b>24.38</b>	Shells (%):
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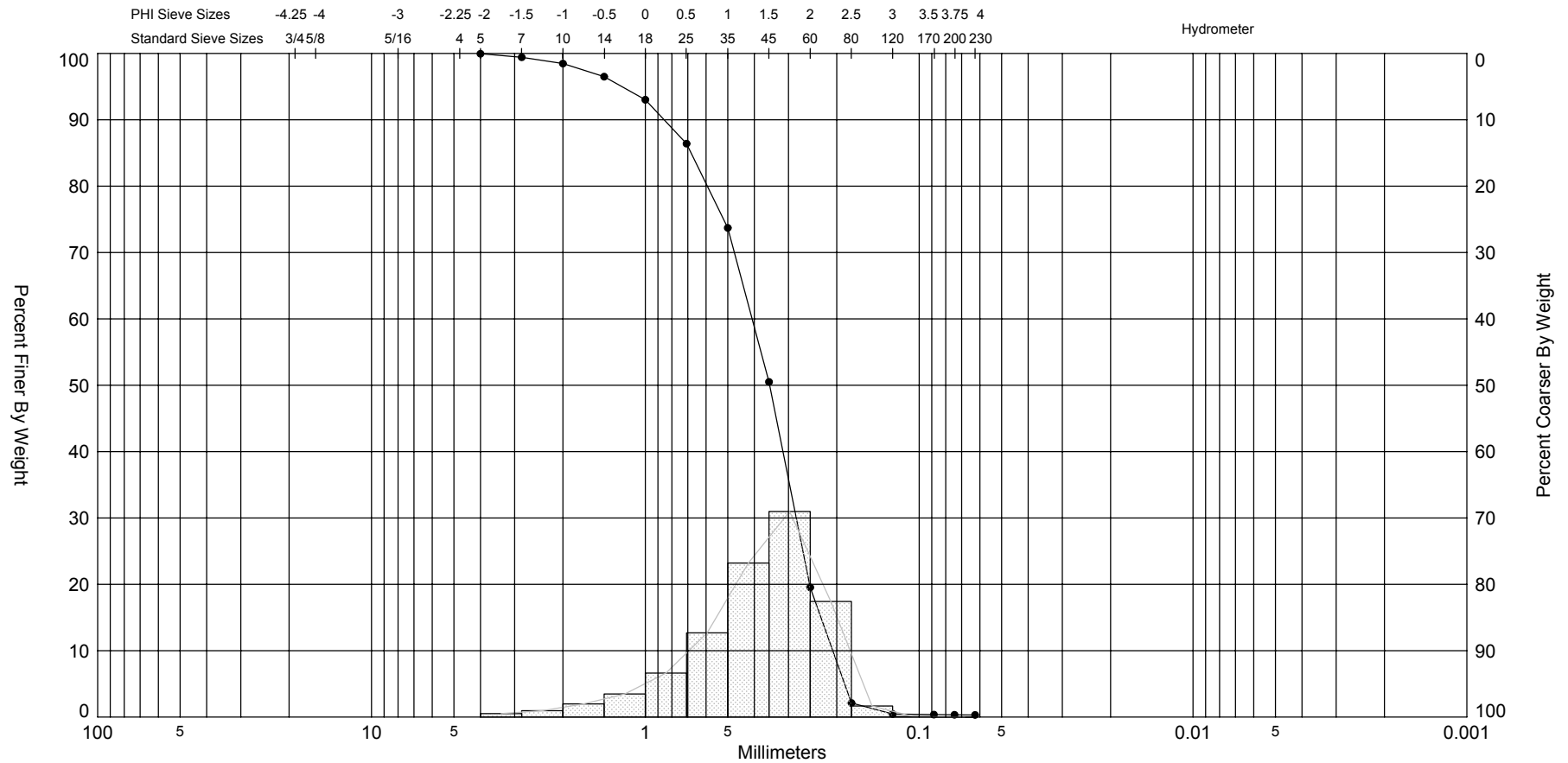
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.03	0.05	0.03	0.05
7	-1.50	2.83	0.27	0.53	0.29	0.58
10	-1.00	2.00	0.48	0.95	0.77	1.53
14	-0.50	1.41	1.00	1.97	1.77	3.50
18	0.00	1.00	1.77	3.48	3.54	6.98
25	0.50	0.71	3.36	6.62	6.89	13.60
35	1.00	0.50	6.43	12.69	13.33	26.29
45	1.50	0.35	11.76	23.20	25.09	49.49
60	2.00	0.25	15.70	30.97	40.79	80.46
80	2.50	0.18	8.83	17.42	49.62	97.88
120	3.00	0.13	0.84	1.66	50.47	99.54
170	3.50	0.09	0.04	0.09	50.51	99.63
200	3.75	0.07	0.02	0.03	50.53	99.66
230	4.00	0.06	0.01	0.02	50.54	99.68

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.42	2.10	1.91	1.51	0.95	0.59	-0.28
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.34	0.40	0.81	-1.05	4.38	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

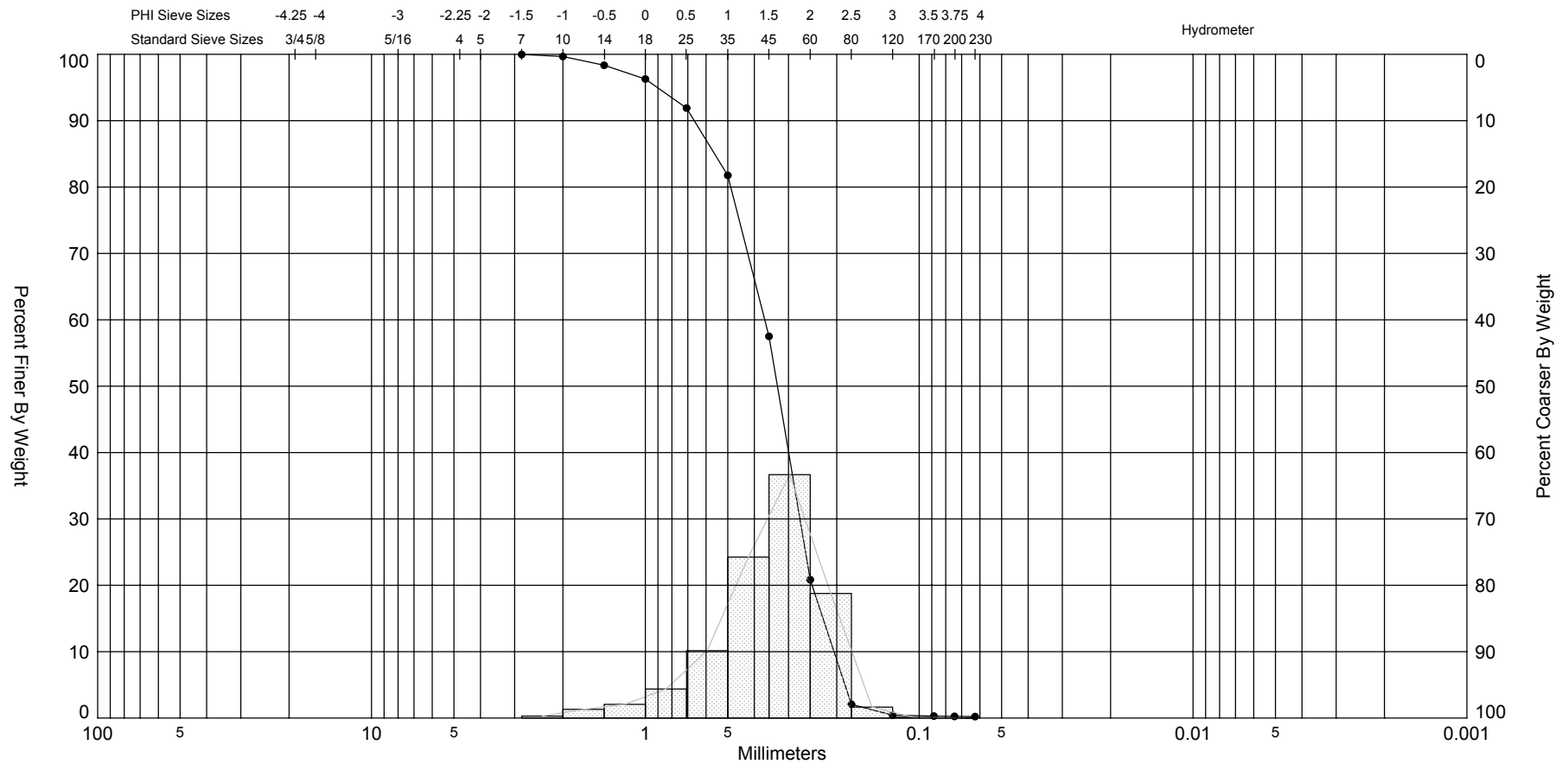


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-19	—●—		SP	#200 - 0.34 #230 - 0.32	0.92	24.38	1.51	1.34	-1.05	4.38	0.81	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-13-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	205,249
												Northing (ft):	753,002
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-20	—●—		SP	#200 - 0.25 #230 - 0.22	0.85	21.63	1.6	1.49	-1.01	4.64	0.68	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	204,239
												Northing (ft):	753,504
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-21

Analysis Date: 09-11-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>204,338</b>	Northing (ft): <b>752,485</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>50.00</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.28</b>	Fines (%): #200 - 0.39 #230 - 0.37	Organics (%): <b>0.68</b>	Carbonates (%): <b>16.50</b>	Shells (%):
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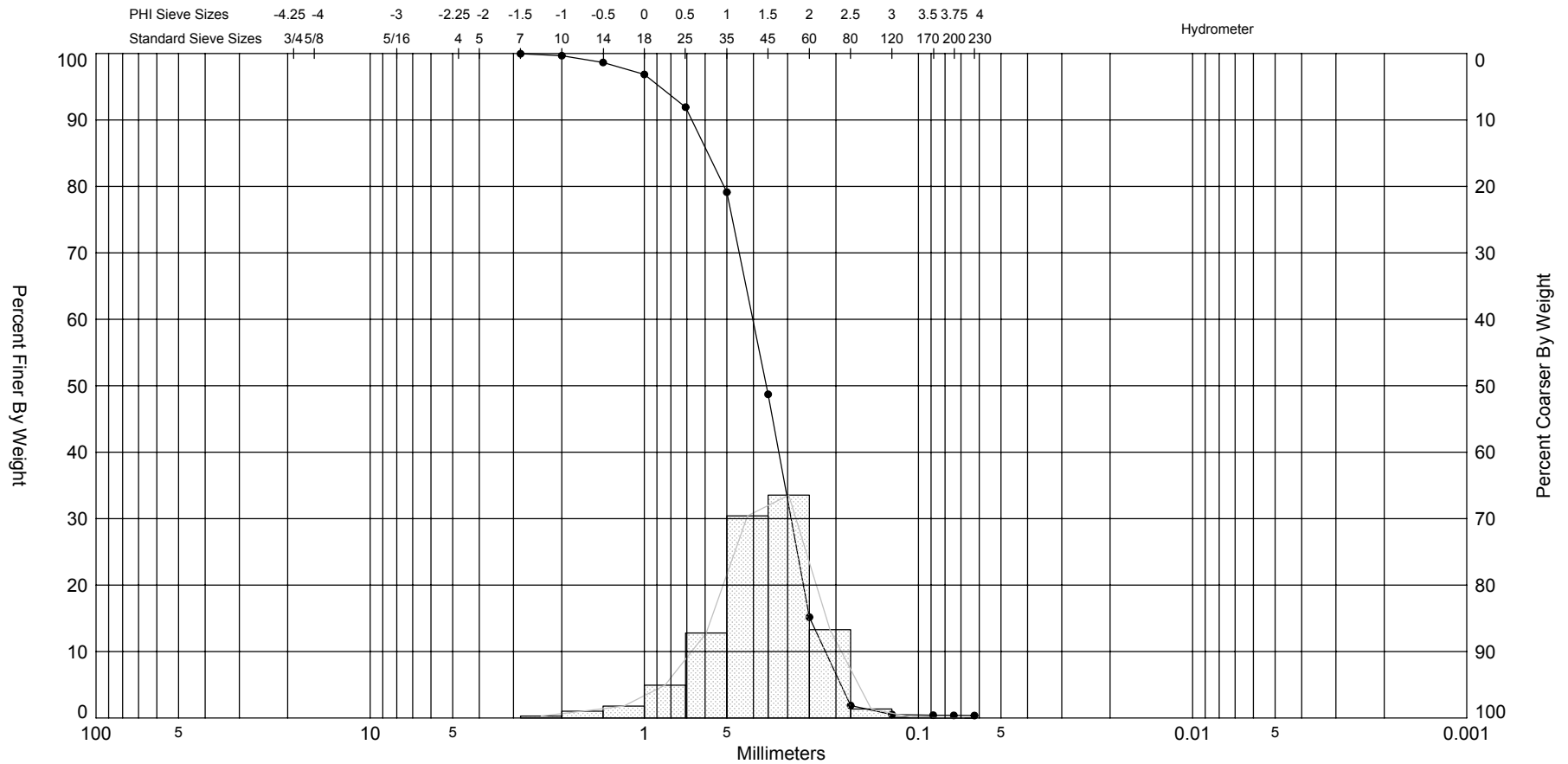
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.02	0.04	0.02	0.04
10	-1.00	2.00	0.14	0.29	0.16	0.33
14	-0.50	1.41	0.51	1.02	0.67	1.35
18	0.00	1.00	0.90	1.80	1.57	3.15
25	0.50	0.71	2.46	4.93	4.03	8.08
35	1.00	0.50	6.40	12.79	10.43	20.87
45	1.50	0.35	15.21	30.42	25.64	51.29
60	2.00	0.25	16.77	33.54	42.41	84.83
80	2.50	0.18	6.65	13.29	49.05	98.12
120	3.00	0.13	0.68	1.35	49.73	99.47
170	3.50	0.09	0.05	0.11	49.78	99.58
200	3.75	0.07	0.02	0.03	49.80	99.61
230	4.00	0.06	0.01	0.02	49.81	99.63

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.38	1.99	1.85	1.48	1.07	0.81	0.19
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.41	0.38	0.64	-0.8	4.46	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

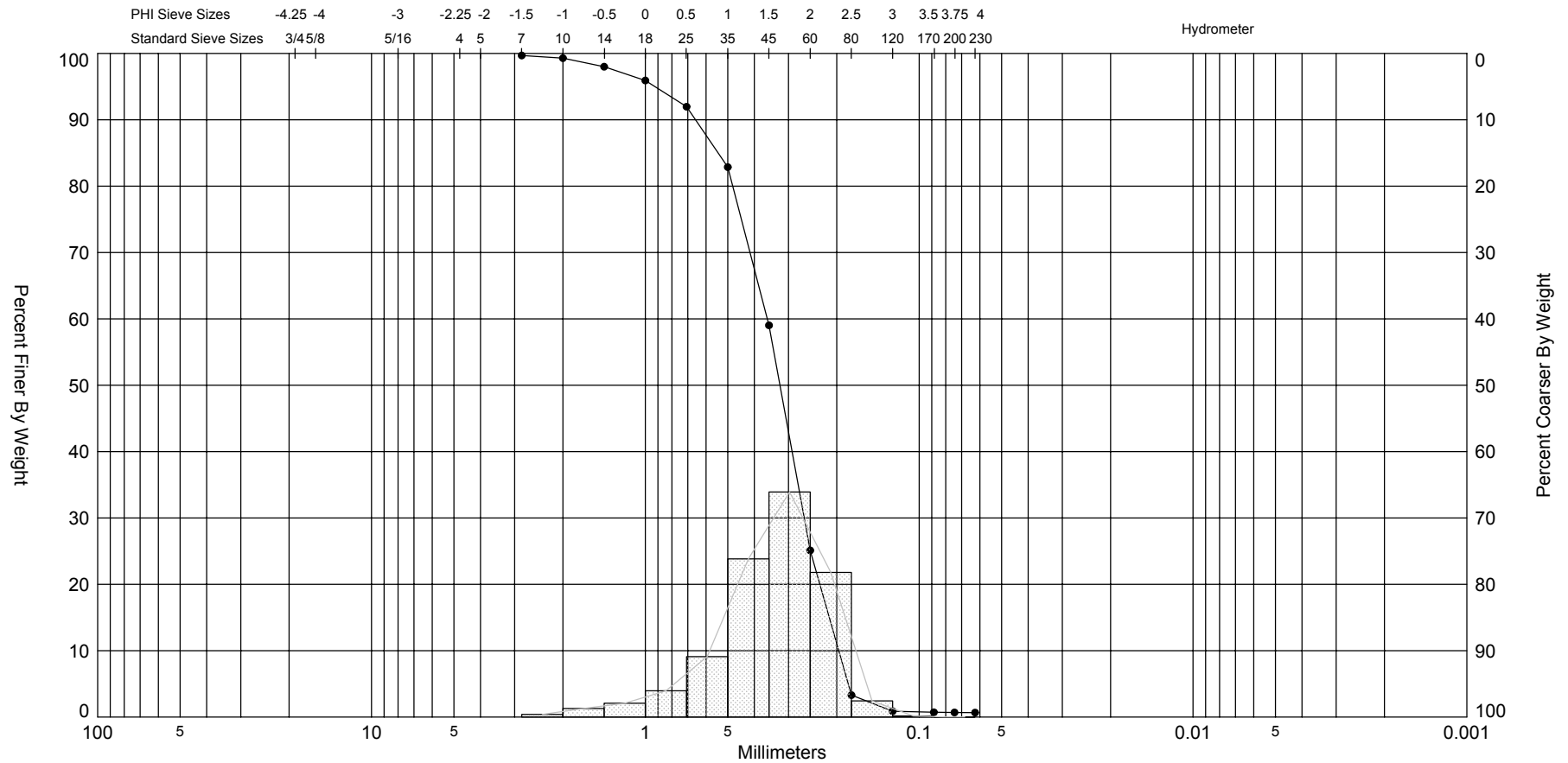


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-21	—●—		SP	#200 - 0.39 #230 - 0.37	0.68	16.50	1.48	1.41	-0.8	4.46	0.64	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	204,338
												Northing (ft):	752,485
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-22	—●—		SP	#200 - 0.69 #230 - 0.67	0.97	21.99	1.63	1.52	-1	4.66	0.69	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	204,769
												Northing (ft):	750,444
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T1-24

Analysis Date: 09-18-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>202,375</b>	Northing (ft): <b>751,112</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>58.37</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.90</b>	Fines (%): #200 - 0.35 #230 - 0.34	Organics (%): <b>0.80</b>	Carbonates (%): <b>24.09</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.09	0.15	0.09	0.15
10	-1.00	2.00	0.55	0.95	0.64	1.10
14	-0.50	1.41	1.36	2.33	2.00	3.43
18	0.00	1.00	2.86	4.90	4.86	8.33
25	0.50	0.71	5.39	9.24	10.25	17.57
35	1.00	0.50	10.16	17.40	20.41	34.97
45	1.50	0.35	19.03	32.60	39.44	67.57
60	2.00	0.25	14.18	24.30	53.62	91.87
80	2.50	0.18	4.18	7.16	57.80	99.03
120	3.00	0.13	0.33	0.56	58.13	99.59
170	3.50	0.09	0.03	0.05	58.15	99.64
200	3.75	0.07	0.01	0.01	58.16	99.65
230	4.00	0.06	0.01	0.01	58.17	99.66

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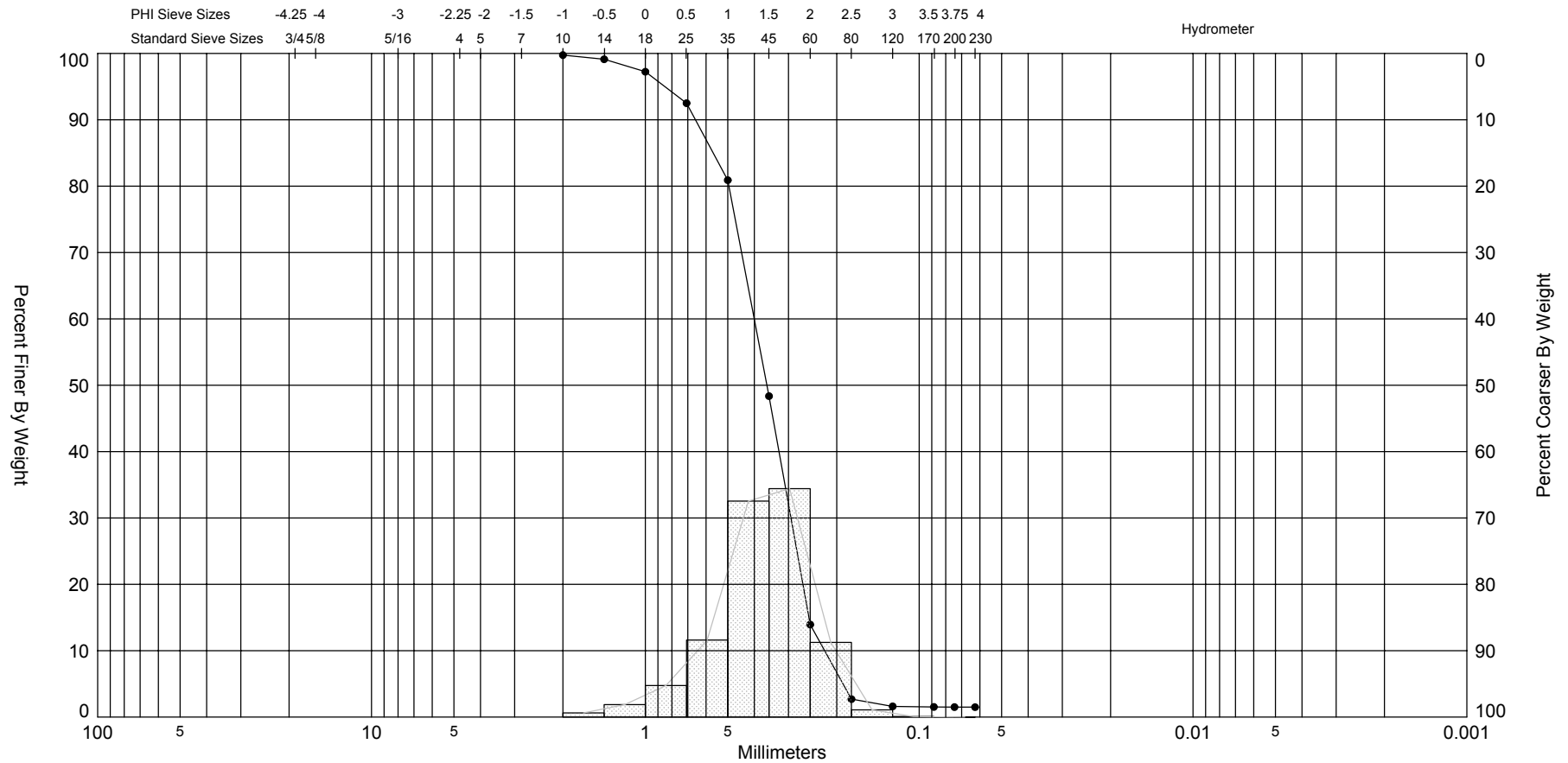
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.22	1.84	1.65	1.23	0.71	0.42	-0.34
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.12	0.46	0.73	-0.73	3.63	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



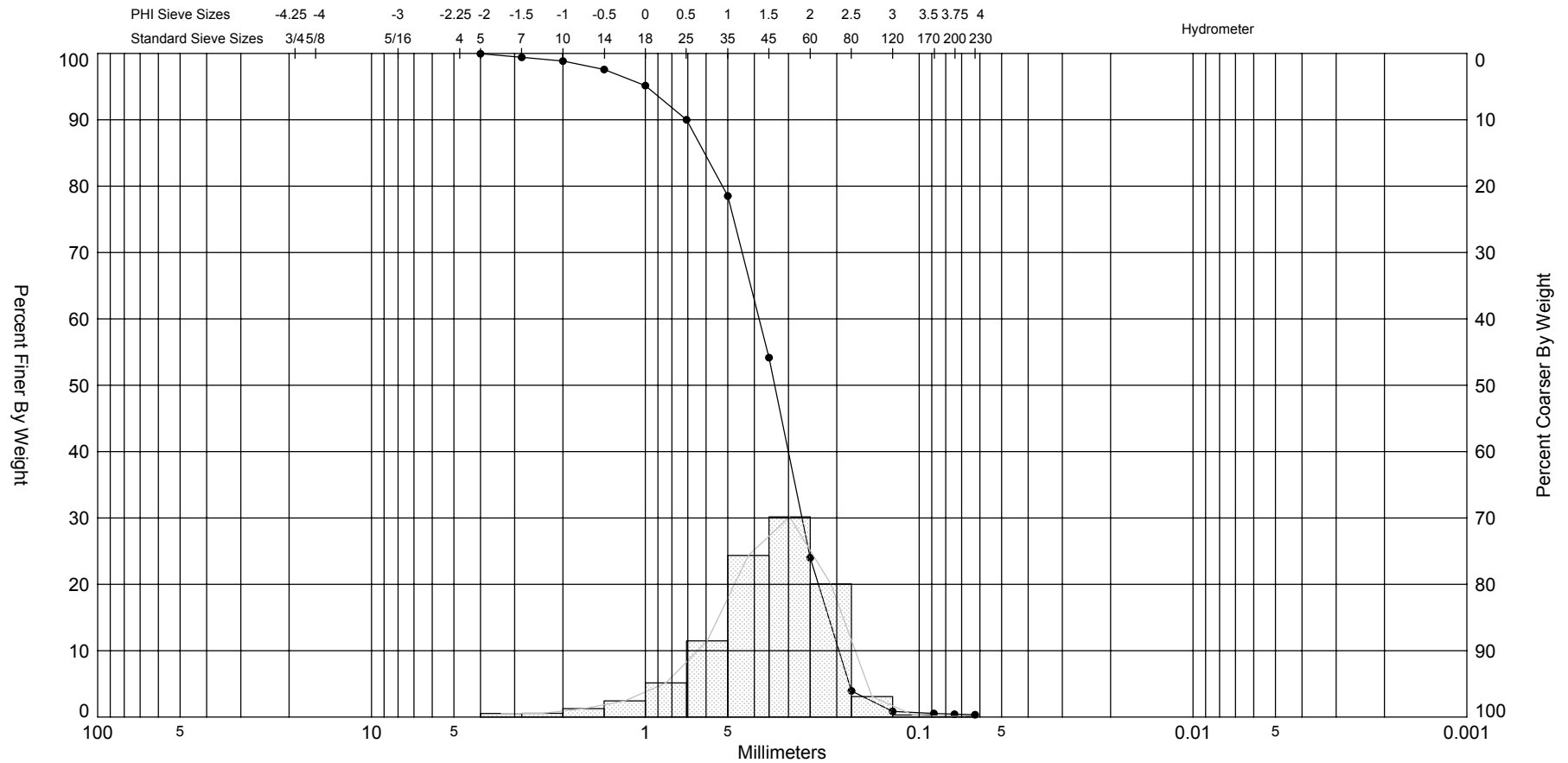
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-26	—●—		SP	#200 - 1.50 #230 - 1.49	0.72	19.66	1.47	1.4	-0.66	4.07	0.59	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	203,062
												Northing (ft):	752,093
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



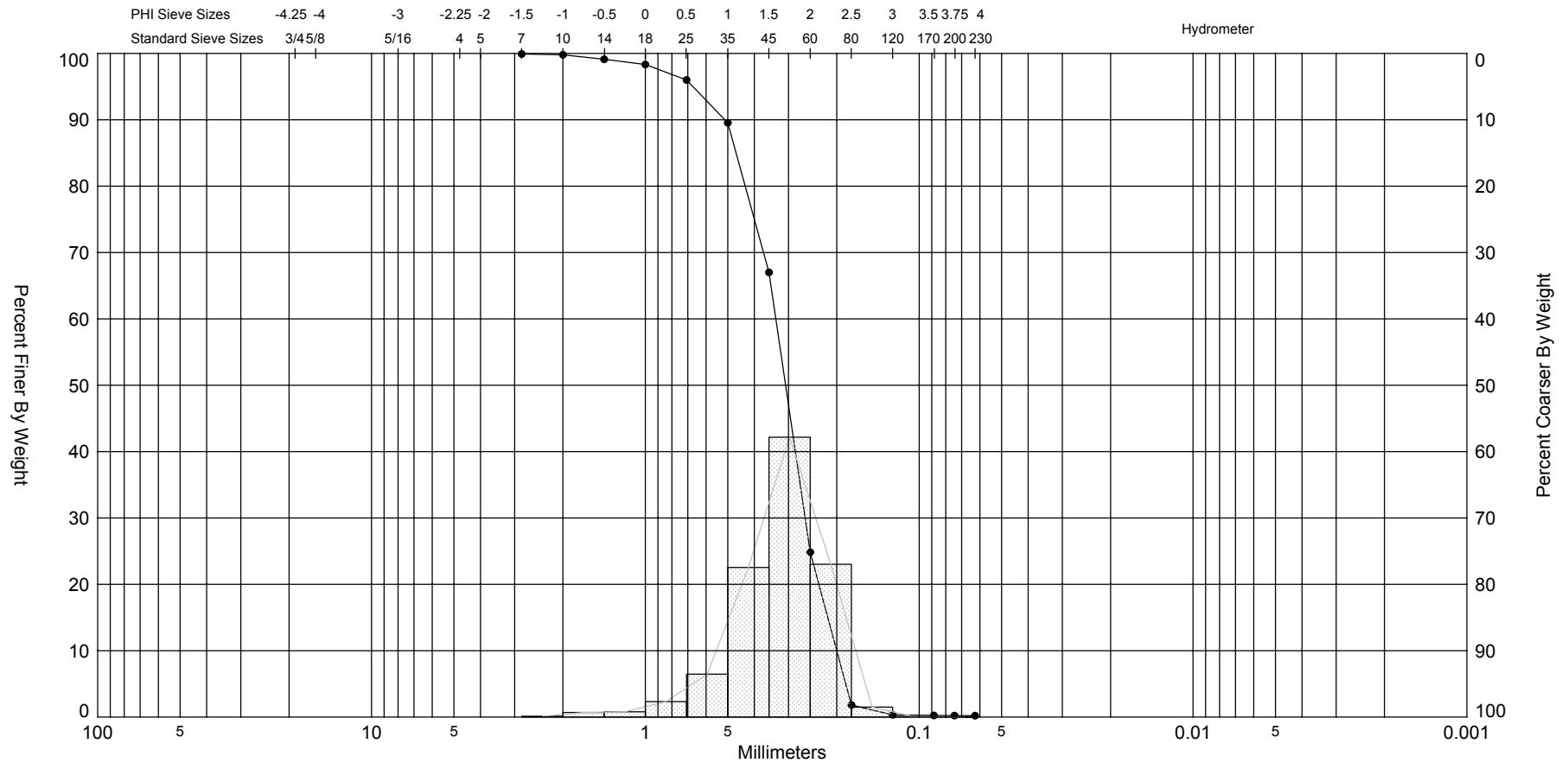
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-27	—●—		SP	#200 - 0.43 #230 - 0.35	0.86	26.25	1.57	1.46	-1.01	4.96	0.77	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	203,537
												Northing (ft):	753,160
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-T1-28							
Analysis Date: 09-20-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
204,989		751,618		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
49.63		0.00	-0.10	#200 - 0.22 #230 - 0.21	0.58	13.22	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.04	0.08	0.04	0.08	
10	-1.00	2.00	0.06	0.12	0.10	0.20	
14	-0.50	1.41	0.34	0.68	0.44	0.88	
18	0.00	1.00	0.39	0.79	0.83	1.67	
25	0.50	0.71	1.16	2.33	1.99	4.00	
35	1.00	0.50	3.20	6.45	5.19	10.45	
45	1.50	0.35	11.19	22.54	16.38	32.99	
60	2.00	0.25	20.93	42.17	37.30	75.16	
80	2.50	0.18	11.43	23.02	48.73	98.18	
120	3.00	0.13	0.74	1.49	49.47	99.67	
170	3.50	0.09	0.04	0.09	49.51	99.76	
200	3.75	0.07	0.01	0.02	49.53	99.78	
230	4.00	0.06	0.00	0.01	49.53	99.79	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.43	2.19	2.00	1.70	1.32	1.12	0.58	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.63	0.32	0.57	-1.15	5.81		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-28	—●—		SP	#200 - 0.22 #230 - 0.21	0.58	13.22	1.7	1.63	-1.15	5.81	0.57	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-20-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	204,989
												Northing (ft):	751,618
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

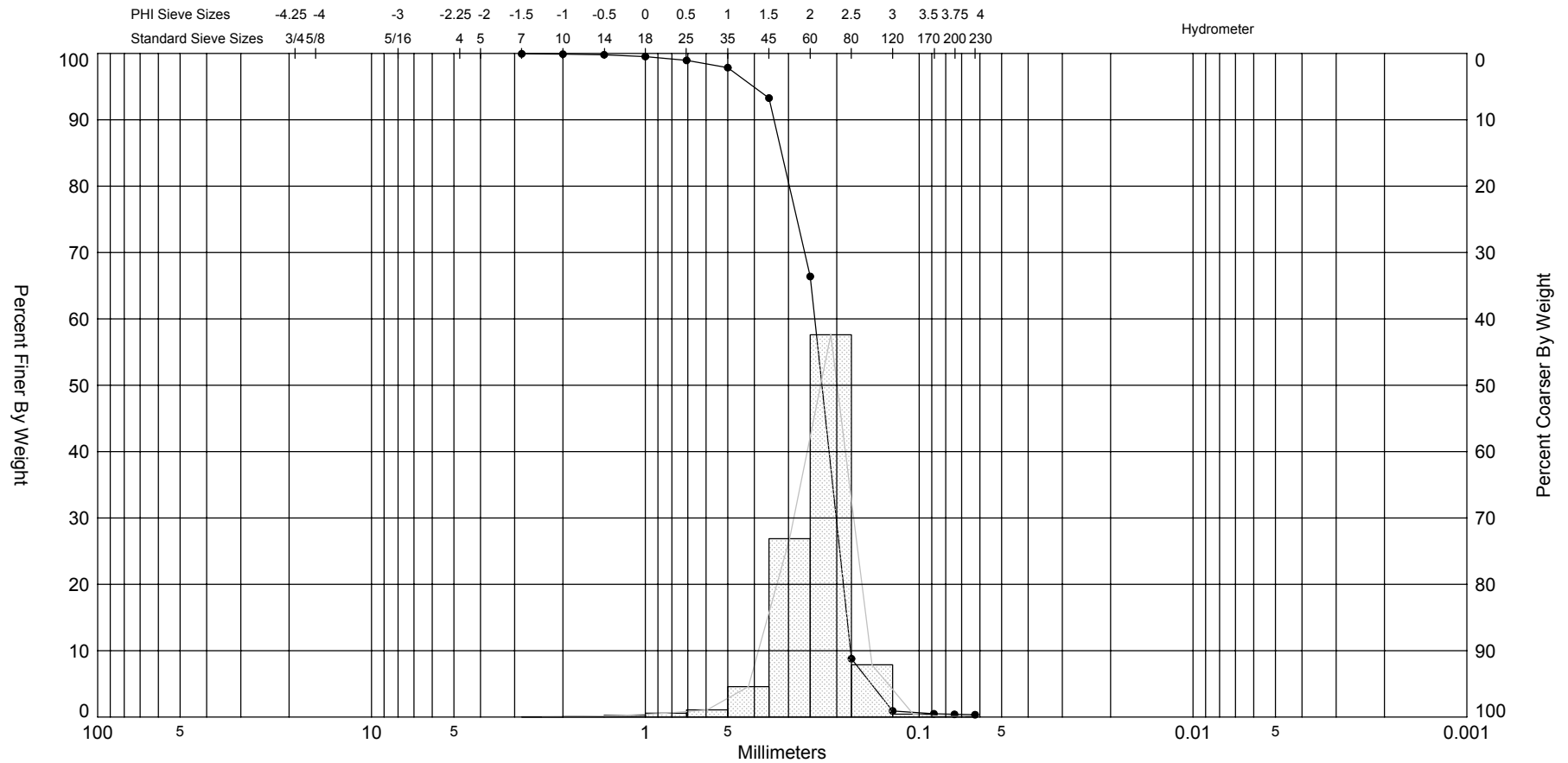




Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-T1-32							
Analysis Date: 09-18-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
206,041		752,043		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
42.24		0.06		#200 - 0.41 #230 - 0.35	0.66	11.68	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.03	0.06	0.03	0.06	
10	-1.00	2.00	0.02	0.05	0.05	0.11	
14	-0.50	1.41	0.04	0.09	0.09	0.20	
18	0.00	1.00	0.12	0.27	0.20	0.47	
25	0.50	0.71	0.24	0.58	0.45	1.05	
35	1.00	0.50	0.46	1.09	0.91	2.14	
45	1.50	0.35	1.94	4.59	2.85	6.73	
60	2.00	0.25	11.36	26.88	14.20	33.61	
80	2.50	0.18	24.33	57.60	38.53	91.21	
120	3.00	0.13	3.32	7.87	41.86	99.08	
170	3.50	0.09	0.18	0.43	42.04	99.51	
200	3.75	0.07	0.03	0.08	42.07	99.59	
230	4.00	0.06	0.03	0.06	42.10	99.65	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.74	2.44	2.36	2.14	1.84	1.67	1.31	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.07	0.24	0.44	-1.55	10		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



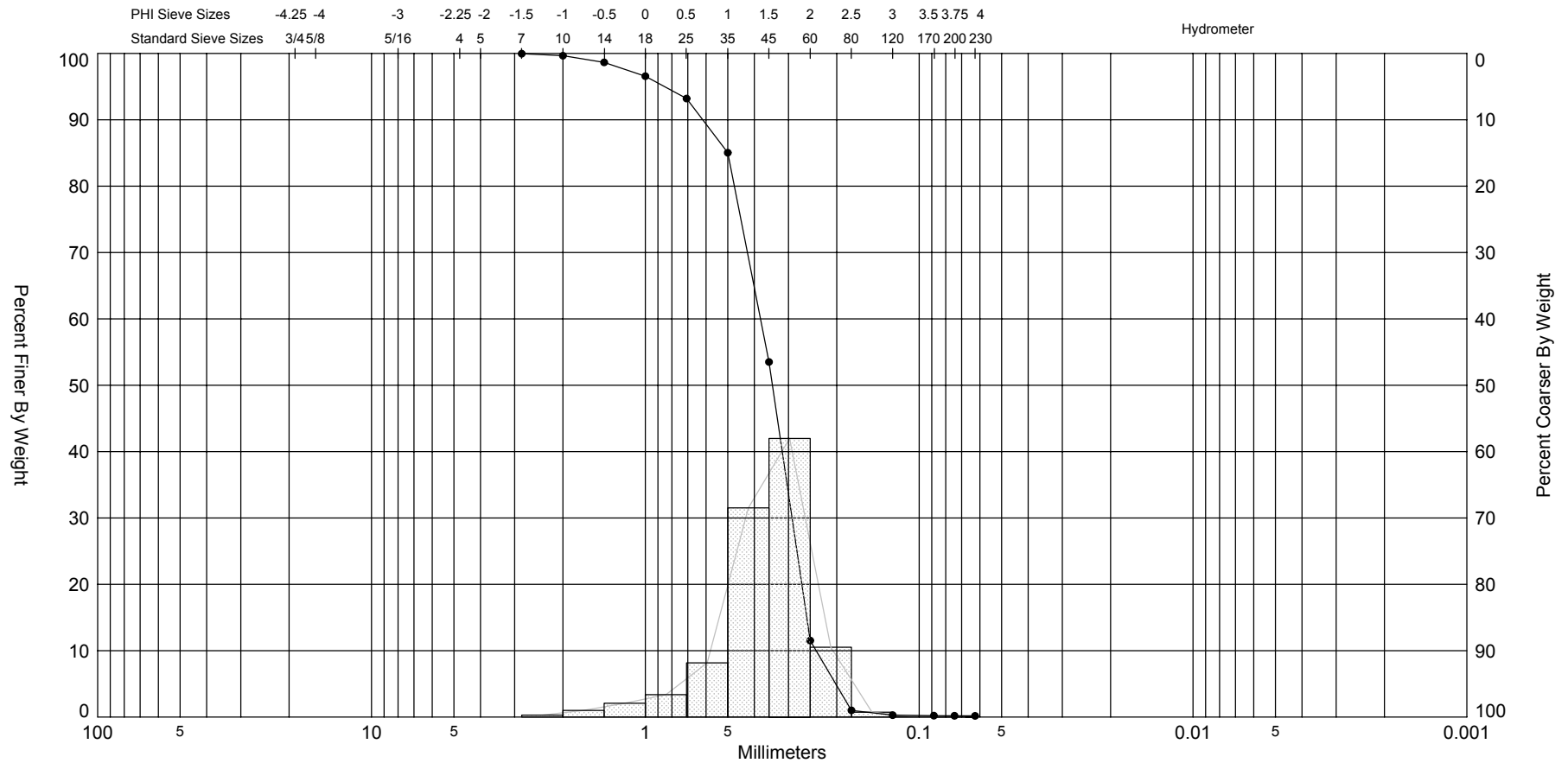
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T1-32	—●—		SP	#200 - 0.41 #230 - 0.35	0.66	11.68	2.14	2.07	-1.55	10	0.44	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	206,041
												Northing (ft):	752,043
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



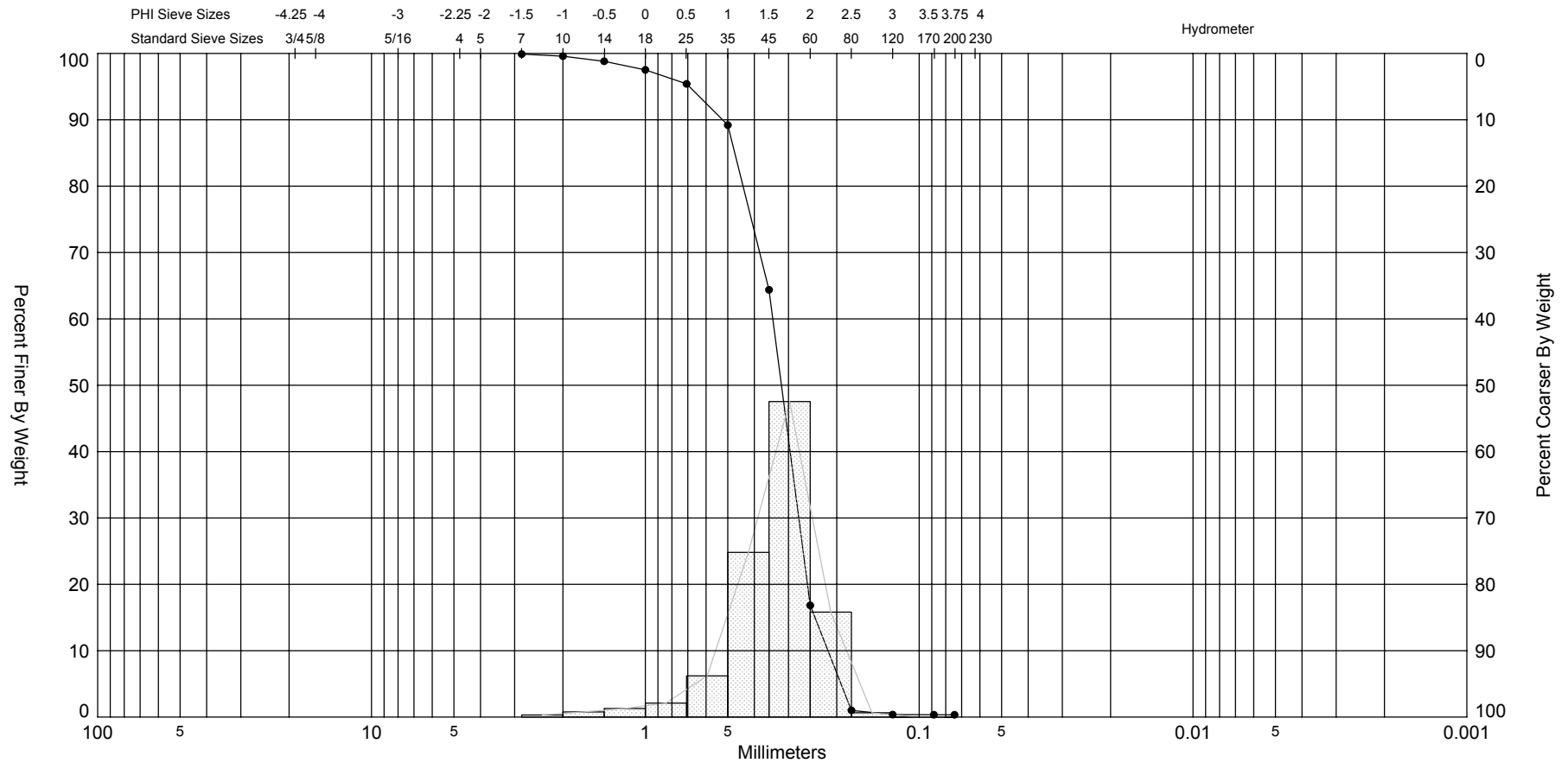
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-01	—●—		SP	#200 - 0.19 #230 - 0.18	0.68	14.04	1.54	1.44	-1.24	5.89	0.6	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-02-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	199,101
												Northing (ft):	748,215
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-T2-02							
Analysis Date: 09-06-06							
Analyzed By: SEA Inc.							
Easting (ft): 202,954		Northing (ft): 741,568		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft):	
USCS: SP		Munsell:		Comments:			
Dry Weight (g): 53.15	Wash Weight (g):	Pan Retained (g): 0.00	Sieve Loss (%): 0.63	Fines (%): #200 - 0.34 #230 - 0.69	Organics (%): 0.69	Carbonates (%): 12.38	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.05	0.10	0.05	0.10	
10	-1.00	2.00	0.16	0.31	0.22	0.41	
14	-0.50	1.41	0.41	0.77	0.63	1.18	
18	0.00	1.00	0.69	1.30	1.32	2.48	
25	0.50	0.71	1.12	2.11	2.44	4.59	
35	1.00	0.50	3.30	6.21	5.74	10.80	
45	1.50	0.35	13.19	24.82	18.93	35.62	
60	2.00	0.25	25.27	47.55	44.20	83.17	
80	2.50	0.18	8.41	15.82	52.60	98.99	
120	3.00	0.13	0.34	0.64	52.95	99.63	
170	3.50	0.09	0.01	0.02	52.96	99.65	
200	3.75	0.07	0.00	0.01	52.96	99.66	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.37	2.03	1.91	1.65	1.29	1.10	0.53	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.56	0.34	0.56	-1.49	7.13		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-02	—●—		SP	#200 - 0.34 #230 - 0.69	0.69	12.38	1.65	1.56	-1.49	7.13	0.56	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	202,954
												Northing (ft):	741,568
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T2-04

Analysis Date: 09-06-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>201,732</b>	Northing (ft): <b>742,636</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>57.53</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.32</b>	Fines (%): #200 - <b>0.51</b> #230 - <b>2.13</b>	Organics (%): <b>0.76</b>	Carbonates (%): <b>15.37</b>	Shells (%):
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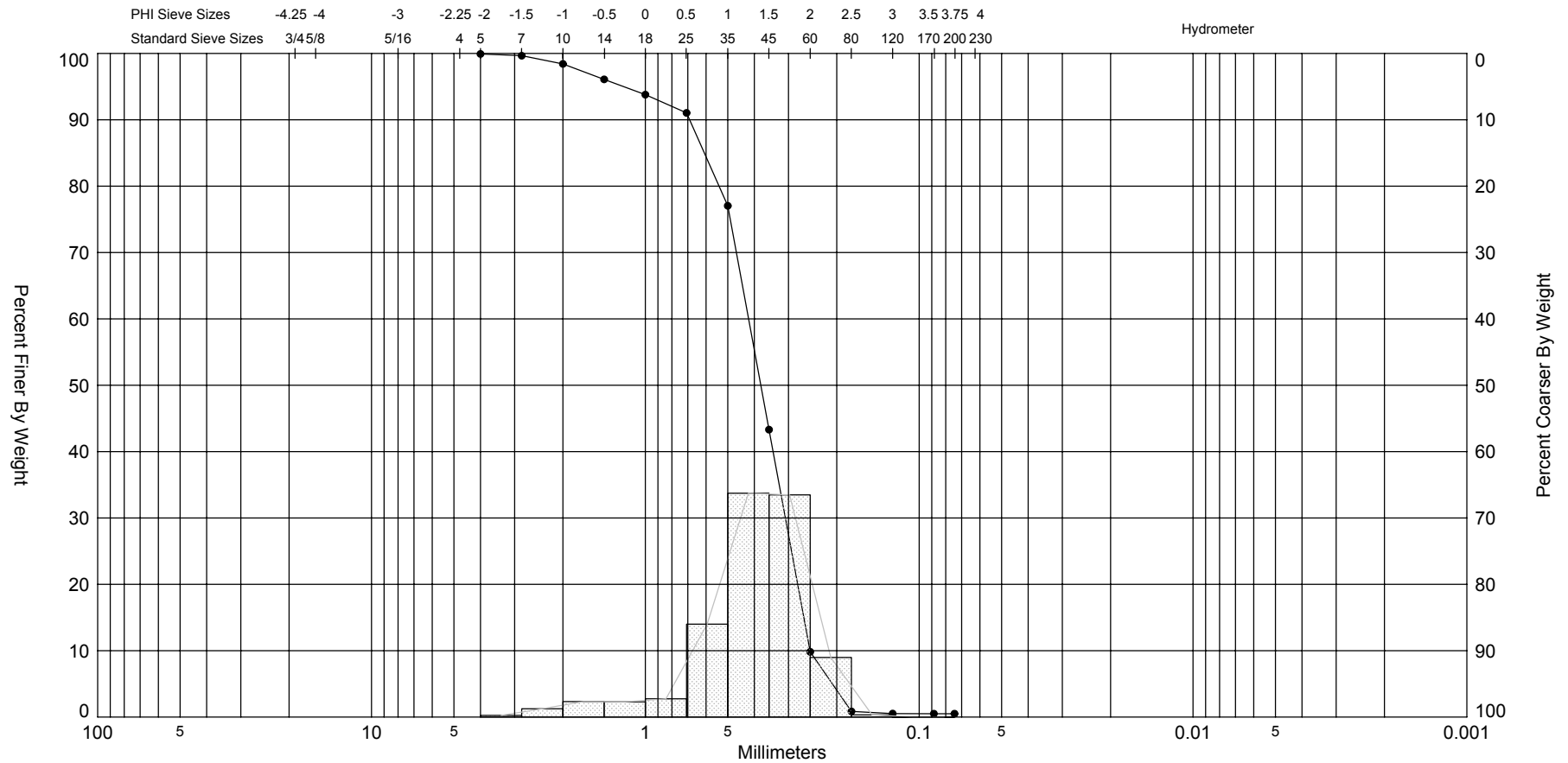
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.05	0.08	0.05	0.08
7	-1.50	2.83	0.15	0.26	0.19	0.34
10	-1.00	2.00	0.72	1.24	0.91	1.58
14	-0.50	1.41	1.34	2.33	2.25	3.91
18	0.00	1.00	1.32	2.30	3.57	6.21
25	0.50	0.71	1.58	2.75	5.15	8.96
35	1.00	0.50	8.06	14.00	13.21	22.96
45	1.50	0.35	19.40	33.73	32.61	56.69
60	2.00	0.25	19.26	33.48	51.87	90.17
80	2.50	0.18	5.17	8.98	57.04	99.15
120	3.00	0.13	0.19	0.33	57.23	99.48
170	3.50	0.09	0.01	0.01	57.24	99.49
200	3.75	0.07	0.00	0.00	57.24	99.49

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.27	1.91	1.77	1.40	1.03	0.75	-0.26
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.29	0.41	0.7	-1.44	5.97	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-04	—●—		SP	#200 - 0.51 #230 - 2.13	0.76	15.37	1.4	1.29	-1.44	5.97	0.7	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	201,732
												Northing (ft):	742,636
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T2-05

Analysis Date: 09-06-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>202,944</b>	Northing (ft): <b>742,677</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>58.43</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): #200 - 2.14 #230 - 2.13	Organics (%): <b>0.72</b>	Carbonates (%): <b>16.90</b>	Shells (%):
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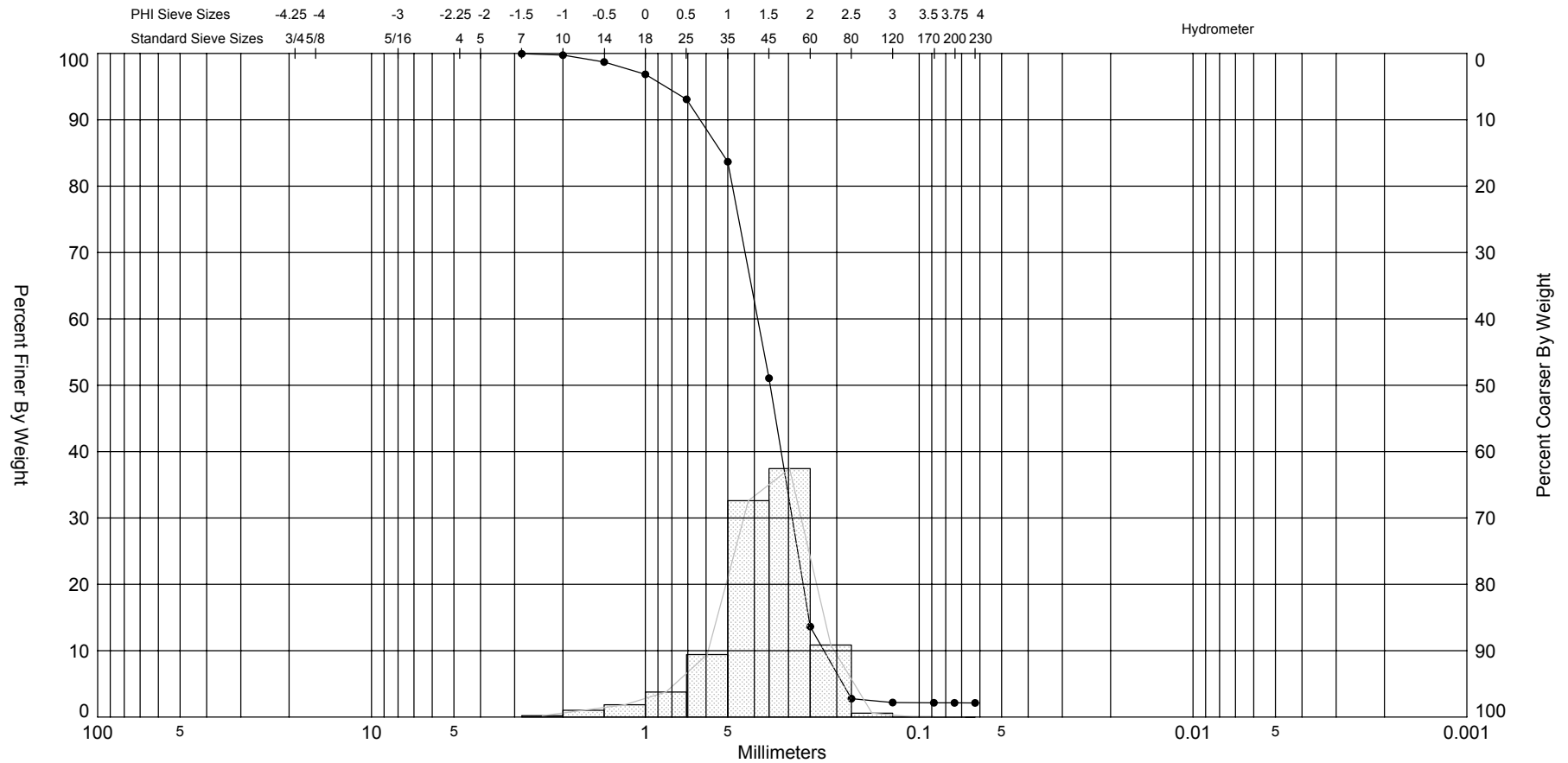
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.03	0.05	0.03	0.05
10	-1.00	2.00	0.12	0.21	0.15	0.26
14	-0.50	1.41	0.60	1.03	0.75	1.29
18	0.00	1.00	1.09	1.86	1.84	3.15
25	0.50	0.71	2.20	3.77	4.04	6.92
35	1.00	0.50	5.50	9.41	9.53	16.33
45	1.50	0.35	19.05	32.61	28.58	48.94
60	2.00	0.25	21.87	37.43	50.45	86.37
80	2.50	0.18	6.34	10.86	56.79	97.23
120	3.00	0.13	0.34	0.58	57.14	97.81
170	3.50	0.09	0.02	0.04	57.16	97.85
200	3.75	0.07	0.00	0.01	57.16	97.86
230	4.00	0.06	0.00	0.01	57.16	97.87

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.40	1.97	1.85	1.51	1.13	0.98	0.25
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.42	0.37	0.59	-1.11	5.3	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

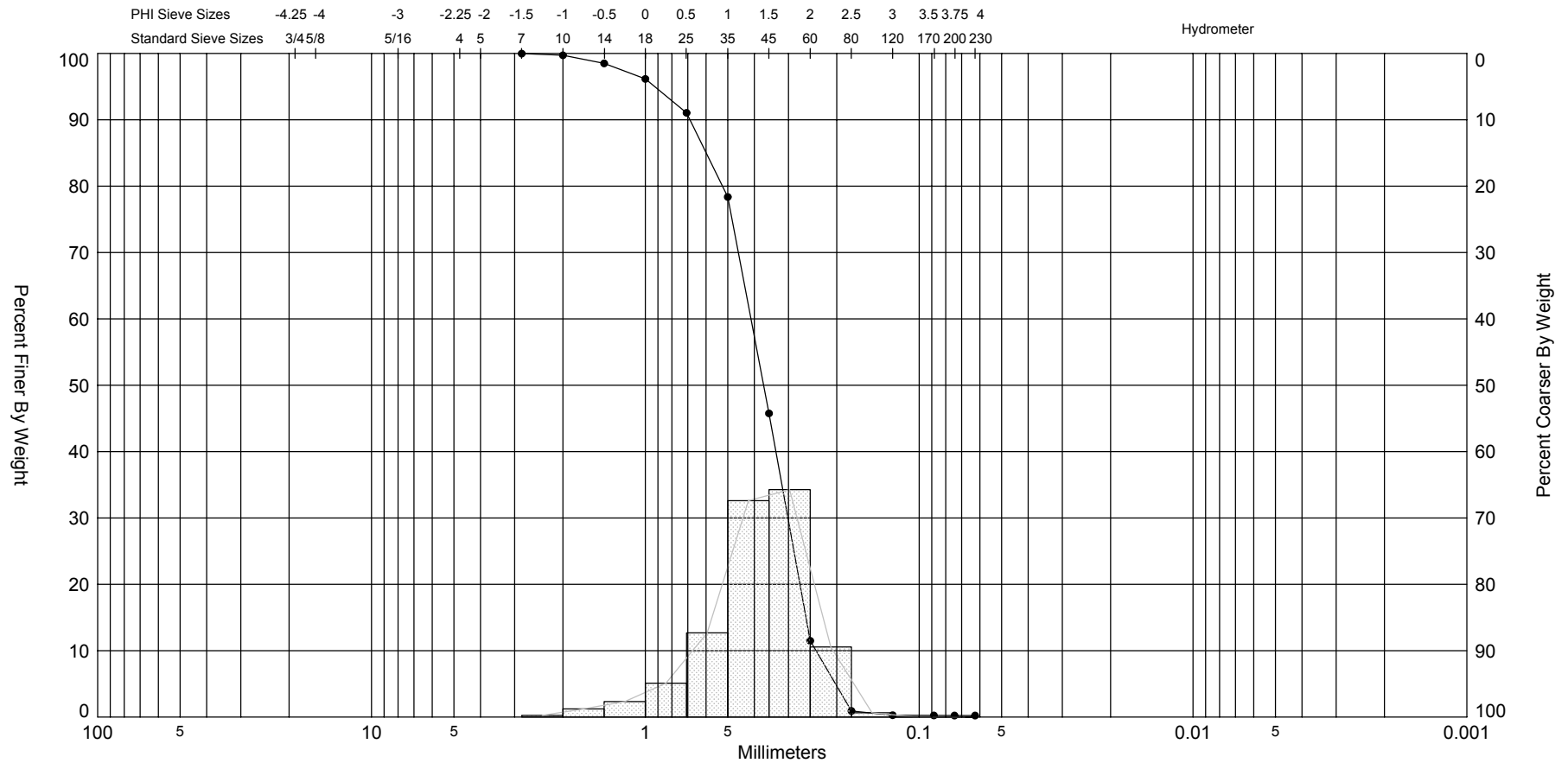


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-05	—●—		SP	#200 - 2.14 #230 - 2.13	0.72	16.90	1.51	1.42	-1.11	5.3	0.59	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	202,944
												Northing (ft):	742,677
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

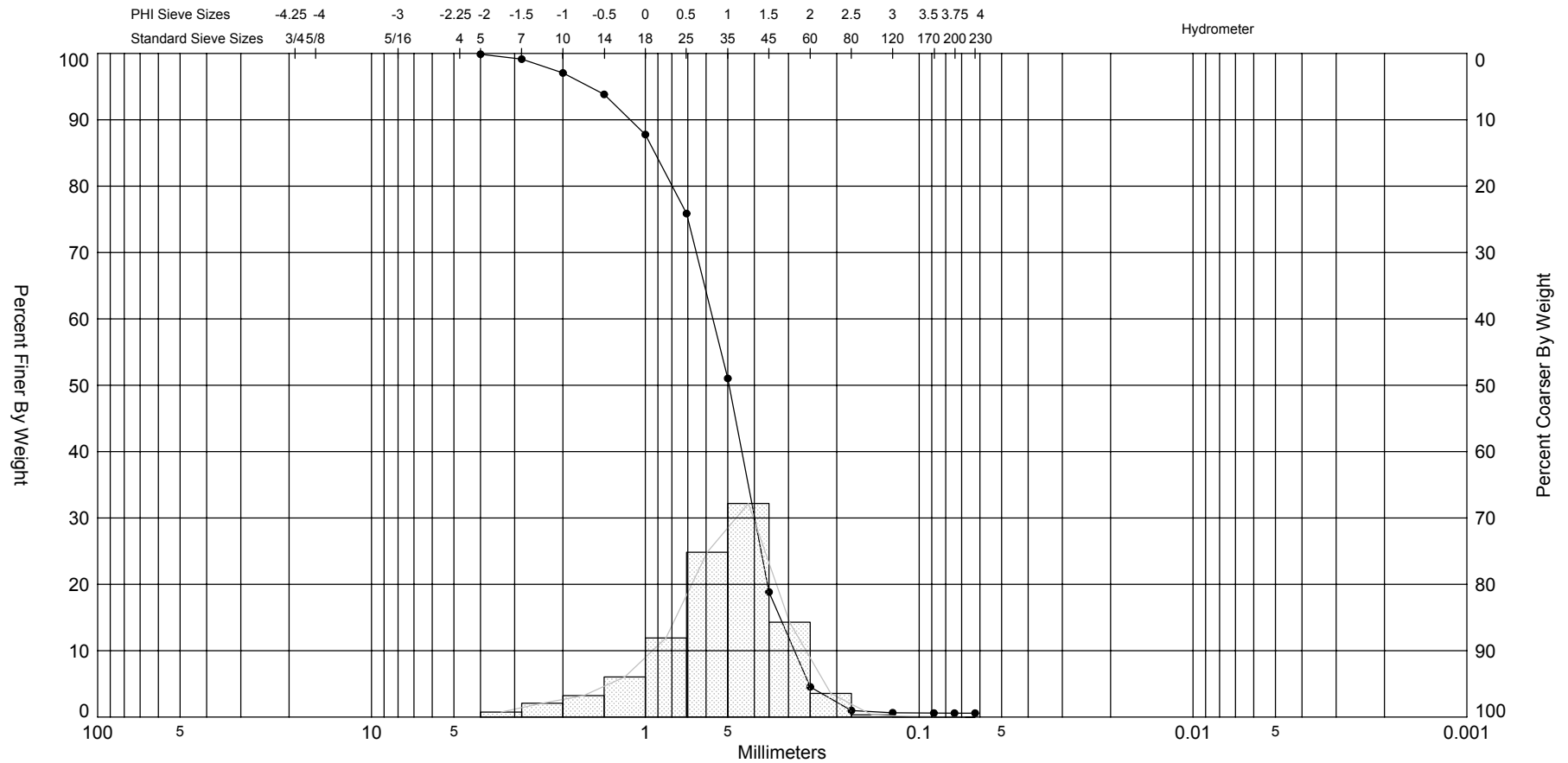


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-06	—●—		SP	#200 - 0.23 #230 - 0.23	0.71	13.82	1.43	1.36	-0.94	4.53	0.63	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	200,909
												Northing (ft):	744,747
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

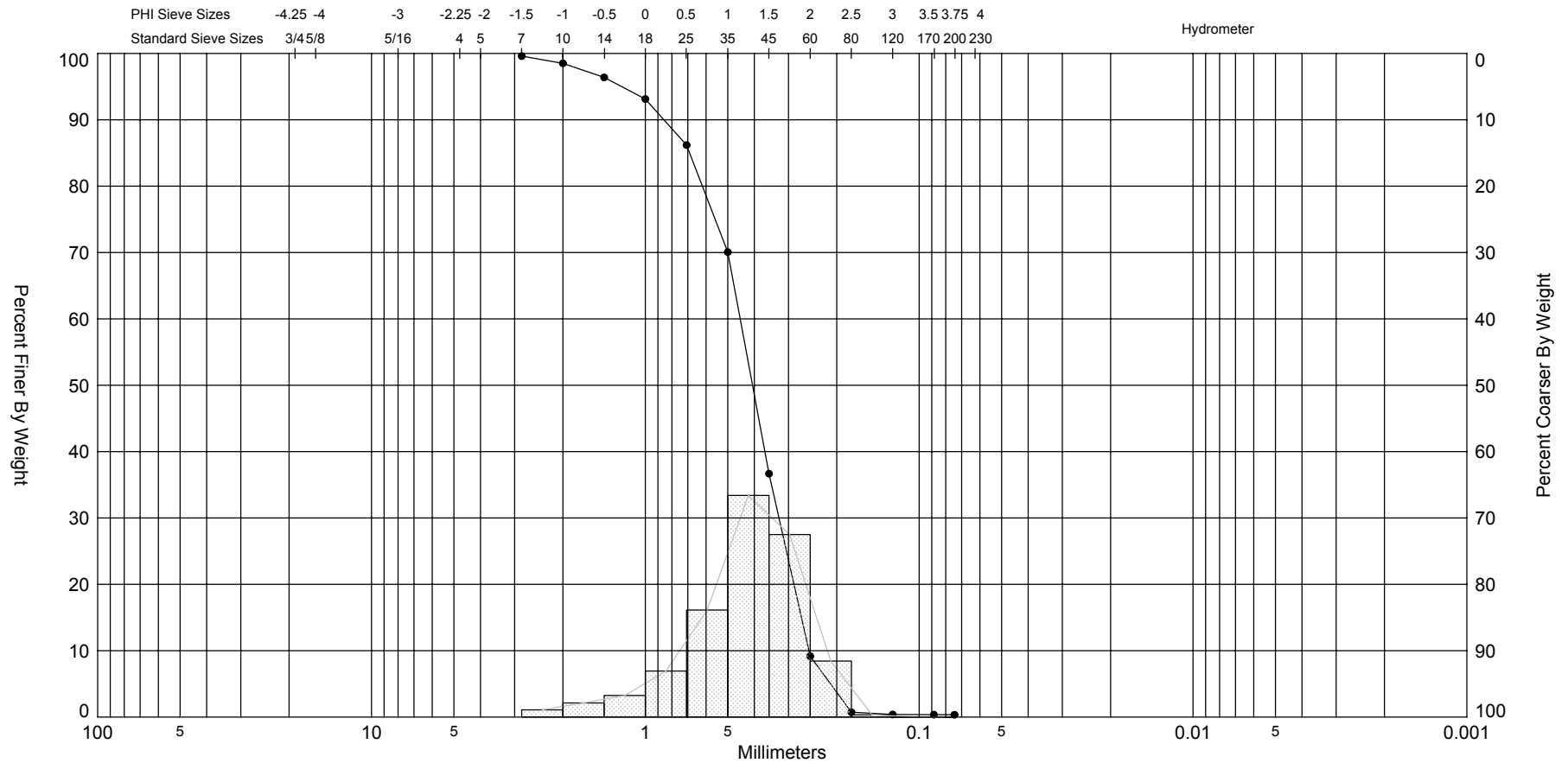


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-07	—●—		SP	#200 - 0.59 #230 - 0.59	1.52	36.63	1.02	0.88	-0.8	3.97	0.77	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Easting (ft):	203,898
												Northing (ft):	741,546
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



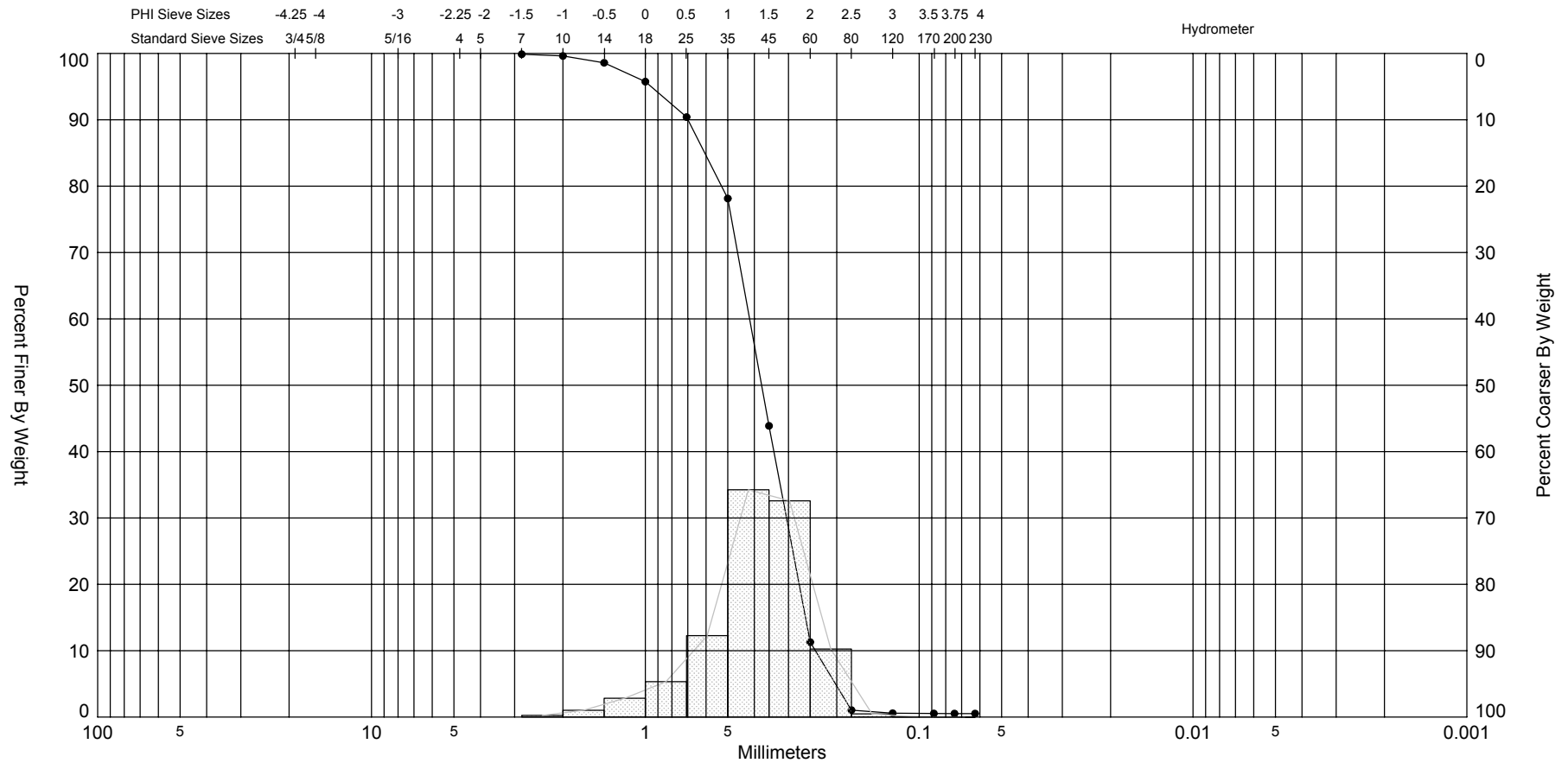
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-08	—●—		SP	#200 - 0.35 #230 - 3.48	0.92	20.94	1.3	1.2	-0.93	4.27	0.71	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-09-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	202,637
												Northing (ft):	743,541
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

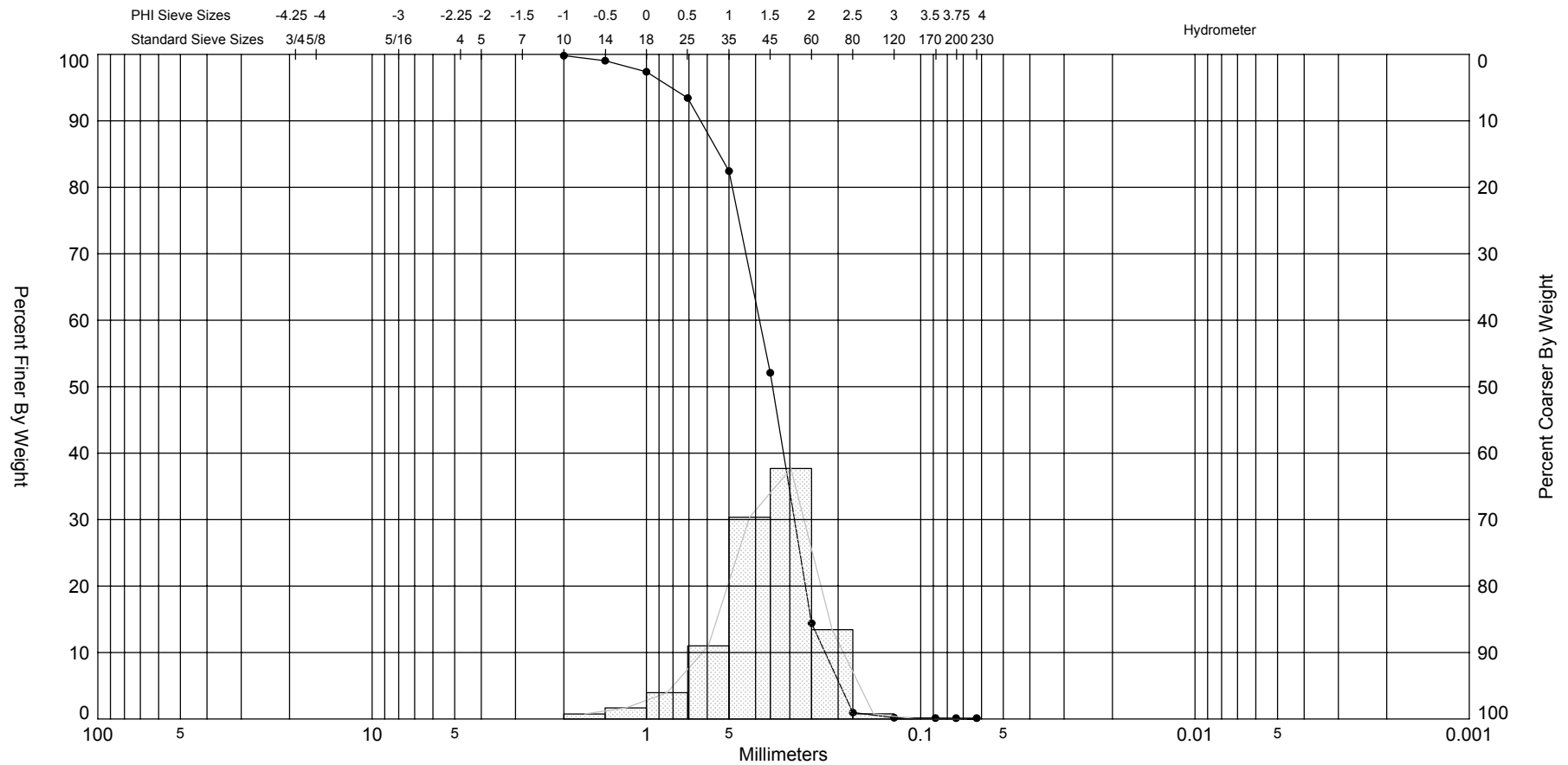


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-09	—●—		SP	#200 - 0.53 #230 - 0.53	0.75	14.71	1.41	1.34	-0.91	4.41	0.63	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	201,542
												Northing (ft):	743,716
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-10	—●—		SP	#200 - 0.13 #230 - 0.13	0.78	12.75	1.53	1.45	-0.83	4.34	0.59	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	200,713
												Northing (ft):	742,762
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T2-11

Analysis Date: 09-06-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>201,392</b>	Northing (ft): <b>741,985</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>52.46</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.15</b>	Fines (%): #200 - 0.02 #230 - 0.01	Organics (%): <b>0.65</b>	Carbonates (%): <b>15.77</b>	Shells (%):
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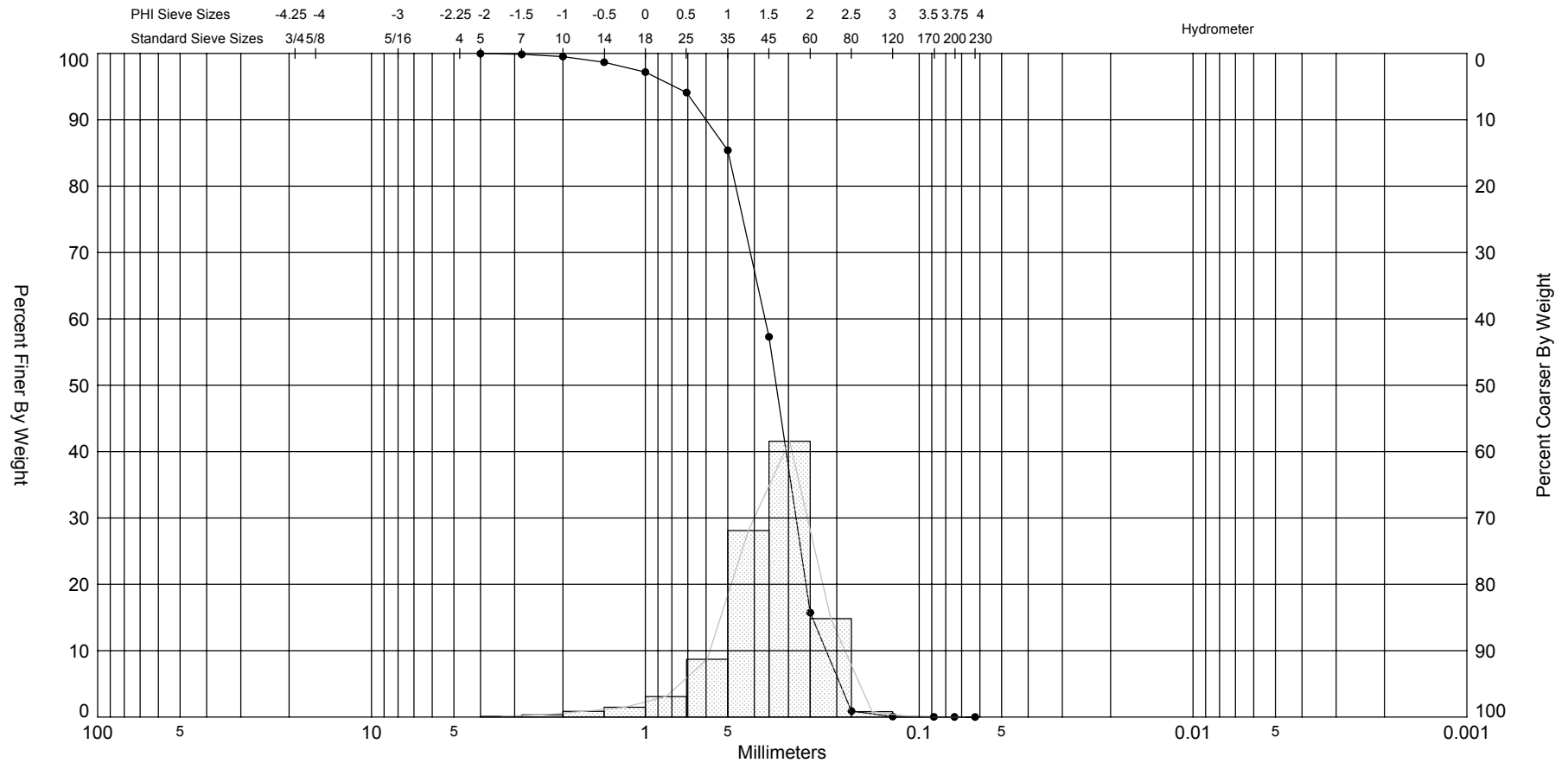
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.02	0.03	0.02	0.03
7	-1.50	2.83	0.05	0.10	0.07	0.13
10	-1.00	2.00	0.18	0.34	0.25	0.47
14	-0.50	1.41	0.45	0.86	0.70	1.33
18	0.00	1.00	0.78	1.48	1.47	2.81
25	0.50	0.71	1.62	3.09	3.10	5.90
35	1.00	0.50	4.56	8.70	7.66	14.60
45	1.50	0.35	14.74	28.10	22.40	42.70
60	2.00	0.25	21.80	41.56	44.20	84.26
80	2.50	0.18	7.78	14.84	51.99	99.10
120	3.00	0.13	0.43	0.82	52.42	99.92
170	3.50	0.09	0.03	0.05	52.44	99.97
200	3.75	0.07	0.01	0.01	52.45	99.98
230	4.00	0.06	0.00	0.01	52.45	99.99

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.36	2.00	1.89	1.59	1.19	1.02	0.35
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.49	0.36	0.6	-1.3	6.32	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

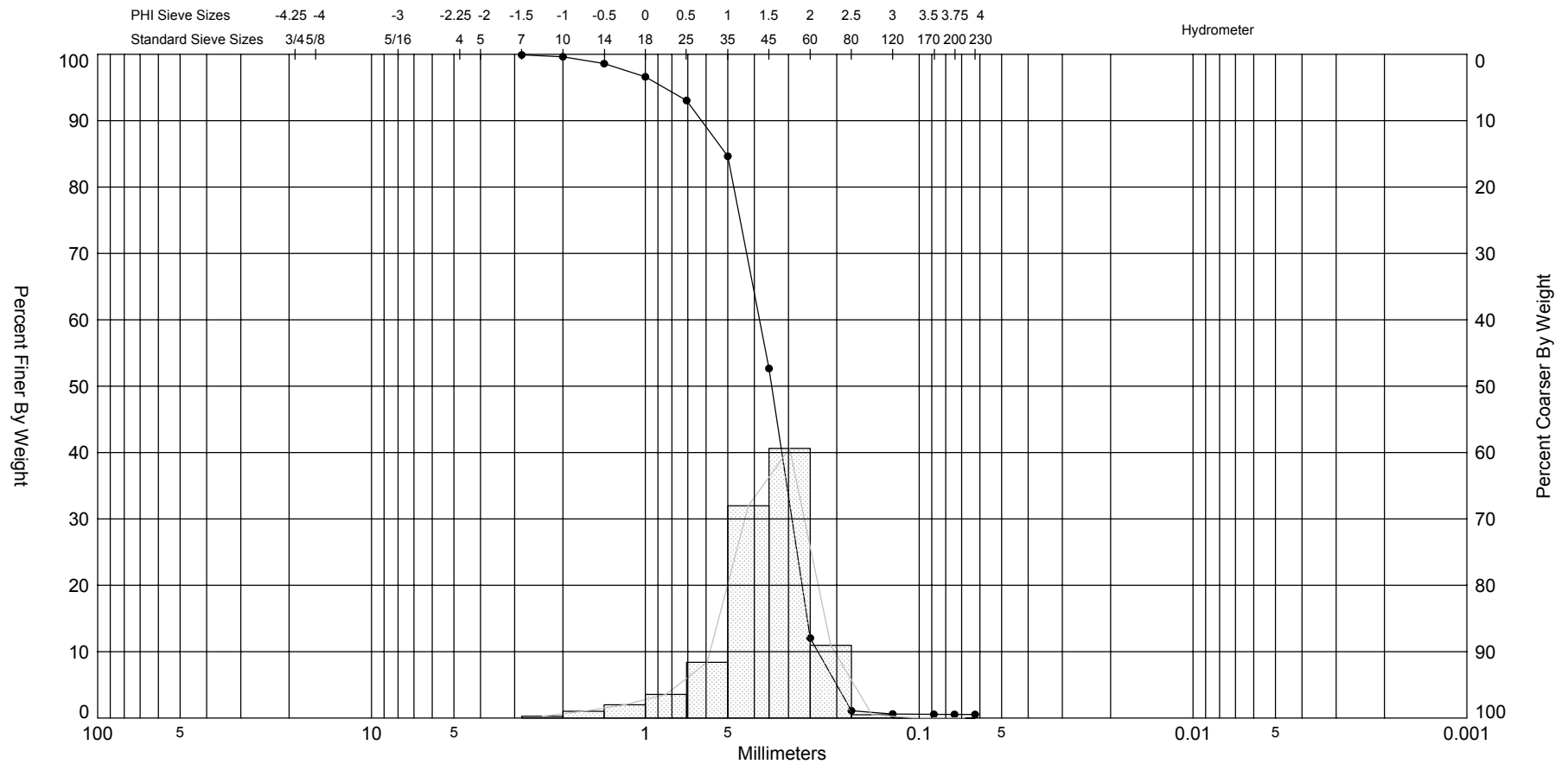


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-11	—●—		SP	#200 - 0.02 #230 - 0.01	0.65	15.77	1.59	1.49	-1.3	6.32	0.6	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	201,392
												Northing (ft):	741,985
												Horizontal System:	NAD 1983
												Vertical System:	NGVD



SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



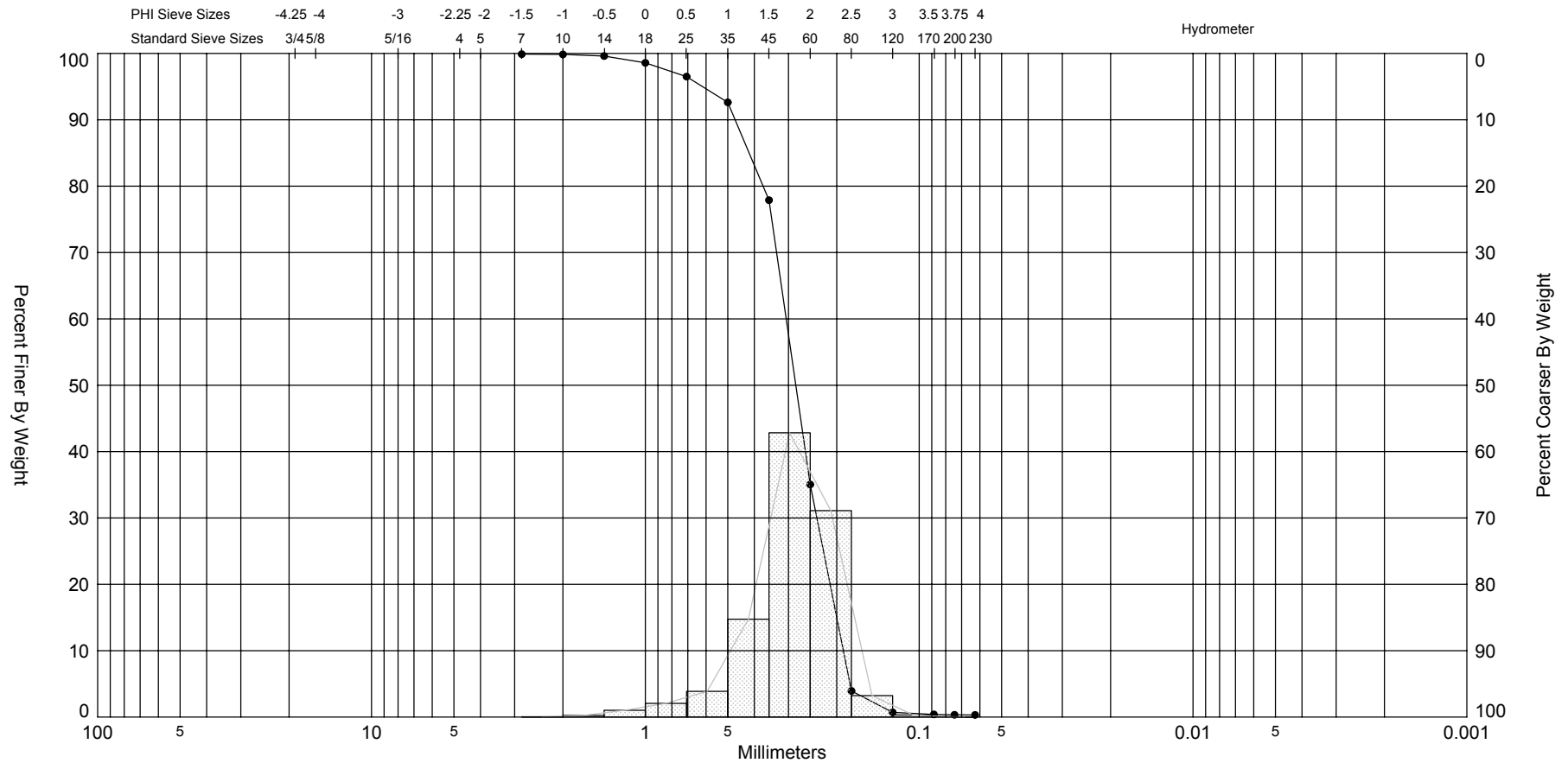
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-12	—●—		SP	#200 - 0.55 #230 - 0.54	0.61	12.34	1.53	1.43	-1.24	5.71	0.59	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-09-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	199,865
												Northing (ft):	747,146
												Horizontal System:	NAD 1983
												Vertical System:	NGVD





SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



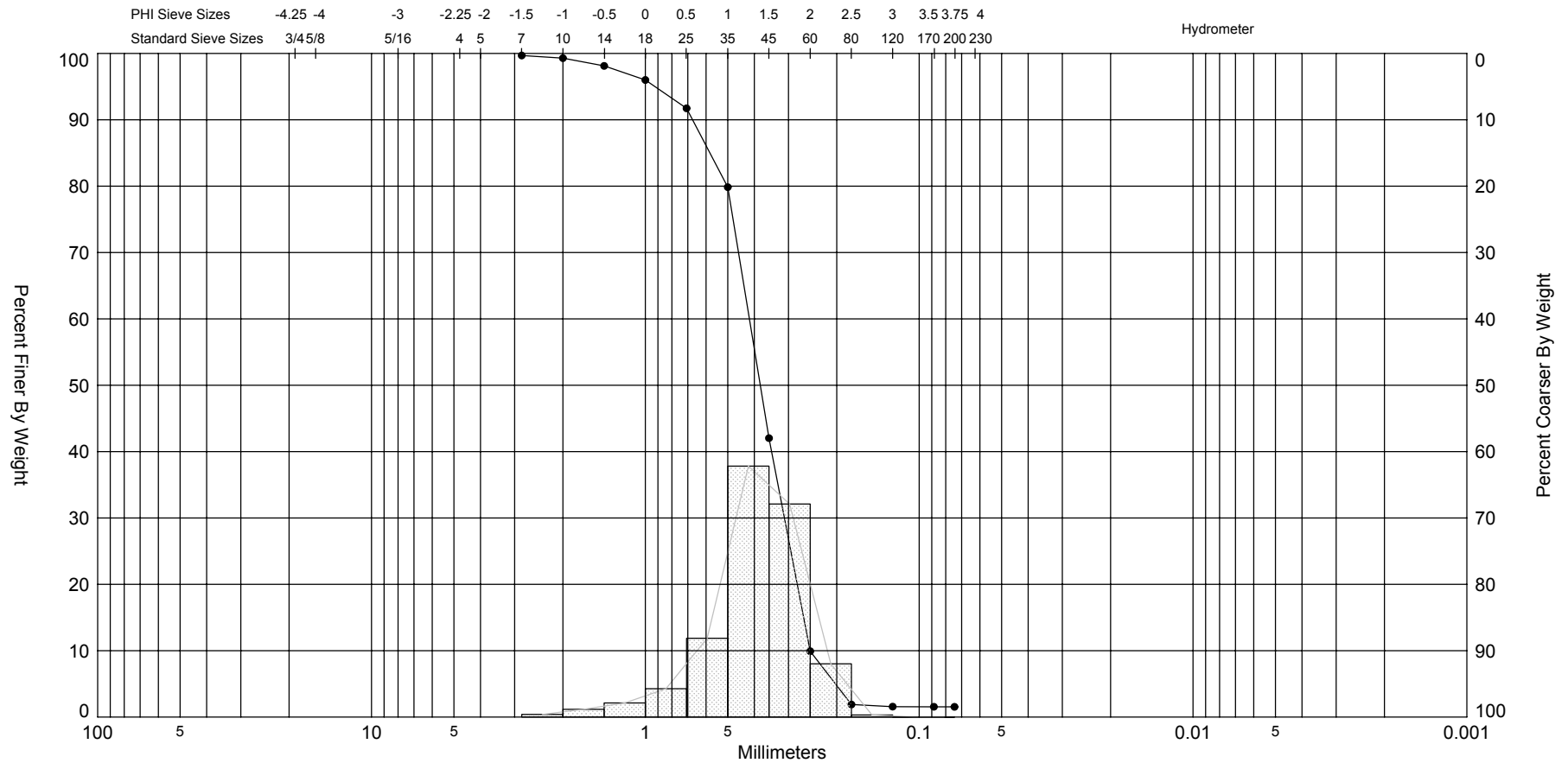
Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-13	—●—		SP	#200 - 0.34 #230 - 0.32	1.23	15.92	1.83	1.77	-1.12	5.87	0.55	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-18-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
<p style="text-align: center;">Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708</p>												Easting (ft):	198,439
												Northing (ft):	745,998
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

Granulometric Report							
Depths and elevations based on measured values							
Project Name: MMS - Field Study 2006 CT-39054				Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			
Sample Name: W2-T2-14							
Analysis Date: 09-11-06							
Analyzed By: SEA Inc.							
Easting (ft):		Northing (ft):		Coordinate System:		Elevation (ft):	
201,662		746,284		Geographic (Latitude/Longitude)			
USCS:		Munsell:		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
46.36		0.00	0.66	#200 - 1.54	0.91	16.38	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.15	0.31	0.14	0.31	
10	-1.00	2.00	0.19	0.40	0.33	0.71	
14	-0.50	1.41	0.54	1.17	0.87	1.88	
18	0.00	1.00	0.98	2.12	1.86	4.00	
25	0.50	0.71	1.98	4.27	3.84	8.27	
35	1.00	0.50	5.51	11.88	9.34	20.15	
45	1.50	0.35	17.53	37.82	26.88	57.97	
60	2.00	0.25	14.89	32.11	41.76	90.08	
80	2.50	0.18	3.72	8.03	45.48	98.11	
120	3.00	0.13	0.15	0.32	45.63	98.43	
170	3.50	0.09	0.01	0.02	45.64	98.45	
200	3.75	0.07	0.00	0.01	45.65	98.46	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.31	1.91	1.77	1.39	1.06	0.83	0.12	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.32	0.40	0.6	-1.07	5.3		

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-14	—●—		SP	#200 - 1.54	0.91	16.38	1.39	1.32	-1.07	5.3	0.6	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	201,662
												Northing (ft):	746,284
												Horizontal System:	NAD 1983
												Vertical System:	NGVD

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T2-15

Analysis Date: 09-06-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>202,855</b>	Northing (ft): <b>744,520</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>53.53</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.53</b>	Fines (%): #200 - 2.17 #230 - 2.17	Organics (%): <b>0.89</b>	Carbonates (%): <b>25.55</b>	Shells (%):
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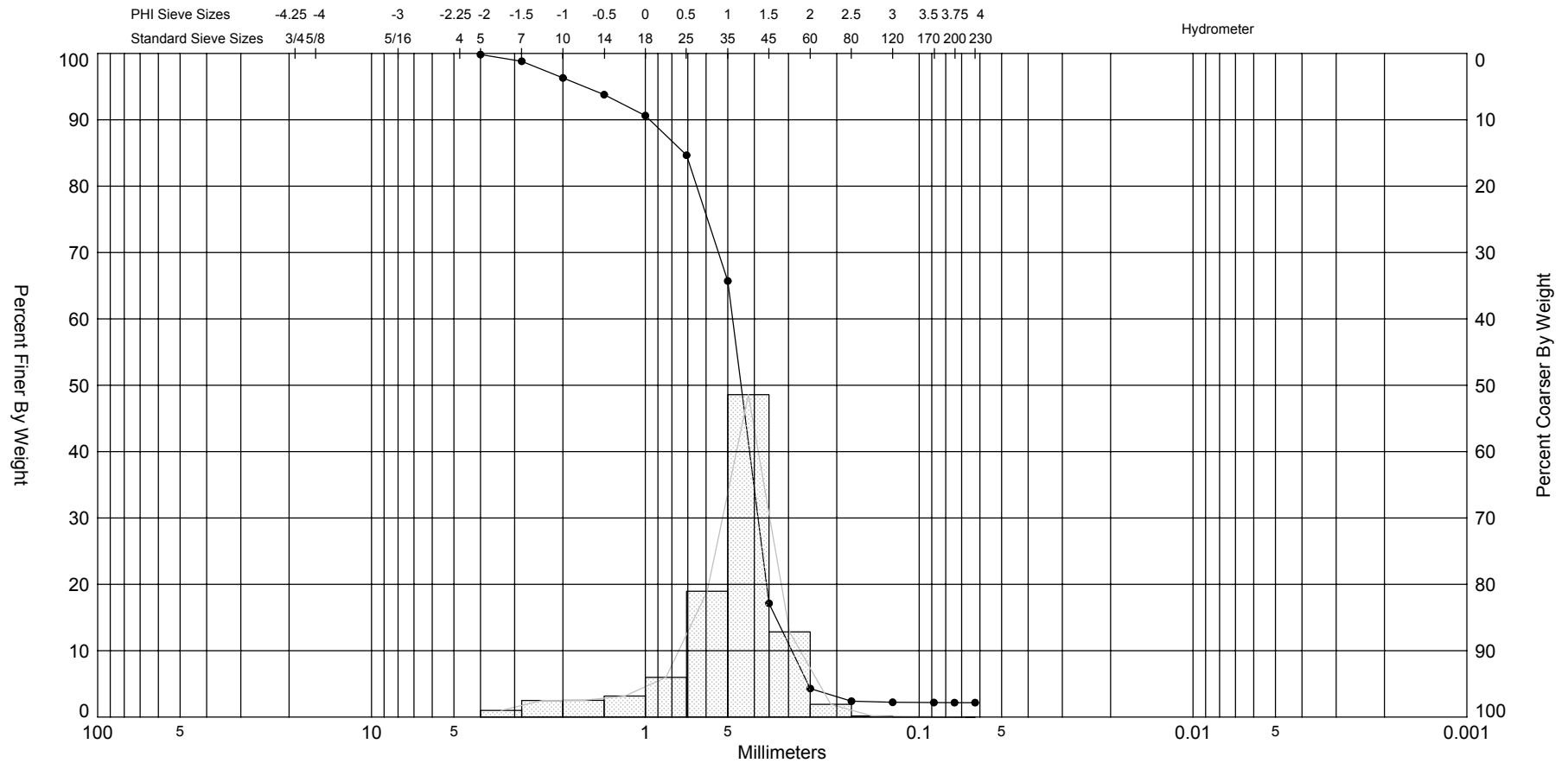
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.09	0.17	0.09	0.17
7	-1.50	2.83	0.54	1.01	0.63	1.18
10	-1.00	2.00	1.34	2.51	1.98	3.69
14	-0.50	1.41	1.35	2.52	3.33	6.21
18	0.00	1.00	1.69	3.16	5.01	9.37
25	0.50	0.71	3.20	5.97	8.21	15.34
35	1.00	0.50	10.15	18.95	18.36	34.29
45	1.50	0.35	26.01	48.58	44.36	82.87
60	2.00	0.25	6.87	12.83	51.23	95.70
80	2.50	0.18	1.02	1.91	52.25	97.61
120	3.00	0.13	0.09	0.16	52.34	97.77
170	3.50	0.09	0.02	0.04	52.36	97.81
200	3.75	0.07	0.01	0.02	52.37	97.83
230	4.00	0.06	0.00	0.00	52.37	97.83

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
1.97	1.54	1.42	1.16	0.75	0.52	-0.74
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	0.98	0.51	0.73	-1.53	5.99	

GRANULOMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-15	—●—		SP	#200 - 2.17 #230 - 2.17	0.89	25.55	1.16	0.98	-1.53	5.99	0.73	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-06-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	202,855
												Northing (ft):	744,520
												Horizontal System:	NAD 1983
												Vertical System:	NGVD







# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS - Field Study 2006 CT-39054

Sample Name: W2-T2-17

Analysis Date: 09-11-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>200,566</b>	Northing (ft): <b>741,854</b>	Coordinate System: <b>Geographic (Latitude/Longitude)</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>42.41</b>	Wash Weight (g):	Pan Retained (g): <b>0.03</b>	Sieve Loss (%): <b>0.15</b>	Fines (%): #200 - 0.17 #230 - 0.14	Organics (%): <b>1.05</b>	Carbonates (%): <b>16.46</b>	Shells (%):
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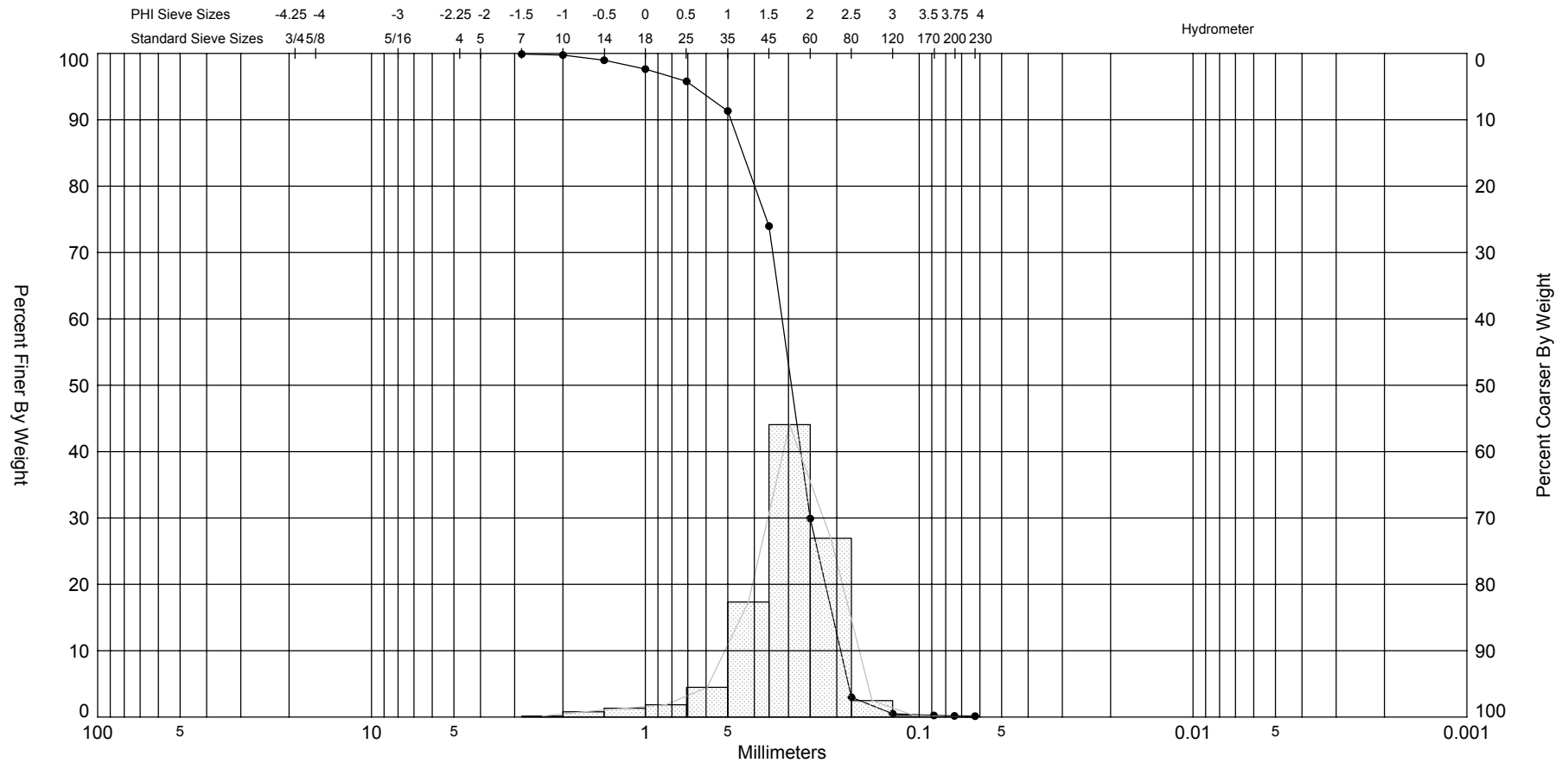
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.04	0.10	0.04	0.10
10	-1.00	2.00	0.06	0.14	0.10	0.24
14	-0.50	1.41	0.33	0.79	0.44	1.03
18	0.00	1.00	0.57	1.33	1.00	2.36
25	0.50	0.71	0.78	1.85	1.78	4.21
35	1.00	0.50	1.89	4.47	3.68	8.68
45	1.50	0.35	7.36	17.34	11.03	26.02
60	2.00	0.25	18.69	44.07	29.72	70.09
80	2.50	0.18	11.42	26.93	41.14	97.02
120	3.00	0.13	1.05	2.47	42.19	99.49
170	3.50	0.09	0.12	0.27	42.30	99.76
200	3.75	0.07	0.03	0.07	42.33	99.83
230	4.00	0.06	0.01	0.03	42.34	99.86

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.46	2.26	2.09	1.77	1.47	1.21	0.59
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.7	0.31	0.59	-1.34	6.69	

GRANULARMETRIC REPORT MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07

SIEVE ANALYSIS: MMS WEST SPRING 06 SEDIMENT ANALYSIS.GPJ FL DEP ROSS.GDT 6/4/07



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
W2-T2-17	—●—		SP	#200 - 0.17 #230 - 0.14	1.05	16.46	1.77	1.7	-1.34	6.69	0.59	Project Name:	MMS - Field Study 2006 CT-39054
Comments:												Analysis Date:	09-11-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
							Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					Easting (ft):	200,566
												Northing (ft):	741,854
												Horizontal System:	NAD 1983
												Vertical System:	NGVD