

LOG OF BORING

Project: Sand Search for DMPAs

Boring No.: B-4

Groundwater during drilling: ---

Groundwater after drilling: ---

Date: 2/13/2006

Northing: 13,698,643.0

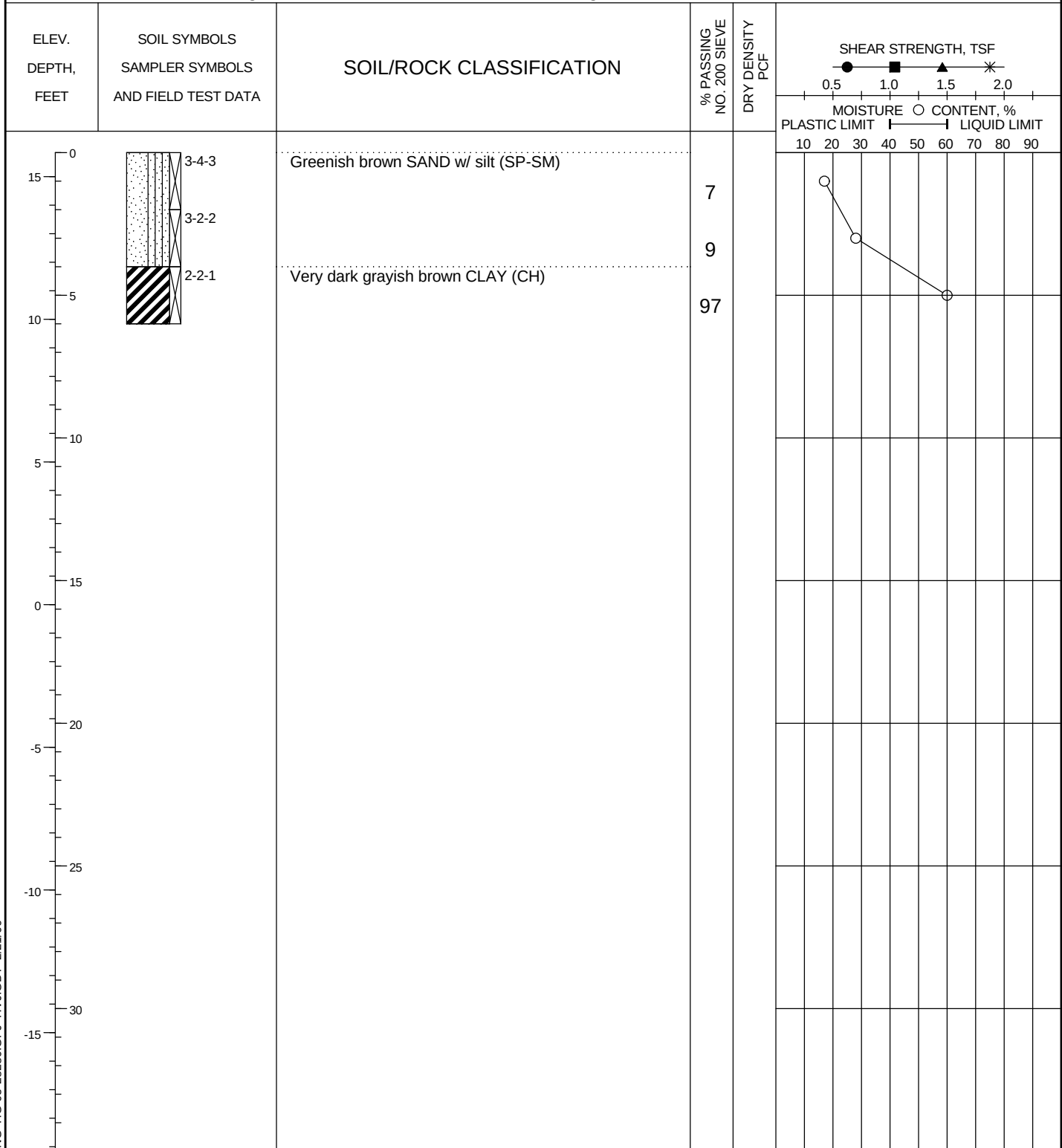
Easting: 3,303,069.0

Project No.: HG-05-28280

Elevation: 15.84 feet

Station: --

Offset: --



Shear Types:

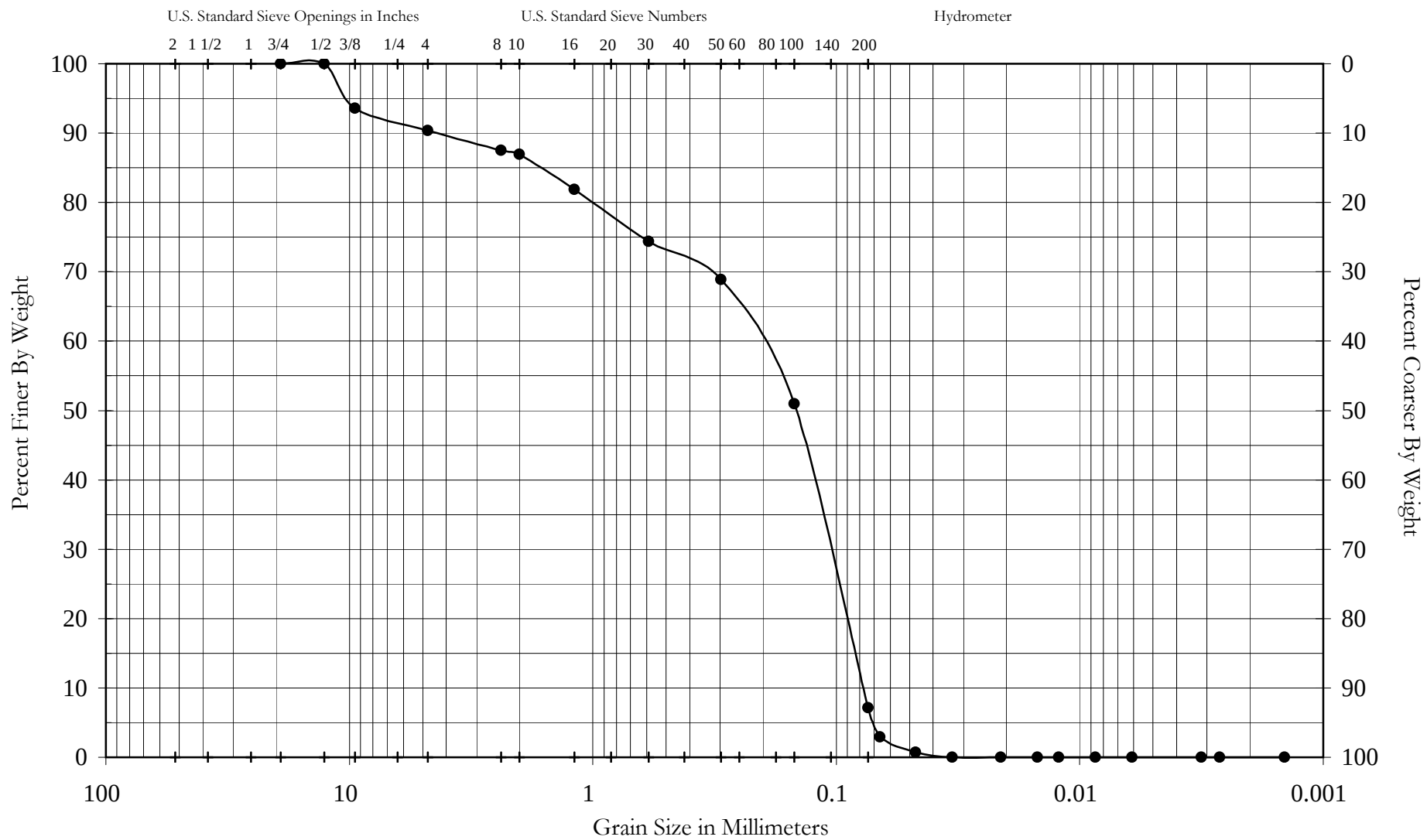
● = Hand Penet.

■ = Torvane

▲ = Unconf. Comp.

* = UU Triaxial

LOG OF SOIL BORING HG-05-28280.GPJ HVJ.GDT 2/21/06

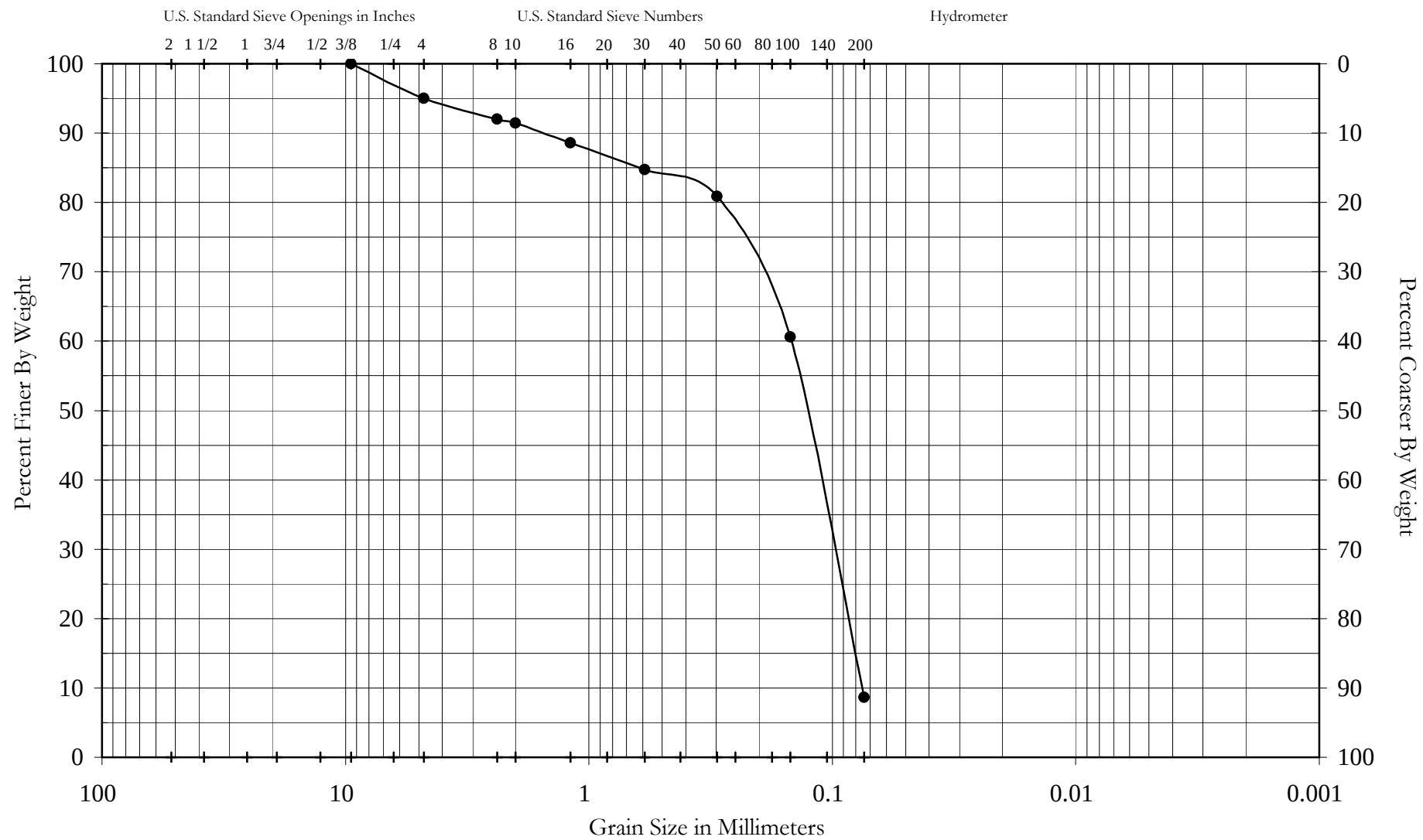


SIEVE ANALYSIS DATA

Project:	Sand Search	Job No.	HG-05-28280	Date:	02/15/06
Boring No.	4	Sample No.	1	Depth:	0-2'
Matl Desc.	Greenish brown Sand with silt				

Tare No.	16	Init Wt. - Tare	98.49	% Ret.	92.89
Tare Wt.	6.80	Dry Wt. after test	98.29	% Pass #200	7.11
Init. Dry Wt.	105.29	Wt. Ret. on #200	91.49		

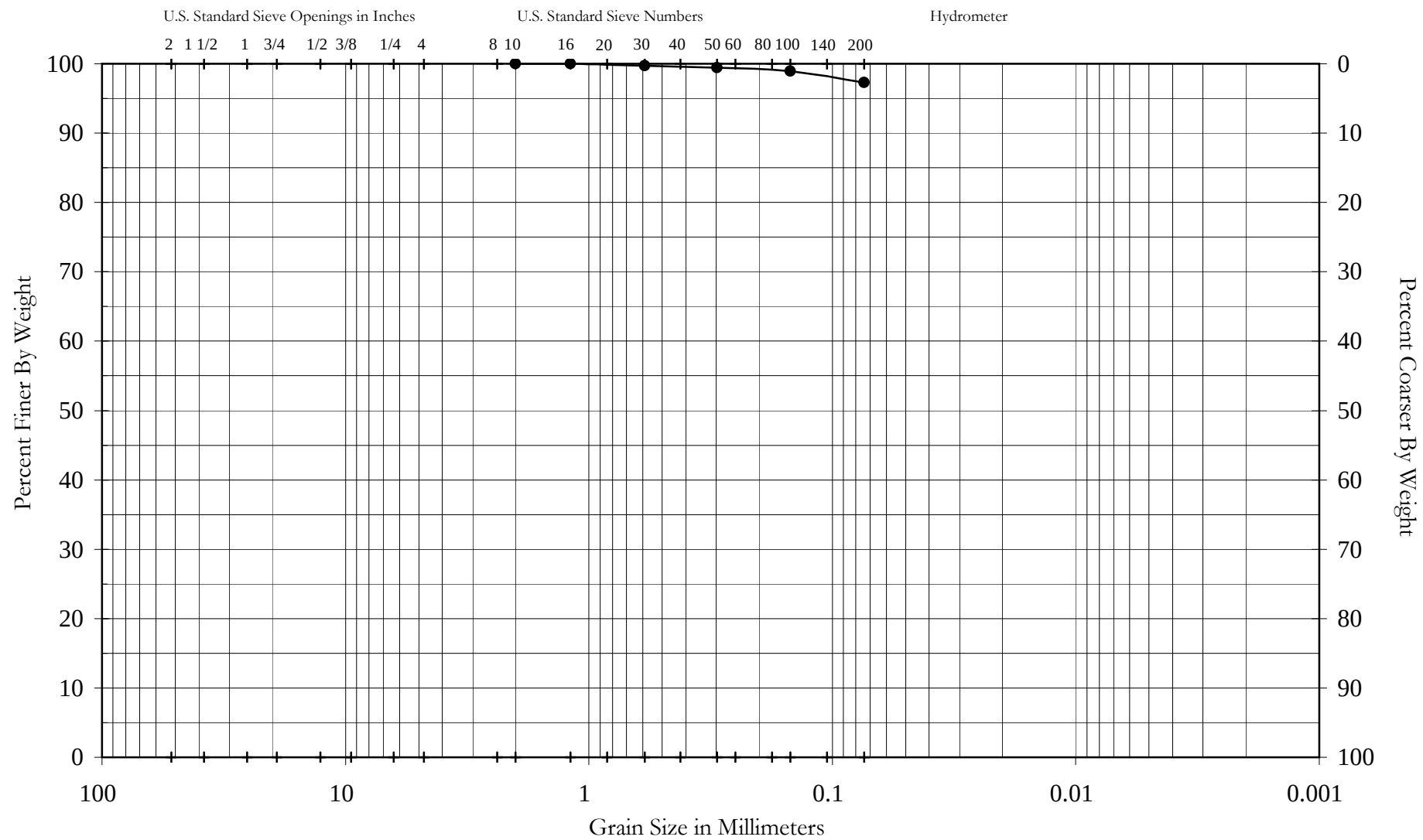
Sieve Size/No.	Sieve Size (mm)	Weight Ret.	% Retained	% Passing
3/4"	19.1	0.00	0.00	100.00
1/2"	12.7	0.00	0.00	100.00
3/8"	9.5	6.36	6.46	93.54
4	4.76	9.48	9.63	90.37
8	2.38	12.32	12.51	87.49
10	2	12.86	13.06	86.94
16	1.19	17.87	18.14	81.86
30	0.59	25.26	25.65	74.35
50	0.297	30.65	31.12	68.88
100	0.149	48.31	49.05	50.95
200	0.074	91.49	92.89	7.11
	0.066			2.90
	0.047			0.72
	0.033			0
	0.021			0
	0.015			0
	0.012			0
	0.009			0
	0.006			0
	0.003			0
	0.003			0
	0.001			0.00



Boring No.
B-4

Depth, Ft.
2-4'

Classification
Greenish brown Sand with silt



SIEVE ANALYSIS DATA

Project:	<u>Sand Search</u>	Job No.	<u>HG-05-28280</u>	Date:	<u>02/15/06</u>
Boring No.	<u>4</u>	Sample No.	<u>2</u>	Depth:	<u>2-4'</u>
Matl Desc.	Greenish brown Sand with silt				

Tare No.	4	Init Wt. - Tare	133.75	% Ret.	91.36
Tare Wt.	6.69	Dry Wt. after test	128.88	% Pass #200	8.64
Init. Dry Wt.	140.44	Wt. Ret. on #200	122.19		

[illegible]

SIEVE ANALYSIS DATA

Project:	<u>Sand Search</u>	Job No.	<u>HG-05-28280</u>	Date:	<u>02/15/06</u>
Boring No.	<u>4</u>	Sample No.	<u>3</u>	Depth:	<u>4-6'</u>
Matl Desc.	<u>Very dark grayish brown Clay</u>				

Tare No.	v	Init Wt. - Tare	58.05	% Ret.	2.69
Tare Wt.	6.67	Dry Wt. after test	8.23	% Pass #200	97.31
Init. Dry Wt.	64.72	Wt. Ret. on #200	1.56		

[illegible]

Work Order No. 1306-06-001
Dredged Material Placement Area (DMPA)
Pelican Island Geotechnical investigation
GLO Contract No. 06-090C
Requisition No. 317-6-0482

February 13, 2006

Sample Analysis Performed by: TAMUG
Grain Size Analysis Performed by: GBA, Associates

Hole No: 4	Sample No: 4B	Depth: 1-2 ft
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Note: Enter data in to the green cells

Sieve Size, (No.)	Sieve Size, (mm)	Cumulative Weight Retained on Sieve, (grams)	Weight Retained on Sieve, (grams)	Phi, f	% Coarser by Weight	% Finer than by Weight
10	2	6.22	6.22	-1.0	4.53%	95.47%
14	1.41	9.28	3.06	-0.5	6.76%	93.24%
18	1	12.61	3.33	0.0	9.19%	90.81%
25	0.71	15.58	2.97	0.5	11.36%	88.64%
35	0.5	17.4	1.82	1.0	12.68%	87.32%
45	0.354	18.41	1.01	1.5	13.42%	86.58%
60	0.25	20.18	1.77	2.0	14.71%	85.29%
80	0.177	27.24	7.06	2.5	19.86%	80.14%
125	0.125	88.39	61.15	3.0	64.43%	35.57%
170	0.088	124.43	36.04	3.5	90.70%	9.30%
200	0.074	133.01	8.58	3.8	96.95%	3.05%
230	0.0625	135.83	2.82	4.0	99.01%	0.99%
Pan	0.0039	137.19	1.36	8.0	100.00%	0.00%

Total Weight of Sediment = 137.19 grams

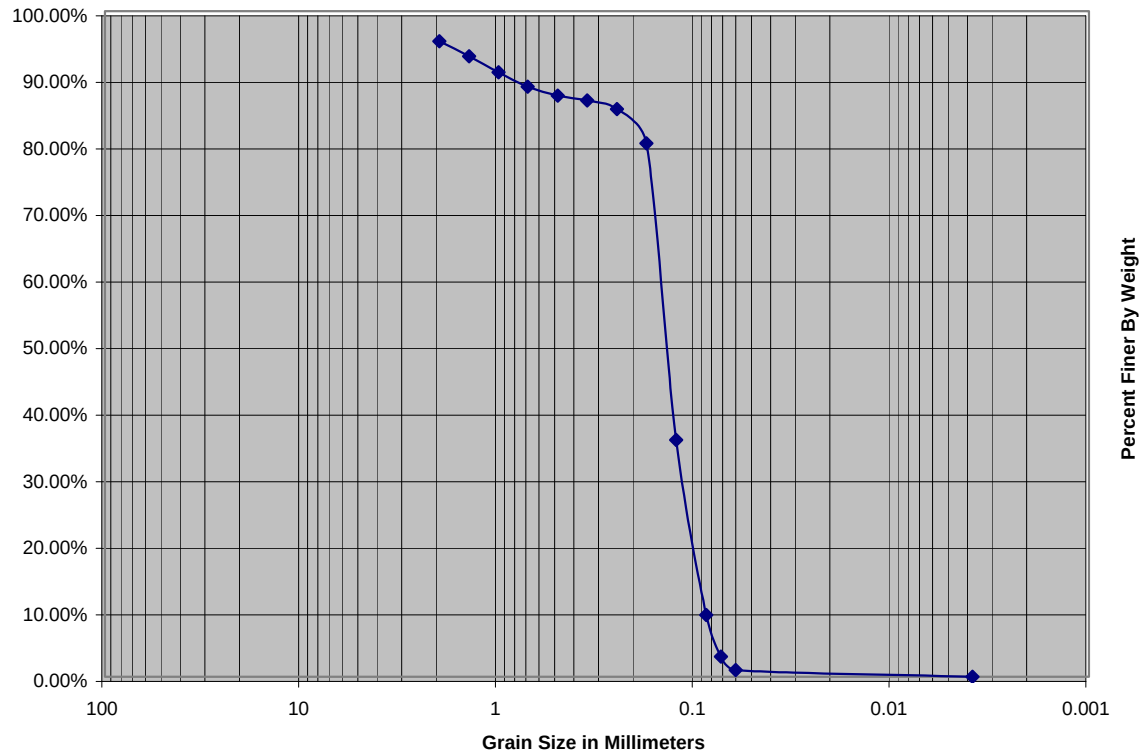
Median Sand Size:		Diameter formulas must be adjusted for accurate percentage, formulas are interpolation equations			
	$D_{50} =$	0.14	$D_{16} =$	0.23	$D_{84} =$ 0.10
	$\phi_{50} =$	2.8	$\phi_{16} =$	2.1	$\phi_{84} =$ 3.4
			$D_5 =$	1.88	$D_{95} =$ 0.08
			$\phi_5 =$	-0.9	$\phi_{95} =$ 3.7

Mean:		
	PHI	mm
$M_{d\phi} = (\phi_{16} + \phi_{84})/2 =$	2.7	0.2

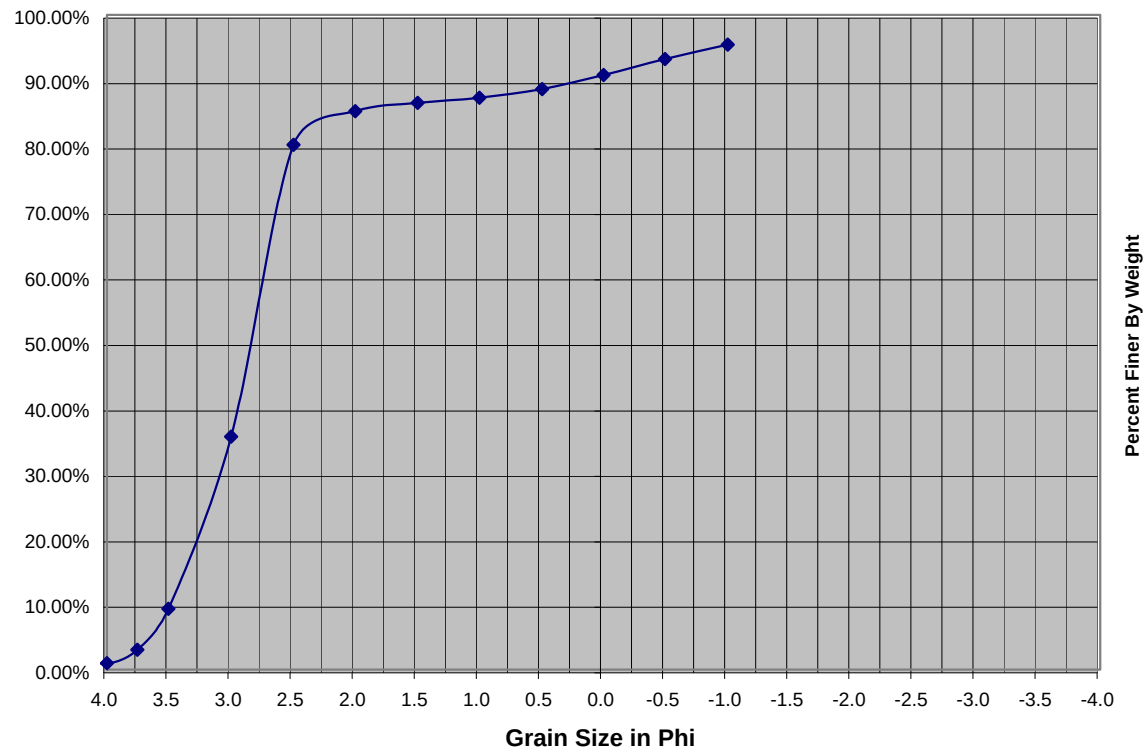
Standard Deviation:		
$\sigma_{\phi} = (\phi_{84} - \phi_{16})/4 + (\phi_{95} - \phi_5)/6 =$	1.1	Poorly Sorted
		$\sigma_{\phi} \leq 0.5$: Sample is well sorted. $\sigma_{\phi} \geq 1.0$: Sample is poorly sorted.

Skewness:		
$\alpha_{\phi} = (\phi_{16} + \phi_{84} - (2 * \phi_{50})) / (2(\phi_{84} - \phi_{16})) + (\phi_5 + \phi_{95} - (2 * \phi_{50})) / (2(\phi_{95} - \phi_5)) =$	0.4	Fine-Skewed
		$\alpha_{\phi} < -0.1$: Sample is Coarse-Skewed $\alpha_{\phi} -0.1$ to $+0.1$: Sample is Near-Symmetrical $\alpha_{\phi} > +0.1$: Sample is Fine-Skewed

Auger 4 Sample 4B Depth 1 to 2 ft, Sieve Analysis



Auger 4 Sample 4B Depth 1 to 2 ft, Sieve Analysis



Work Order No. 1306-06-001
Dredged Material Placement Area (DMPA)
Pelican Island Geotechnical investigation
GLO Contract No. 06-090C
Requisition No. 317-6-0482

February 13, 2006

Sample Analysis Performed by: TAMUG
 Grain Size Analysis Performed by: GBA, Associates

Hole No: 4	Sample No: 4A	Depth: 0-1 ft
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Note: Enter data in to the green cells

Sieve Size, (No.)	Sieve Size, (mm)	Cumulative Weight Retained on Sieve, (grams)	Weight Retained on Sieve, (grams)	Phi, f	% Coarser by Weight	% Finer than by Weight
10	2	4.5	4.5	-1.0	5.05%	94.95%
14	1.41	6.82	2.32	-0.5	7.65%	92.35%
18	1	8.75	1.93	0.0	9.81%	90.19%
25	0.71	10.59	1.84	0.5	11.88%	88.12%
35	0.5	12.29	1.7	1.0	13.78%	86.22%
45	0.354	13.54	1.25	1.5	15.18%	84.82%
60	0.25	15.18	1.64	2.0	17.02%	82.98%
80	0.177	18.99	3.81	2.5	21.30%	78.70%
125	0.125	45.3	26.31	3.0	50.80%	49.20%
170	0.088	64.2	18.9	3.5	72.00%	28.00%
200	0.074	72.89	8.69	3.8	81.74%	18.26%
230	0.0625	80.27	7.38	4.0	90.02%	9.98%
Pan	0.0039	89.17	8.9	8.0	100.00%	0.00%

Total Weight of Sediment = 89.17 grams

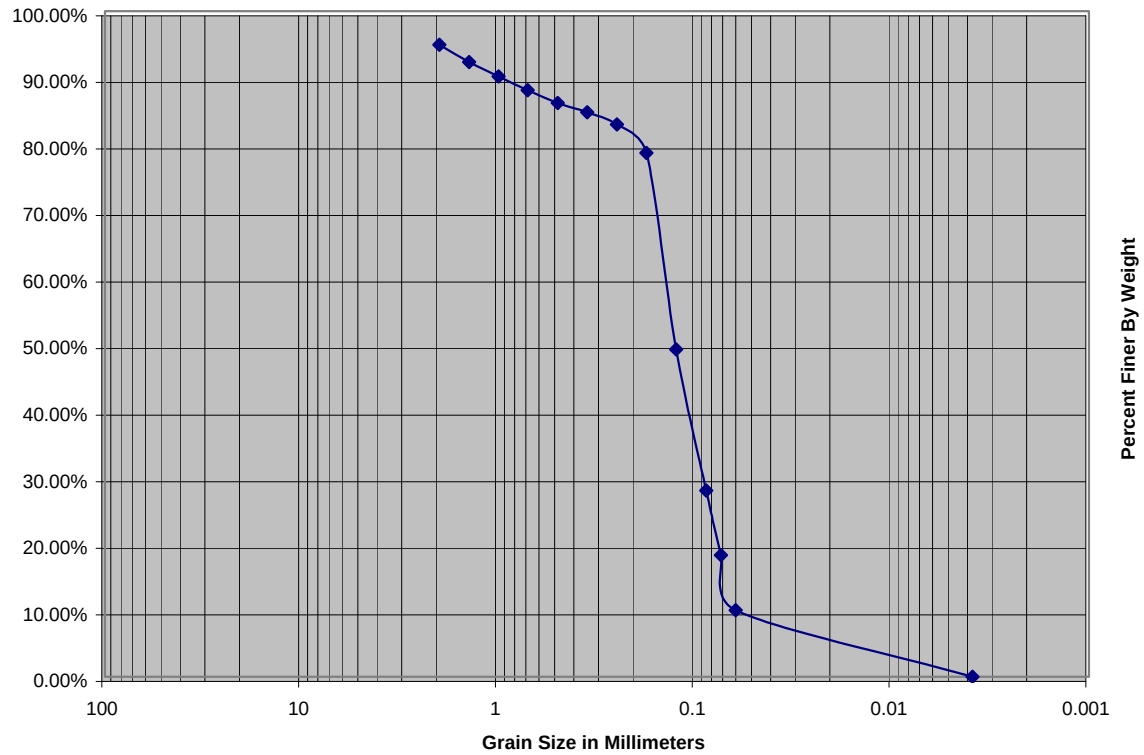
Median Sand Size:		Diameter formulas must be adjusted for accurate percentage, formulas are interpolation equations			
	$D_{50} =$	0.13	$D_{16} =$	0.27	$D_{84} =$ 0.07
	$\phi_{50} =$	3.0	$\phi_{16} =$	1.9	$\phi_{84} =$ 3.8
			$D_5 =$	1.99	$D_{95} =$ 0.03
			$\phi_5 =$	-1.0	$\phi_{95} =$ 4.9

Mean:		
	PHI	mm
$M_{d\phi} = (\phi_{16} + \phi_{84})/2 =$	2.9	0.1

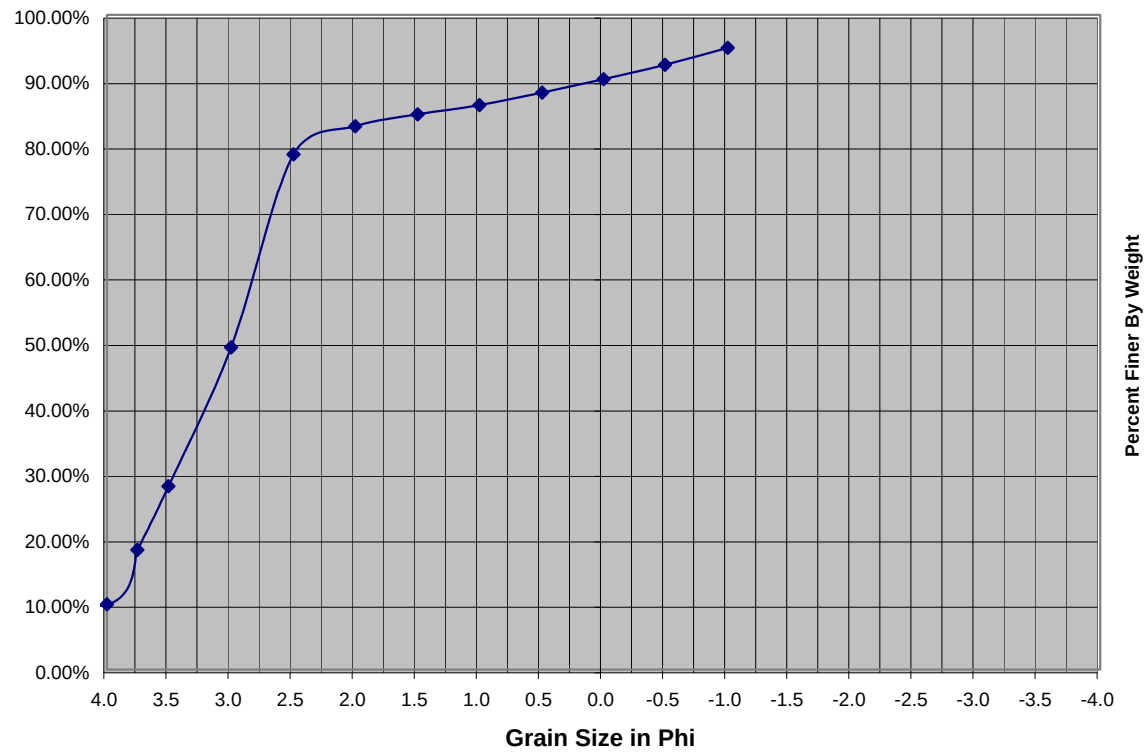
Standard Deviation:		
$\sigma_{\phi} = (\phi_{84} - \phi_{16})/4 + (\phi_{95} - \phi_5)/6 =$	1.5	Poorly Sorted
		$\sigma_{\phi} \leq 0.5$: Sample is well sorted. $\sigma_{\phi} \geq 1.0$: Sample is poorly sorted.

Skewness:		
$\alpha_{\phi} = (\phi_{16} + \phi_{84} - (2 * \phi_{50})) / (2(\phi_{84} - \phi_{16})) + (\phi_5 + \phi_{95} - (2 * \phi_{50})) / (2(\phi_{95} - \phi_5)) =$	0.2	Fine-Skewed
		$\alpha_{\phi} < -0.1$: Sample is Coarse-Skewed $\alpha_{\phi} -0.1$ to $+0.1$: Sample is Near-Symmetrical $\alpha_{\phi} > +0.1$: Sample is Fine-Skewed

Auger 4 Sample 4A Depth 0 to 1 ft, Sieve Analysis



Auger 4 Sample 4A Depth 0 to 1 ft, Sieve Analysis



Work Order No. 1306-06-001
Dredged Material Placement Area (DMPA)
Pelican Island Geotechnical investigation
GLO Contract No. 06-090C
Requisition No. 317-6-0482

February 13, 2006

Sample Analysis Performed by: TAMUG
 Grain Size Analysis Performed by: GBA, Associates

Hole No: 4	Sample No: 4C	Depth: 2-3 ft
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Note: Enter data in to the green cells

Sieve Size, (No.)	Sieve Size, (mm)	Cumulative Weight Retained on Sieve, (grams)	Weight Retained on Sieve, (grams)	Phi, f	% Coarser by Weight	% Finer than by Weight
10	2	34.02	34.02	-1.0	20.93%	79.07%
14	1.41	43.57	9.55	-0.5	26.81%	73.19%
18	1	51.09	7.52	0.0	31.43%	68.57%
25	0.71	59.6	8.51	0.5	36.67%	63.33%
35	0.5	65.23	5.63	1.0	40.13%	59.87%
45	0.354	69.35	4.12	1.5	42.67%	57.33%
60	0.25	76.82	7.47	2.0	47.26%	52.74%
80	0.177	94.67	17.85	2.5	58.24%	41.76%
125	0.125	140.6	45.93	3.0	86.50%	13.50%
170	0.088	154.9	14.3	3.5	95.30%	4.70%
200	0.074	158.7	3.8	3.8	97.64%	2.36%
230	0.0625	161.04	2.34	4.0	99.08%	0.92%
Pan	0.0039	162.54	1.5	8.0	100.00%	0.00%

Total Weight of Sediment = 162.54 grams

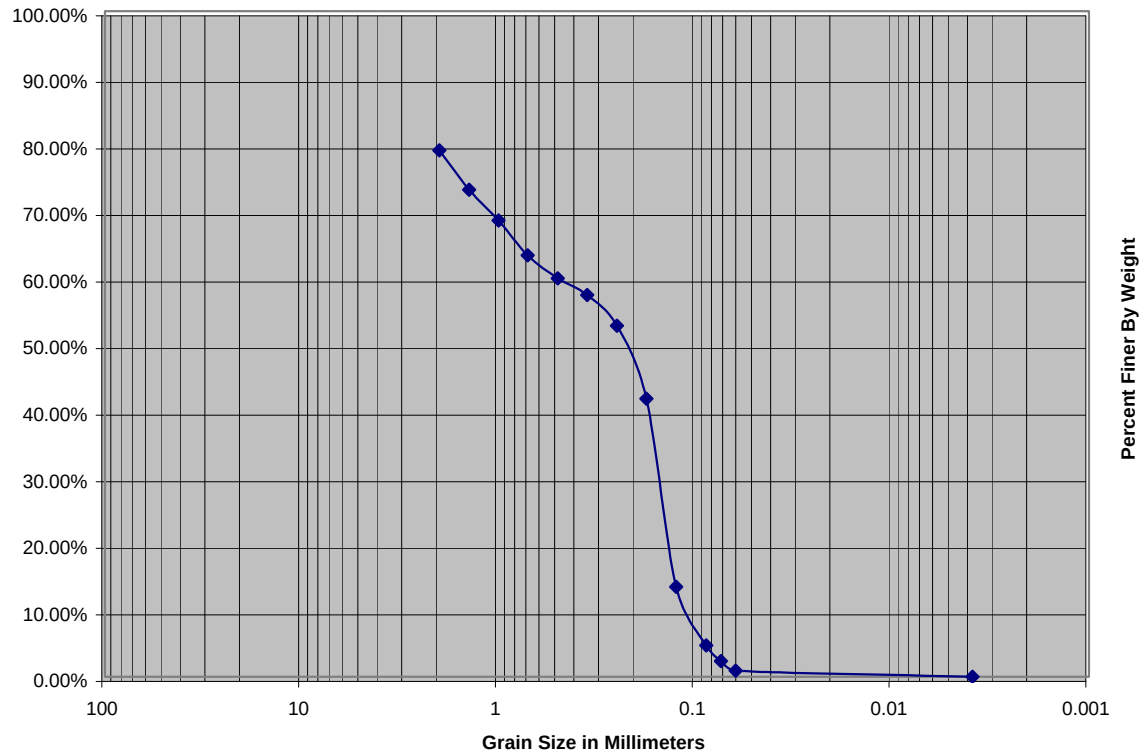
Median Sand Size:		Diameter formulas must be adjusted for accurate percentage, formulas are interpolation equations			
	$D_{50} =$	0.23	$D_{16} =$	0.56	$D_{84} =$ 0.07
	$\phi_{50} =$	2.1	$\phi_{16} =$	0.8	$\phi_{84} =$ 3.8
			$D_5 =$	0.53	$D_{95} =$ 0.02
			$\phi_5 =$	0.9	$\phi_{95} =$ 5.3

Mean:		
	PHI	mm
$M_{d\phi} = (\phi_{16} + \phi_{84})/2 =$	2.3	0.2

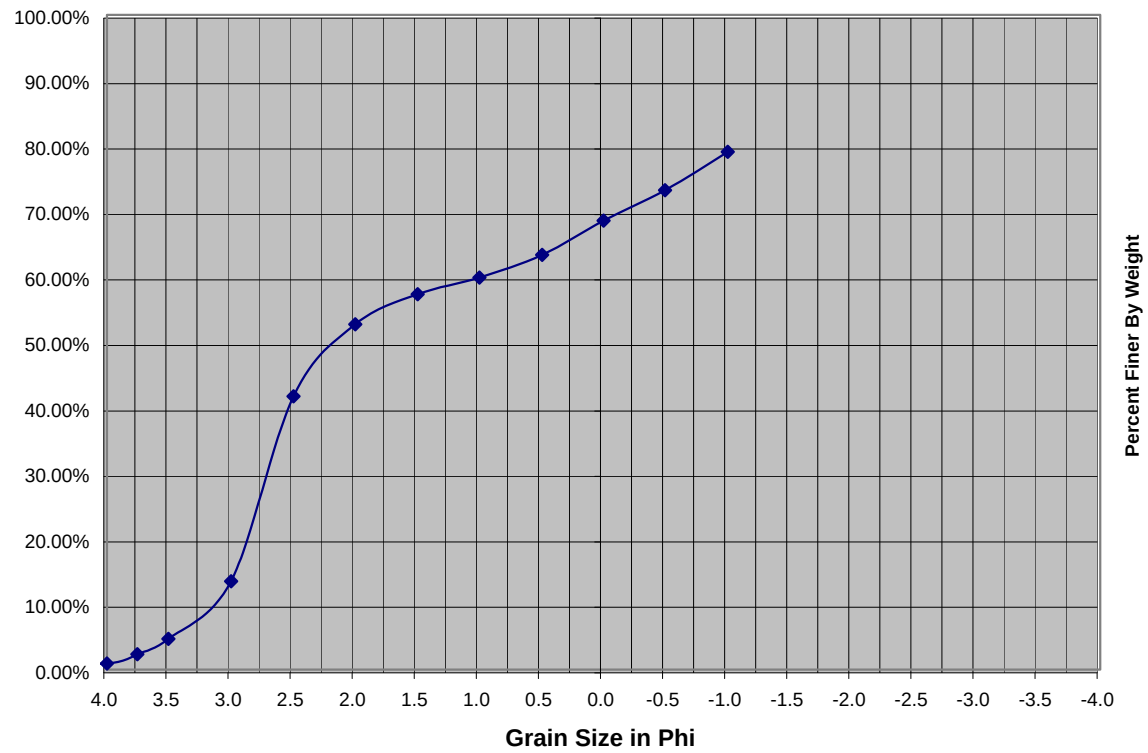
Standard Deviation:			
$\sigma_{\phi} = (\phi_{84} - \phi_{16})/4 + (\phi_{95} - \phi_5)/6 =$	1.5	Poorly Sorted	$\sigma_{\phi} \leq 0.5$: Sample is well sorted. $\sigma_{\phi} \geq 1.0$: Sample is poorly sorted.

Skewness:		
$\alpha_{\phi} = (\phi_{16} + \phi_{84} - (2 * \phi_{50})) / (2(\phi_{84} - \phi_{16})) + (\phi_5 + \phi_{95} - (2 * \phi_{50})) / (2(\phi_{95} - \phi_5)) =$	-0.3	Coarse-Skewed
$\alpha_{\phi} < -0.1$: Sample is Coarse-Skewed $\alpha_{\phi} -0.1$ to $+0.1$: Sample is Near-Symmetrical $\alpha_{\phi} > +0.1$: Sample is Fine-Skewed		

Auger 4 Sample 4C Depth 2 to 3 ft, Sieve Analysis



Auger 4 Sample 4C Depth 2 to 3 ft, Sieve Analysis



Work Order No. 1306-06-001
Dredged Material Placement Area (DMPA)
Pelican Island Geotechnical investigation
GLO Contract No. 06-090C
Requisition No. 317-6-0482

Samples taken from the beach and dune system at Galveston County Beach Pocket No. 1 - 7-1/2 Mile Road.

Sample Analysis Performed by: HVJ, Associates

Grain Size Analysis Performed by: GBA, Associates

Sample No: PPS4A						
Sieve Size, (No.)	Sieve Size, (mm)	Cumulative Weight Retained on Sieve, (grams)	Weight Retained on Sieve, (grams)	Phi, f	% Coarser by Weight	% Finer than by Weight
3/8"	9.5	0	0	-3.2	0.00%	100.00%
4	4.75	0.99	0.99	-2.2	0.54%	99.46%
8	2.36	3.38	2.39	-1.2	1.86%	98.14%
16	1.18	10.38	7	-0.2	5.70%	94.30%
30	0.59	16.6	6.22	0.8	9.11%	90.89%
50	0.297	41.11	24.51	1.8	22.57%	77.43%
100	0.149	67.38	26.27	2.7	36.99%	63.01%
200	0.074	182.14	114.76	3.76	99.98%	0.02%
Pan	0.062	182.17	0.03	4.0	100.00%	0.00%

Total Weight of Sediment = 182.17 grams

Median Sand Size:

$D_{50} = \underline{0.14}$	$D_{16} = \underline{0.4}$	$D_{84} = \underline{0.085}$
$\phi_{50} = 2.8$	$\phi_{16} = 1.3$	$\phi_{84} = 3.6$

Mean:

$M_{d\phi} = (\phi_{84} + \phi_{16})/2 = 2.4$

Sorting:

$\sigma_{\phi} = (\phi_{84} - \phi_{16})/2 = 1.1$	Poorly Sorted	$\sigma_{\phi} \leq 0.5$ Sample is well sorted. $\sigma_{\phi} \geq 1.0$ Sample is poorly sorted.
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Skewness:

$\alpha_{\phi} = (M_{d\phi} - \phi_{50})/\sigma_{\phi} = -0.4$

Boring No. PPS4A, Sieve Analysis



Boring No. PPS4A, Sieve Analysis

