

Lovers Key Beach Nourishment Sand Search Detail Level Geotechnical Investigation

Prepared for
Coastal Engineering Consultants Inc.



Prepared By
GFA International
A Universal Engineering Sciences Company



&

Amdrill Inc.



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April 7th, 2022

Attn: Mr. Michael Poff, P.E., President
Coastal Engineering Consultants, Inc.,
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Bonita Springs, Florida 34135

RE:
Lovers Key Beach Nourishment Sand
Search Detail Level Geotechnical
Investigation
Lee County, Florida



GFA International is pleased to submit this report regarding the completion of the vibracore field work and laboratory assessments for this project. In summary, this report includes a description of the work, a description of the equipment utilized, the vibracore sampling procedures, laboratory testing program and maps indicating coring locations.

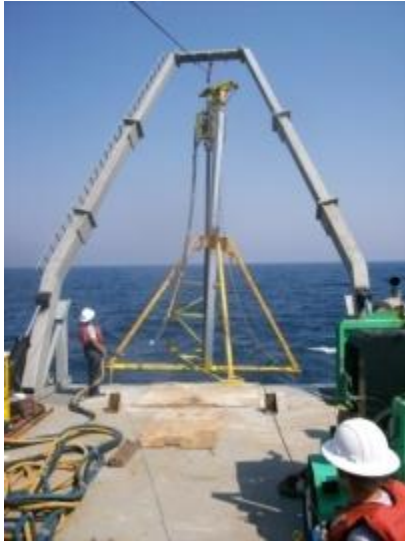
Overview

American Vibracore Services, a division of Amdrill Inc., conducted vibracore sampling operations for this project to assess the sediment characteristics of shoaled material in designated areas determined by Coastal Engineering Consultants Inc., the Client.

Field work was conducted off Lovers Key, Florida October 26th through October 27th 2021. See Section 2.0, "Vibracore Location Map" Figure 1 that indicates the broad study area and vibracore locations. The map was generated in ESRI's ArcGIS software with a satellite imagery basemap. A total of 20 vibracores were collected to within project specifications of locations designated by the Client and following project guidelines. Three of the cores were completed by jetting to a depth of ten to thirteen feet below the Gulf bottom, then recommencing coring to recover sequential sections from subsurface depths. All of the cores were selected for laboratory assessment based on favorable material. A report of the coring and laboratory data is listed herein



Vibracore Sampling Program



Amdrill utilized the vessel “MV Thunderforce” as a work platform for vibracore operations. Amdrill’s large pneumatic vibracore machine was used to extract vibracore samples to specified depths determined by the Client or until refusal. A penetrometer was used to determine depth advancement into the seafloor bottom and the penetration rates were recorded. The “Penetrometer Reports” can be found available in this report in Section 7.0. Where insufficient recovery was achieved, a jetting system was used to advance the vibracore into the substrate to the depth of last recovery without collecting sediment. The vibracore head is engaged and sediment collection begins at the depth of last refusal. This results in two cores making a single sediment profile.

As built core locations were recorded during the core collection program by Amdrill and are reported in Florida State Plane Coordinate System, West Zone (NAD83) for horizontal control. Water depths were recorded at each core location and corrected based on data obtained from the nearest NOAA tide station located in Naples Florida (Station ID: 8725110). Vertical control top of core elevations are expressed in NAVD 1988. Location data are reported as such in this report and on all laboratory data.

Core Processing

All cores collected from the project were split and logged by a Florida Licensed Geologist in general compliance with American Society for Testing and Materials (ASTM) D 5434. Select layers were sampled per the lab assignments determined by the Client project representative upon review of the draft logs. One lengthwise half was used to extract the samples for lab analysis and the other half of the core was preserved for delivery to the Client. Both halves were wrapped in clear plastic (to preserve moisture and keep material in place) and labeled with boring names and depth intervals.

Photographing

Each core section was photographed in two (2) foot color increments with adequate lighting and focus. Cores are displayed in Section 8.0 “Vibracore Photographs” of this report with a legible tape in 10th of a foot increments. Core photos are labeled with the vibracore name, top depth and bottom depth.

Laboratory Testing

Laboratory testing performed at GFA International Inc.’s Lab was conducted in the form of ASTM D 6913 Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis . The following sieve sizes were used in the gradation analysis of the selected samples: 3/4”, 5/8”, 7/16”, 5/16”, 3.5, 4, 5, 7, 10, 14, 18, 25, 35, 45, 60, 80, 120, 170, 200 and 230. Each sample was analyzed for visual shell determination by estimating the concentration of shell retained on each individual sieve above the #4 and calculating the total weighted average. Munsell color determination of each sample were recorded in a moist state.

Carbonate content testing was performed on select samples determined by client. The carbonate testing was performed per the non ASTM acid digestion method suggested by Twenhofel and Tyler Method, 1941. The results of are noted on each vibracore log where applicable. Organic content testing was performed using the Loss on Ignition method and reported as total organic content.

In all, 60 gradation tests, 60 visual shell determinations, 60 carbonate content tests, 60 organic content tests, and 60 Munsell color determination were performed. Please find in Sections 5.0 "Sieve Graphs" and Section 6.0 "Sieve Tables" the results of the gradation testing program.

Reporting

This report serves as a compilation of all findings of the **Lovers Key Beach Nourishment Sand Search Detail Level Geotechnical Investigation Project Lee County, Florida**. The information contained herein meets or exceeds requirements established by the Client which was agreed upon by GFA and reflects work completed to the most current standards and procedures unless otherwise requested. In addition, GFA is dedicated to safe work practices and is pleased to report that all work related to this project was completed with zero reportable incidents.

Closing

We appreciate the opportunity to be of service on this project and look forward to a continued relationship.

Respectfully Submitted,



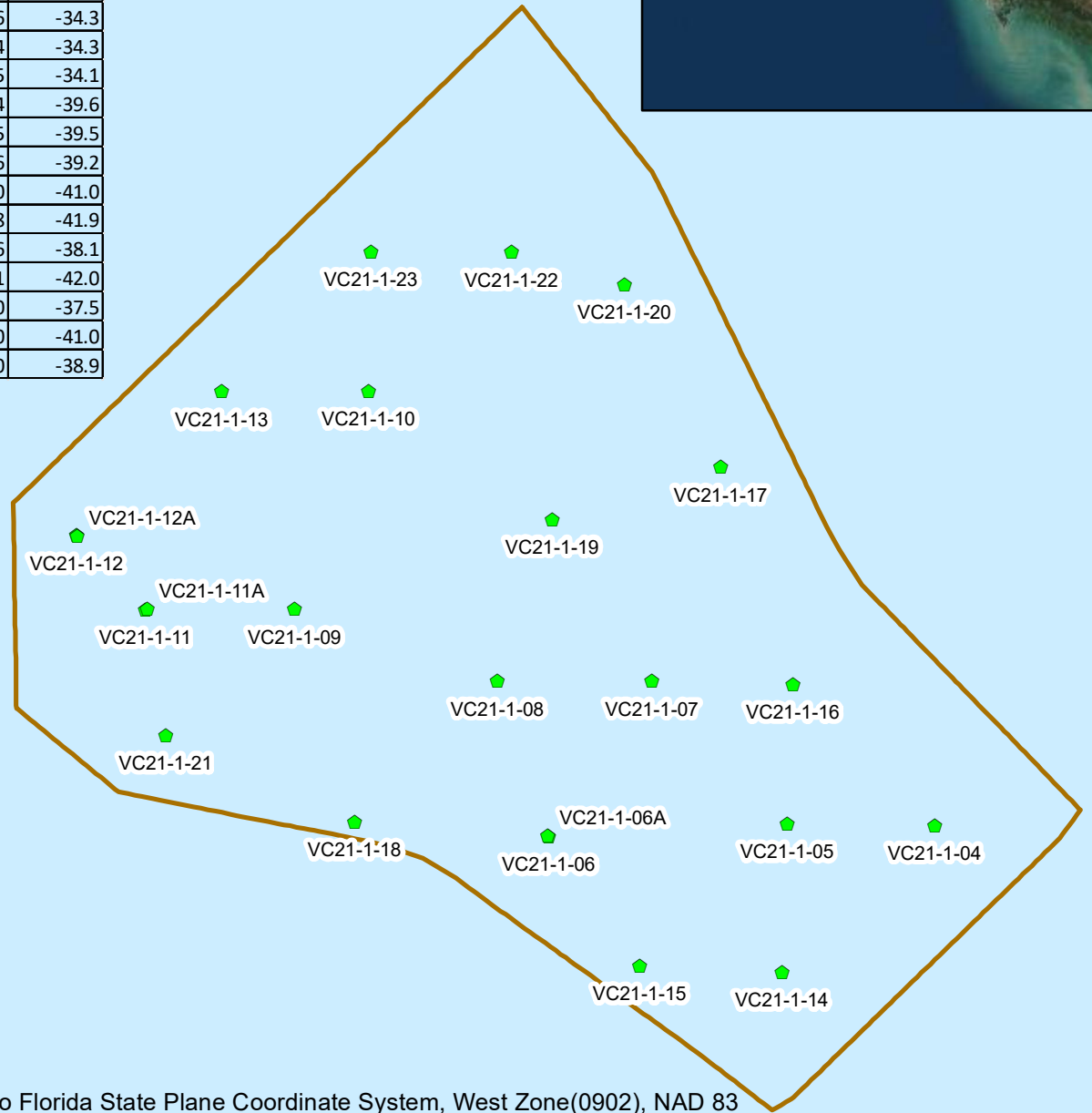
Frederick G Kaub P.G.



2.0 Vibracore Map



Vibracore	Latitude	Longitude	Elevation
VC21-1-04	26.376889	-82.358658	-39.9
VC21-1-05	26.376901	-82.360854	-33.0
VC21-1-06	26.376725	-82.364413	-37.4
VC21-1-06A	26.376733	-82.364431	-36.8
VC21-1-07	26.378815	-82.362878	-35.7
VC21-1-08	26.378808	-82.365185	-32.5
VC21-1-09	26.379768	-82.368207	-32.4
VC21-1-10	26.382695	-82.367116	-37.0
VC21-1-11	26.379752	-82.370432	-33.4
VC21-1-11A	26.379764	-82.370407	-34.6
VC21-1-12	26.380745	-82.371466	-34.3
VC21-1-12A	26.380738	-82.371454	-34.3
VC21-1-13	26.382685	-82.369305	-34.1
VC21-1-14	26.374903	-82.360924	-39.6
VC21-1-15	26.374988	-82.363045	-39.5
VC21-1-16	26.378778	-82.360776	-39.2
VC21-1-17	26.381693	-82.361860	-41.0
VC21-1-18	26.376911	-82.367308	-41.9
VC21-1-19	26.380987	-82.364376	-38.1
VC21-1-20	26.384144	-82.363301	-42.0
VC21-1-21	26.378068	-82.370130	-37.5
VC21-1-22	26.384577	-82.364990	-41.0
VC21-1-23	26.384574	-82.367090	-38.9



Notes:

- Coordinates are references to Florida State Plane Coordinate System, West Zone(0902), NAD 83
- Geographical Coordinates are in decimal degrees referenced to NAD 83
- Elevations are in feet referenced to NAVD88 (derived from NOAA Tide Station: 8725110)



Legend

- ◆ Vibracores
- 19063-LK-P1-BA-limits-from-Permit-Set

0 0.05 0.1 0.2 0.3 0.4 Miles

Figure 1

Lovers Key Beach Nourishment
Sand Search

Design Level Cores 2021
Investigation Area

Map Created by GFA International Inc.

3.0

Granularmetric Summary Table

Lovers Key Beach Nourishment Sand Search
Detail Level Geotechnical Investigation

Vibracore	Sample Number	Sample Interval (ft)	gINT Granularmetrics						USC	Silt (%)	Carbonates (%)	Organics (%)	Shell (%)	Munsell Color	
			Size Class (wt%)				Descriptive Statistics							Wet	
			Gravel	Sand	<#200	<#230	Mean (mm)	Verbal						Verbal	Value
VC21-1-04	S1	0.0' - 2.1'	4.17%	94.46%	1.37%	1.34%	0.67	C	SW	1.34%	40.90%	0.90%	4.17%	Light gray	10YR 7/2
	S2	2.1' - 5.5'	4.26%	94.20%	1.54%	1.49%	0.69	C	SW	1.49%	32.90%	0.70%	4.26%	Light gray	10YR 7/1
	S3	5.5' - 6.5'	1.43%	97.01%	1.56%	1.48%	0.56	C	SW	1.48%	40.90%	0.70%	1.43%	Light gray	10YR 7/1
	S4	6.5' - 11.6'	0.94%	96.53%	2.53%	2.33%	0.36	M	SW	2.33%	35.20%	0.70%	0.94%	Light gray	10YR 7/1
VC21-1-05	S1	0.0' - 8.5'	2.96%	95.93%	1.11%	1.08%	0.53	C	SW	1.08%	36.30%	0.60%	2.96%	Light gray	10YR 7/1
	S2	8.5' - 18.0'	0.64%	96.24%	3.12%	2.91%	0.36	M	SW	2.91%	34.00%	0.70%	0.64%	Light gray	10YR 7/1
	S3	18.0' - 18.8'	6.85%	84.97%	8.18%	7.53%	0.33	M	SW-SM	7.53%	45.50%	1.00%	6.85%	Light gray	10YR 7/1
VC21-1-06	S1	0.0' - 5.7'	0.25%	98.35%	1.40%	1.33%	0.33	M	SP	1.33%	32.90%	0.60%	0.25%	Light gray	10YR 7/1
	S2	5.7' - 11.7'	0.67%	97.31%	2.02%	1.91%	0.36	M	SW	1.91%	31.70%	0.60%	0.67%	Light gray	10YR 7/1
VC21-1-06A	S3	10.0' - 12.4'	0.79%	96.46%	2.75%	2.46%	0.40	M	SW	2.46%	47.80%	0.80%	0.79%	Light gray	10YR 7/1
VC21-1-07	S1	0.0' - 2.8'	1.81%	97.14%	1.05%	1.03%	0.50	C	SW	1.03%	27.10%	0.50%	1.81%	Light gray	10YR 7/1
	S2	2.8' - 8.0	1.36%	97.38%	1.26%	1.21%	0.37	M	SW	1.21%	28.30%	0.60%	1.36%	Light gray	10YR 7/1
	S3	8.0' - 17.4'	1.45%	96.45%	2.10%	1.91%	0.38	M	SW	1.91%	29.40%	0.60%	1.45%	Light gray	10YR 7/1
VC21-1-08	S1	0.0' - 2.5'	1.13%	97.84%	1.03%	1.01%	0.48	M	SW	1.01%	32.90%	0.70%	1.13%	Light gray	10YR 7/1
	S2	2.5' - 12.3'	0.59%	98.49%	0.92%	0.87%	0.31	M	SP	0.87%	23.70%	0.60%	0.59%	Light gray	10YR 7/1
	S3	12.5' - 17.5'	0.72%	97.33%	1.95%	1.81%	0.35	M	SW	1.81%	32.87%	0.70%	0.72%	Light gray	10YR 7/1
VC21-1-09	S1	0.0' - 1.5'	1.10%	97.88%	1.02%	1.00%	0.52	C	SW	1.00%	31.70%	0.70%	1.10%	Light gray	10YR 7/1
	S2	1.5' - 3.0'	0.59%	98.24%	1.17%	1.15%	0.39	M	SW	1.15%	28.30%	0.60%	0.59%	Light gray	10YR 7/1
	S3	3.0' - 10.5'	0.25%	98.51%	1.24%	1.16%	0.33	M	SP	1.16%	36.30%	0.60%	0.25%	Light gray	10YR 7/1
	S4	10.5' - 18.0	0.35%	98.07%	1.58%	1.45%	0.29	M	SP	1.45%	27.10%	0.30%	0.35%	Light gray	10YR 7/1
VC21-1-10	S1	0.0' - 0.6'	0.21%	98.87%	0.92%	0.86%	0.43	M	SW	0.86%	31.60%	0.60%	0.21%	Light gray	10YR 7/1
	S2	0.6' - 7.7'	0.82%	97.90%	1.28%	1.20%	0.31	M	SW	1.20%	35.40%	0.60%	0.82%	Light gray	10YR 7/1
	S3	7.7' - 14.8	0.30%	96.61%	3.09%	2.80%	0.24	F	SP	2.80%	28.80%	0.70%	0.30%	Light gray	10YR 7/1

Vibracore	Sample Number	Sample Interval (ft)	gINT Granularmetrics						USC	Silt (%)	Carbonates (%)	Organics (%)	Shell (%)	Munsell Color	
			Size Class (wt%)				Descriptive Statistics							Wet	
			Gravel	Sand	<#200	<#230	Mean (mm)	Verbal						Verbal	Value
VC21-1-11	S1	0.0' - 7.0'	0.32%	98.98%	0.70%	0.67%	0.38	M	SW	0.67%	26.80%	0.50%	0.32%	Light gray	10YR 7/1
	S2	7.0' - 14.1	0.44%	98.35%	1.21%	1.14%	0.36	M	SW	1.14%	30.00%	0.50%	0.44%	Light gray	10YR 7/1
VC21-1-11A	S3	13.6' - 18.5'	0.68%	97.30%	2.02%	1.82%	0.28	M	SW	1.82%	36.10%	0.70%	0.68%	Light gray	10YR 7/1
VC21-1-12	S1	0.0' - 2.0'	0.07%	99.01%	0.92%	0.89%	0.36	M	SP	0.89%	23.50%	0.50%	0.07%	Light gray	10YR 7/2
	S2	2.0' - 8.5'	0.22%	98.73%	1.05%	1.00%	0.36	M	SP	1.00%	30.80%	0.50%	0.22%	Light gray	10YR 7/1
	S3	8.5' - 15.0'	0.09%	98.08%	1.83%	1.62%	0.30	M	SP	1.62%	27.30%	0.60%	0.09%	Light gray	10YR 7/1
VC21-1-12A	S4	12.2' - 20.0'	0.75%	95.80%	3.45%	2.97%	0.26	M	SW	2.97%	40.30%	0.80%	0.75%	Light gray	10YR 7/1
VC21-1-13	S1	0.0' - 0.4'	1.75%	97.06%	1.19%	1.17%	0.55	C	SW	1.17%	32.90%	0.50%	1.75%	Light gray	10YR 7/1
	S2	0.4' - 5.5'	0.13%	98.70%	1.17%	1.12%	0.36	M	SP	1.12%	23.70%	0.50%	0.13%	Light gray	10YR 7/1
	S3	5.5' - 10.3'	0.16%	98.01%	1.83%	1.73%	0.33	M	SP	1.73%	21.40%	0.50%	0.16%	Light gray	10YR 7/1
	S4	10.3' - 15.2'	0.68%	96.26%	3.06%	2.82%	0.32	M	SW	2.82%	30.60%	0.70%	0.68%	Light gray	10YR 7/1
VC21-1-14	S1	0.0' - 4.9'	2.15%	96.81%	1.04%	0.99%	0.52	C	SW	0.99%	43.20%	0.70%	2.15%	Light gray	10YR 7/1
	S2	4.9' - 10.0'	1.61%	96.50%	1.89%	1.75%	0.36	M	SW	1.75%	27.50%	0.70%	1.61%	Light gray	10YR 7/1
VC21-1-15	S1	0.0' - 5.1'	1.40%	97.52%	1.08%	1.05%	0.42	M	SW	1.05%	38.90%	0.80%	1.40%	Light gray	10YR 7/1
	S2	5.1' - 10.0'	0.21%	97.60%	2.19%	2.13%	0.33	M	SW	2.13%	33.10%	0.70%	0.21%	Light gray	10YR 7/1
VC21-1-16	S1	0.0' - 0.9'	1.15%	97.82%	1.03%	0.99%	0.52	C	SW	0.99%	43.80%	0.90%	1.15%	Light gray	10YR 7/1
	S2	0.9' - 5.4'	0.76%	98.32%	0.92%	0.90%	0.45	M	SW	0.90%	40.70%	0.80%	0.76%	Light gray	10YR 7/1
	S3	5.4' - 10.0'	0.53%	97.97%	1.50%	1.45%	0.40	M	SW	1.45%	35.70%	0.80%	0.53%	Light gray	10YR 7/1
VC21-1-17	S1	0.0' - 1.0'	1.50%	97.52%	0.98%	0.94%	0.52	C	SW	0.94%	29.40%	0.60%	1.50%	Light gray	10YR 7/1
	S2	1.0' - 5.5'	0.99%	97.63%	1.38%	1.29%	0.36	M	SW	1.29%	29.40%	0.50%	0.99%	Light gray	10YR 7/1
	S3	5.5' - 10.0'	0.74%	96.98%	2.28%	2.22%	0.37	M	SW	2.22%	31.70%	0.60%	0.74%	Light gray	10YR 7/1
VC21-1-18	S1	0.0' - 5.0'	1.01%	97.29%	1.70%	1.61%	0.35	M	SW	1.61%	33.90%	0.70%	1.01%	Light gray	10YR 7/1
	S2	5.0' - 9.7'	0.37%	96.54%	3.09%	2.84%	0.30	M	SW	2.84%	36.50%	0.80%	0.37%	Light gray	10YR 7/1

Vibracore	Sample Number	Sample Interval (ft)	gINT Granularmetrics						USC	Silt (%)	Carbonates (%)	Organics (%)	Shell (%)	Munsell Color	
			Size Class (wt%)				Descriptive Statistics							Wet	
			Gravel	Sand	<#200	<#230	Mean (mm)	Verbal						Verbal	Value
VC21-1-19	S1	0.0' - 0.8'	1.55%	97.43%	1.02%	0.98%	0.48	M	SW	0.98%	24.80%	0.50%	1.55%	Light gray	10YR 7/1
	S2	0.8' - 5.4'	0.30%	98.58%	1.12%	1.09%	0.32	M	SP	1.09%	23.70%	0.50%	0.30%	Light gray	10YR 7/1
	S3	5.4' - 10.0'	0.41%	97.76%	1.83%	1.63%	0.30	M	SW	1.63%	27.10%	0.60%	0.41%	Light gray	10YR 7/1
VC21-1-20	S1	0.0' - 0.4'	1.81%	97.36%	0.83%	0.80%	0.54	C	SW	0.80%	41.30%	0.70%	1.81%	Light gray	10YR 7/1
	S2	0.4' - 5.2'	0.94%	97.61%	1.45%	1.36%	0.43	M	SW	1.36%	36.00%	0.60%	0.94%	Light gray	10YR 7/1
	S3	5.2' - 10.0'	0.51%	98.47%	1.02%	1.00%	0.38	M	SW	1.00%	25.10%	0.70%	0.51%	Light gray	10YR 7/1
VC21-1-21	S1	0.0' - 5.0'	2.68%	94.66%	2.66%	2.46%	0.36	M	SW	2.46%	34.00%	0.70%	2.68%	Light gray	10YR 7/1
	S2	5.0' - 10.0'	0.23%	98.28%	1.49%	1.44%	0.32	M	SW	1.44%	30.90%	0.80%	0.23%	Light gray	10YR 7/1
VC21-1-22	S1	0.0' - 1.8'	0.85%	98.08%	1.07%	1.05%	0.48	M	SW	1.05%	35.50%	0.70%	0.85%	Light gray	10YR 7/1
	S2	1.8' - 5.8'	0.54%	98.10%	1.36%	1.33%	0.33	M	SW	1.33%	24.60%	0.60%	0.54%	Light gray	10YR 7/1
	S3	5.8' - 9.7'	2.27%	94.55%	3.18%	3.04%	0.35	M	SW	3.04%	32.60%	0.80%	2.27%	Light gray	10YR 7/1
VC21-1-23	S1	0.0' - 0.5'	2.95%	96.44%	0.61%	0.60%	0.55	C	SW	0.60%	38.50%	0.70%	2.95%	Light gray	10YR 7/1
	S2	0.5' - 5.3'	0.86%	97.95%	1.19%	1.13%	0.31	M	SW	1.13%	30.90%	0.60%	0.86%	Light gray	10YR 7/1
	S3	5.3' - 10.0'	0.28%	97.02%	2.70%	2.51%	0.23	F	SP	2.51%	23.80%	0.60%	0.28%	Light gray	10YR 7/1

4.0 Vibracore Logs



DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In. 10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
2. BORING DESIGNATION VC21-1-04		LOCATION COORDINATES X = -82.358658 Y = 26.376889		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER Vibrocure ☐ MANUAL HAMMER			
3. DRILLING AGENCY American Vibrocure Services		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED 4 UNDISTURBED (UD) 0	
4. NAME OF DRILLER BM				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		BEARING		14. ELEVATION GROUND WATER	
6. THICKNESS OF OVERBURDEN 0.0 Ft.		15. DATE BORING		STARTED 10-26-21 09:53 COMPLETED 10-26-21 09:59		16. ELEVATION TOP OF BORING -39.9 Ft.	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		17. TOTAL RECOVERY FOR BORING 11.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR FW			
8. TOTAL DEPTH OF BORING 13.2 Ft.							

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-39.9	0.0					
-42.0	2.1		Silica sand (c), trace shell (up to 1.5" in size), light gray (10YR-7/2), (SW).		S1	Sample #S1, Depth = 0.0' - 2.1' Mean Grain Size (mm): 0.67 Silt (%): 1.34 Gravel (%): 4.17 Carbonates (%): 40.90
-45.4	5.5		Silica sand (c), trace shell and coral fragments (up to 1.5" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 2.1' - 5.5' Mean Grain Size (mm): 0.69 Silt (%): 1.49 Gravel (%): 4.26 Carbonates (%): 32.90
-46.4	6.5		Silica sand (c), trace shell fragments (up to 0.5" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 5.5' - 6.5' Mean Grain Size (mm): 0.56 Silt (%): 1.48 Gravel (%): 1.43 Carbonates (%): 40.90
-51.5	11.6		Silica sand (m), grainsize decreasing with depth, trace shell fragments with large shell (1.5" in size) at 7.6', light gray (10YR-7/1), (SW).		S4	Sample #S4, Depth = 6.5' - 11.6' Mean Grain Size (mm): 0.36 Silt (%): 2.33 Gravel (%): 0.94 Carbonates (%): 35.20
-53.1	13.2		Assumed not recovered, (NR).			
			End of Boring			

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS GDT 1/12/22

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
				10. COORDINATE SYSTEM/DATUM		HORIZONTAL	VERTICAL
				Geographic (Latitude/Longitude)		NAD 1983	NAVD 88
2. BORING DESIGNATION VC21-1-05		LOCATION COORDINATES X = -82.360854 Y = 26.376901		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER Vibrocure ☐ MANUAL HAMMER			
3. DRILLING AGENCY American Vibrocure Services		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED	UNDISTURBED (UD)
4. NAME OF DRILLER BM				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		14. ELEVATION GROUND WATER			
		BEARING		15. DATE BORING		STARTED	COMPLETED
				10-27-21 12:12		10-27-21 12:23	
6. THICKNESS OF OVERBURDEN		0.0 Ft.		16. ELEVATION TOP OF BORING -33.0 Ft.			
7. DEPTH DRILLED INTO ROCK		0.0 Ft.		17. TOTAL RECOVERY FOR BORING 18.8 Ft.			
8. TOTAL DEPTH OF BORING		19.5 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-33.0	0.0					
			Silica sand (c), trace shell fragments (up to 1.0" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 8.5' Mean Grain Size (mm): 0.53 Silt (%): 1.08 Gravel (%): 2.96 Carbonates (%): 36.30
-41.5	8.5					
			Silica sand (m), trace shell fragments (up to 0.25" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 8.5' - 18.0' Mean Grain Size (mm): 0.36 Silt (%): 2.91 Gravel (%): 0.64 Carbonates (%): 34.00
-51.0	18.0					
-51.8	18.8		Silty silica sand (m), few shell fragments (up to 1.5" in size), light gray (10YR-7/1), (SW-SM).		S3	Sample #S3, Depth = 18.0' - 18.8' Mean Grain Size (mm): 0.33 Silt (%): 7.53 Gravel (%): 6.85 Carbonates (%): 45.50
-52.5	19.5		Assumed not recovered, (NR).			
			End of Boring			

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
				10. COORDINATE SYSTEM/DATUM		HORIZONTAL	VERTICAL
				Geographic (Latitude/Longitude)		NAD 1983	NAVD 88
2. BORING DESIGNATION VC21-1-06		LOCATION COORDINATES X = -82.364413 Y = 26.376725		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER Vibrocure ☐ MANUAL HAMMER			
3. DRILLING AGENCY American Vibracore Services		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED	UNDISTURBED (UD)
4. NAME OF DRILLER BM				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		BEARING		14. ELEVATION GROUND WATER	
6. THICKNESS OF OVERBURDEN 0.0 Ft.		15. DATE BORING		STARTED		COMPLETED	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		16. ELEVATION TOP OF BORING -37.4 Ft.		17. TOTAL RECOVERY FOR BORING 11.7 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	
8. TOTAL DEPTH OF BORING 16.1 Ft.				FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-37.4	0.0					
-43.1	5.7		Silica sand (m), trace shell fragments (up to 0.25" in size), light gray (10YR-7/1), (SP).		S1	Sample #S1, Depth = 0.0' - 5.7' Mean Grain Size (mm): 0.33 Silt (%): 1.33 Gravel (%): 0.25 Carbonates (%): 32.90
-49.1	11.7		Silica sand (m), trace shell fragments (up to 0.25" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 5.7' - 11.7' Mean Grain Size (mm): 0.36 Silt (%): 1.91 Gravel (%): 0.67 Carbonates (%): 31.70
-53.5	16.1		Assumed not recovered, (NR).			
			End of Boring			

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS GDT 1/12/22

Boring Designation VC21-1-06A

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-06A				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 1 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-27-21 13:12 10-27-21 13:16			
8. TOTAL DEPTH OF BORING 12.8 Ft.				16. ELEVATION TOP OF BORING -36.8 Ft.			
				17. TOTAL RECOVERY FOR BORING 2.8 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-36.8	0.0					
			Reference, Vibracore Log VC21-1-6 for sediment description from 0.0' - 10.0', VC21-1-6A Jetted to 10.0'.			
-46.8	10.0					
-49.2	12.4		Silica sand (m), trace shell fragments (up to 0.25" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 10.0' - 12.4' Mean Grain Size (mm): 0.40 Silt (%): 2.46 Gravel (%): 0.79 Carbonates (%): 47.80'
-49.6	12.8		Silica sand (m-c), some rock (up to 2.5" in size), light gray (10YR-7/1), (SP).			
			End of Boring			

FLORIDA DEP ROSS LOVERS KEY.GPJ FL DEP ROSS.GDT 1/24/22

Boring Designation VC21-1-07

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-07				10. COORDINATE SYSTEM/DATUM Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES 3 DISTURBED 3 UNDISTURBED (UD) 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING 10-27-21 10:32 COMPLETED 10-27-21 10:40			
8. TOTAL DEPTH OF BORING 17.4 Ft.				16. ELEVATION TOP OF BORING -35.7 Ft.			
				17. TOTAL RECOVERY FOR BORING 17.4 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.7	0.0					
-38.5	2.8		Silica sand (c), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 2.8' Mean Grain Size (mm): 0.50 Silt (%): 1.03 Gravel (%): 1.81 Carbonates (%): 27.10
-43.7	8.0		Silica sand (m), trace shell (up to 1.0" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 2.8' - 8.0' Mean Grain Size (mm): 0.37 Silt (%): 1.21 Gravel (%): 1.36 Carbonates (%): 28.30
-53.1	17.4		Silica sand (m), grainsize decreasing with depth, trace shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 8.0' - 17.4' Mean Grain Size (mm): 0.38 Silt (%): 1.91 Gravel (%): 1.45 Carbonates (%): 29.40
			End of Boring			

Boring Designation VC21-1-08

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-08				10. COORDINATE SYSTEM/DATUM Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES 3 DISTURBED 0 UNDISTURBED (UD) 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING 10-27-21 10:53 COMPLETED 10-27-21 11:06			
8. TOTAL DEPTH OF BORING 17.5 Ft.				16. ELEVATION TOP OF BORING -32.5 Ft.			
				17. TOTAL RECOVERY FOR BORING 17.5 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-32.5	0.0					
-35.0	2.5		Silica sand (m), and shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 2.5' Mean Grain Size (mm): 0.48 Silt (%): 1.01 Gravel (%): 1.13 Carbonates (%): 32.90
-44.8	12.3		Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SP).		S2	Sample #S2, Depth = 2.5' - 12.3' Mean Grain Size (mm): 0.31 Silt (%): 0.87 Gravel (%): 0.59 Carbonates (%): 23.70
-45.0	12.5		Silica sand (f-m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SP).			
-50.0	17.5		Silica sand (m), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 12.5' - 17.5' Mean Grain Size (mm): 0.35 Silt (%): 1.81 Gravel (%): 0.72 Carbonates (%): 32.87
			End of Boring			

Boring Designation VC21-1-09

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-09				10. COORDINATE SYSTEM/DATUM Geographic (Latitude/Longitude)		HORIZONTAL NAD 1983	
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		VERTICAL NAVD 88	
4. NAME OF DRILLER BM				12. TOTAL SAMPLES		DISTURBED 4	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER		15. DATE BORING	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				16. ELEVATION TOP OF BORING -32.4 Ft.		STARTED 10-27-21 11:19	
8. TOTAL DEPTH OF BORING 19.1 Ft.				17. TOTAL RECOVERY FOR BORING 18 Ft.		COMPLETED 10-27-21 11:33	
18. SIGNATURE AND TITLE OF INSPECTOR FW							
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-32.4	0.0						
-33.9	1.5		Silica sand (c), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 1.5' Mean Grain Size (mm): 0.52 Silt (%): 1.00 Gravel (%): 1.10 Carbonates (%): 31.70	
-35.4	3.0		Silica sand (m), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 1.5' - 3.0' Mean Grain Size (mm): 0.39 Silt (%): 1.15 Gravel (%): 0.59 Carbonates (%): 28.30	
					S3	Sample #S3, Depth = 3.0' - 10.5' Mean Grain Size (mm): 0.33 Silt (%): 1.16 Gravel (%): 0.25 Carbonates (%): 36.30	
					S4	Sample #S4, Depth = 10.5' - 18.0' Mean Grain Size (mm): 0.29 Silt (%): 1.45 Gravel (%): 0.35 Carbonates (%): 27.10	
-50.4	18.0		Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SP).				
-51.5	19.1		Assumed not recovered, (NR).				
			End of Boring				

Boring Designation VC21-1-10

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-10				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 3 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-26-21 14:28 10-26-21 14:34			
8. TOTAL DEPTH OF BORING 14.8 Ft.				16. ELEVATION TOP OF BORING -37.0 Ft.			
				17. TOTAL RECOVERY FOR BORING 14.8 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-37.0	0.0						
-37.6	0.6		Silica sand (m), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 0.6' Mean Grain Size (mm): 0.43 Silt (%): 0.86 Gravel (%): 0.21 Carbonates (%): 31.60	0
			Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 0.6' - 7.7' Mean Grain Size (mm): 0.31 Silt (%): 1.20 Gravel (%): 0.82 Carbonates (%): 35.40	5
-44.7	7.7						
			Silica sand (f), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SP).		S3	Sample #S3, Depth = 7.7' - 14.8' Mean Grain Size (mm): 0.24 Silt (%): 2.80 Gravel (%): 0.30 Carbonates (%): 28.80	10
-51.8	14.8						
			End of Boring				15
							20

FLORIDA DEP ROSS LOVERS KEY.GPJ FL DEP ROSS.GDT 1/12/22

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, Fl		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida							
2. BORING DESIGNATION VC21-1-11		LOCATION COORDINATES X = -82.370432 Y = 26.379752		9. SIZE AND TYPE OF BIT 4.0 In.			
3. DRILLING AGENCY American Vibracore Services				10. COORDINATE SYSTEM/DATUM Geographic (Latitude/Longitude) HORIZONTAL NAD 1983 VERTICAL NAVD 88			
4. NAME OF DRILLER BM				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER Vibracore ☐ MANUAL HAMMER			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				DEG. FROM VERTICAL		BEARING	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				12. TOTAL SAMPLES DISTURBED 2 UNDISTURBED (UD) 0			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				13. TOTAL NUMBER CORE BOXES			
8. TOTAL DEPTH OF BORING 14.1 Ft.				14. ELEVATION GROUND WATER			
				15. DATE BORING STARTED 10-26-21 13:02 COMPLETED 10-26-21 13:10			
				16. ELEVATION TOP OF BORING -33.4 Ft.			
				17. TOTAL RECOVERY FOR BORING 14.1 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			
ELEV. (ft) -33.4	DEPTH (ft) 0.0	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
			Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 7.0' Mean Grain Size (mm): 0.38 Silt (%): 0.67 Gravel (%): 0.32 Carbonates (%): 26.80	
					S2	Sample #S2, Depth = 7.0' - 14.1' Mean Grain Size (mm): 0.36 Silt (%): 1.14 Gravel (%): 0.44 Carbonates (%): 30.00	
-47.5	14.1						
			End of Boring				

Boring Designation VC21-1-11A

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In. 10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
2. BORING DESIGNATION VC21-1-11A		LOCATION COORDINATES X = -82.370407 Y = 26.379764		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER Vibrocure ☐ MANUAL HAMMER			
3. DRILLING AGENCY American Vibrocure Services		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED 1 UNDISTURBED (UD) 0	
4. NAME OF DRILLER BM				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		BEARING		14. ELEVATION GROUND WATER	
6. THICKNESS OF OVERBURDEN 0.0 Ft.		15. DATE BORING		STARTED 10-27-21 13:39 COMPLETED 10-27-21 13:44		16. ELEVATION TOP OF BORING -34.6 Ft.	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		17. TOTAL RECOVERY FOR BORING 4.9 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR FW			
8. TOTAL DEPTH OF BORING 18.5 Ft.							

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.6	0.0					
			Reference, Vibrocure Log VC21-1-11 for sediment description from 0.0' - 13.6', VC21-1-11A Jetted to 13.6'.			
-48.2	13.6					
			Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 13.6' - 18.5' Mean Grain Size (mm): 0.28 Silt (%): 1.82 Gravel (%): 0.68 Carbonates (%): 36.10
-53.1	18.5					
			End of Boring			

Boring Designation VC21-1-12

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-12				10. COORDINATE SYSTEM/DATUM Geographic (Latitude/Longitude)		HORIZONTAL NAD 1983	
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		VERTICAL NAVD 88	
4. NAME OF DRILLER BM				12. TOTAL SAMPLES		DISTURBED	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD)	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING		STARTED	
8. TOTAL DEPTH OF BORING 15.0 Ft.				16. ELEVATION TOP OF BORING -34.3 Ft.		COMPLETED	
				17. TOTAL RECOVERY FOR BORING 15 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-34.3	0.0						
-36.3	2.0		Silica sand (m), trace shell fragments (up to 0.25" in size), light gray (10YR-7/2), (SP).		S1	Sample #S1, Depth = 0.0' - 2.0' Mean Grain Size (mm): 0.36 Silt (%): 0.89 Gravel (%): 0.07 Carbonates (%): 23.50	
					S2	Sample #S2, Depth = 2.0' - 8.5' Mean Grain Size (mm): 0.36 Silt (%): 1.00 Gravel (%): 0.22 Carbonates (%): 30.80	
					S3	Sample #S3, Depth = 8.5' - 15.0' Mean Grain Size (mm): 0.30 Silt (%): 1.62 Gravel (%): 0.09 Carbonates (%): 27.30	
-49.3	15.0						
			End of Boring				

Boring Designation VC21-1-12A

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-12A				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 1 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-27-21 13:55 10-27-21 14:00			
8. TOTAL DEPTH OF BORING 20.1 Ft.				16. ELEVATION TOP OF BORING -34.3 Ft.			
				17. TOTAL RECOVERY FOR BORING 7.8 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.3	0.0					
			Reference, Vibracore Log VC21-1-12 for sediment description from 0.0' - 12.2', VC21-1-12A jetted to 12.2'.			
-46.5	12.2					
			Silica sand (m), grainsize decreasing with depth, trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S4	Sample #S4, Depth = 12.2' - 20.0' Mean Grain Size (mm): 0.26 Silt (%): 2.97 Gravel (%): 0.75 Carbonates (%): 40.30
-54.3	20.0					
-54.4	20.1		Assumed not recovered, (NR).			
			End of Boring			

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS GDT 1/12/22

Boring Designation VC21-1-13

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In. 10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
2. BORING DESIGNATION VC21-1-13		LOCATION COORDINATES X = -82.369305 Y = 26.382685		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
3. DRILLING AGENCY American Vibracore Services		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED 4 UNDISTURBED (UD) 0	
4. NAME OF DRILLER BM				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		BEARING		14. ELEVATION GROUND WATER	
6. THICKNESS OF OVERBURDEN 0.0 Ft.		15. DATE BORING		STARTED 10-26-21 13:51		COMPLETED 10-26-21 13:58	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		16. ELEVATION TOP OF BORING -34.1 Ft.		17. TOTAL RECOVERY FOR BORING 15.2 Ft.			
8. TOTAL DEPTH OF BORING 15.2 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR FW					
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-34.1	0.0						
-34.5	0.4		Silica sand (c), trace shell fragments (up to 0.25" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 0.4' Mean Grain Size (mm): 0.55 Silt (%): 1.17 Gravel (%): 1.75 Carbonates (%): 32.90	
			Silica sand (m), trace shell (up to 1.0" in size), light gray (10YR-7/1), (SP).		S2	Sample #S2, Depth = 0.4' - 5.5' Mean Grain Size (mm): 0.36 Silt (%): 1.12 Gravel (%): 0.13 Carbonates (%): 23.70	
-39.6	5.5						
			Silica sand (m), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SP).		S3	Sample #S3, Depth = 5.5' - 10.3' Mean Grain Size (mm): 0.33 Silt (%): 1.73 Gravel (%): 0.16 Carbonates (%): 21.40	
-44.4	10.3						
			Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S4	Sample #S4, Depth = 10.3' - 15.2' Mean Grain Size (mm): 0.32 Silt (%): 2.82 Gravel (%): 0.68 Carbonates (%): 30.60	
-49.3	15.2						
			End of Boring				

FLORIDA DEP ROSS LOVERS KEY.GPJ FL DEP ROSS.GDT 1/12/22

Boring Designation VC21-1-14

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida							
2. BORING DESIGNATION VC21-1-14		LOCATION COORDINATES X = -82.360924 Y = 26.374903		9. SIZE AND TYPE OF BIT 4.0 In. 10. COORDINATE SYSTEM/DATUM HORIZONTAL: Geographic (Latitude/Longitude) VERTICAL: NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM		12. TOTAL SAMPLES 2 DISTURBED 2 UNDISTURBED (UD) 0		13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		14. ELEVATION GROUND WATER			
6. THICKNESS OF OVERBURDEN 0.0 Ft.		15. DATE BORING 10-26-21 10:23 COMPLETED 10-26-21 10:26		16. ELEVATION TOP OF BORING -39.6 Ft.			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		17. TOTAL RECOVERY FOR BORING 10 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR FW			
8. TOTAL DEPTH OF BORING 10.0 Ft.							
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-39.6	0.0						
-44.5	4.9		Silica sand (c), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 4.9' Mean Grain Size (mm): 0.52 Silt (%): 0.99 Gravel (%): 2.15 Carbonates (%): 43.20	
-49.6	10.0		Silica sand (m), trace shell fragments (up to 0.5" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 4.9' - 10.0' Mean Grain Size (mm): 0.36 Silt (%): 1.75 Gravel (%): 1.61 Carbonates (%): 27.50	
			End of Boring				

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

Boring Designation VC21-1-15

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-15				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 2 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-26-21 10:44 10-26-21 10:47			
8. TOTAL DEPTH OF BORING 10.0 Ft.				16. ELEVATION TOP OF BORING -39.5 Ft.			
				17. TOTAL RECOVERY FOR BORING 10 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-39.5	0.0					
-44.6	5.1		Silica sand (m), trace shell fragments (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 5.1' Mean Grain Size (mm): 0.42 Silt (%): 1.05 Gravel (%): 1.40 Carbonates (%): 38.90
-49.5	10.0		Silica sand (m), trace shell fragments (up to 0.25" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 5.1' - 10.0' Mean Grain Size (mm): 0.33 Silt (%): 2.13 Gravel (%): 0.21 Carbonates (%): 33.10
			End of Boring			

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

Boring Designation VC21-1-16

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-16				10. COORDINATE SYSTEM/DATUM Geographic (Latitude/Longitude)		HORIZONTAL NAD 1983	
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		VERTICAL NAVD 88	
4. NAME OF DRILLER BM				12. TOTAL SAMPLES		DISTURBED 3	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES		14. ELEVATION GROUND WATER	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				15. DATE BORING		STARTED 10-26-21 16:17	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				16. ELEVATION TOP OF BORING -39.2 Ft.		COMPLETED 10-26-21 16:18	
8. TOTAL DEPTH OF BORING 10.0 Ft.				17. TOTAL RECOVERY FOR BORING 10 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR FW	
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-39.2	0.0						
-40.1	0.9		Silica sand (c), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 0.9' Mean Grain Size (mm): 0.52 Silt (%): 0.99 Gravel (%): 1.15 Carbonates (%): 43.80	
					S2	Sample #S2, Depth = 0.9' - 5.4' Mean Grain Size (mm): 0.45 Silt (%): 0.90 Gravel (%): 0.76 Carbonates (%): 40.70	
			Silica sand (m), grainsize decreasing with depth, trace shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 5.4' - 10.0' Mean Grain Size (mm): 0.40 Silt (%): 1.45 Gravel (%): 0.53 Carbonates (%): 35.70	
-49.2	10.0		End of Boring				

Boring Designation VC21-1-17

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-17				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 3 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-26-21 15:42 10-26-21 15:45			
8. TOTAL DEPTH OF BORING 10.0 Ft.				16. ELEVATION TOP OF BORING -41.0 Ft.			
				17. TOTAL RECOVERY FOR BORING 10 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-41.0	0.0						
-42.0	1.0		Silica sand (c), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 1.0' Mean Grain Size (mm): 0.52 Silt (%): 0.94 Gravel (%): 1.50 Carbonates (%): 29.40	0
					S2	Sample #S2, Depth = 1.0' - 5.5' Mean Grain Size (mm): 0.36 Silt (%): 1.29 Gravel (%): 0.99 Carbonates (%): 29.40	5
					S3	Sample #S3, Depth = 5.5' - 10.0' Mean Grain Size (mm): 0.37 Silt (%): 2.22 Gravel (%): 0.74 Carbonates (%): 31.70	10
-51.0	10.0						
			End of Boring				15
							20

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

Boring Designation VC21-1-18

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In. 10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
2. BORING DESIGNATION VC21-1-18		LOCATION COORDINATES X = -82.367308 Y = 26.376911		11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER Vibrocure ☐ MANUAL HAMMER			
3. DRILLING AGENCY American Vibrocure Services		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED 2 UNDISTURBED (UD) 0	
4. NAME OF DRILLER BM				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL		14. ELEVATION GROUND WATER			
6. THICKNESS OF OVERBURDEN 0.0 Ft.		7. DEPTH DRILLED INTO ROCK 0.0 Ft.		15. DATE BORING		STARTED 10-26-21 11:50 COMPLETED 10-26-21 11:52	
8. TOTAL DEPTH OF BORING 10.0 Ft.		16. ELEVATION TOP OF BORING -41.9 Ft.		17. TOTAL RECOVERY FOR BORING 9.7 Ft.			
18. SIGNATURE AND TITLE OF INSPECTOR FW							
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-41.9	0.0						
			Silica sand (m), grainsize decreasing with depth, trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 5.0' Mean Grain Size (mm): 0.35 Silt (%): 1.61 Gravel (%): 1.01 Carbonates (%): 33.90	
					S2	Sample #S2, Depth = 5.0' - 9.7' Mean Grain Size (mm): 0.30 Silt (%): 2.84 Gravel (%): 0.37 Carbonates (%): 36.50	
-51.6	9.7						
-51.9	10.0		Assumed not recovered, (NR).				
			End of Boring				

Boring Designation VC21-1-19

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
				10. COORDINATE SYSTEM/DATUM		HORIZONTAL	VERTICAL
				Geographic (Latitude/Longitude)		NAD 1983	NAVD 88
2. BORING DESIGNATION VC21-1-19		LOCATION COORDINATES X = -82.364376 Y = 26.380987		11. MANUFACTURER'S DESIGNATION OF DRILL Vibrocure			
3. DRILLING AGENCY American Vibracore Services		CONTRACTOR FILE NO.		12. TOTAL SAMPLES		DISTURBED	UNDISTURBED (UD)
4. NAME OF DRILLER BM				13. TOTAL NUMBER CORE BOXES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED		DEG. FROM VERTICAL	BEARING	14. ELEVATION GROUND WATER			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				15. DATE BORING		STARTED	COMPLETED
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				16. ELEVATION TOP OF BORING -38.1 Ft.			
8. TOTAL DEPTH OF BORING 10.0 Ft.				17. TOTAL RECOVERY FOR BORING 10 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-38.1	0.0						
-38.9	0.8		Silica sand (m), trace shell (up to 0.75" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 0.8' Mean Grain Size (mm): 0.48 Silt (%): 0.98 Gravel (%): 1.55 Carbonates (%): 24.80	0
			Silica sand (m), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SP).		S2	Sample #S2, Depth = 0.8' - 5.4' Mean Grain Size (mm): 0.32 Silt (%): 1.09 Gravel (%): 0.30 Carbonates (%): 23.70	5
-43.5	5.4						
			Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 5.4' - 10.0' Mean Grain Size (mm): 0.30 Silt (%): 1.63 Gravel (%): 0.41 Carbonates (%): 27.10	10
-48.1	10.0						
			End of Boring				15
							20

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

Boring Designation VC21-1-20

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-20				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 3 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-26-21 15:26 10-26-21 15:29			
8. TOTAL DEPTH OF BORING 10.0 Ft.				16. ELEVATION TOP OF BORING -42.0 Ft.			
				17. TOTAL RECOVERY FOR BORING 10 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-42.0	0.0						
-42.4	0.4		Silica sand (c), and shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 0.4' Mean Grain Size (mm): 0.54 Silt (%): 0.80 Gravel (%): 1.81 Carbonates (%): 41.30	0
					S2	Sample #S2, Depth = 0.4' - 5.2' Mean Grain Size (mm): 0.43 Silt (%): 1.36 Gravel (%): 0.94 Carbonates (%): 36.00	5
			Silica sand (m), trace shell with larger fragments (up to 0.5" in size), light gray (10YR-7/1), (SW).		S3	Sample #S3, Depth = 5.2' - 10.0' Mean Grain Size (mm): 0.38 Silt (%): 1.00 Gravel (%): 0.51 Carbonates (%): 25.10	10
-52.0	10.0						
			End of Boring				15
							20

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

Boring Designation VC21-1-21

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-21				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 2 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-26-21 12:45 10-26-21 12:47			
8. TOTAL DEPTH OF BORING 10.0 Ft.				16. ELEVATION TOP OF BORING -37.5 Ft.			
				17. TOTAL RECOVERY FOR BORING 10 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-37.5	0.0					
					S1	Sample #S1, Depth = 0.0' - 5.0' Mean Grain Size (mm): 0.36 Silt (%): 2.46 Gravel (%): 2.68 Carbonates (%): 34.00
			Silica sand (m), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 5.0' - 10.0' Mean Grain Size (mm): 0.32 Silt (%): 1.44 Gravel (%): 0.23 Carbonates (%): 30.90
-47.5	10.0					
			End of Boring			

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

Boring Designation VC21-1-22

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-22				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL Geographic (Latitude/Longitude) NAD 1983 NAVD 88			
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER ☐ MANUAL HAMMER Vibracore			
4. NAME OF DRILLER BM				12. TOTAL SAMPLES DISTURBED UNDISTURBED (UD) 3 0			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED COMPLETED 10-26-21 15:10 10-26-21 15:14			
8. TOTAL DEPTH OF BORING 10.0 Ft.				16. ELEVATION TOP OF BORING -41.0 Ft.			
				17. TOTAL RECOVERY FOR BORING 10 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-41.0	0.0						
-42.8	1.8		Silica sand (m), abundant shell (up to 0.25" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 1.8' Mean Grain Size (mm): 0.48 Silt (%): 1.05 Gravel (%): 0.85 Carbonates (%): 35.50	0
					S2	Sample #S2, Depth = 1.8' - 5.8' Mean Grain Size (mm): 0.33 Silt (%): 1.33 Gravel (%): 0.54 Carbonates (%): 24.60	5
					S3	Sample #S3, Depth = 5.8' - 9.7' Mean Grain Size (mm): 0.35 Silt (%): 3.04 Gravel (%): 2.27 Carbonates (%): 32.60	10
-50.7	9.7		Silica sand (f-m), some rock fragments (up to 1.5" in size), light gray (10YR-7/1), (SP).				
-51.0	10.0		End of Boring				

FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

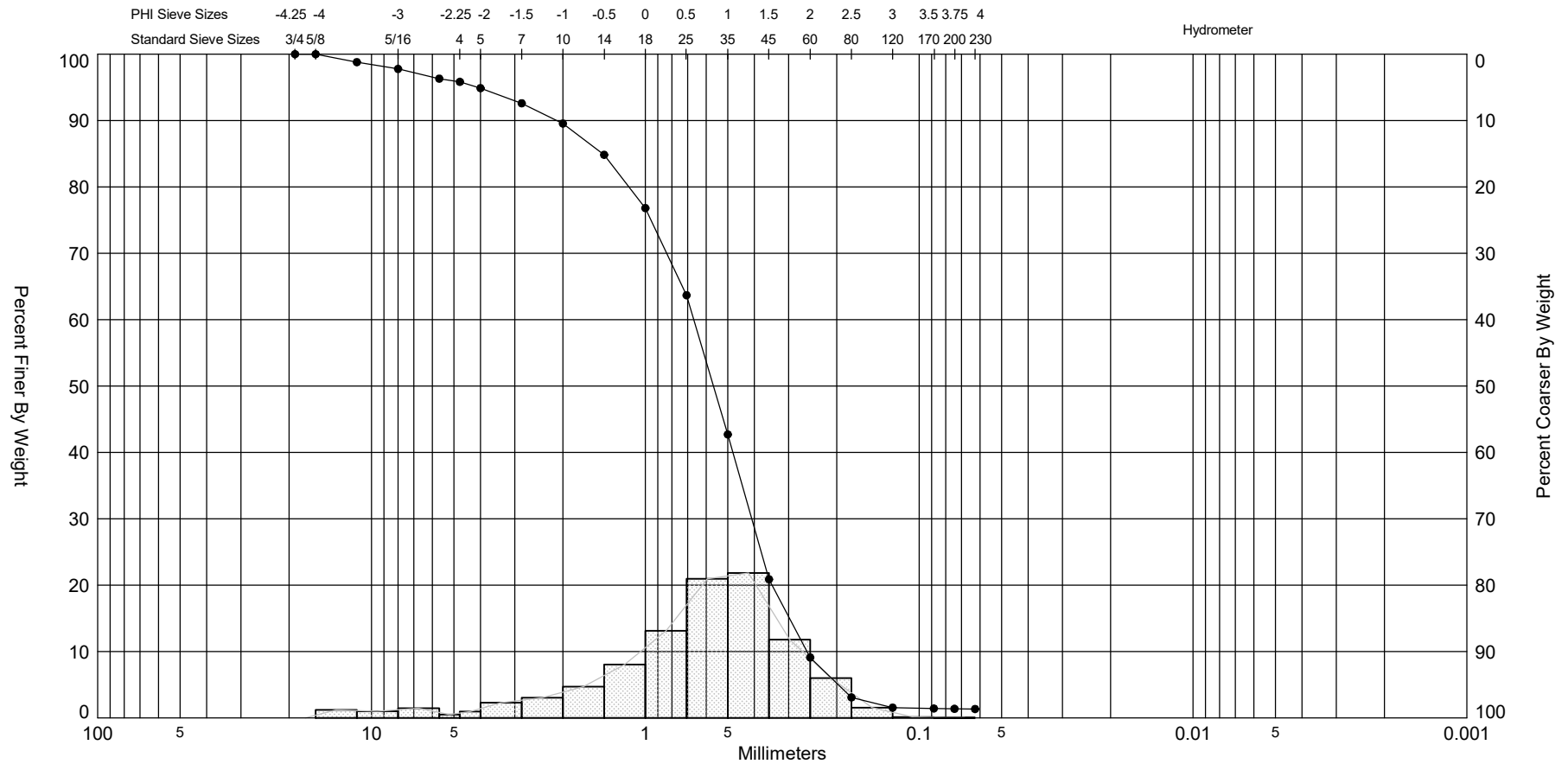
Boring Designation VC21-1-23

DRILLING LOG		CONTRACTING AGENCY Coastal Engineering Consultants Inc.		CONTRACTING AGENCY OFFICE Bonita Springs, FL		SHEET 1 OF 1 SHEETS	
1. PROJECT Lovers Key Detail Level Cores Lee County, Florida				9. SIZE AND TYPE OF BIT 4.0 In.			
2. BORING DESIGNATION VC21-1-23				10. COORDINATE SYSTEM/DATUM Geographic (Latitude/Longitude)		HORIZONTAL NAD 1983	
3. DRILLING AGENCY American Vibracore Services				11. MANUFACTURER'S DESIGNATION OF DRILL Vibracore		☐ AUTO HAMMER ☐ MANUAL HAMMER	
4. NAME OF DRILLER BM				12. TOTAL SAMPLES		DISTURBED 3	
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES		UNDISTURBED (UD) 0	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER		15. DATE BORING	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				16. ELEVATION TOP OF BORING -38.9 Ft.		STARTED 10-26-21 14:50	
8. TOTAL DEPTH OF BORING 10.0 Ft.				17. TOTAL RECOVERY FOR BORING 10 Ft.		COMPLETED 10-26-21 14:54	
				18. SIGNATURE AND TITLE OF INSPECTOR FW			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-38.9	0.0					
-39.4	0.5		Silica sand (c), trace shell (up to 0.5" in size), light gray (10YR-7/1), (SW).		S1	Sample #S1, Depth = 0.0' - 0.5' Mean Grain Size (mm): 0.55 Silt (%): 0.60 Gravel (%): 2.95 Carbonates (%): 38.50
-44.2	5.3		Silica sand (m), trace shell (up to 0.75" in size), light gray (10YR-7/1), (SW).		S2	Sample #S2, Depth = 0.5' - 5.3' Mean Grain Size (mm): 0.31 Silt (%): 1.13 Gravel (%): 0.86 Carbonates (%): 30.90
-48.9	10.0		Silica sand (f), trace shell (up to 0.25" in size), light gray (10YR-7/1), (SP).		S3	Sample #S3, Depth = 5.3' - 10.0' Mean Grain Size (mm): 0.23 Silt (%): 2.51 Gravel (%): 0.28 Carbonates (%): 23.80
			End of Boring			

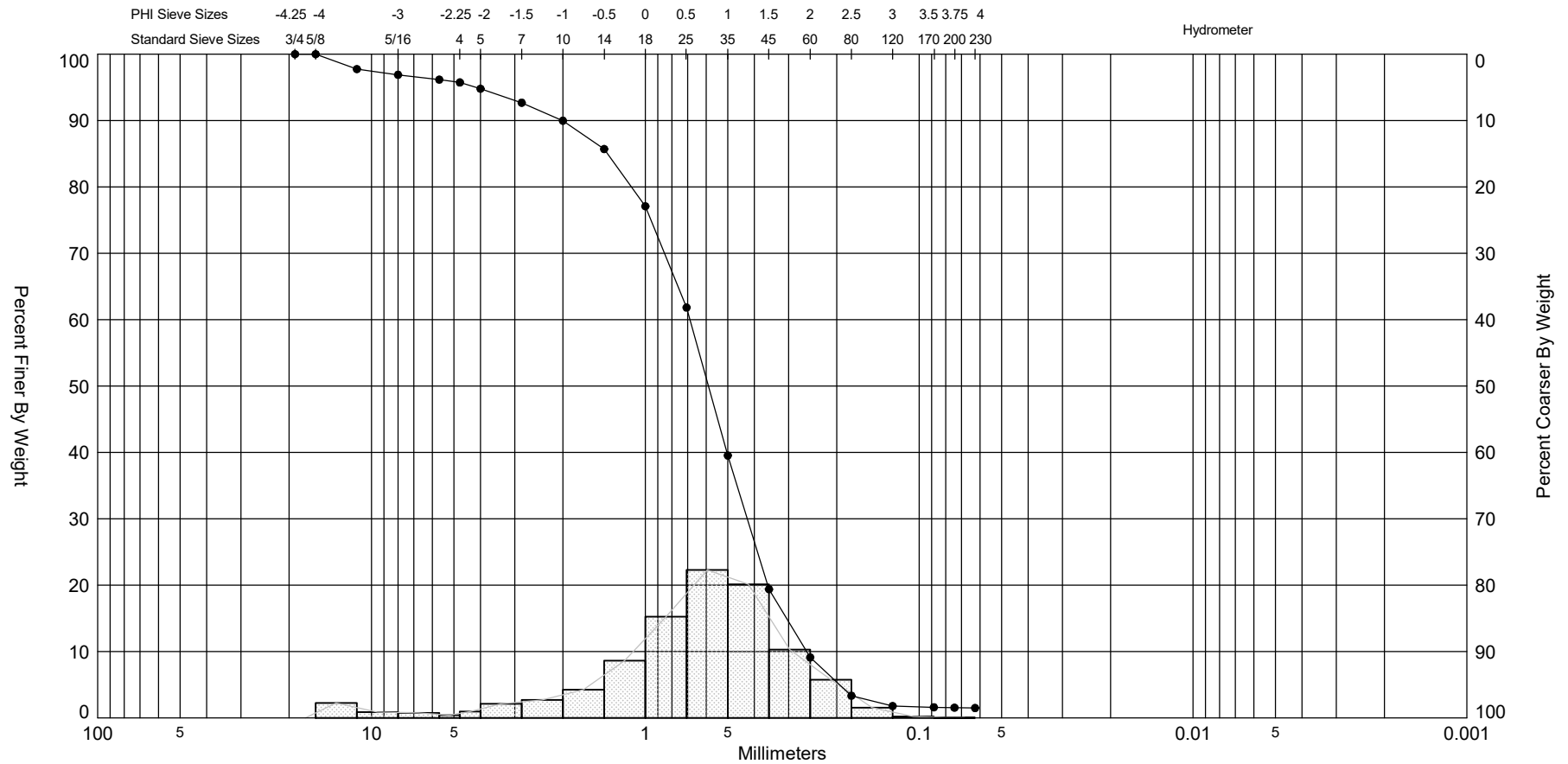
FLORIDA DEP ROSS LOVERS KEY GPJ FL DEP ROSS.GDT 1/12/22

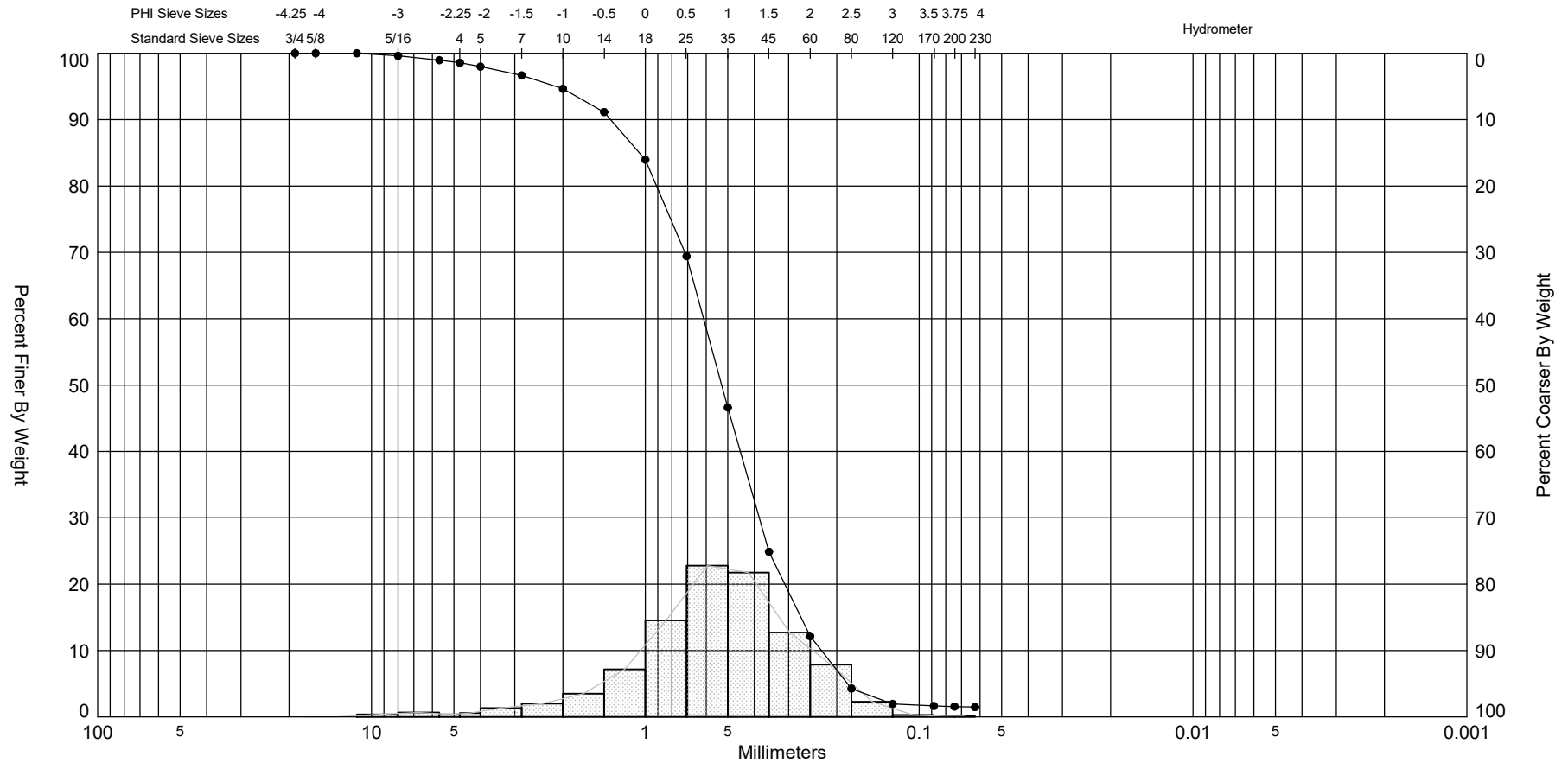
5.0 Sieve Graphs



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

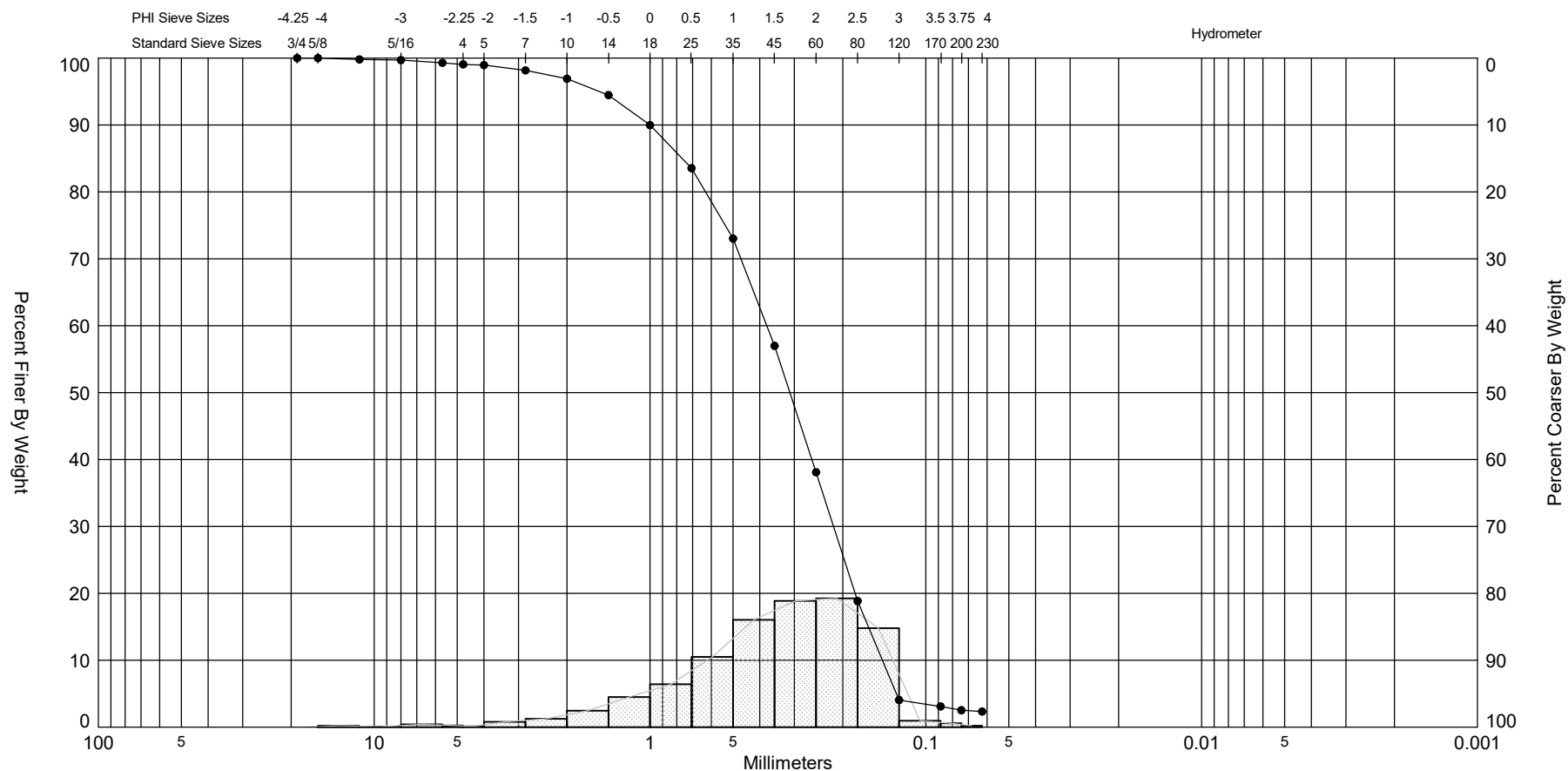
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-04 #S1	—●—	-39.9	SW	#200 - 1.37 #230 - 1.34	0.90	40.90	0.83	0.58	-1.18	4.72	1.25	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 2.1' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.358658
												Latitude (Y):	26.376889
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													





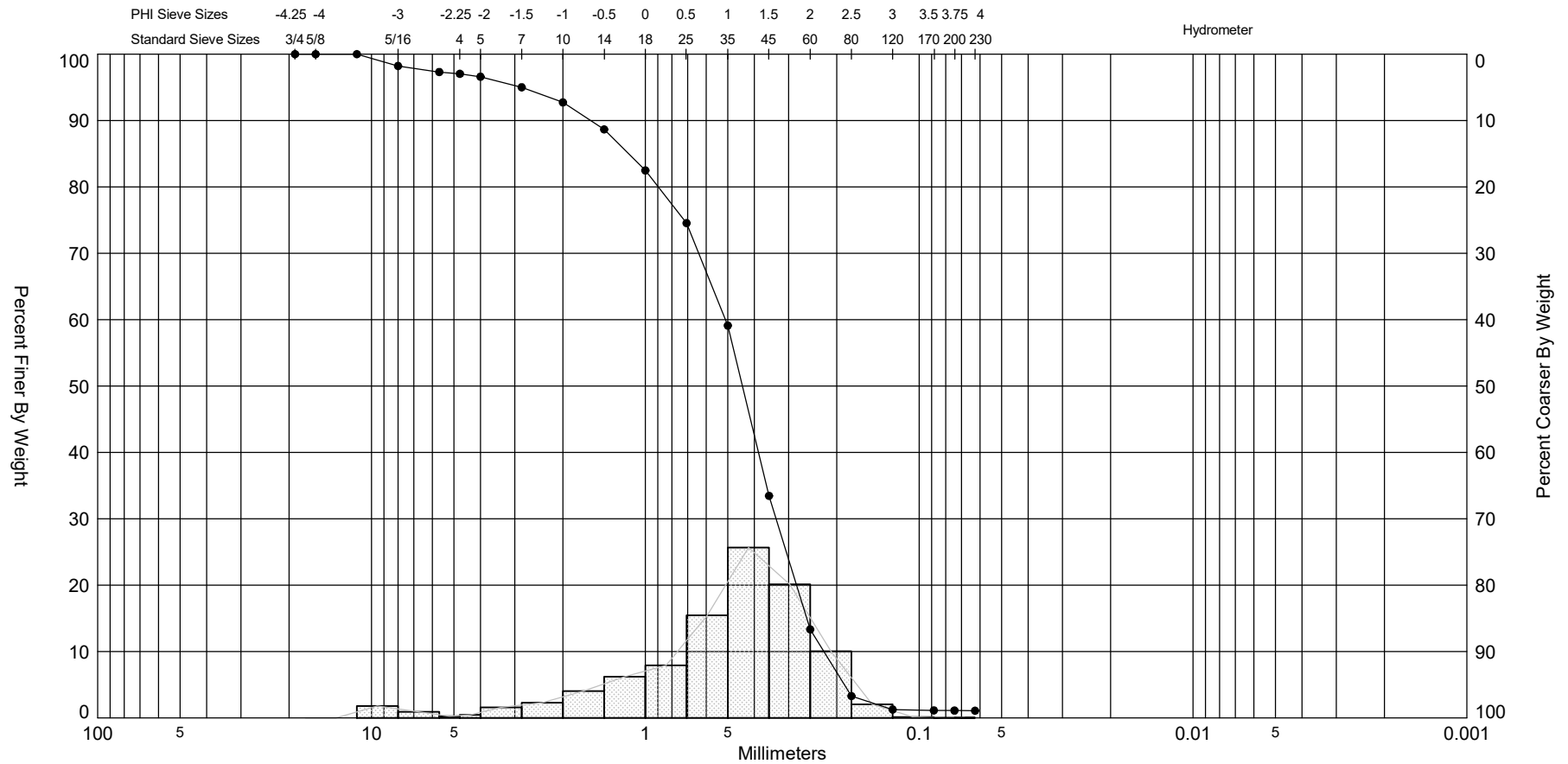
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-04 #S3	—●—	-45.4	SW	#200 - 1.56 #230 - 1.48	0.70	40.90	0.93	0.83	-0.83	4.61	1.04	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.5' - 6.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.358658
												Latitude (Y):	26.376889
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

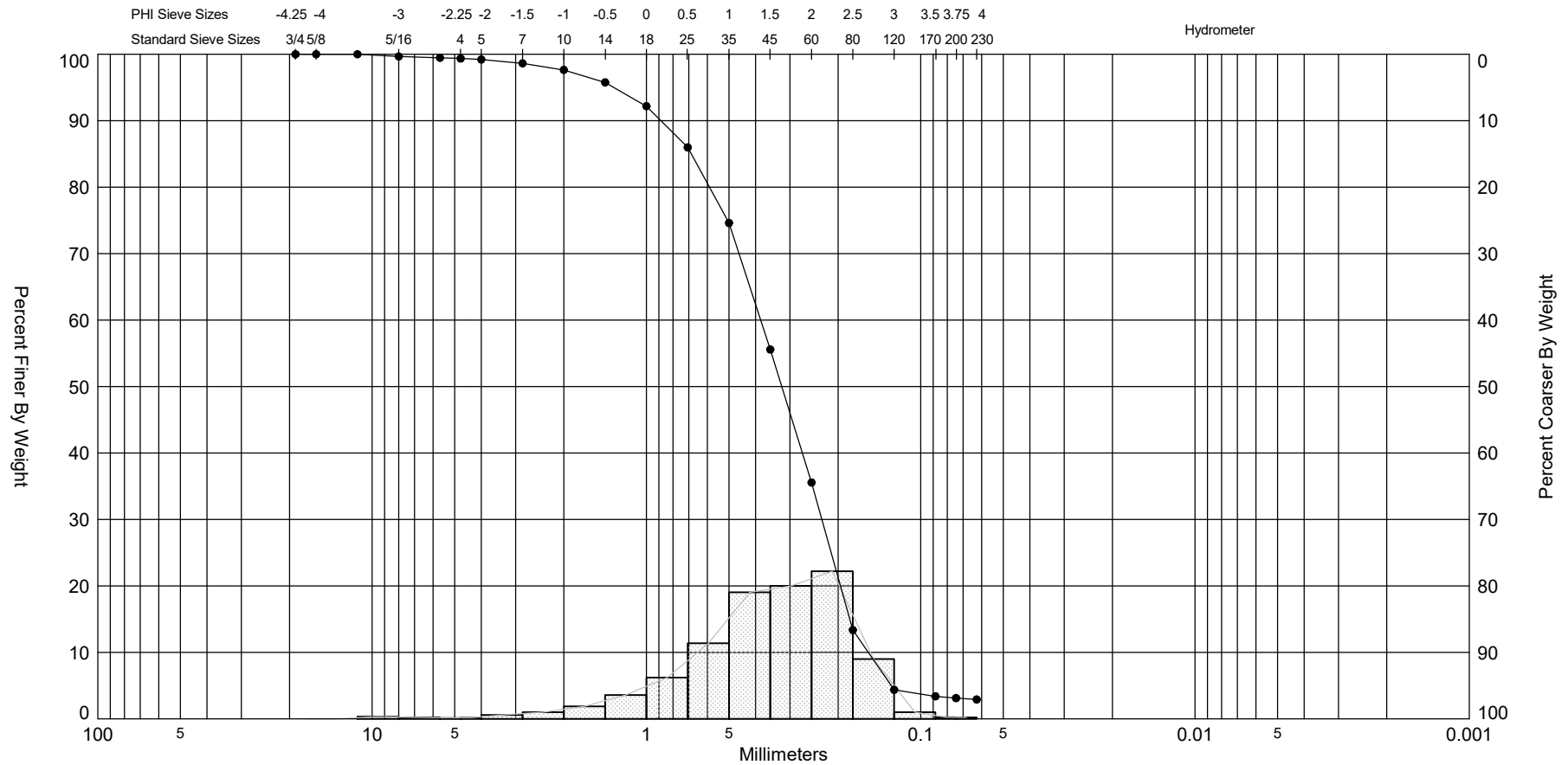
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-04 #S4		-46.4	SW	#200 - 2.53 #230 - 2.33	0.70	35.20	1.69	1.47	-1.1	4.82	1.12	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 6.5' - 11.6' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.358658
												Latitude (Y):	26.376889
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



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	
VC21-1-05 #S1	—●—	-33.0	SW	#200 - 1.11 #230 - 1.08	0.60	36.30	1.18	0.91	-1.37	5.2	1.18	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 8.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.360854
												Latitude (Y):	26.376901
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

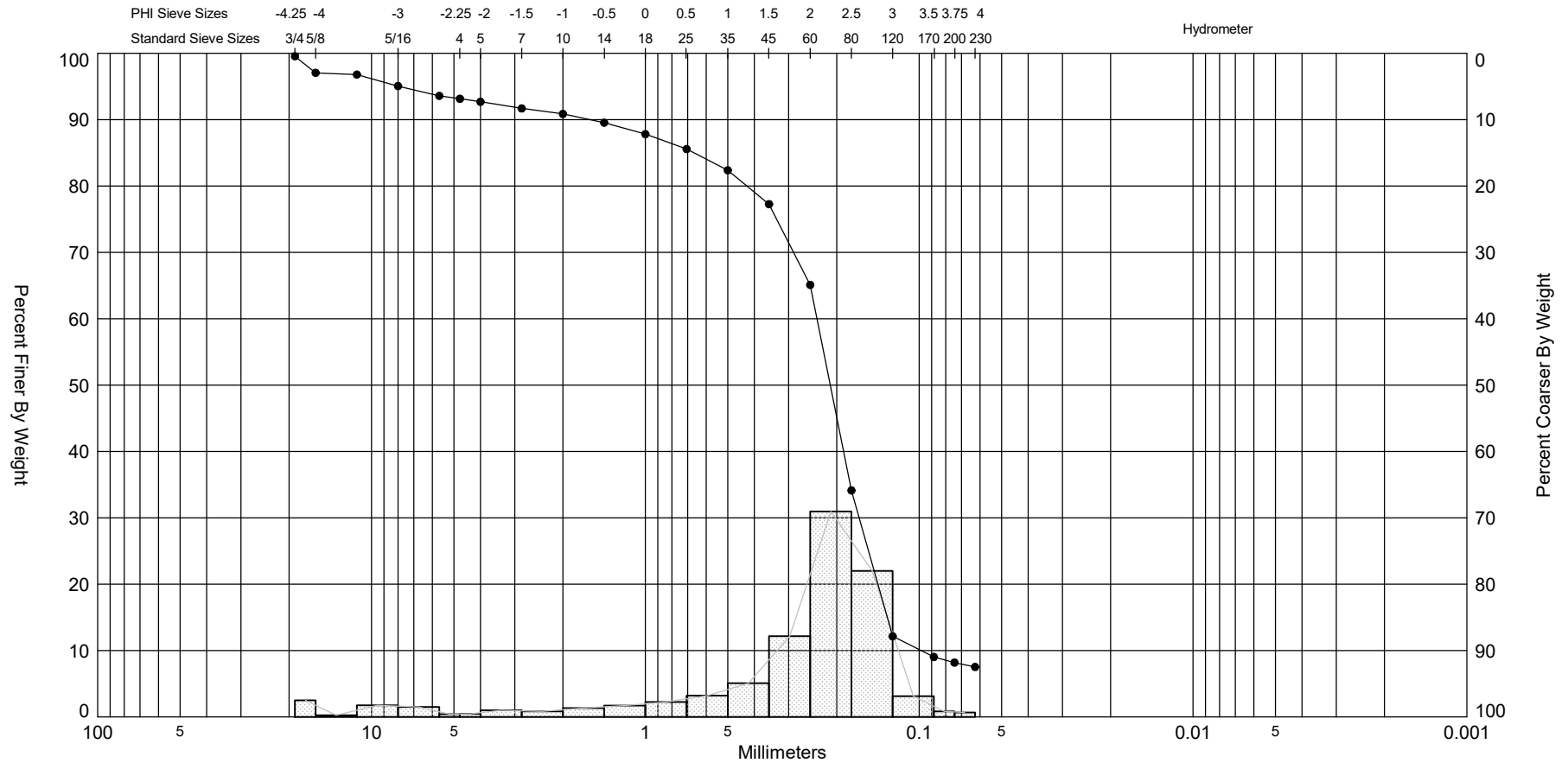
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Delray Beach, FL 33444



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

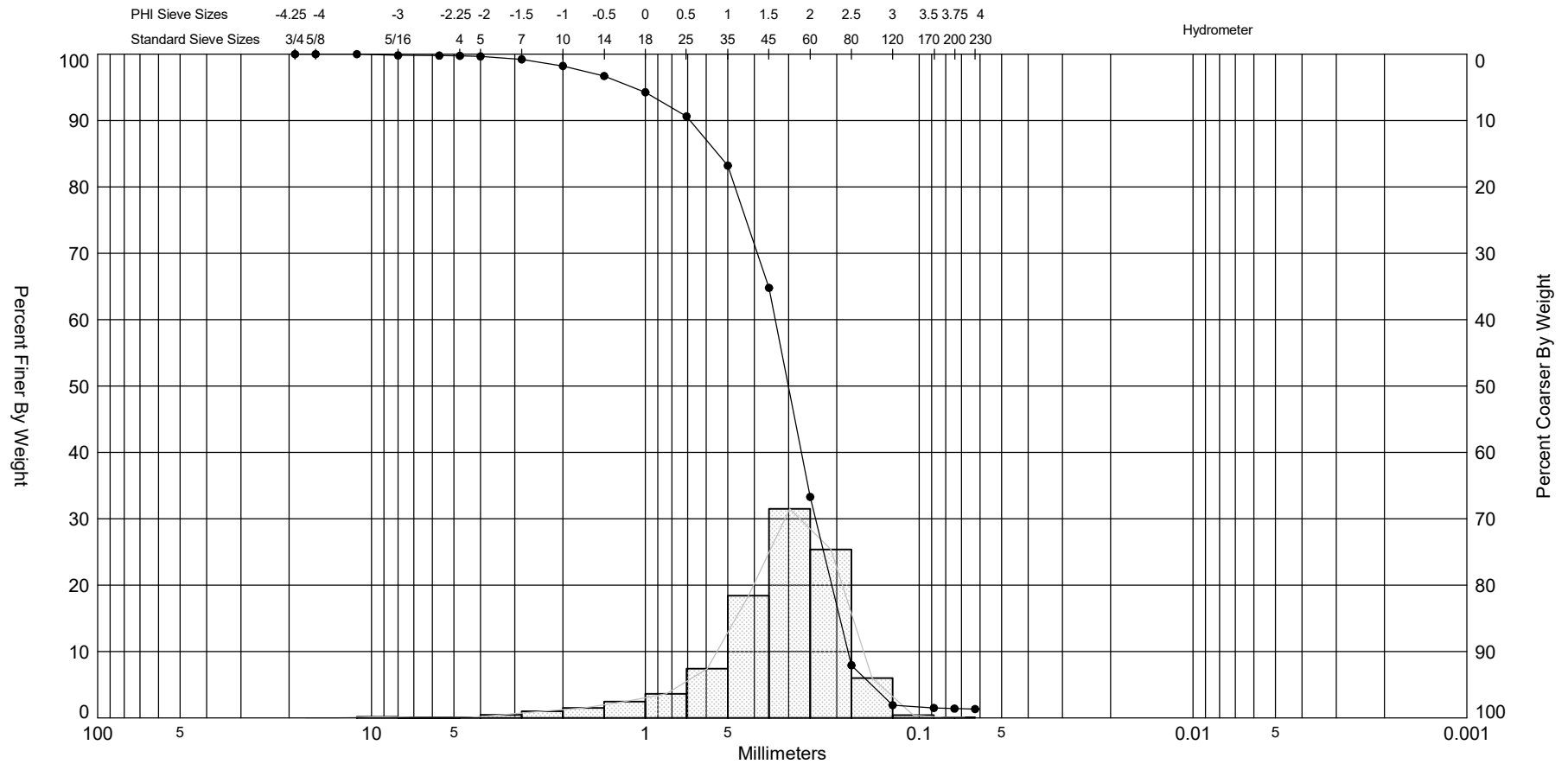
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-05 #S2	—●—	-41.5	SW	#200 - 3.12 #230 - 2.91	0.70	34.00	1.64	1.46	-1.13	5.32	1.01	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 8.5' - 18.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.360854
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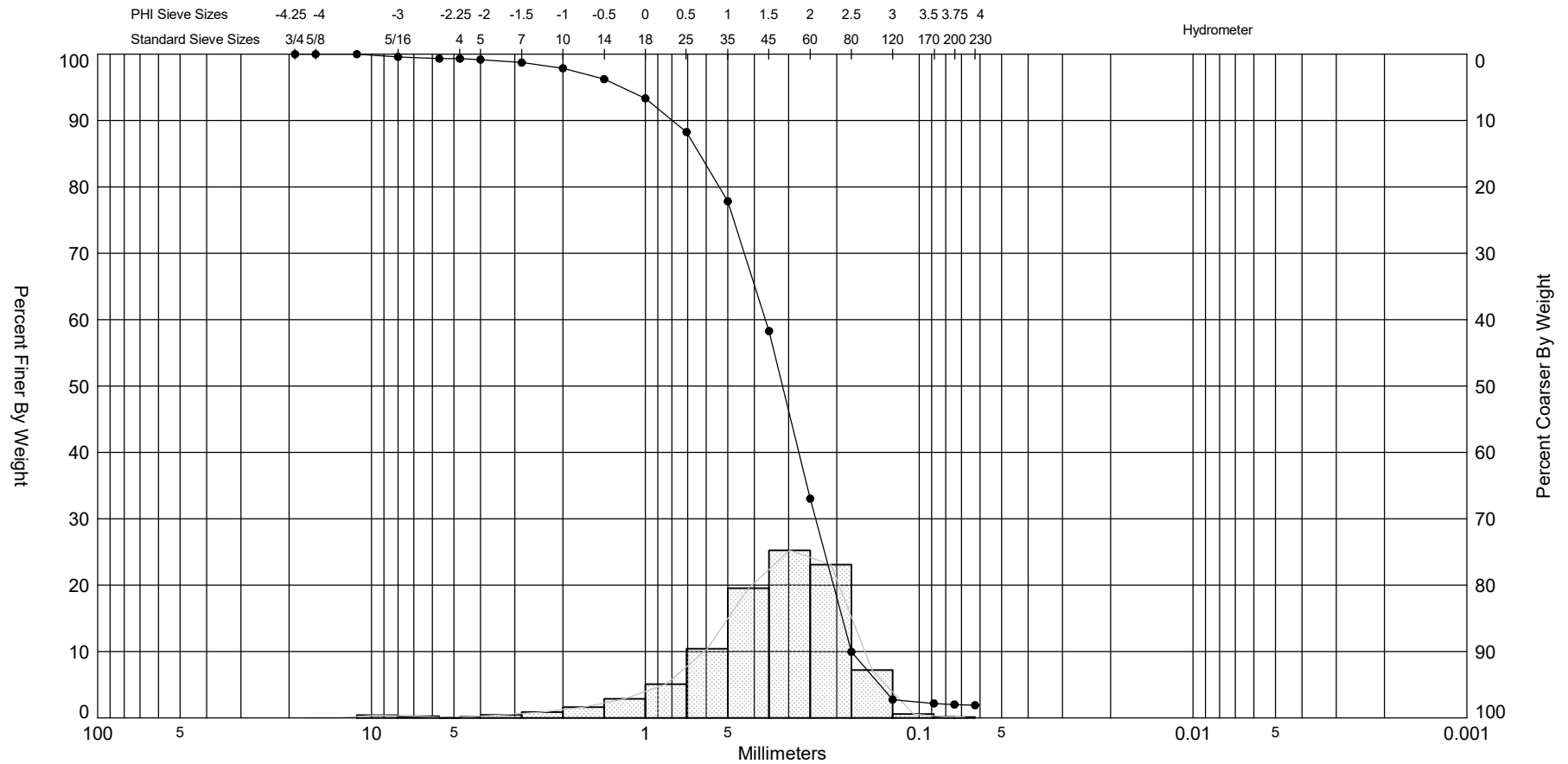
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-05 #S3	—●—	-51.0	SW-SM	#200 - 8.18 #230 - 7.53	1.00	45.50	2.24	1.59	-1.97	6.35	1.7	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 18.0' - 18.8' Material Description: Light gray well graded silty sand with few shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.360854
												Latitude (Y):	26.376901
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
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Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-06 #S1	—●—	-37.4	SP	#200 - 1.40 #230 - 1.33	0.60	32.90	1.73	1.58	-1.54	6.93	0.85	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 5.7' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.364413
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												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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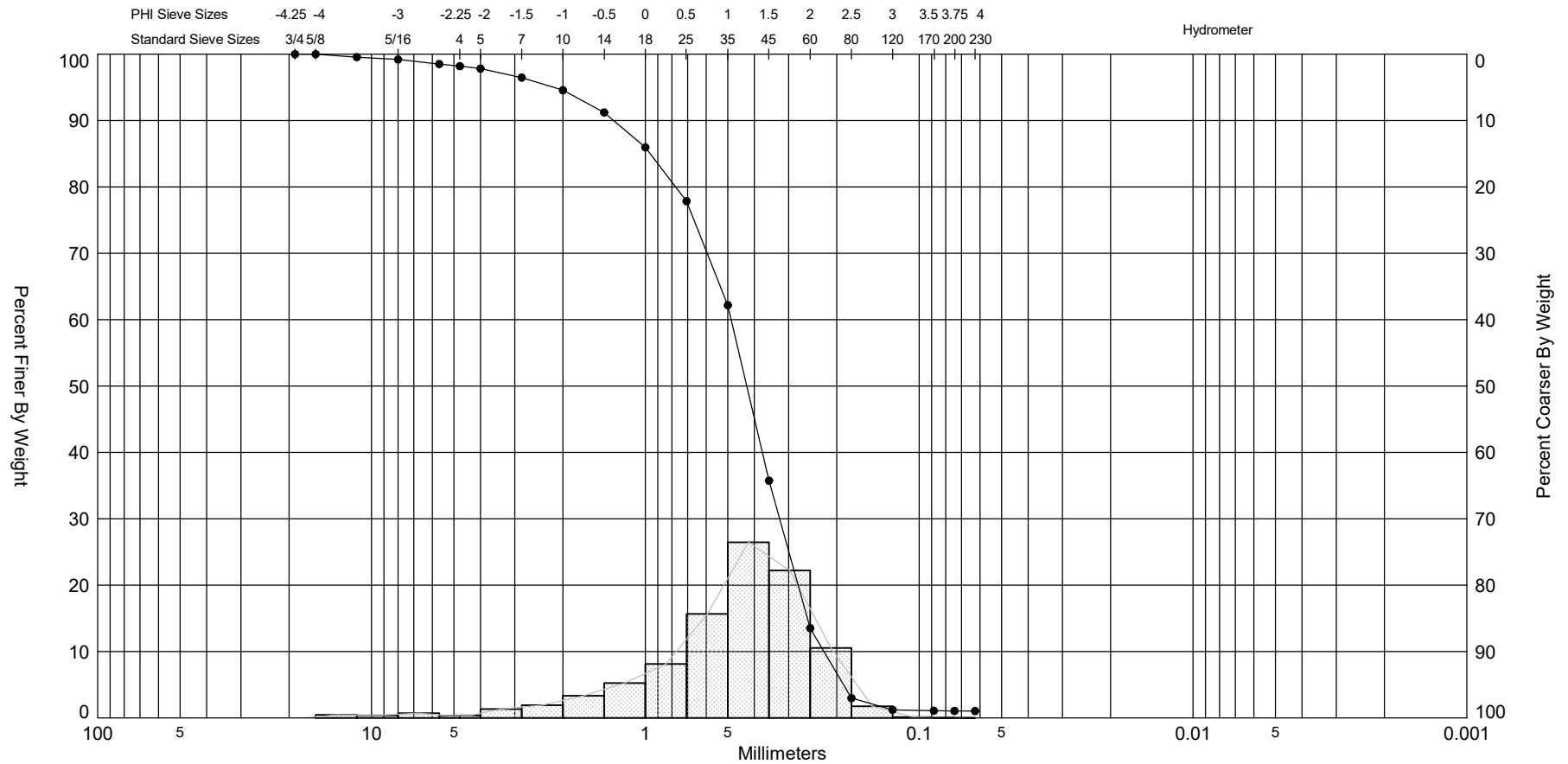


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-06 #S2	—●—	-43.1	SW	#200 - 2.02 #230 - 1.91	0.60	31.70	1.66	1.49	-1.43	6.72	0.95	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.7' - 11.7' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.364413
												Latitude (Y):	26.376725
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

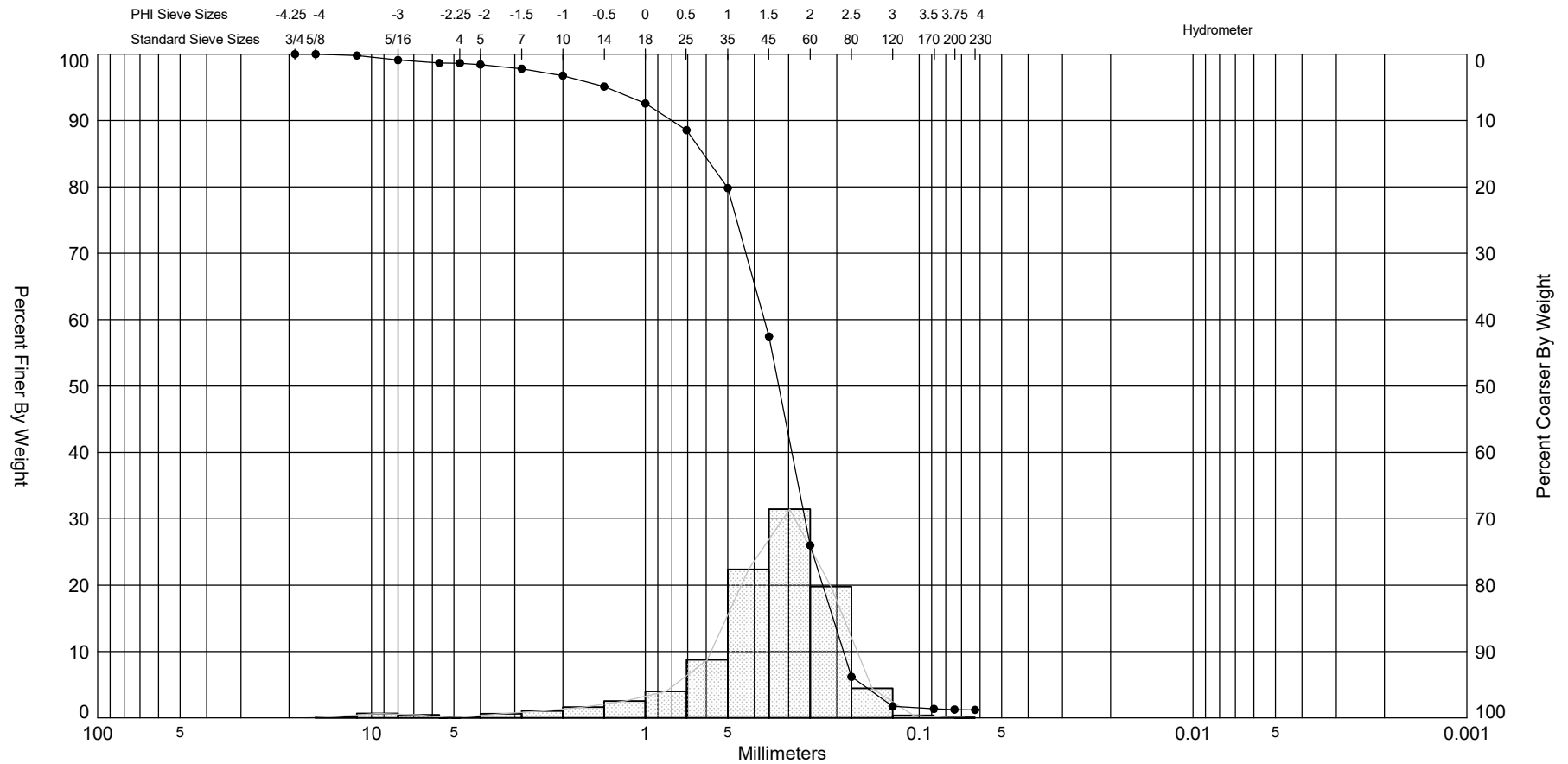
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-06A #S3		-46.8	SW	#200 - 2.75 #230 - 2.46	0.80	47.80	1.52	1.34	-1.03	4.93	1.11	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 10.0' - 12.4' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.364431
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												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

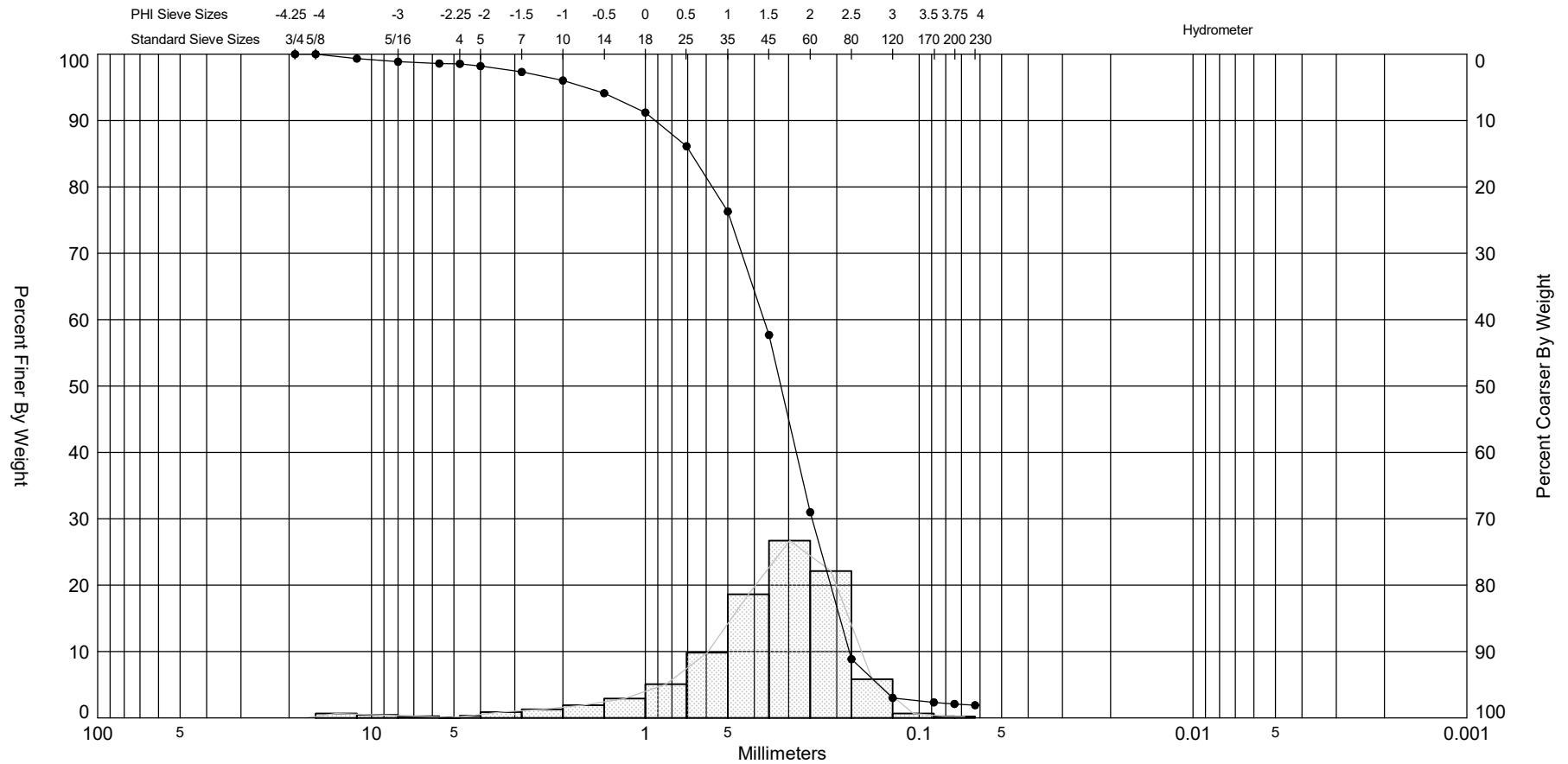
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-07 #S1	—●—	-35.7	SW	#200 - 1.05 #230 - 1.03	0.50	27.10	1.23	1.01	-1.45	5.99	1.07	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 2.8' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.362878
												Latitude (Y):	26.378815
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												Vertical System:	NAVD 88

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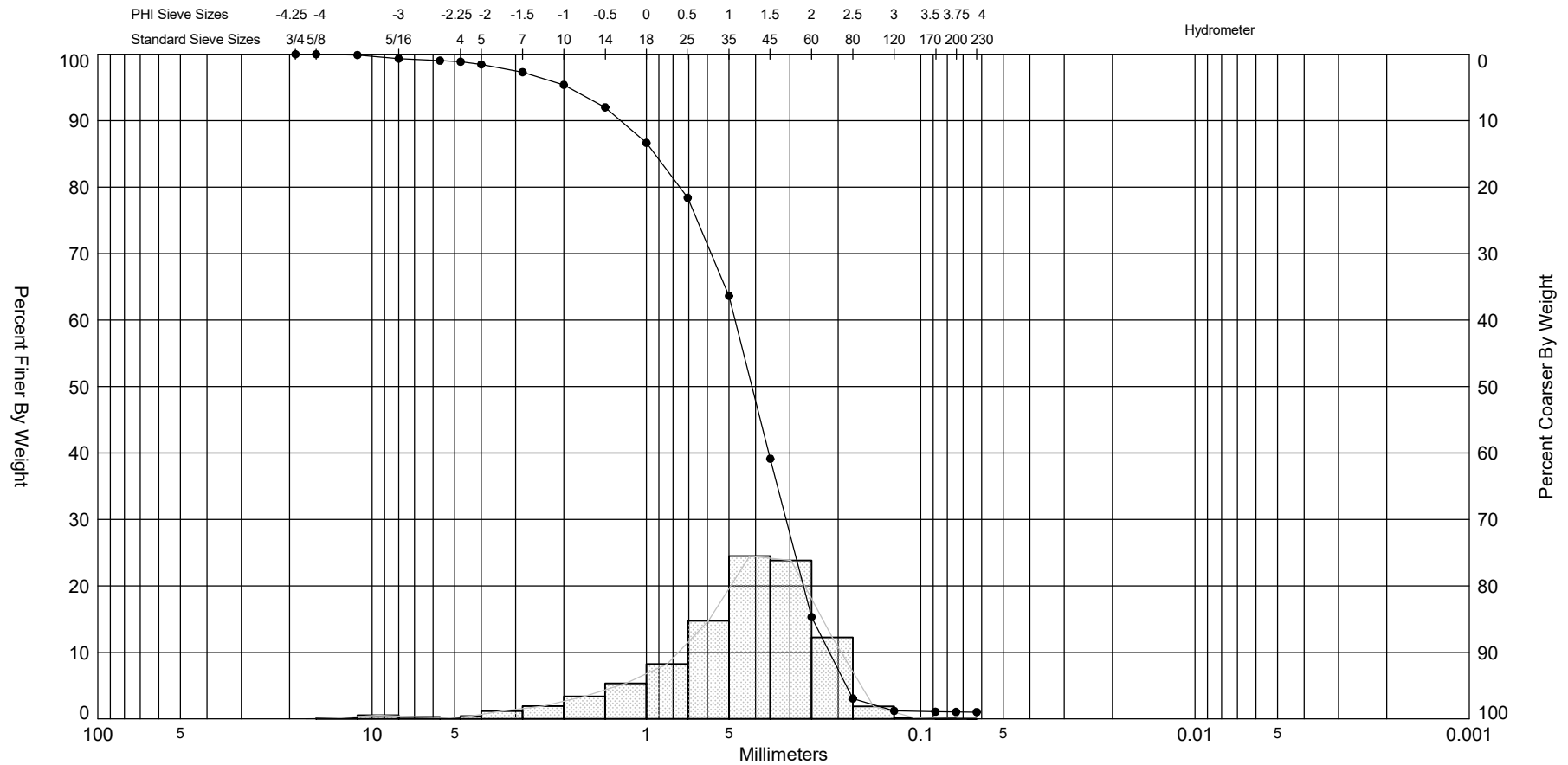
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-07 #S2	—●—	-38.5	SW	#200 - 1.26 #230 - 1.21	0.60	28.30	1.62	1.42	-1.99	9.05	0.99	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 2.8' - 8.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.362878
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												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

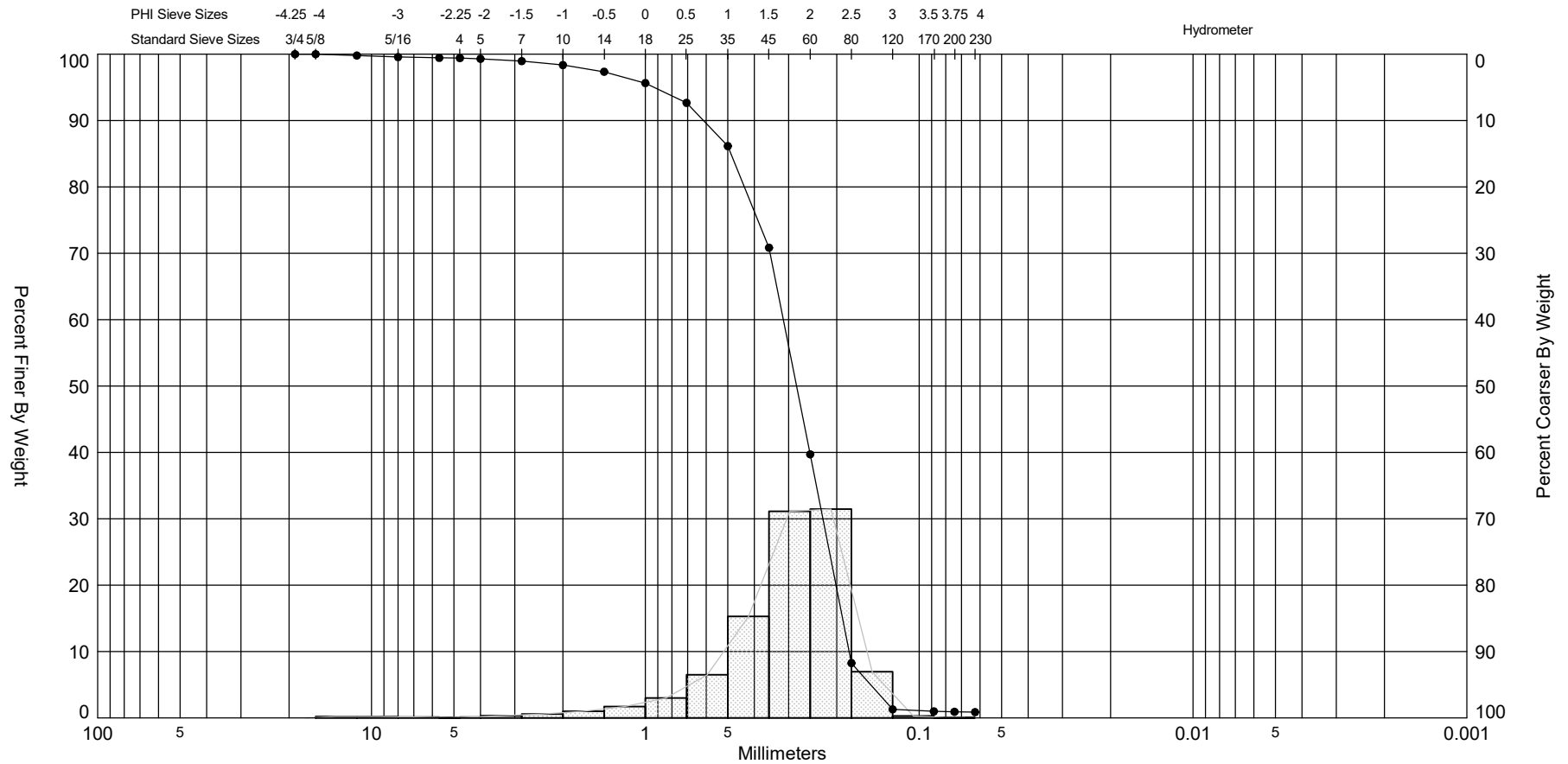
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-07 #S3	—●—	-43.7	SW	#200 - 2.10 #230 - 1.91	0.60	29.40	1.64	1.4	-1.79	7.83	1.1	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 8.0' - 17.4' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.362878
												Latitude (Y):	26.378815
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

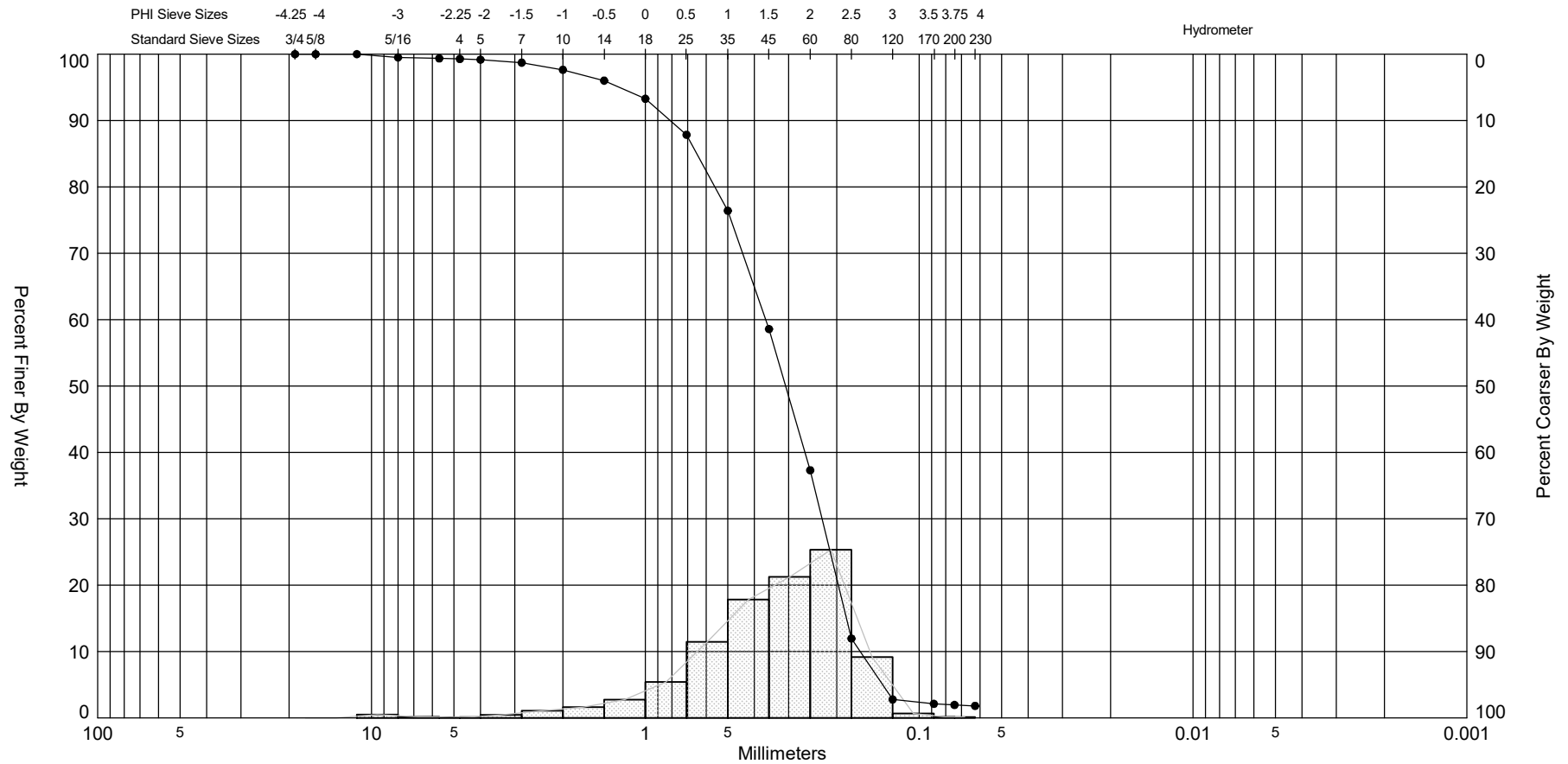
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-08 #S1	—●—	-32.5	SW	#200 - 1.03 #230 - 1.01	0.70	32.90	1.28	1.07	-1.32	5.51	1.03	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 2.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.365185
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												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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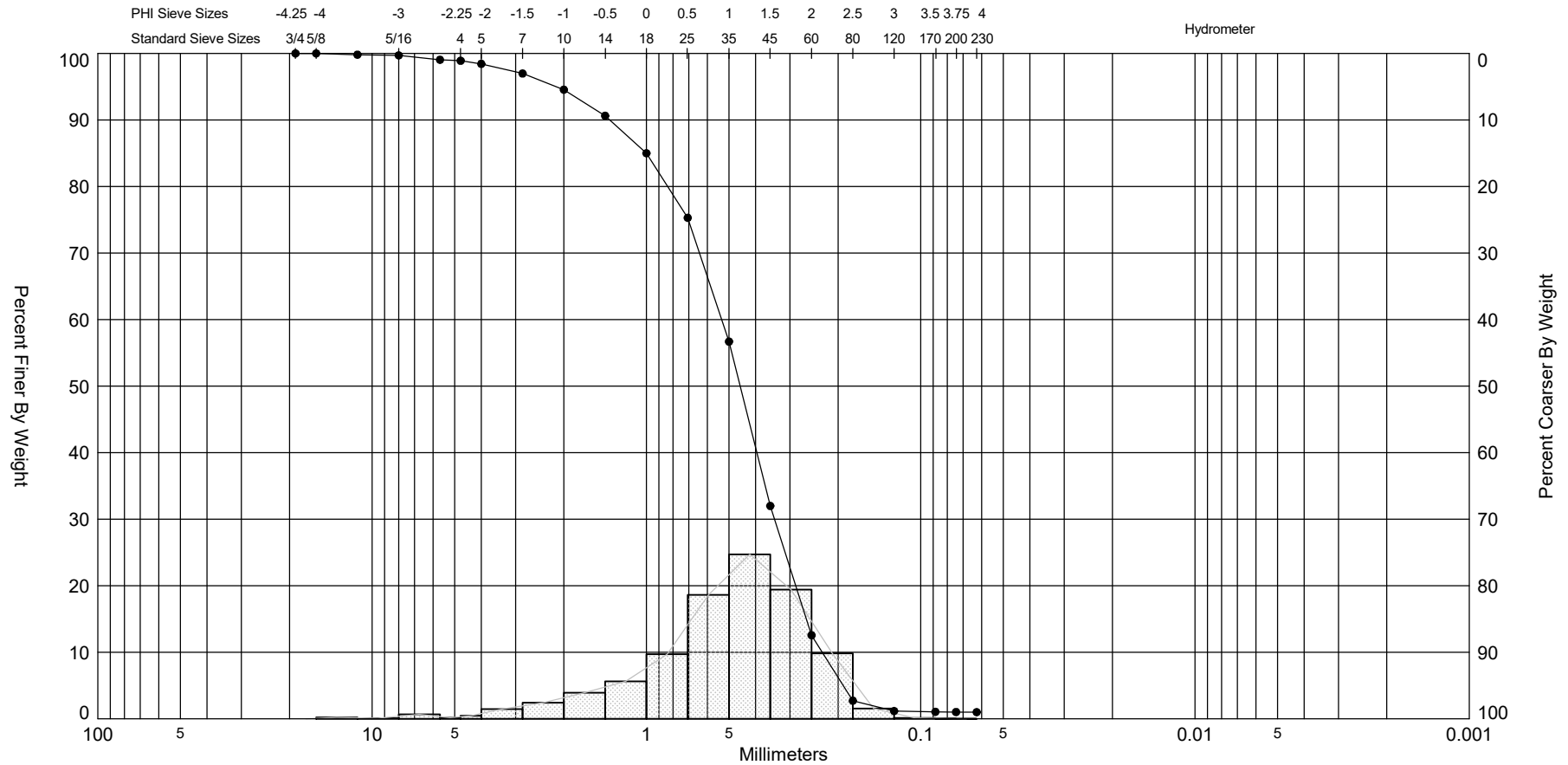
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-08 #S2	—●—	-35.0	SP	#200 - 0.92 #230 - 0.87	0.60	23.70	1.83	1.67	-2.16	11.05	0.85	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 2.5' - 12.3' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.365185
												Latitude (Y):	26.378808
												Horizontal System:	NAD 1983
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GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

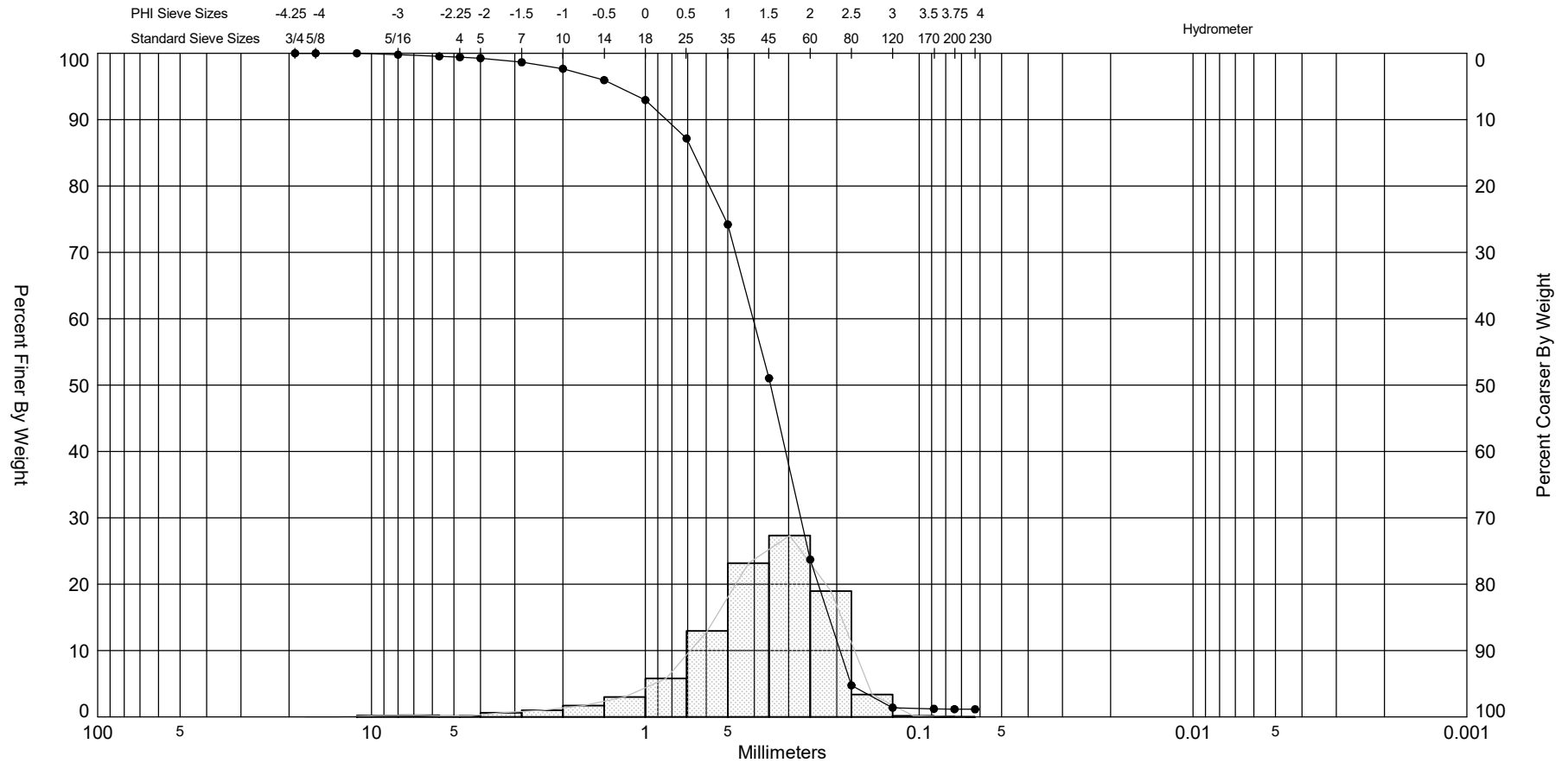
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-08 #S3	—●—	-45.0	SW	#200 - 1.95 #230 - 1.81	0.70	32.87	1.7	1.51	-1.37	6.28	0.99	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 12.5' - 17.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.365185
												Latitude (Y):	26.378808
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

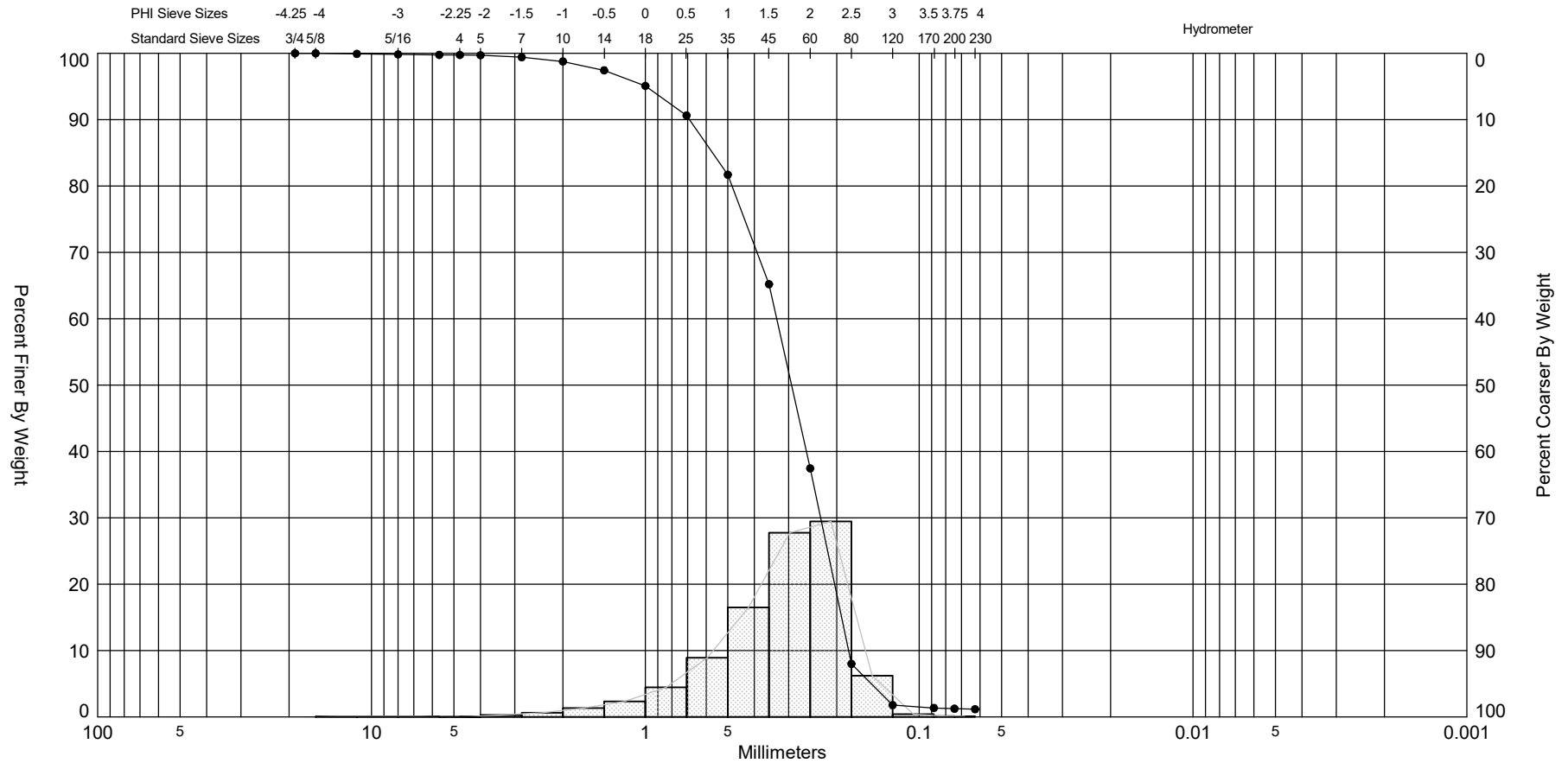
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-09 #S1	—●—	-32.4	SW	#200 - 1.02 #230 - 1.00	0.70	31.70	1.14	0.95	-1.13	4.86	1.03	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 1.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.368207
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												Vertical System:	NAVD 88

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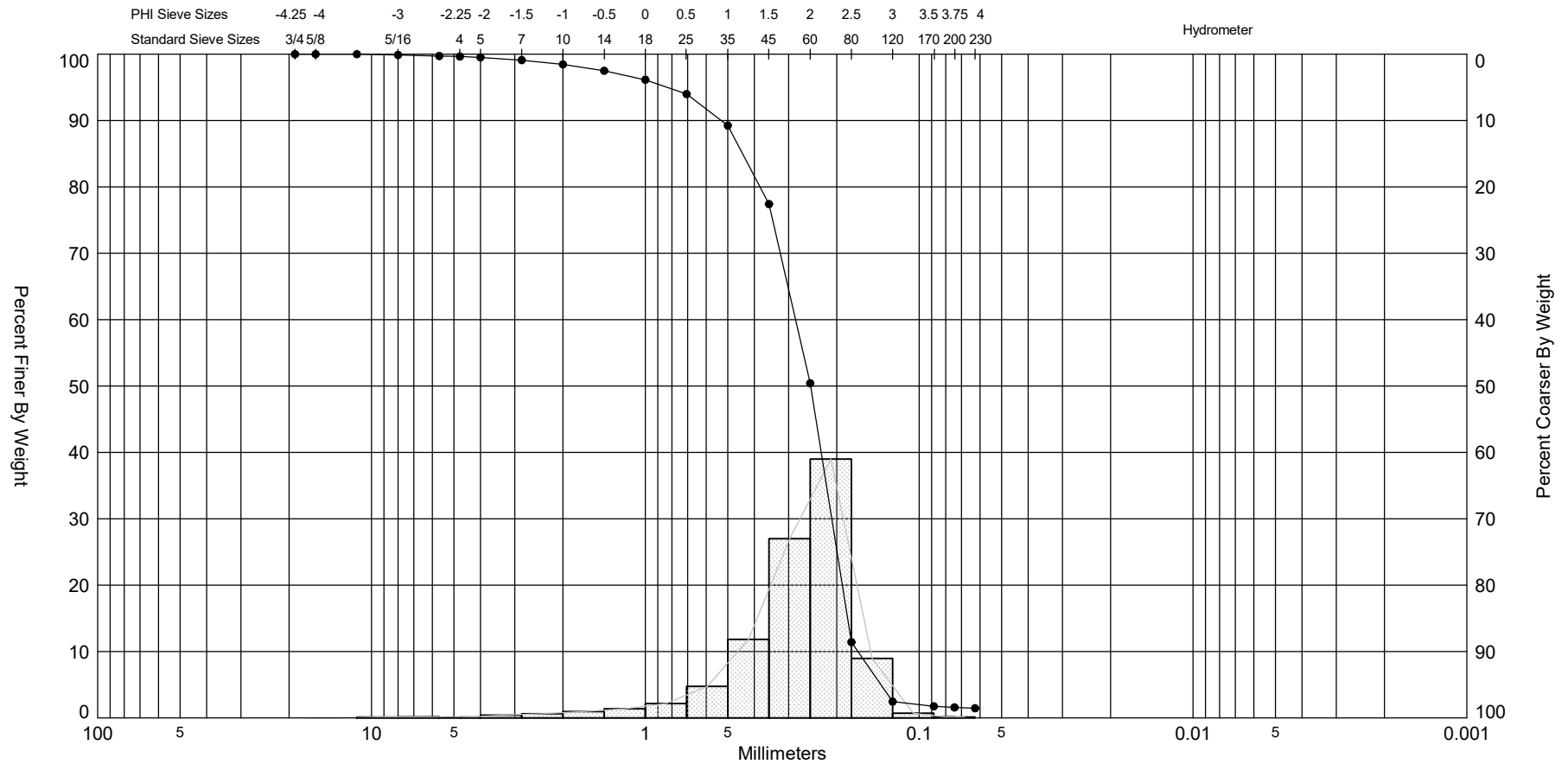
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-09 #S2	—●—	-33.9	SW	#200 - 1.17 #230 - 1.15	0.60	28.30	1.52	1.36	-1.41	6.46	0.9	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 1.5' - 3.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.368207
												Latitude (Y):	26.379768
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



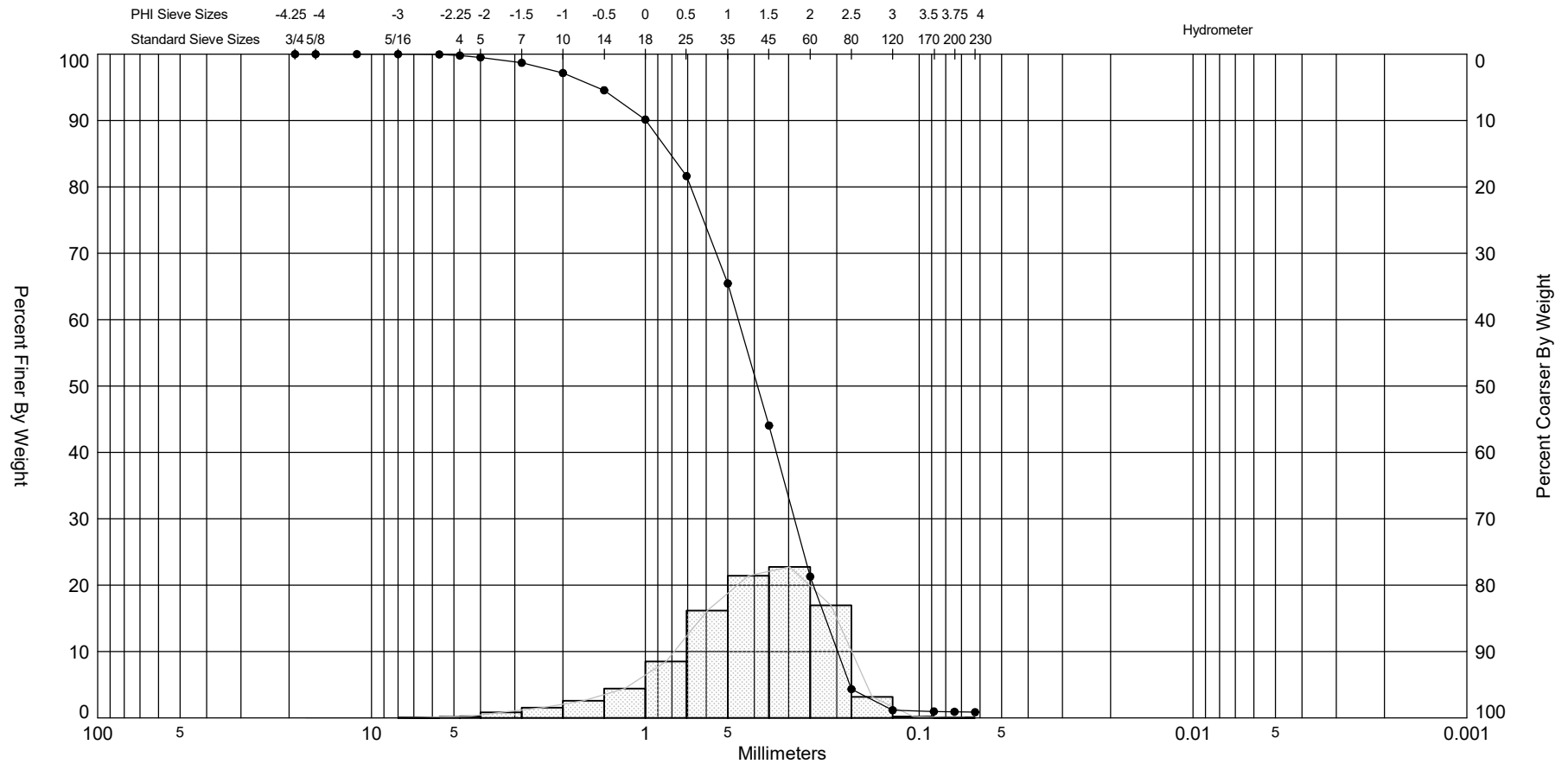
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-09 #S3	—●—	-35.4	SP	#200 - 1.24 #230 - 1.16	0.60	36.30	1.77	1.61	-1.45	6.89	0.84	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 3.0' - 10.5' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.368207
												Latitude (Y):	26.379768
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

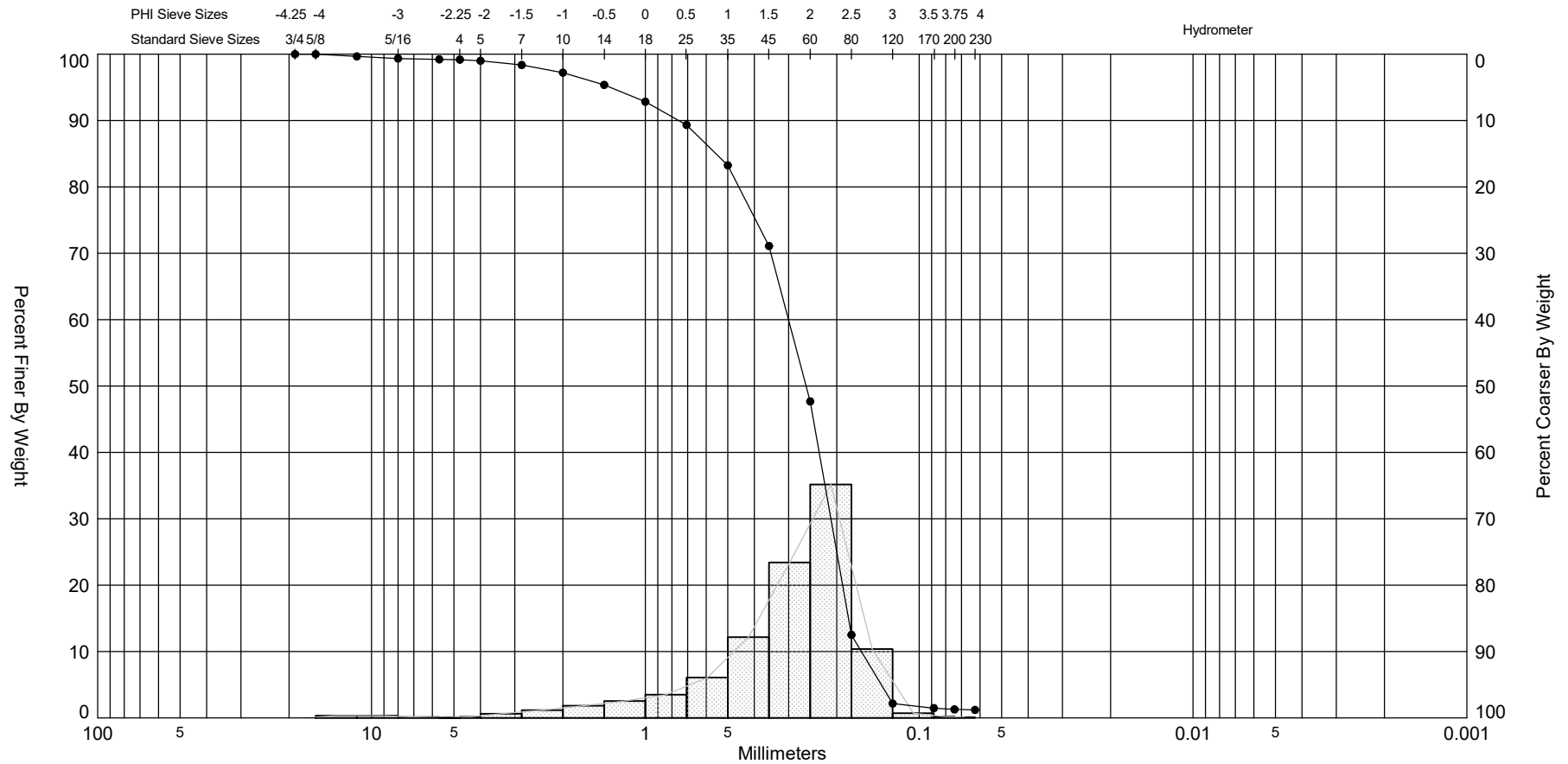
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-09 #S4	—●—	-42.9	SP	#200 - 1.58 #230 - 1.45	0.30	27.10	2.01	1.81	-2.05	9.77	0.81	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 10.5' - 18.0' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.368207
												Latitude (Y):	26.379768
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

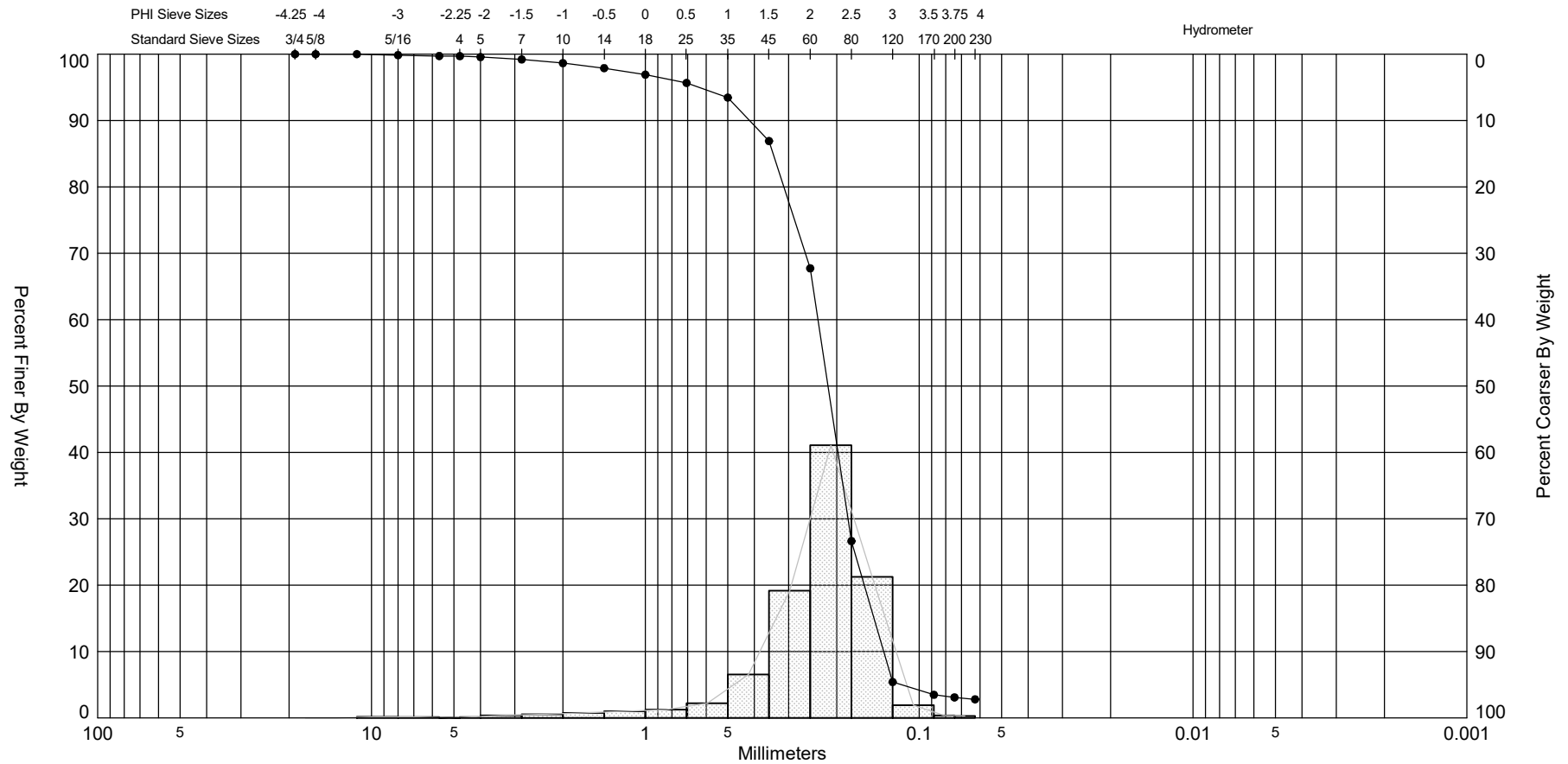
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-10 #S1	—●—	-37.0	SW	#200 - 0.92 #230 - 0.86	0.60	31.60	1.36	1.22	-0.89	4.03	0.94	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 0.6' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-03-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.367116
												Latitude (Y):	26.382695
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

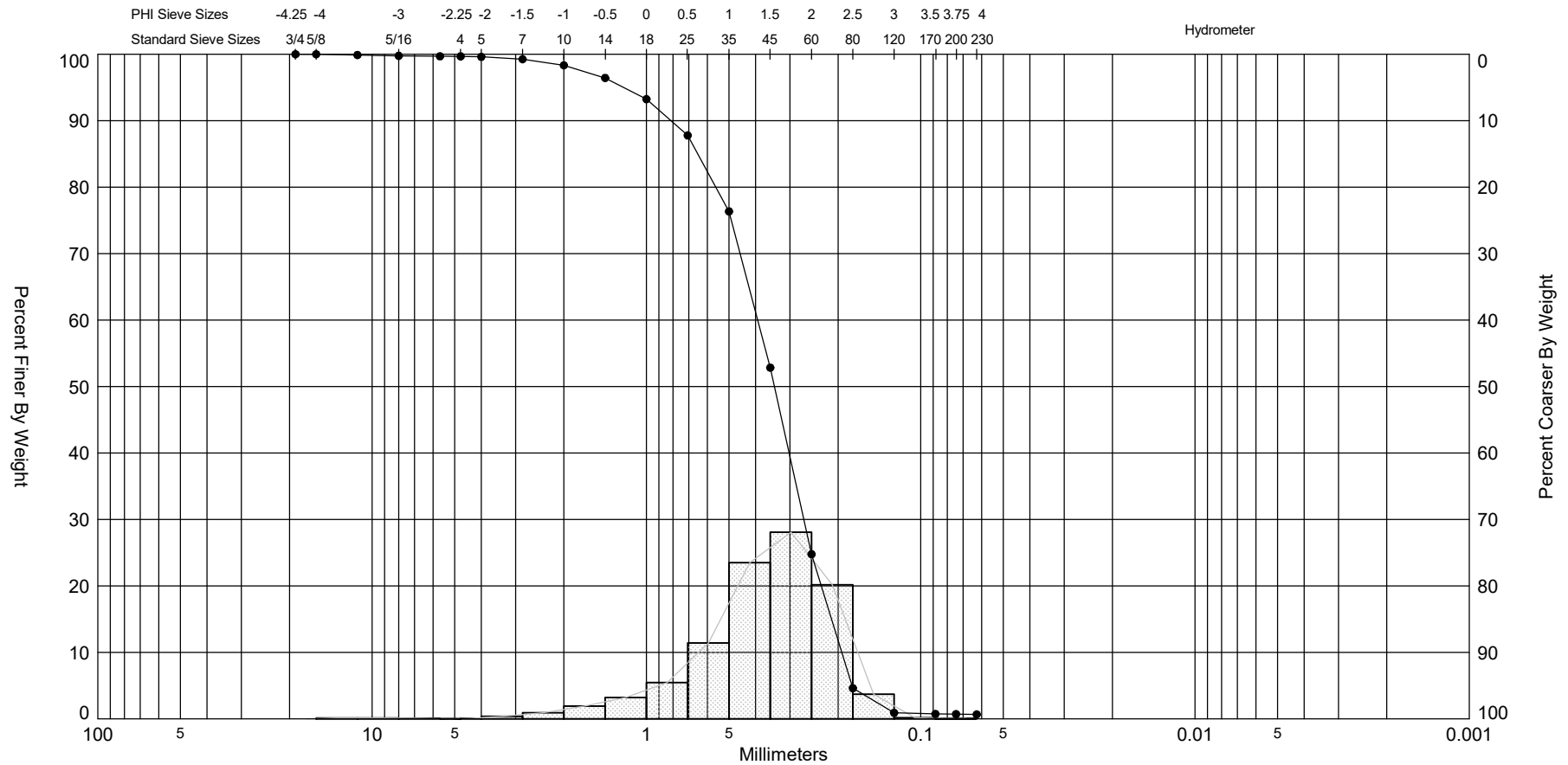
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-10 #S2		-37.6	SW	#200 - 1.28 #230 - 1.20	0.60	35.40	1.95	1.67	-1.96	8.41	1.02	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.6' - 7.7' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-30-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.367116
												Latitude (Y):	26.382695
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



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	
VC21-1-10 #S3	—●—	-44.7	SP	#200 - 3.09 #230 - 2.80	0.70	28.80	2.22	2.06	-2.37	12.11	0.8	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 7.7' - 14.8' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-30-21
Depths and elevations based on measured values												Analyzed By:	KAT
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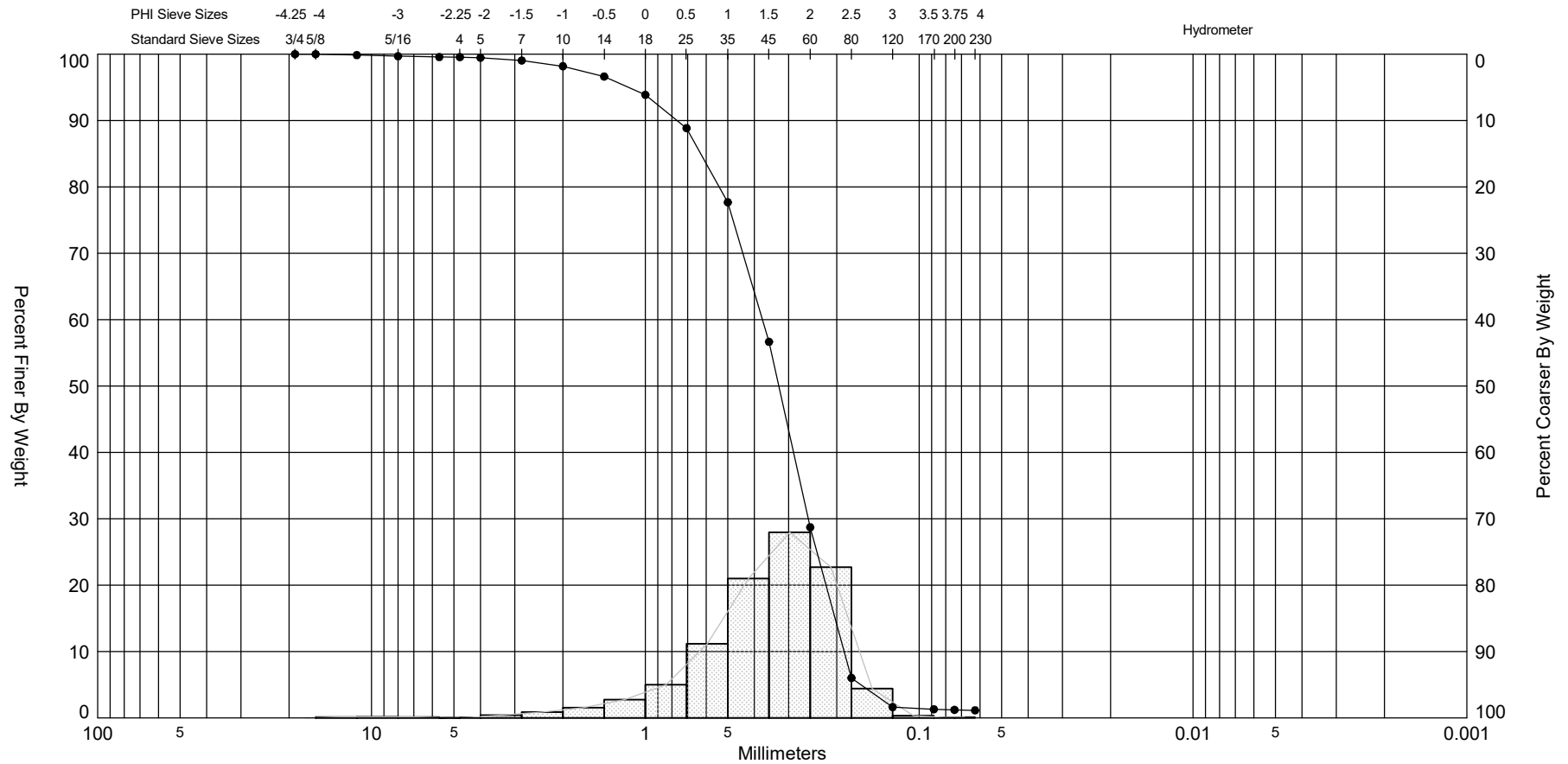
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

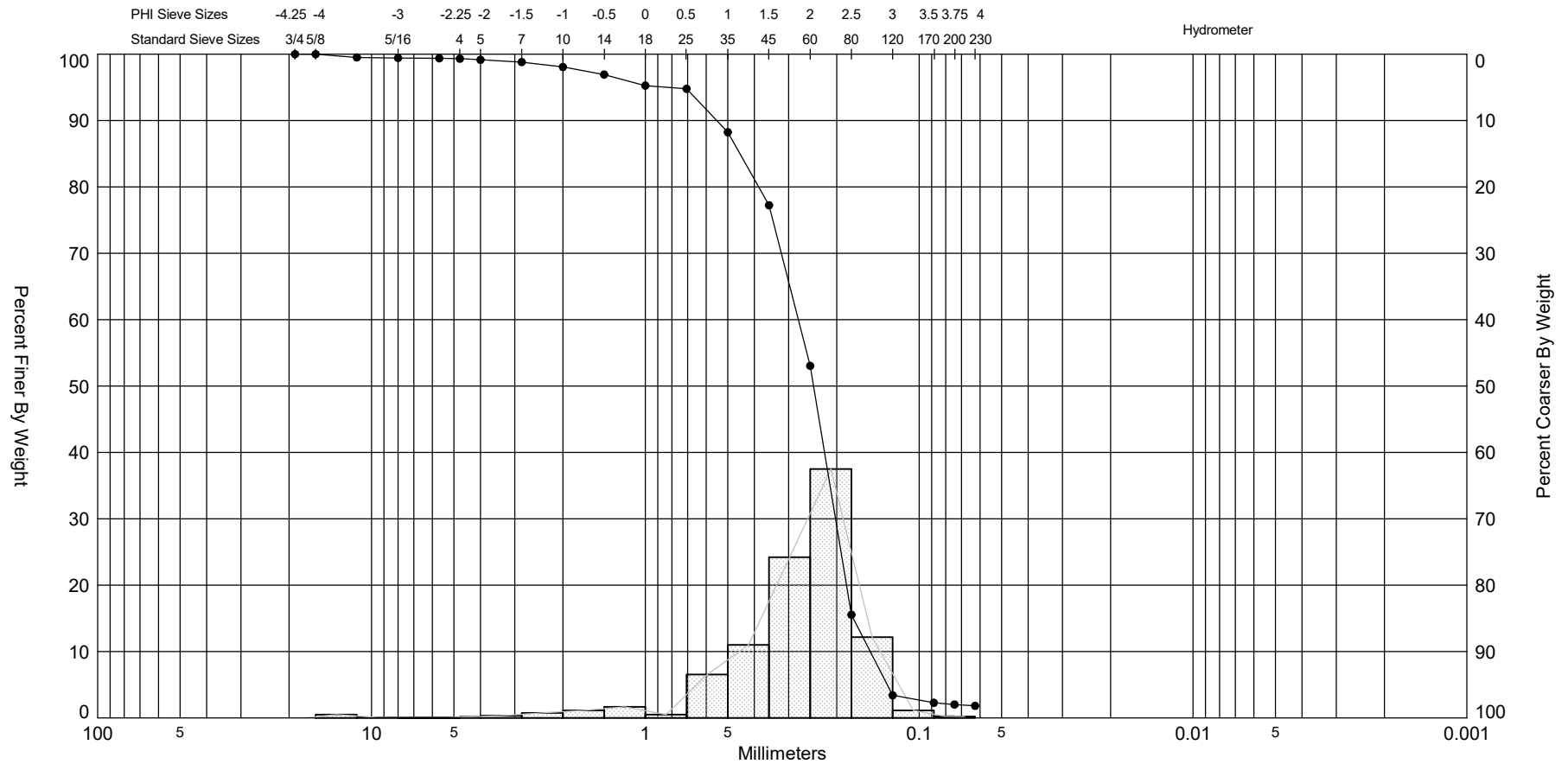
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-11 #S1	—●—	-33.4	SW	#200 - 0.70 #230 - 0.67	0.50	26.80	1.55	1.41	-1.36	6.56	0.86	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 7.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-03-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.370432
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												Horizontal System:	NAD 1983
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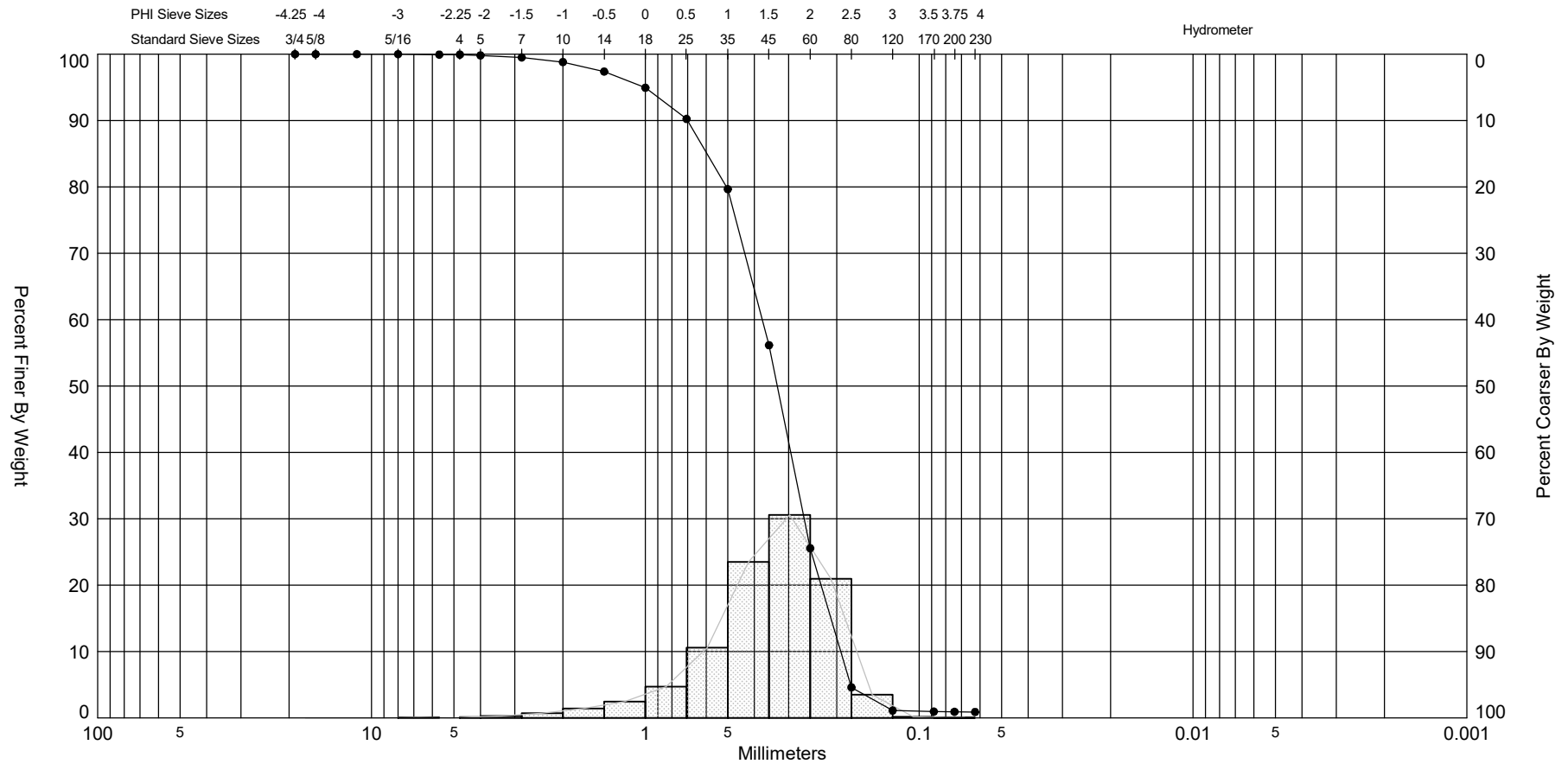
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-11 #S2		-40.4	SW	#200 - 1.21 #230 - 1.14	0.50	30.00	1.62	1.46	-1.49	7.27	0.88	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 7.0' - 14.1' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-03-22
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.370432
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												Horizontal System:	NAD 1983
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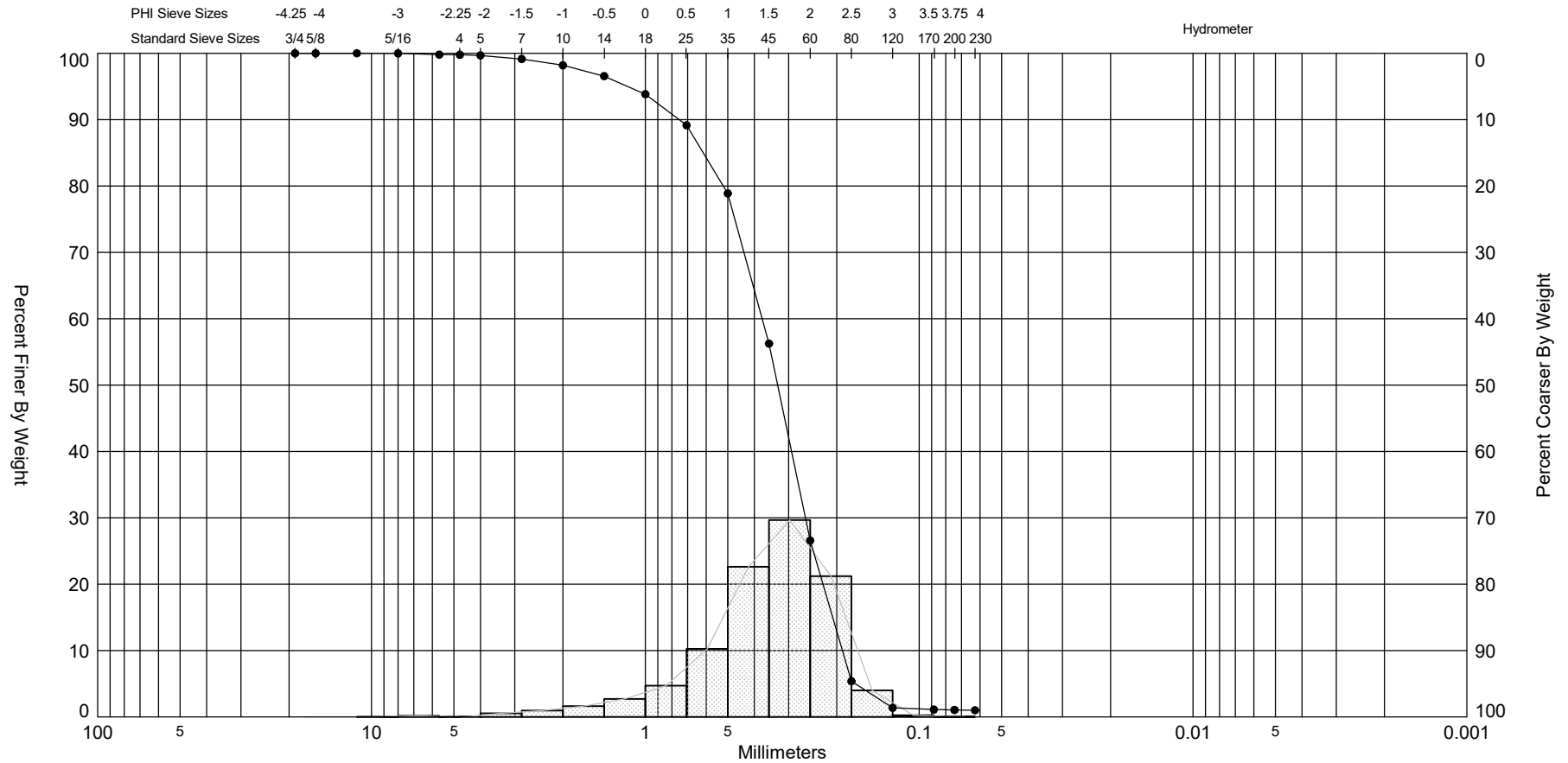
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-11A #S3		-48.2	SW	#200 - 2.02 #230 - 1.82	0.70	36.10	2.04	1.82	-2.39	12.32	0.91	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 13.6' - 18.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-30-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.370407
												Latitude (Y):	26.379764
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

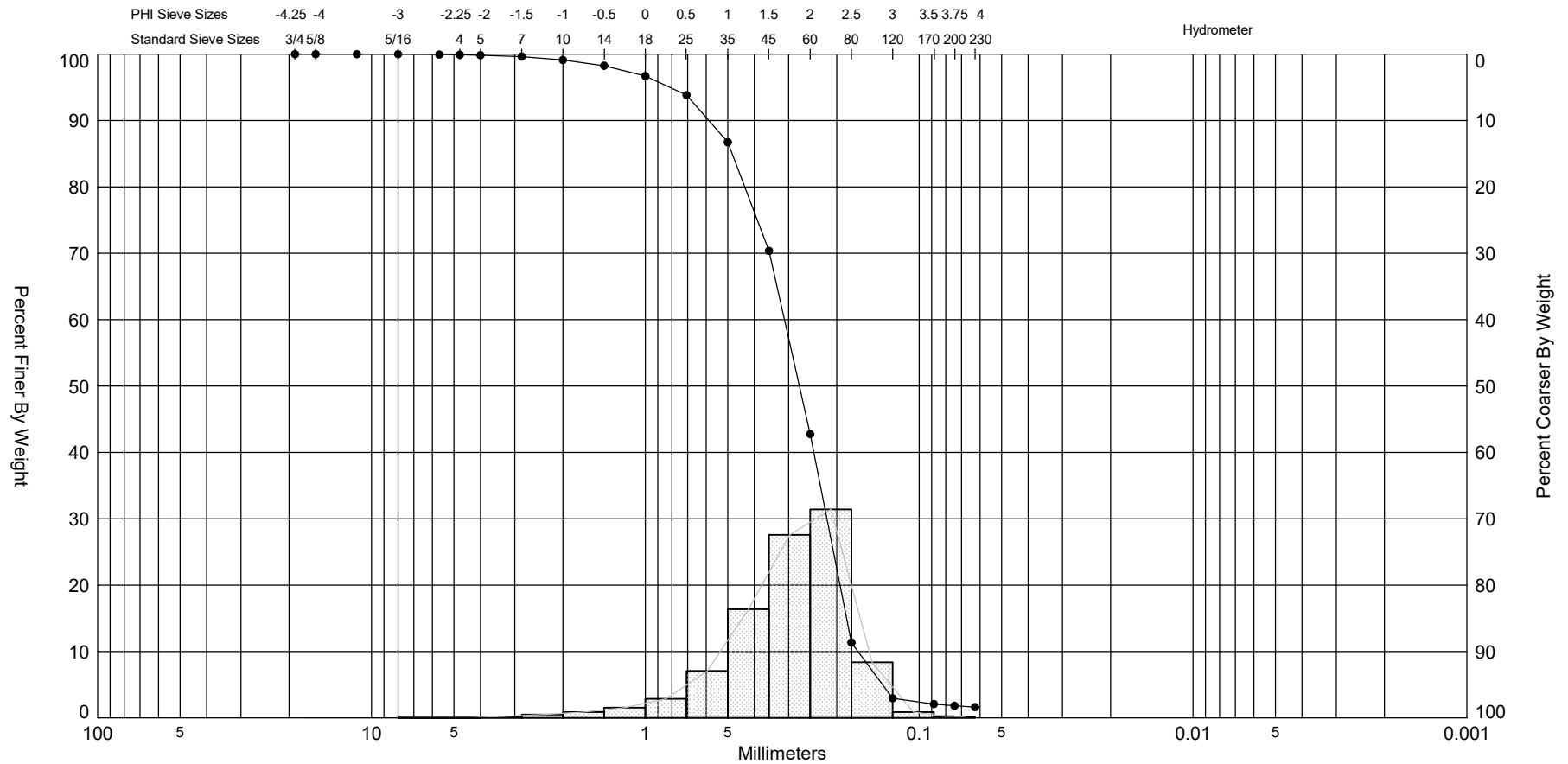
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VC21-1-12 #S1	—●—	-34.3	SP	#200 - 0.92 #230 - 0.89	0.50	23.50	1.6	1.47	-1.2	5.47	0.78	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 2.0' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	01-03-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.371466
												Latitude (Y):	26.380745
												Horizontal System:	NAD 1983
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GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

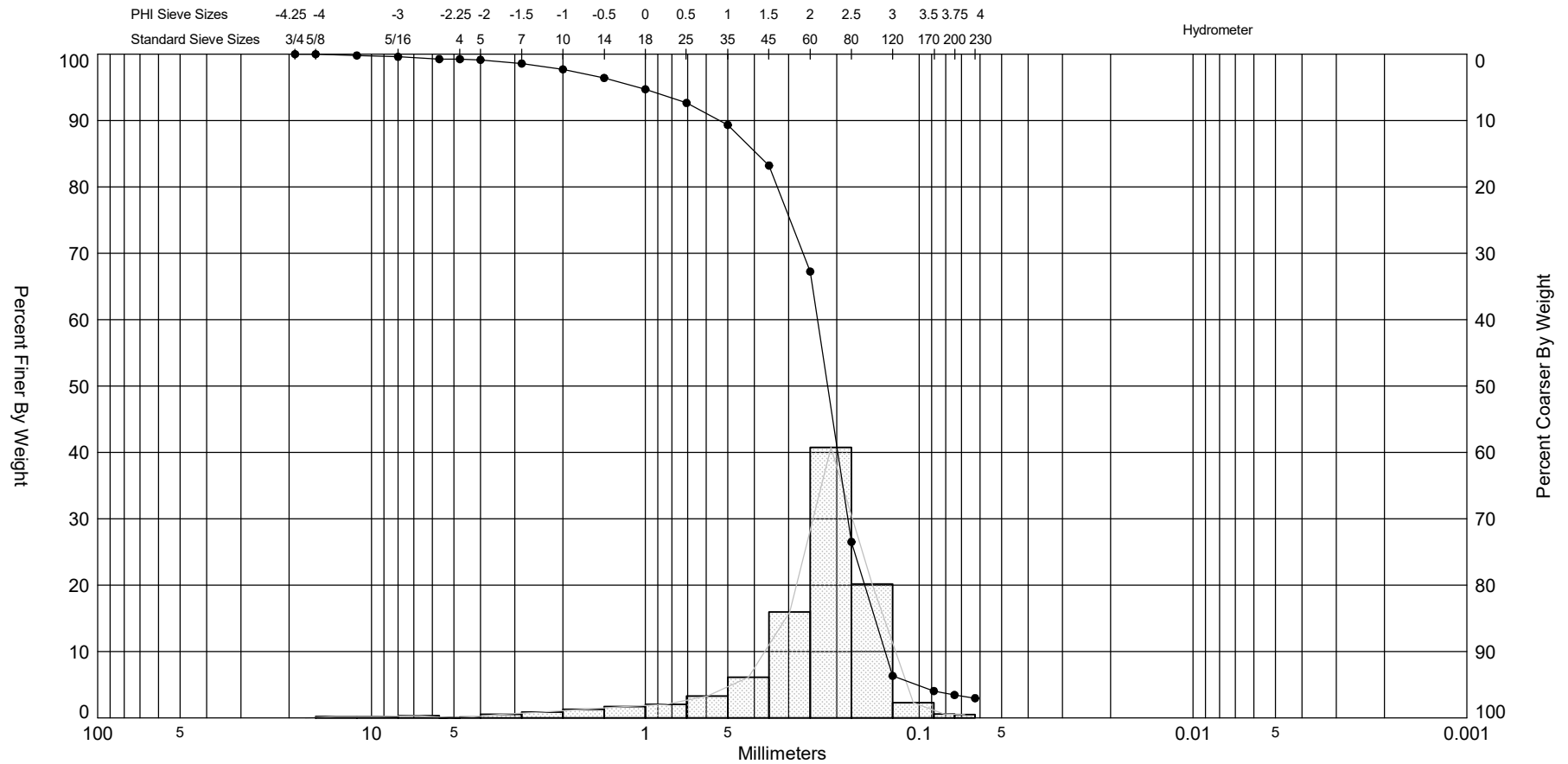
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-12 #S2	—●—	-36.3	SP	#200 - 1.05 #230 - 1.00	0.50	30.80	1.61	1.46	-1.31	5.86	0.84	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 2.0' - 8.5' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	01-04-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.371466
												Latitude (Y):	26.380745
												Horizontal System:	NAD 1983
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

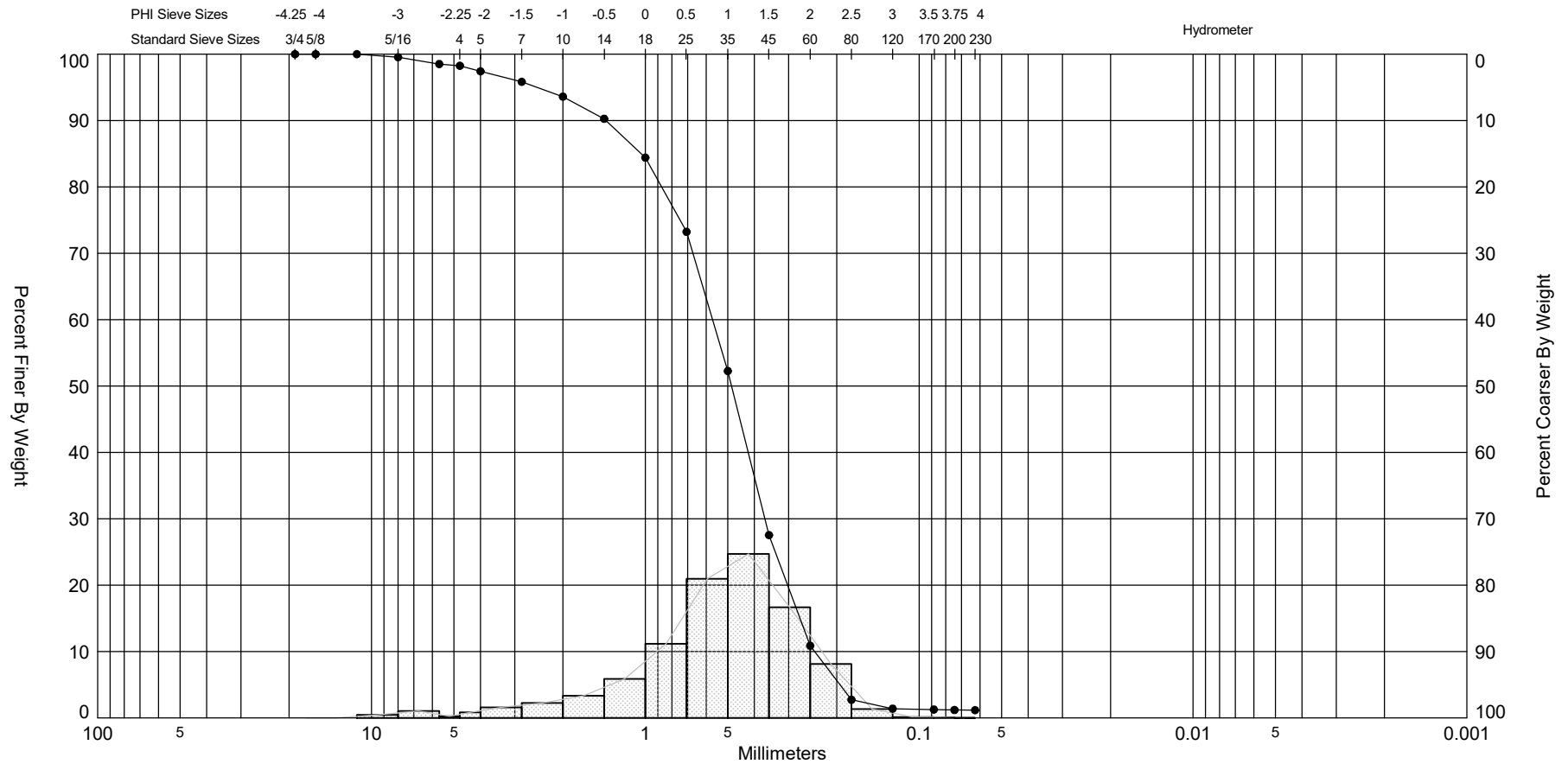
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VC21-1-12 #S3	—●—	-42.8	SP	#200 - 1.83 #230 - 1.62	0.60	27.30	1.87	1.74	-1.24	6.17	0.78	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 8.5' - 15.0' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.371466
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												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

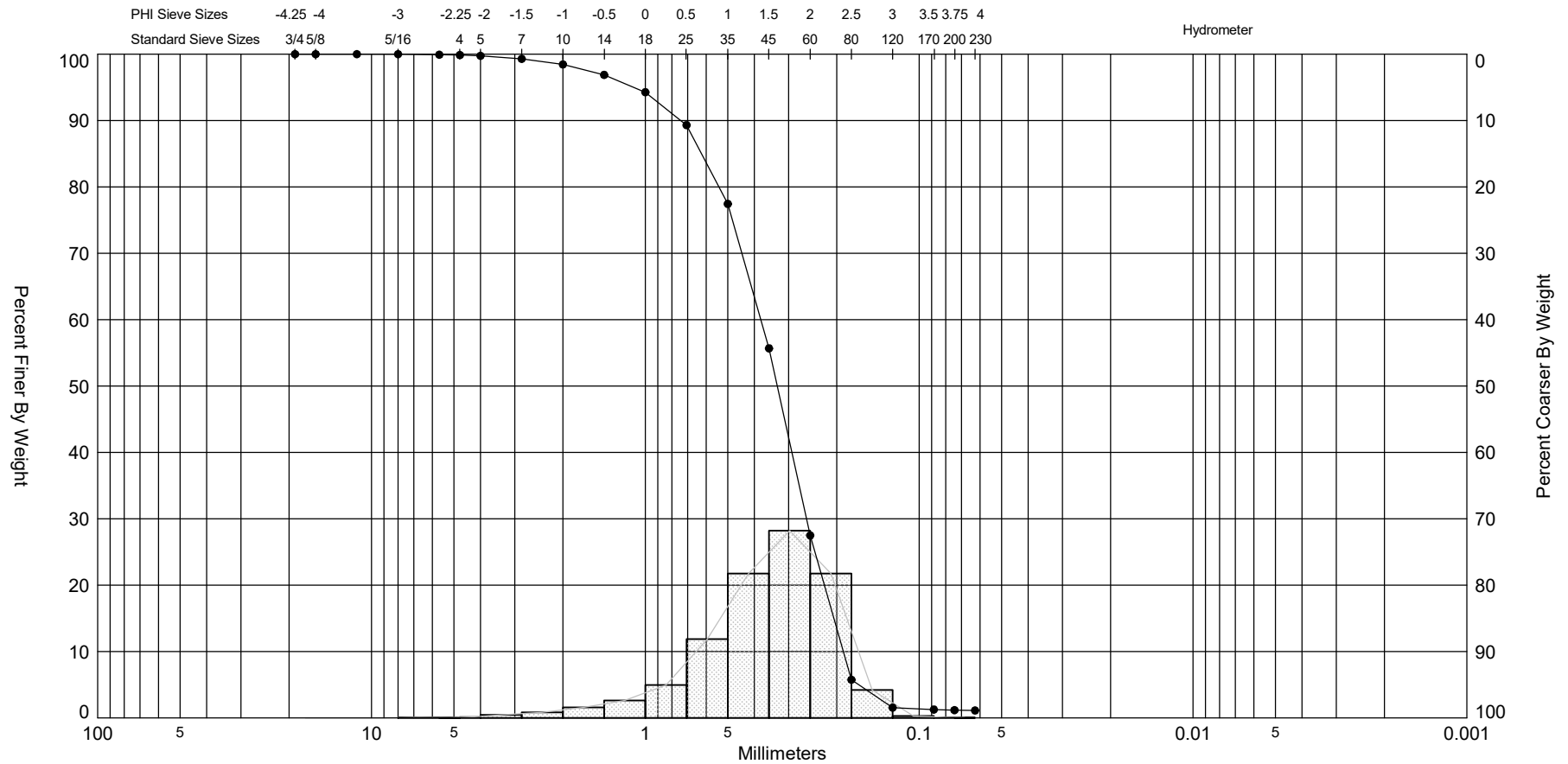
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VC21-1-12A #S4	—●—	-46.5	SW	#200 - 3.45 #230 - 2.97	0.80	40.30	2.21	1.97	-2.27	10.23	0.98	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 12.2' - 20.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-30-21
Depths and elevations based on measured values												Analyzed By:	KAT
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												Horizontal System:	NAD 1983
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

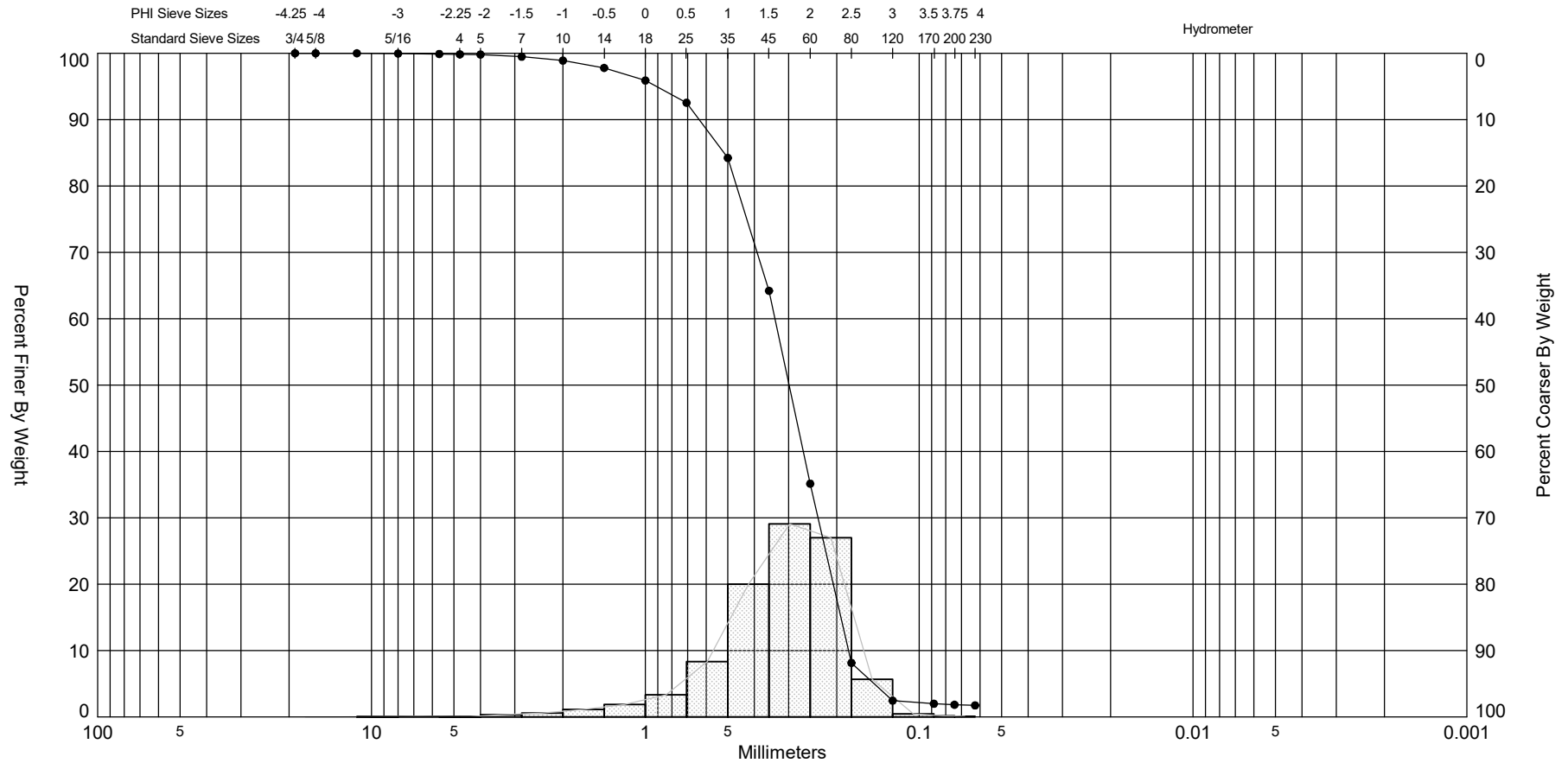
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-13 #S1	—●—	-34.1	SW	#200 - 1.19 #230 - 1.17	0.50	32.90	1.05	0.86	-1.16	4.95	1.06	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 0.4' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.369305
												Latitude (Y):	26.382685
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



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	
VC21-1-13 #S2	—●—	-34.5	SP	#200 - 1.17 #230 - 1.12	0.50	23.70	1.6	1.46	-1.15	5.25	0.83	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.4' - 5.5' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
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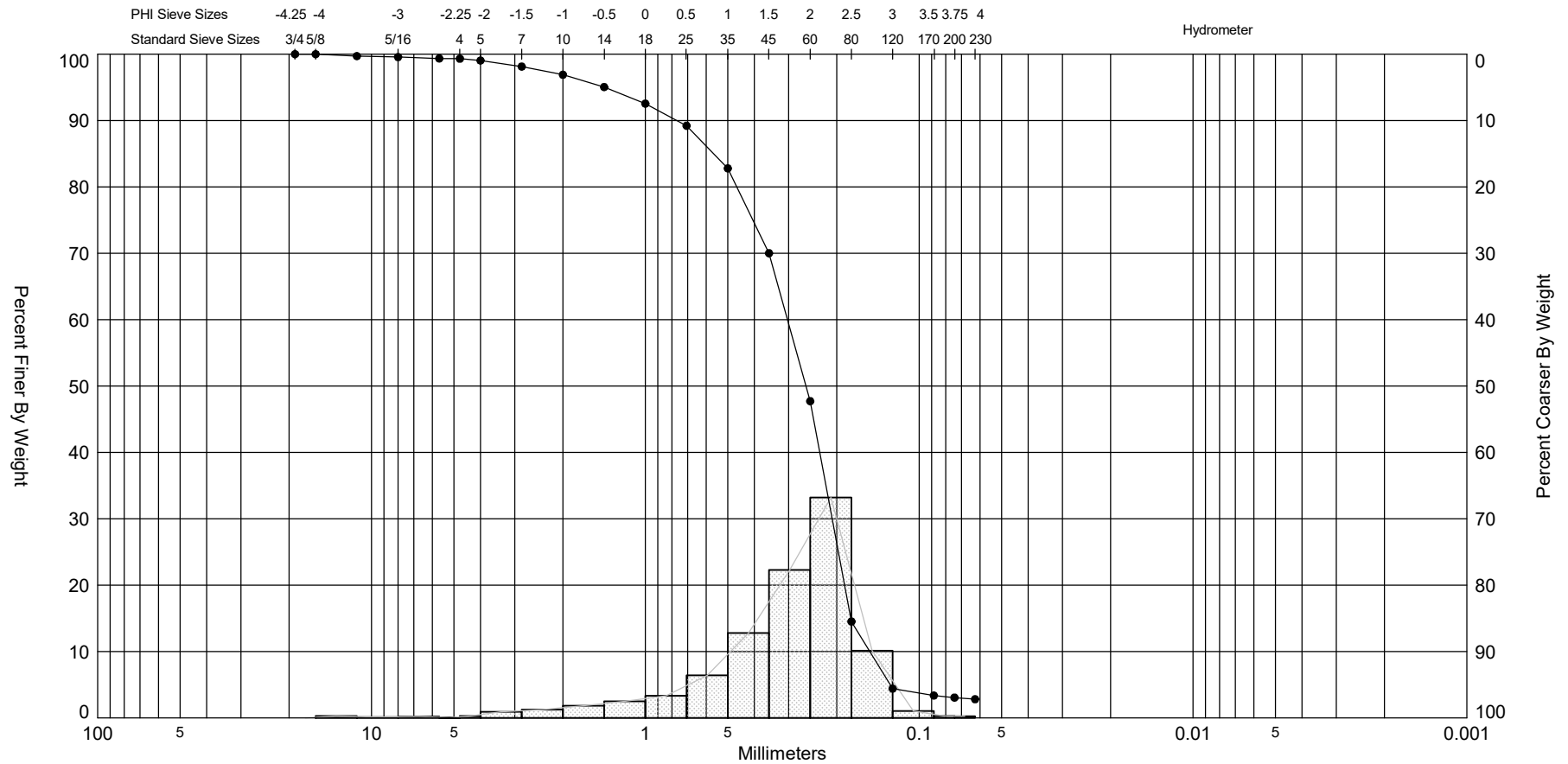
GFA International Inc.
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Delray Beach, FL 33444

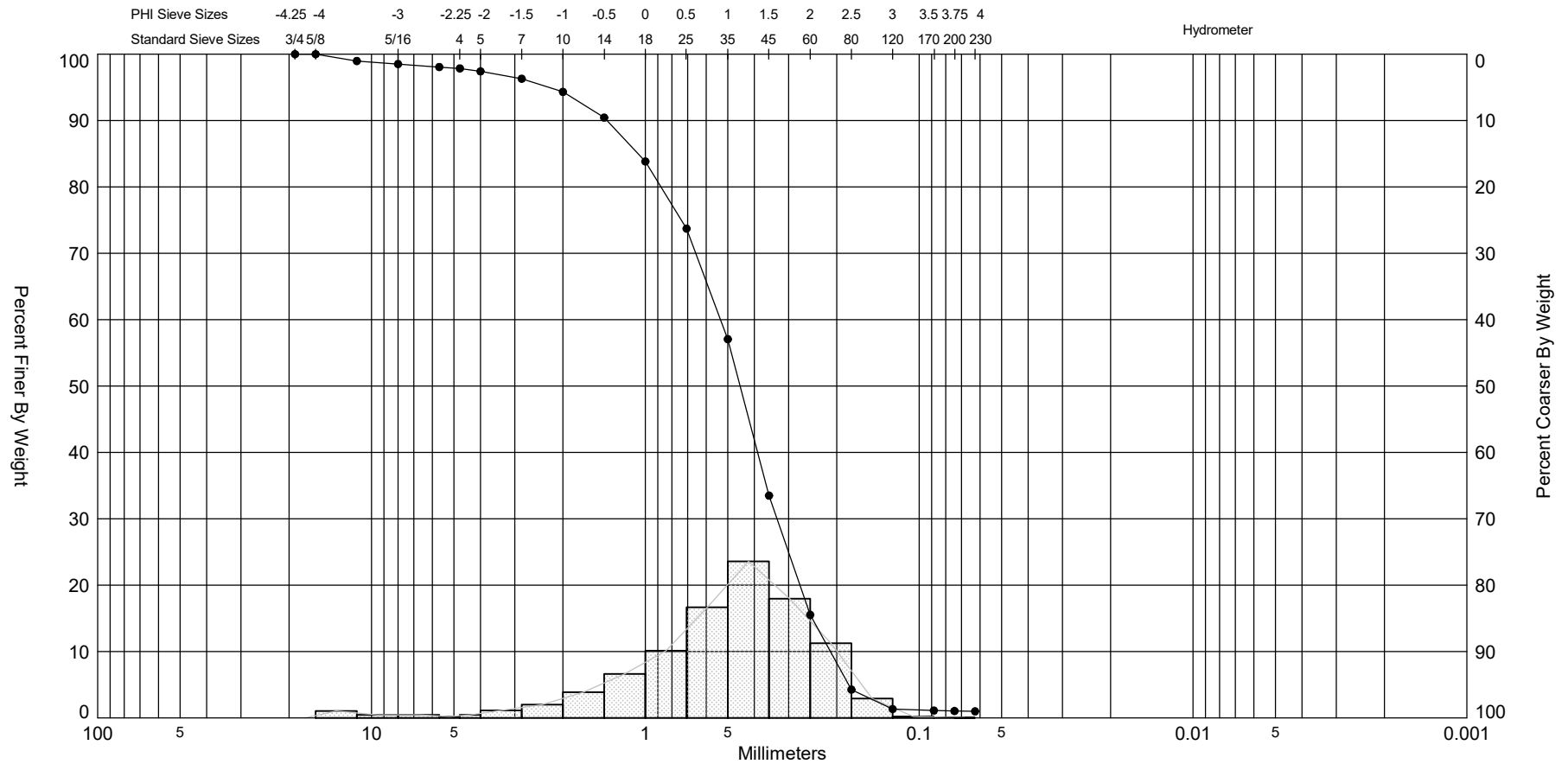


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-13 #S3	—●—	-39.6	SP	#200 - 1.83 #230 - 1.73	0.50	21.40	1.74	1.62	-1.32	6.46	0.79	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.5' - 10.3' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
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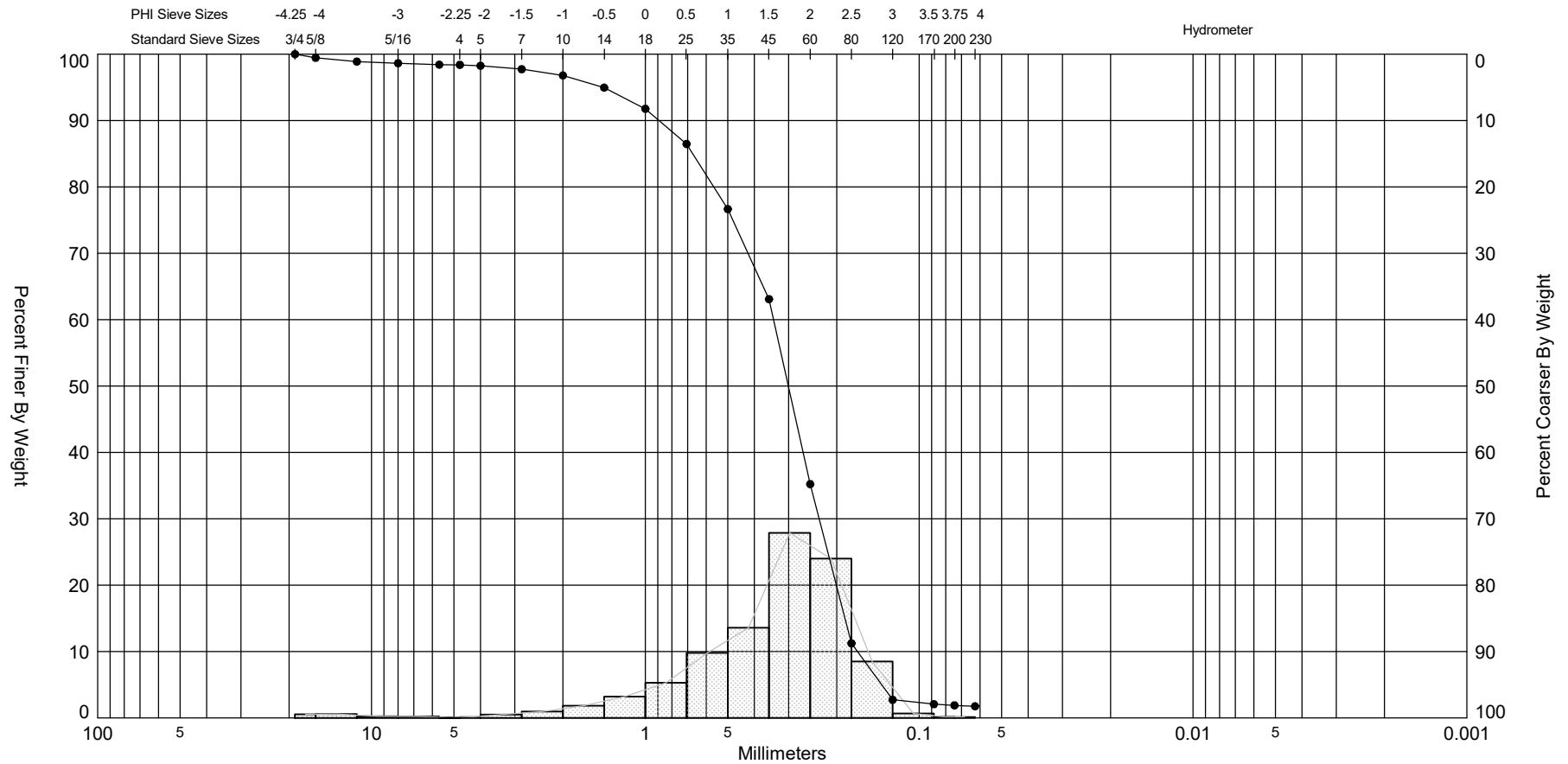
GFA International Inc.
1215 Wallace Drive
Delray Beach, FL 33444





Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-14 #S1	—●—	-39.6	SW	#200 - 1.04 #230 - 0.99	0.70	43.20	1.15	0.94	-1.33	5.86	1.15	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 4.9' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-04-22
Depths and elevations based on measured values												Analyzed By:	KAT
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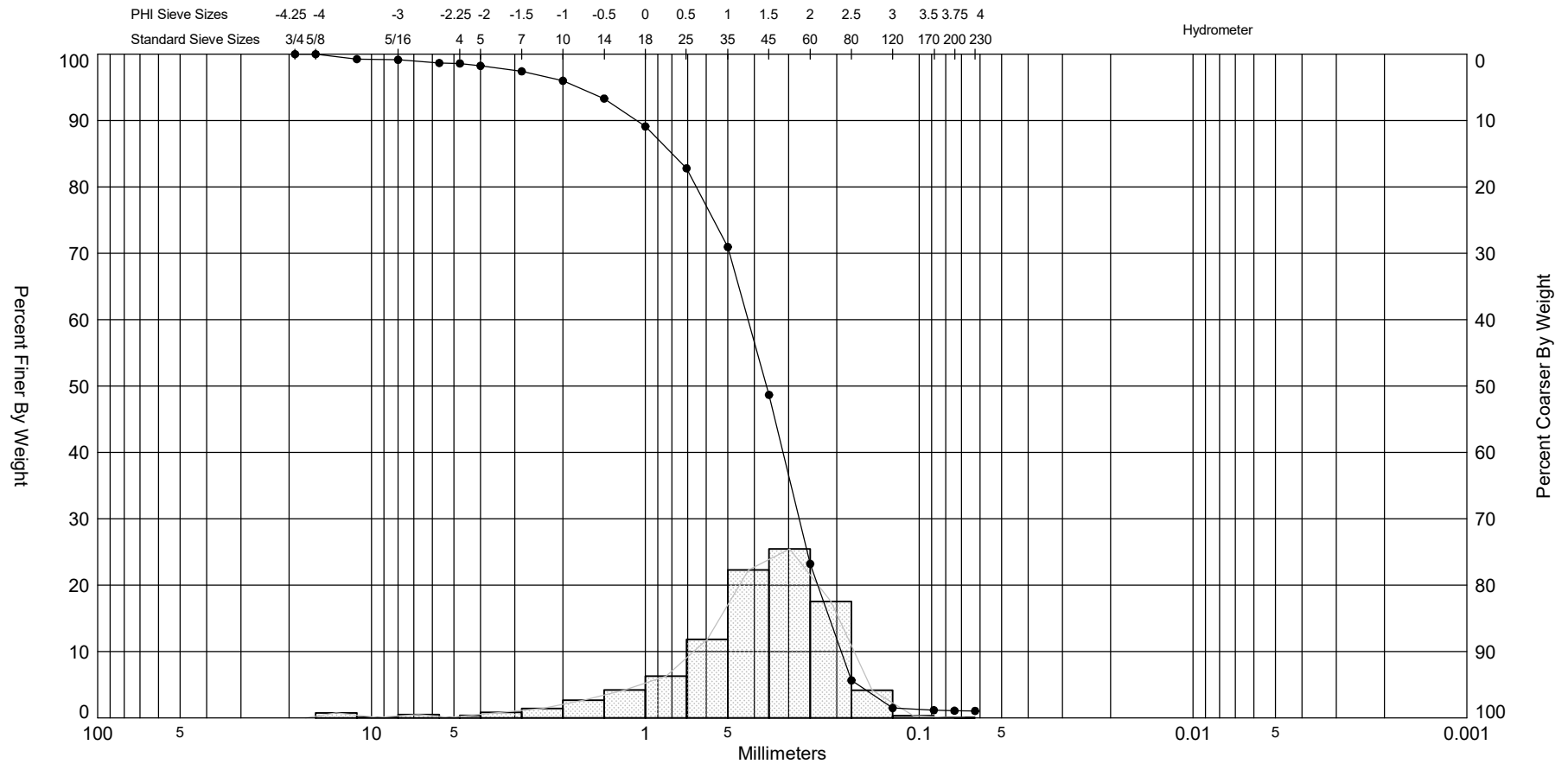
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Delray Beach, FL 33444



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	
VC21-1-14 #S2	—●—	-44.5	SW	#200 - 1.89 #230 - 1.75	0.70	27.50	1.73	1.47	-2.01	9.24	1.12	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 4.9' - 10.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-04-22
Depths and elevations based on measured values												Analyzed By:	KAT
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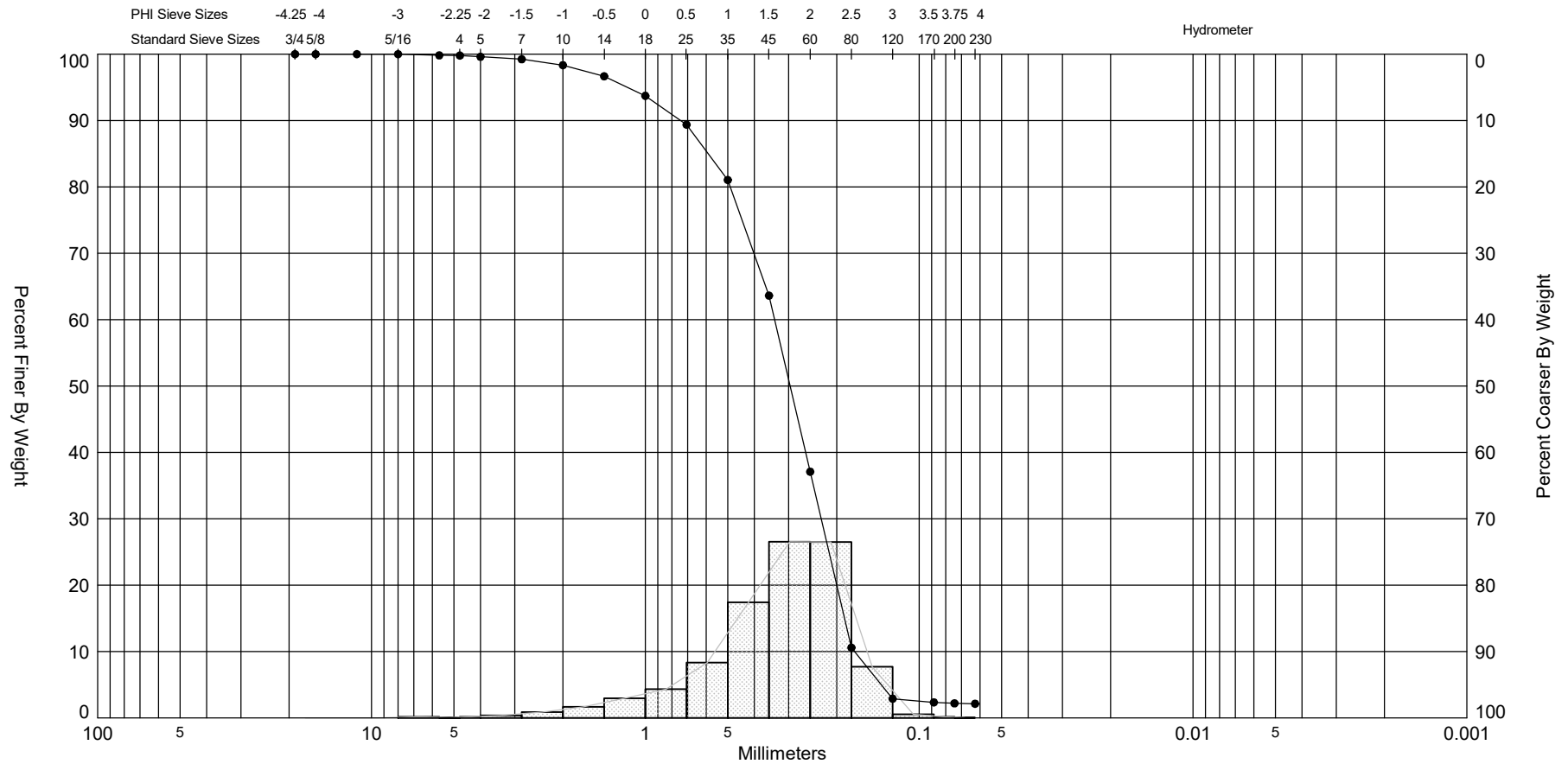
GFA International Inc.
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-15 #S1	—●—	-39.5	SW	#200 - 1.08 #230 - 1.05	0.80	38.90	1.47	1.25	-1.62	7.05	1.08	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 5.1' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-23-21
Depths and elevations based on measured values												Analyzed By:	KAT
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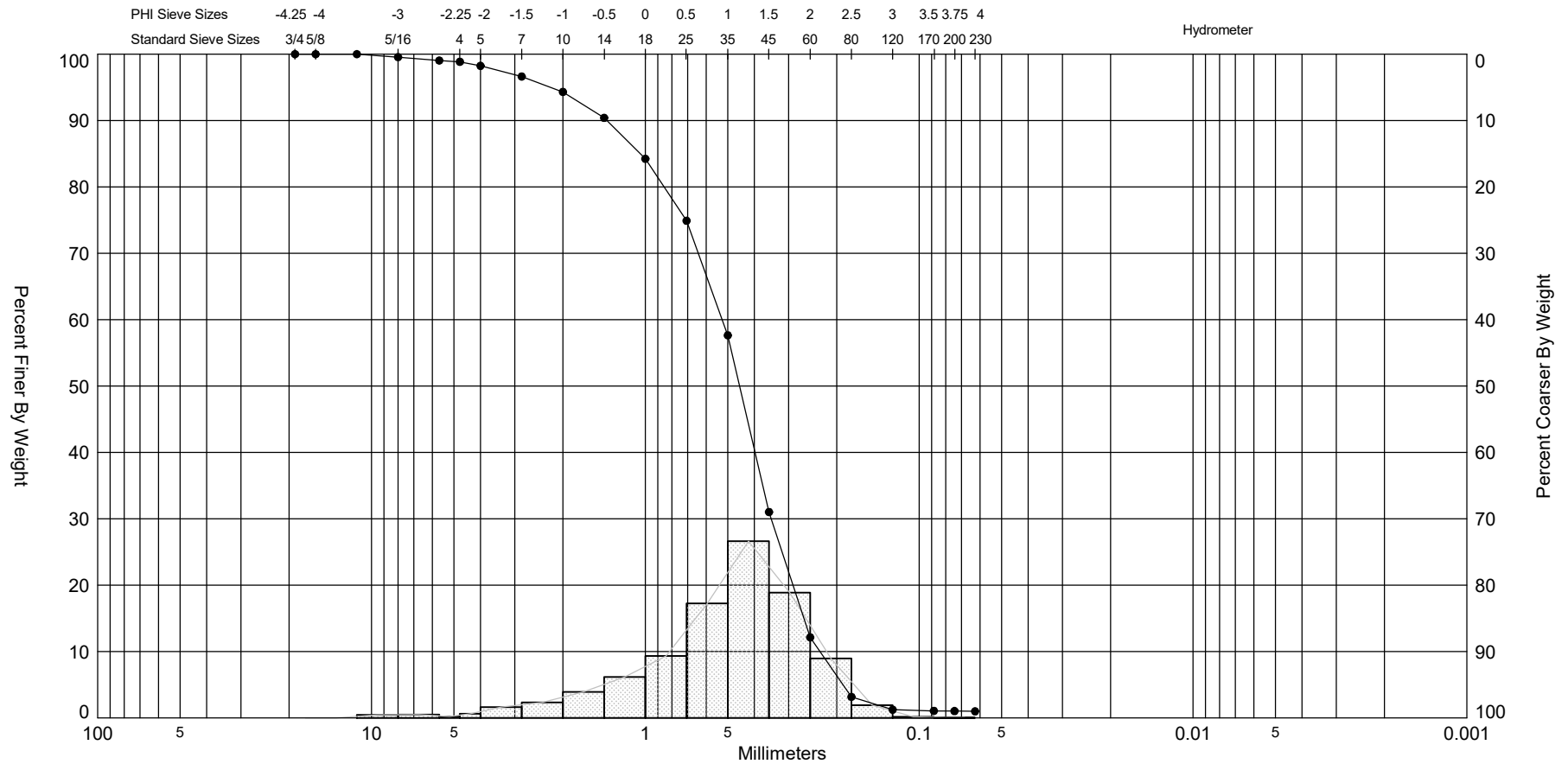
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1215 Wallace Drive
Delray Beach, FL 33444



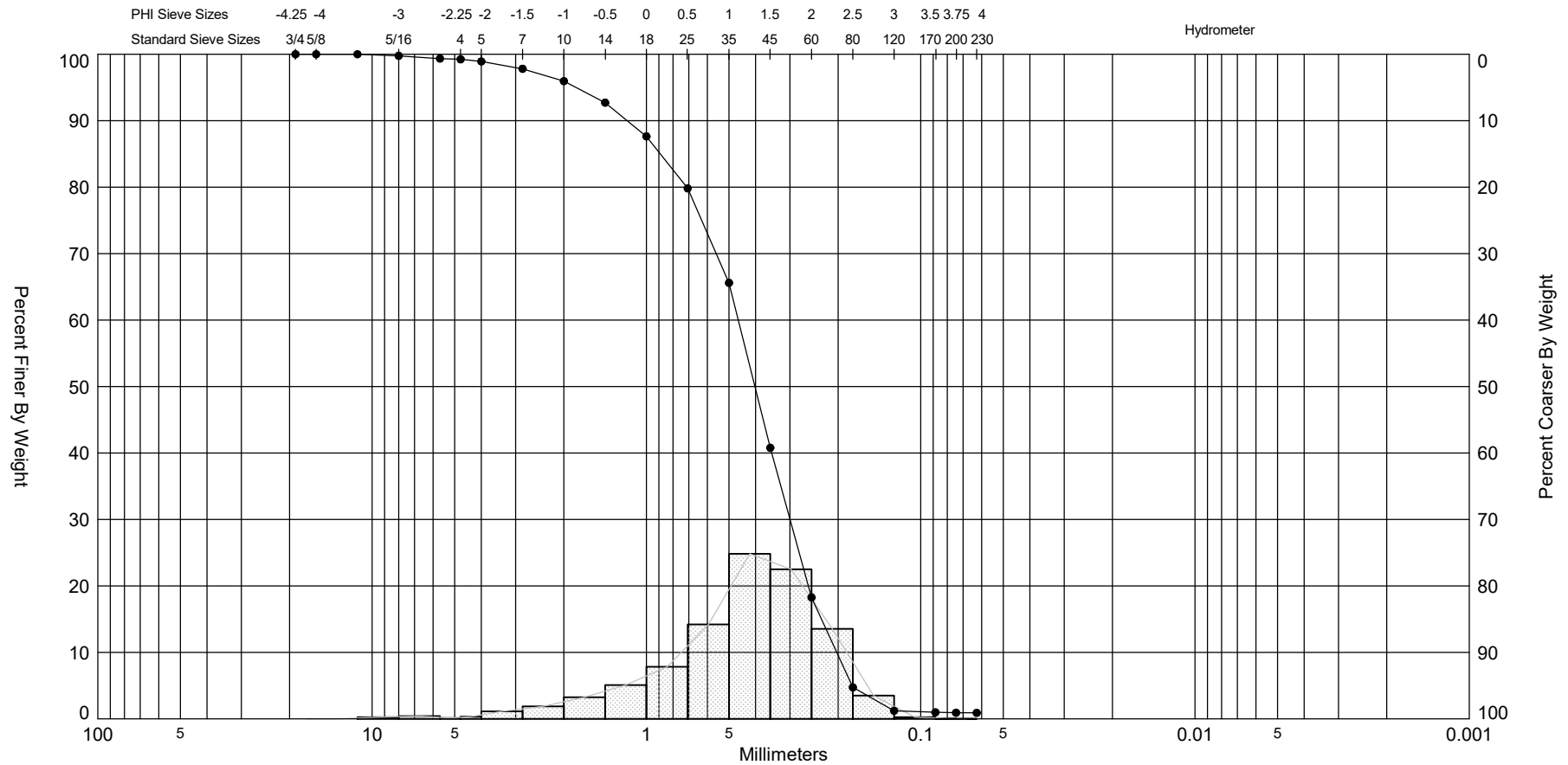
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-15 #S2	—●—	-44.6	SW	#200 - 2.19 #230 - 2.13	0.70	33.10	1.76	1.58	-1.28	5.45	0.89	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.1' - 10.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-23-21
Depths and elevations based on measured values												Analyzed By:	KAT
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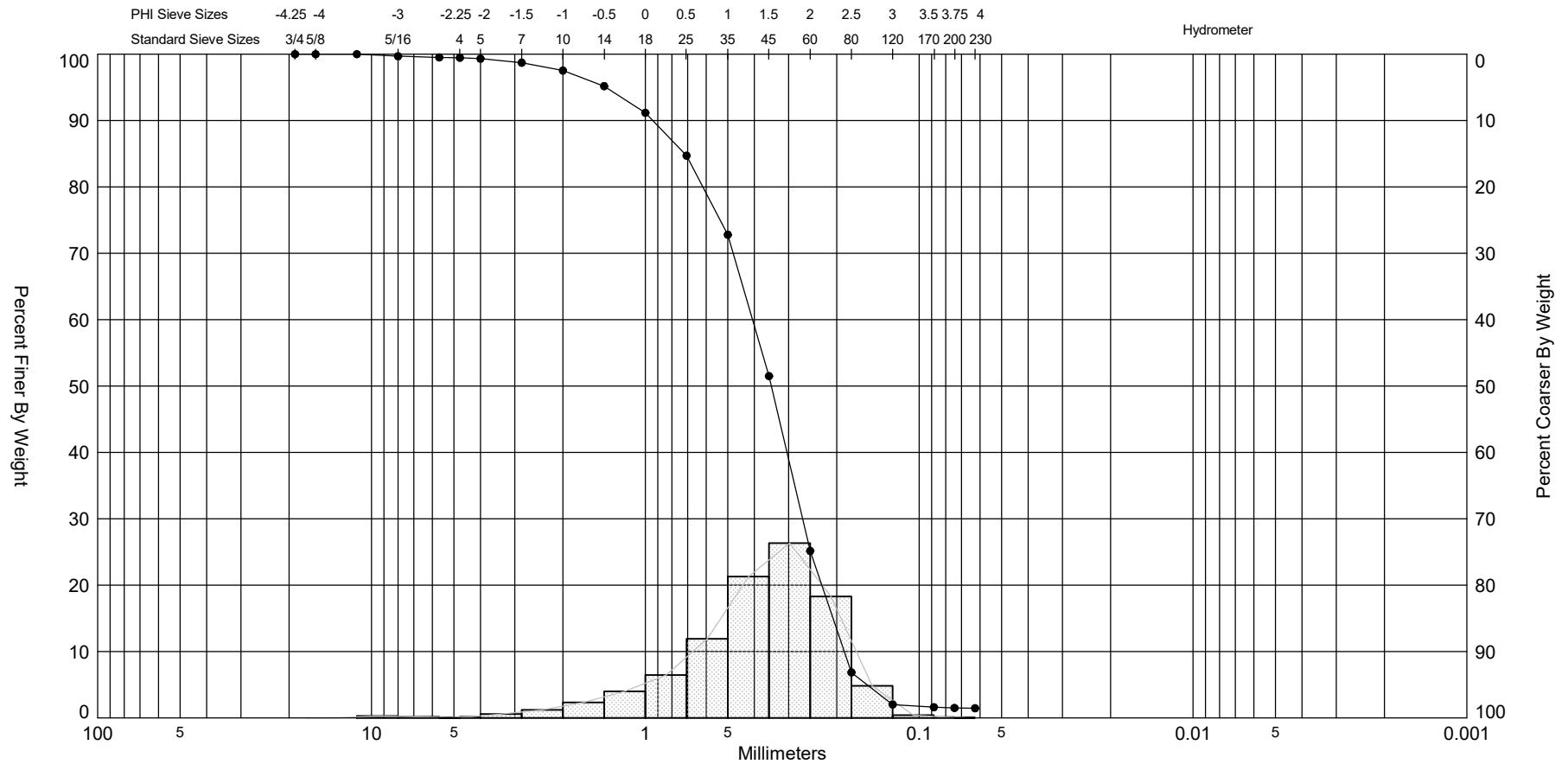


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-16 #S1		-39.2	SW	#200 - 1.03 #230 - 0.99	0.90	43.80	1.14	0.94	-1.1	4.69	1.05	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 0.9' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-23-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.360776
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												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

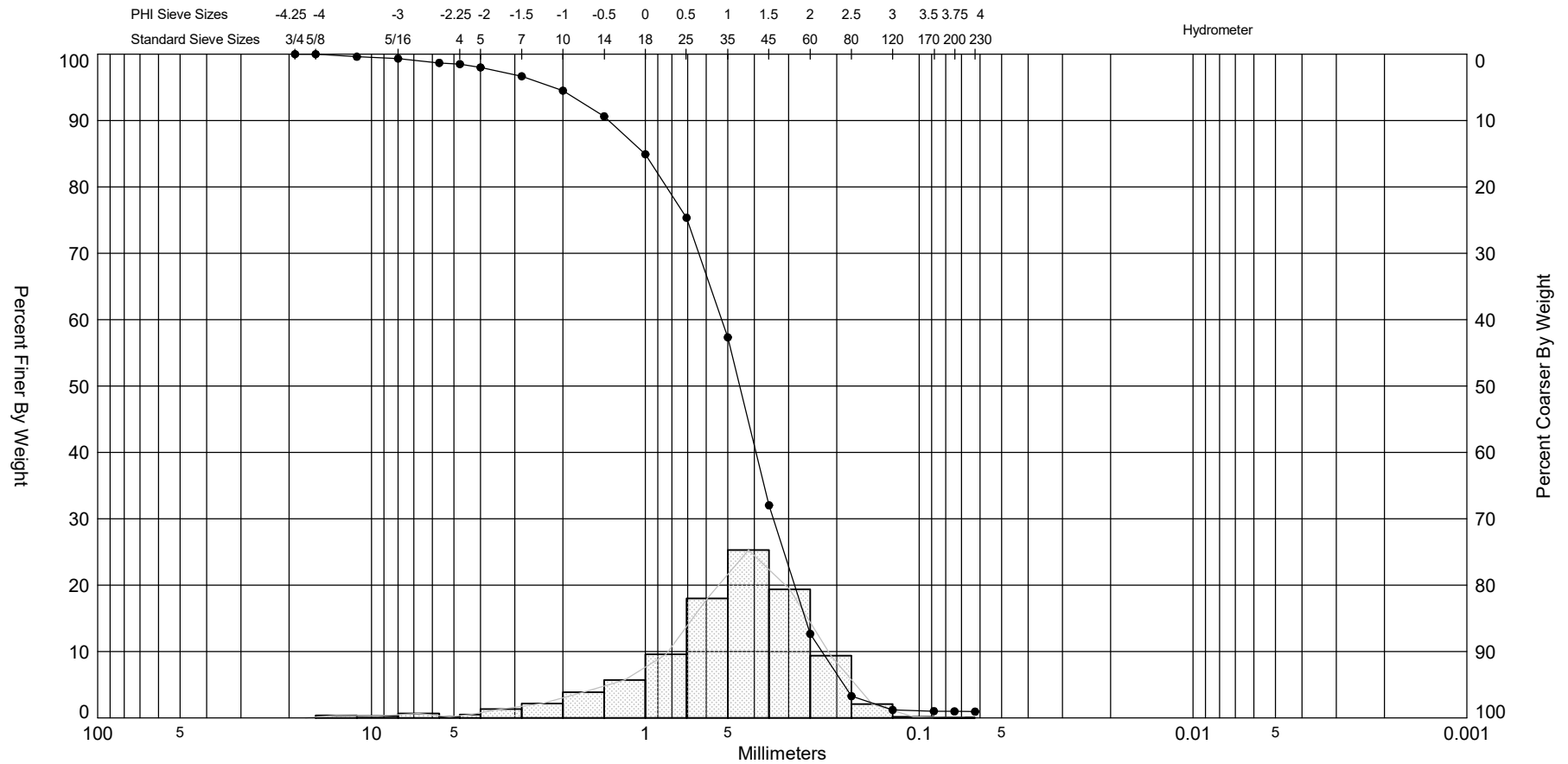
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VC21-1-16 #S2	—●—	-40.1	SW	#200 - 0.92 #230 - 0.90	0.80	40.70	1.31	1.14	-1.11	4.79	1.01	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.9' - 5.4' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-23-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.360776
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												Horizontal System:	NAD 1983
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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	
VC21-1-16 #S3	—●—	-44.6	SW	#200 - 1.50 #230 - 1.45	0.80	35.70	1.53	1.34	-1.22	5.53	0.95	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.4' - 10.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-27-21
Depths and elevations based on measured values												Analyzed By:	KAT
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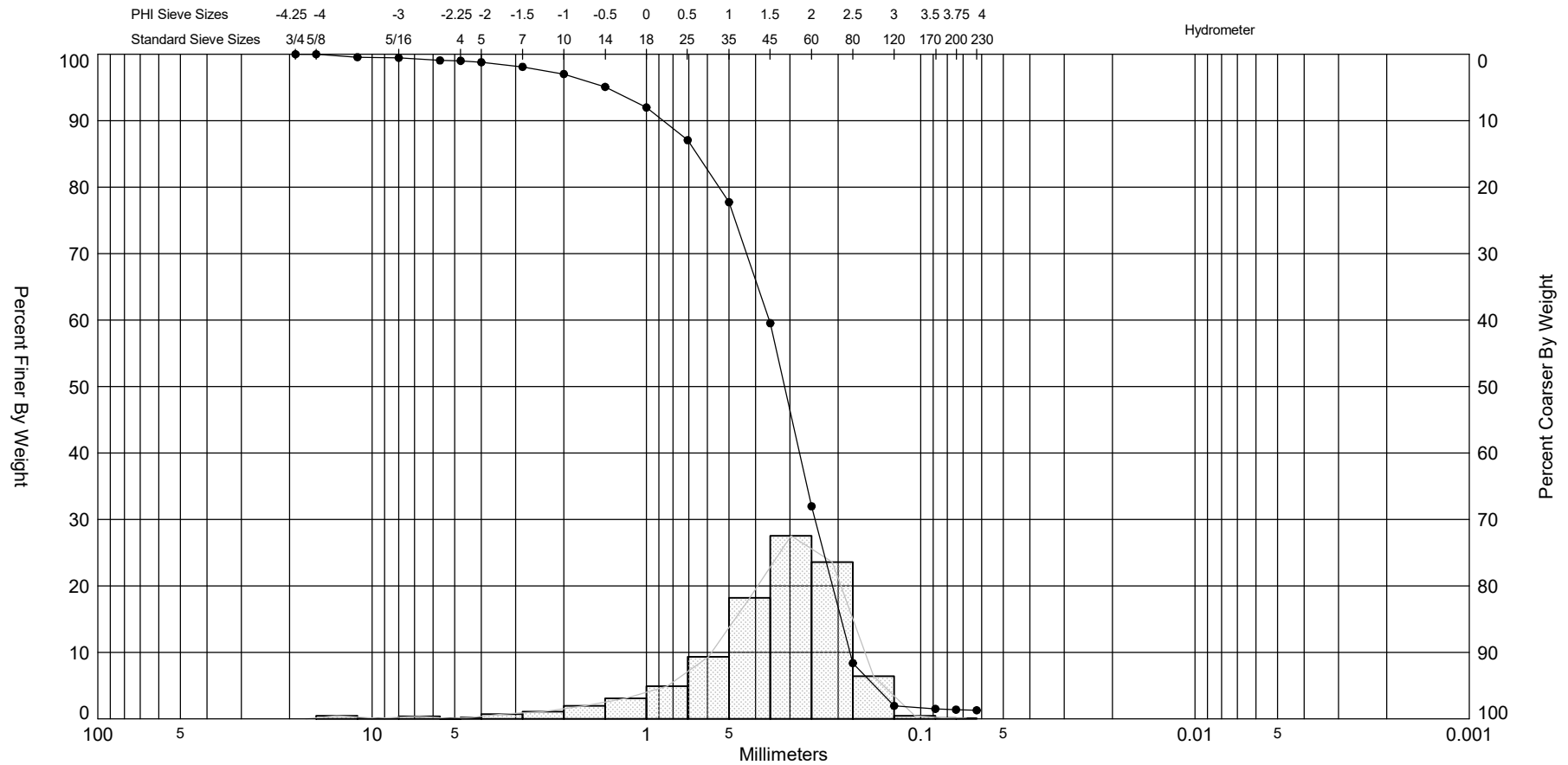
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

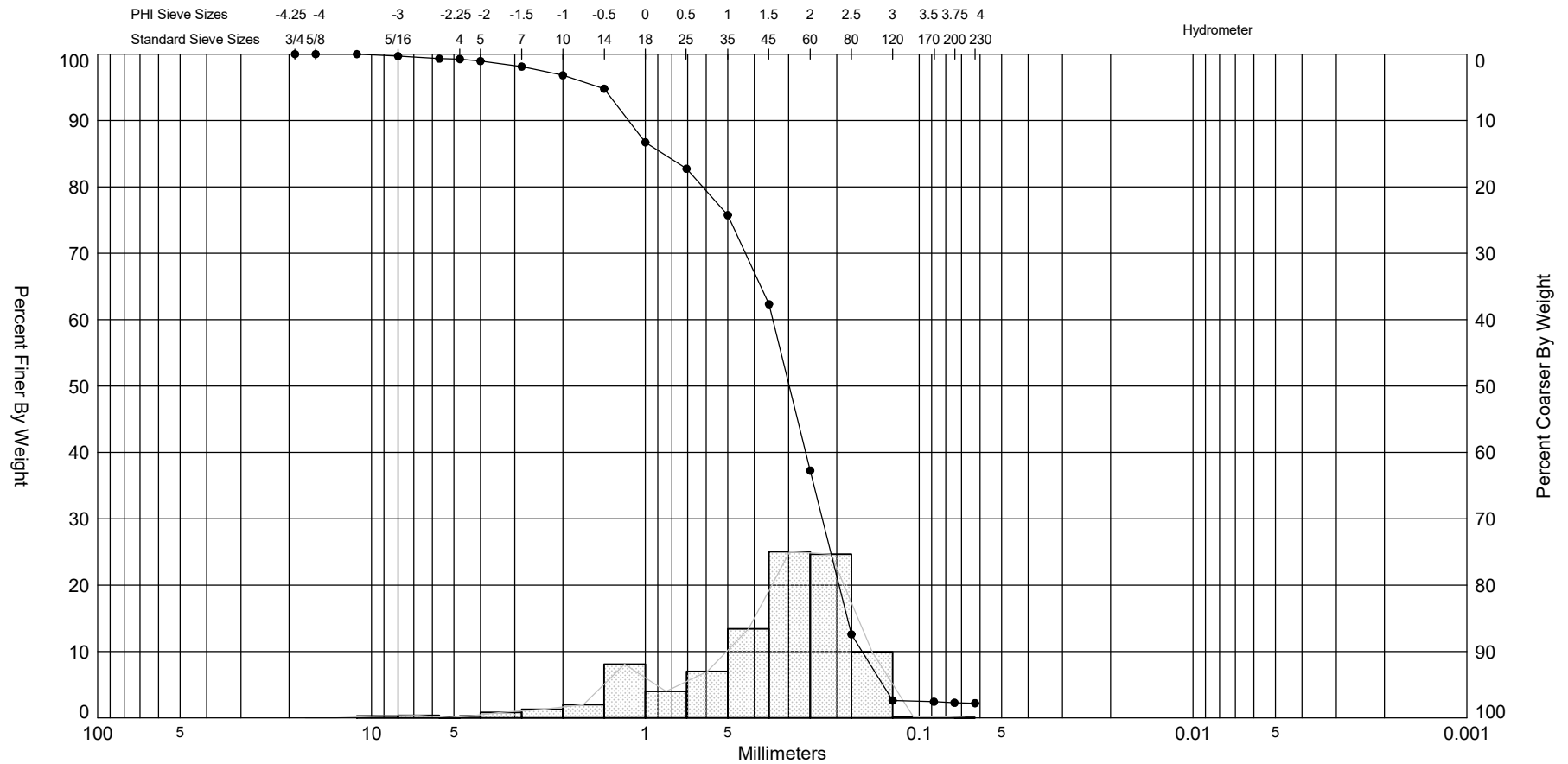
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-17 #S1	—●—	-41.0	SW	#200 - 0.98 #230 - 0.94	0.60	29.40	1.14	0.95	-1.24	5.42	1.07	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 1.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
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Delray Beach, FL 33444



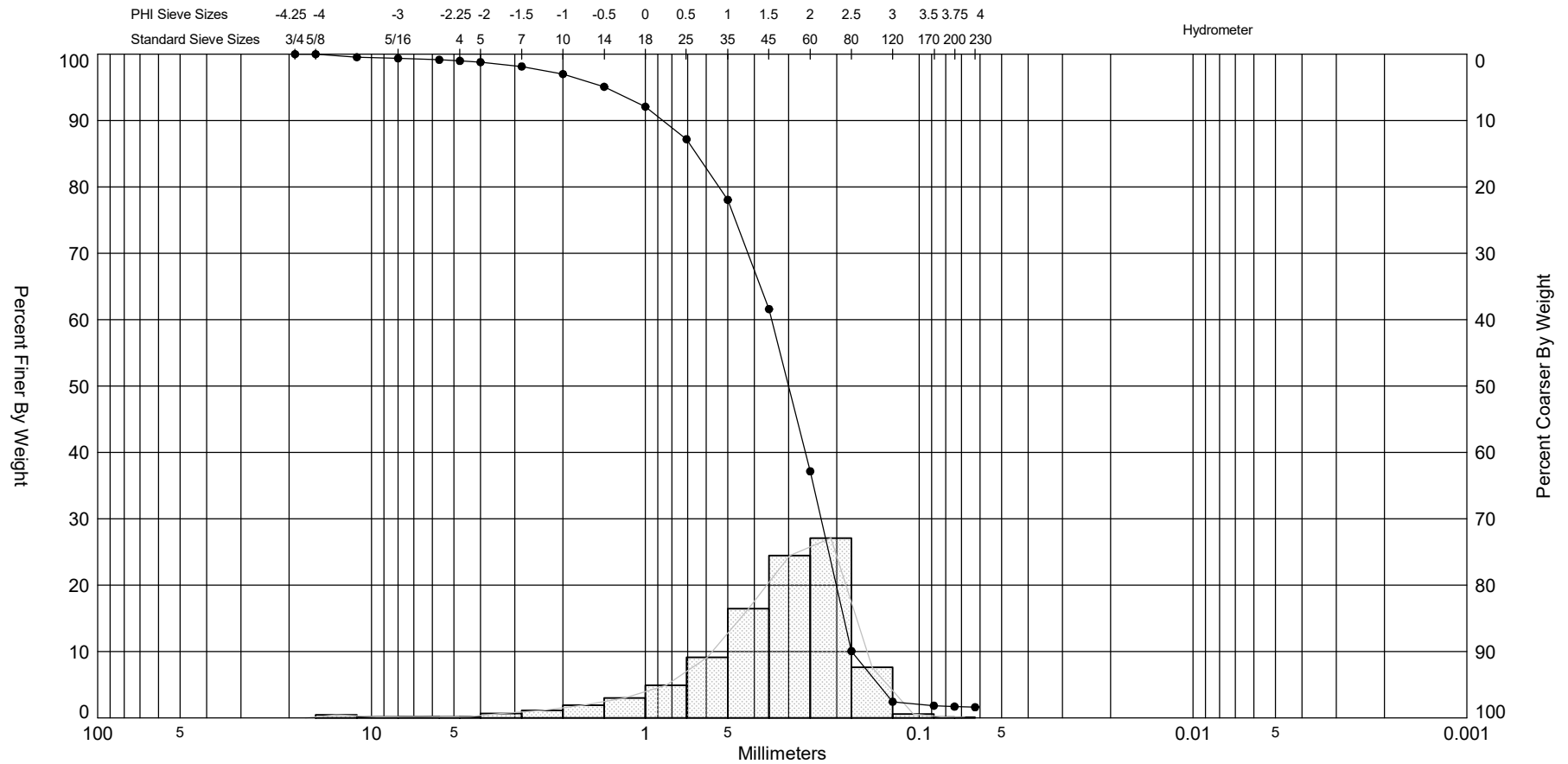
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-17 #S2	—●—	-42.0	SW	#200 - 1.38 #230 - 1.29	0.50	29.40	1.67	1.46	-1.71	7.67	1.01	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 1.0' - 5.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
							GFA International Inc.						
							1215 Wallace Drive						
							Delray Beach, FL 33444						
												Longitude (X):	-82.36186
												Latitude (Y):	26.381693
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

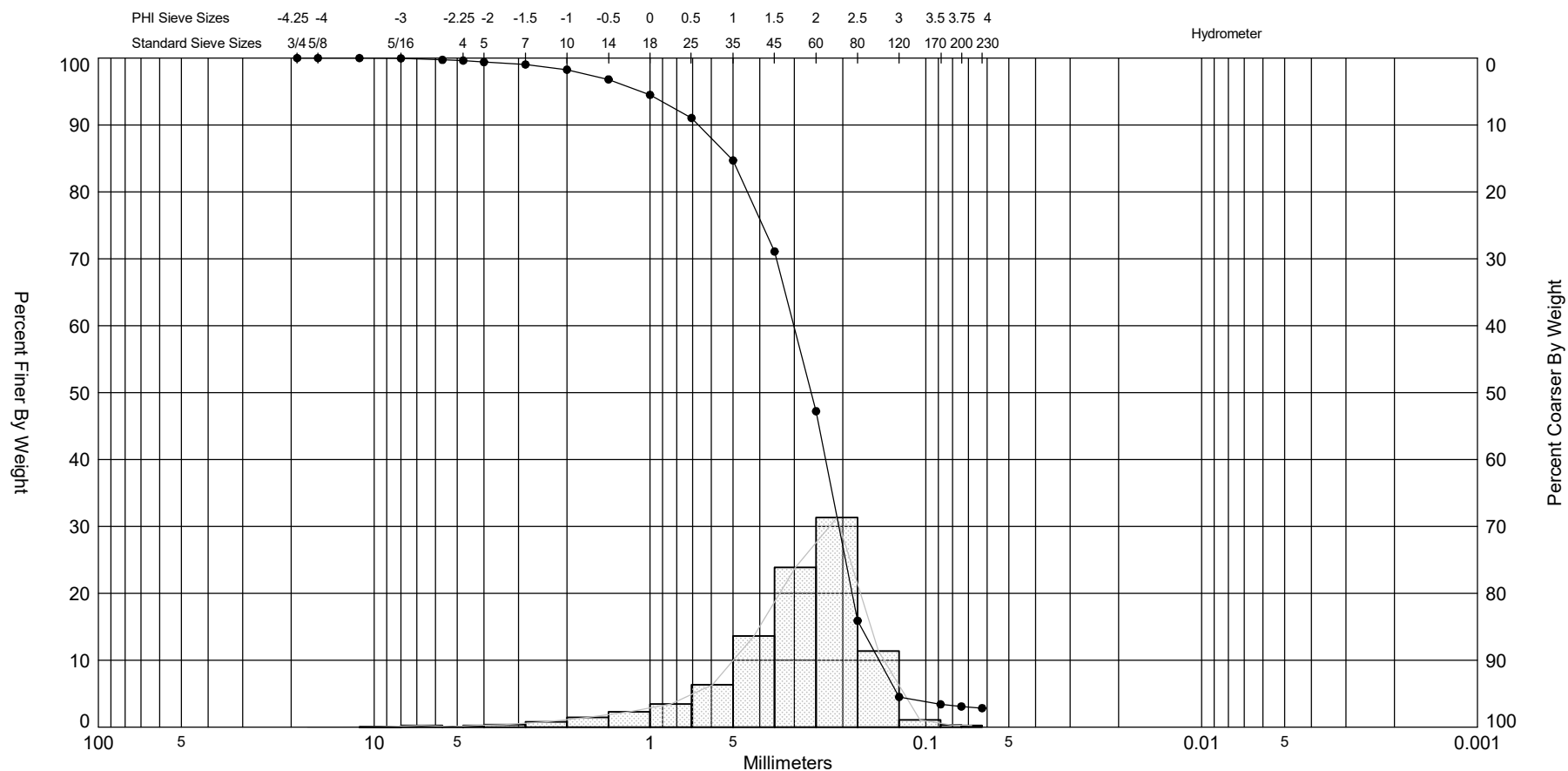
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-17 #S3	—●—	-46.5	SW	#200 - 2.28 #230 - 2.22	0.60	31.70	1.75	1.45	-1.28	4.8	1.09	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.5' - 10.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.36186
												Latitude (Y):	26.381693
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

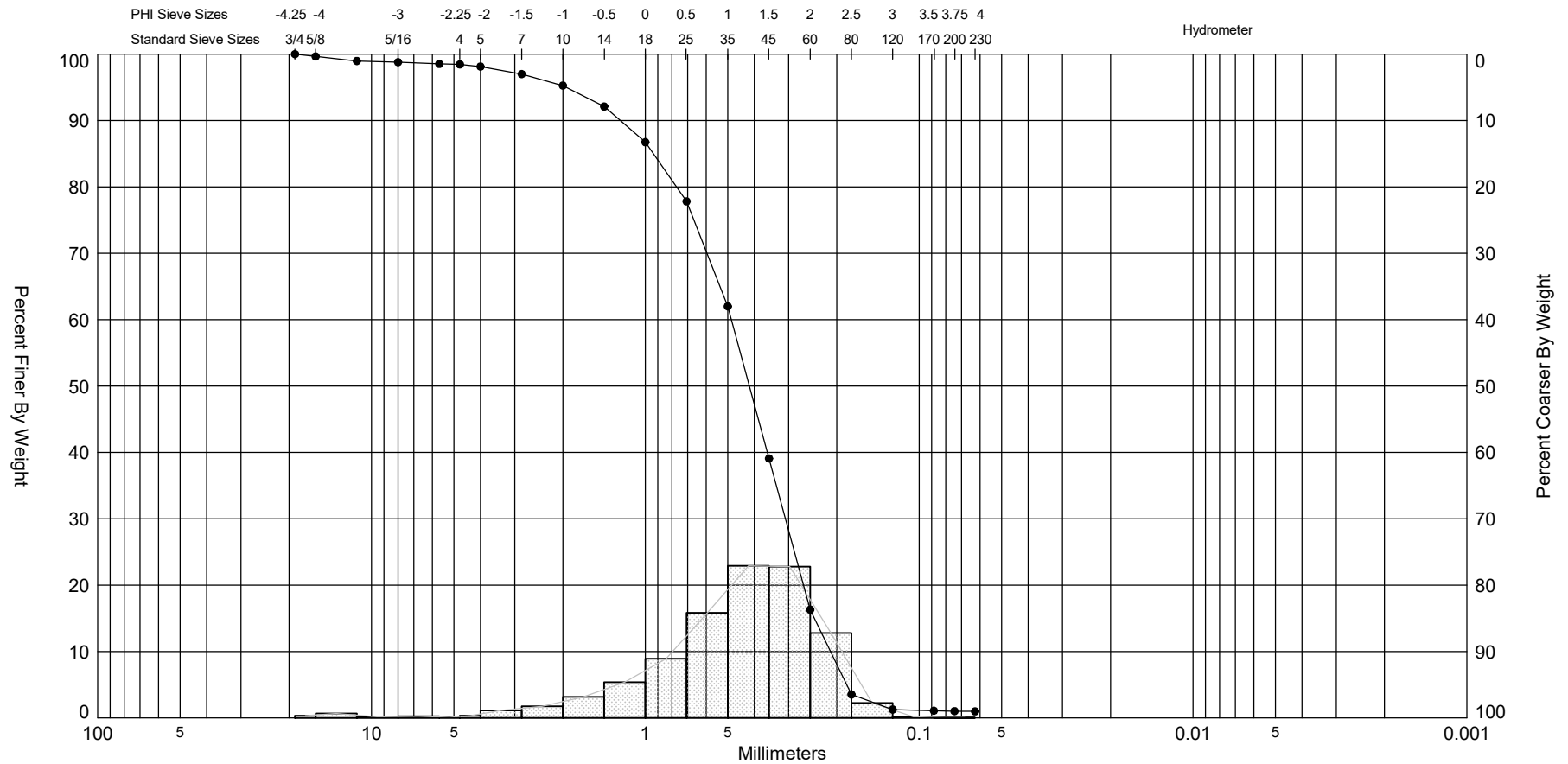
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-18 #S1	—●—	-41.9	SW	#200 - 1.70 #230 - 1.61	0.70	33.90	1.74	1.5	-1.7	7.51	1.03	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 5.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-20-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.367308
												Latitude (Y):	26.376911
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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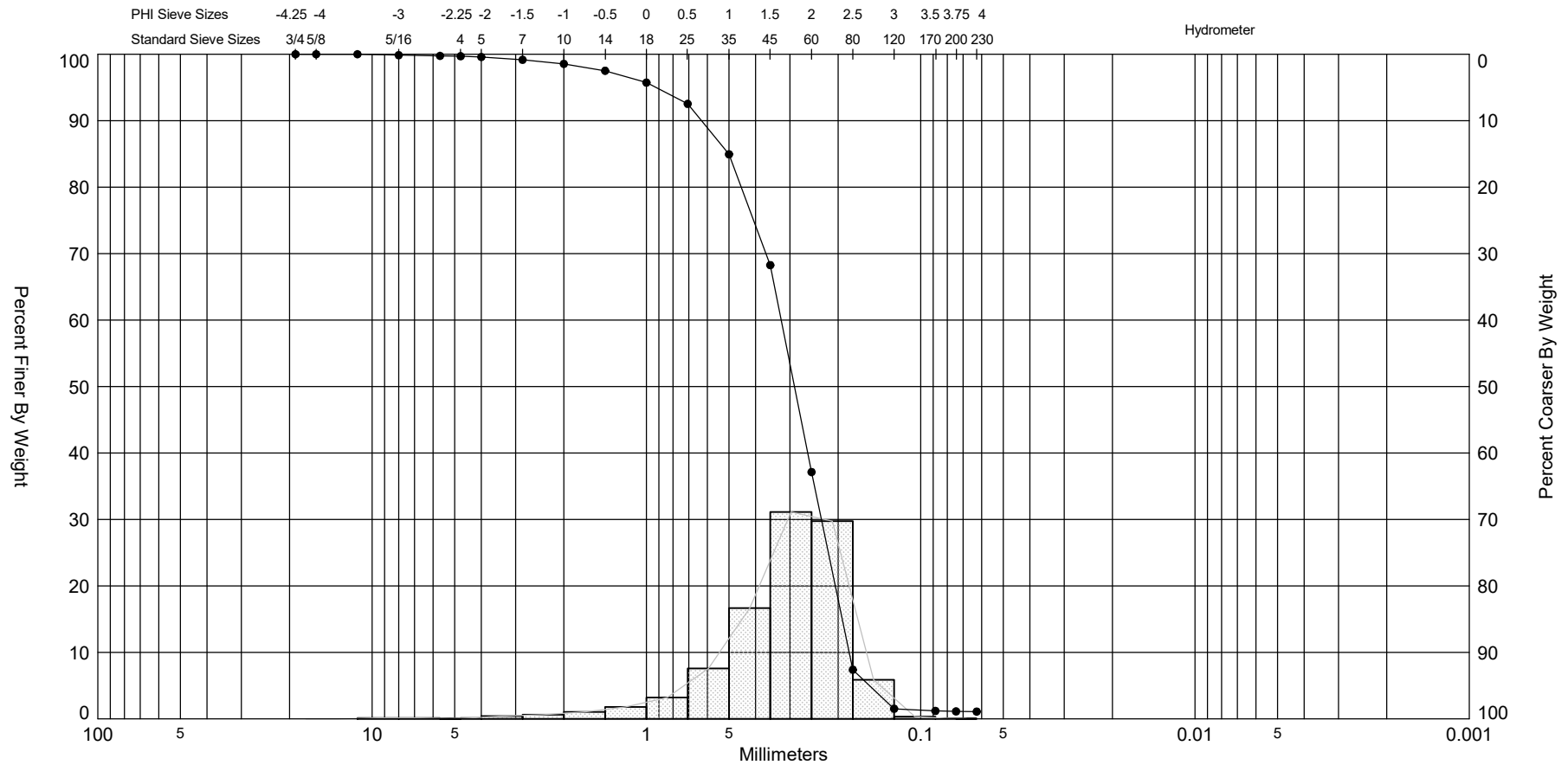
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-18 #S2		-46.9	SW	#200 - 3.09 #230 - 2.84	0.80	36.50	1.94	1.72	-1.5	6.5	0.92	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.0' - 9.7' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-21-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.367308
												Latitude (Y):	26.376911
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

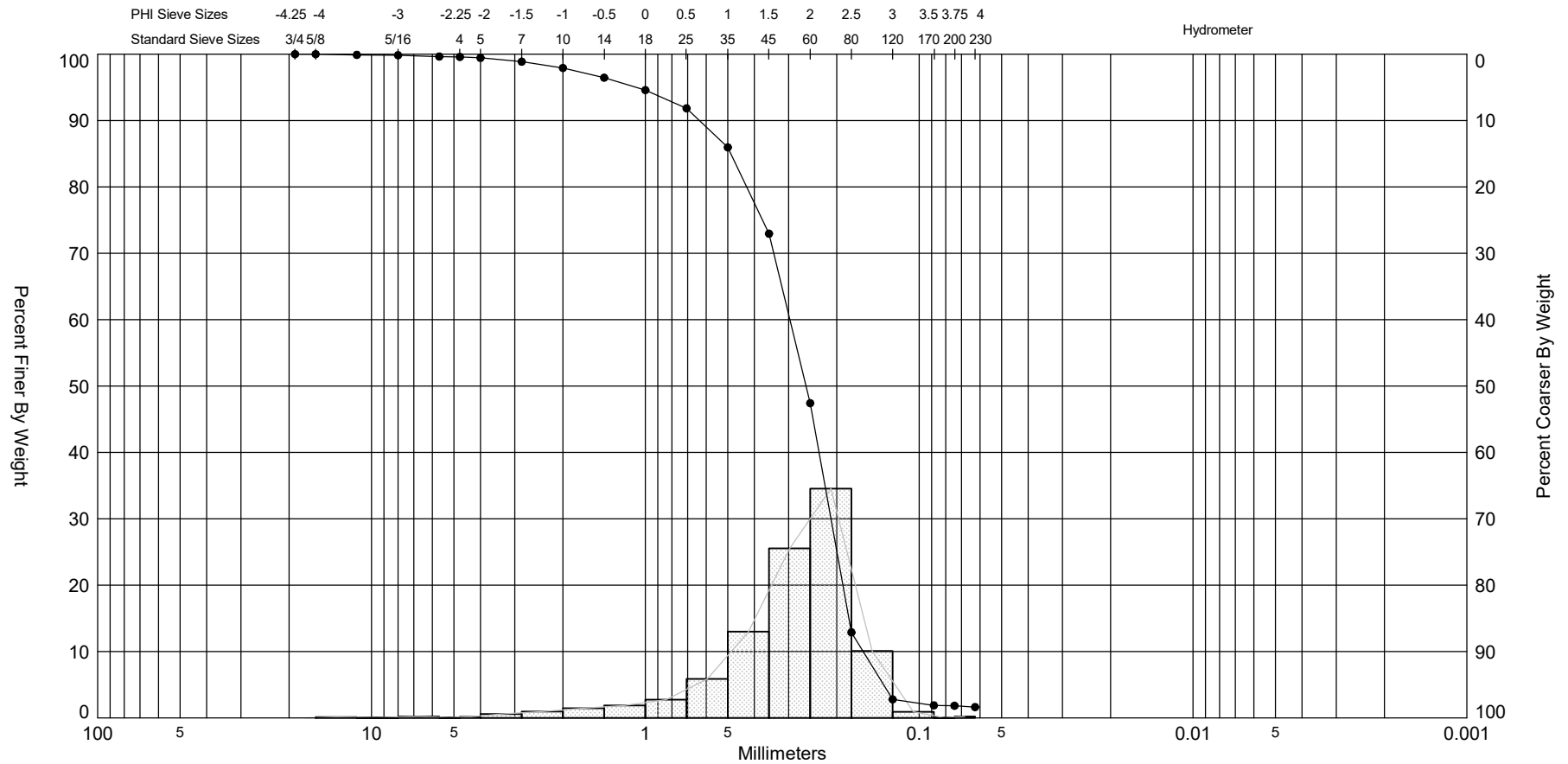
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-19 #S1	—●—	-38.1	SW	#200 - 1.02 #230 - 0.98	0.50	24.80	1.26	1.06	-1.55	6.99	1.1	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 0.8' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.364376
												Latitude (Y):	26.380987
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



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	
VC21-1-19 #S2	—●—	-38.9	SP	#200 - 1.12 #230 - 1.09	0.50	23.70	1.79	1.64	-1.73	8.16	0.81	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.8' - 5.4' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.364376
												Latitude (Y):	26.380987
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

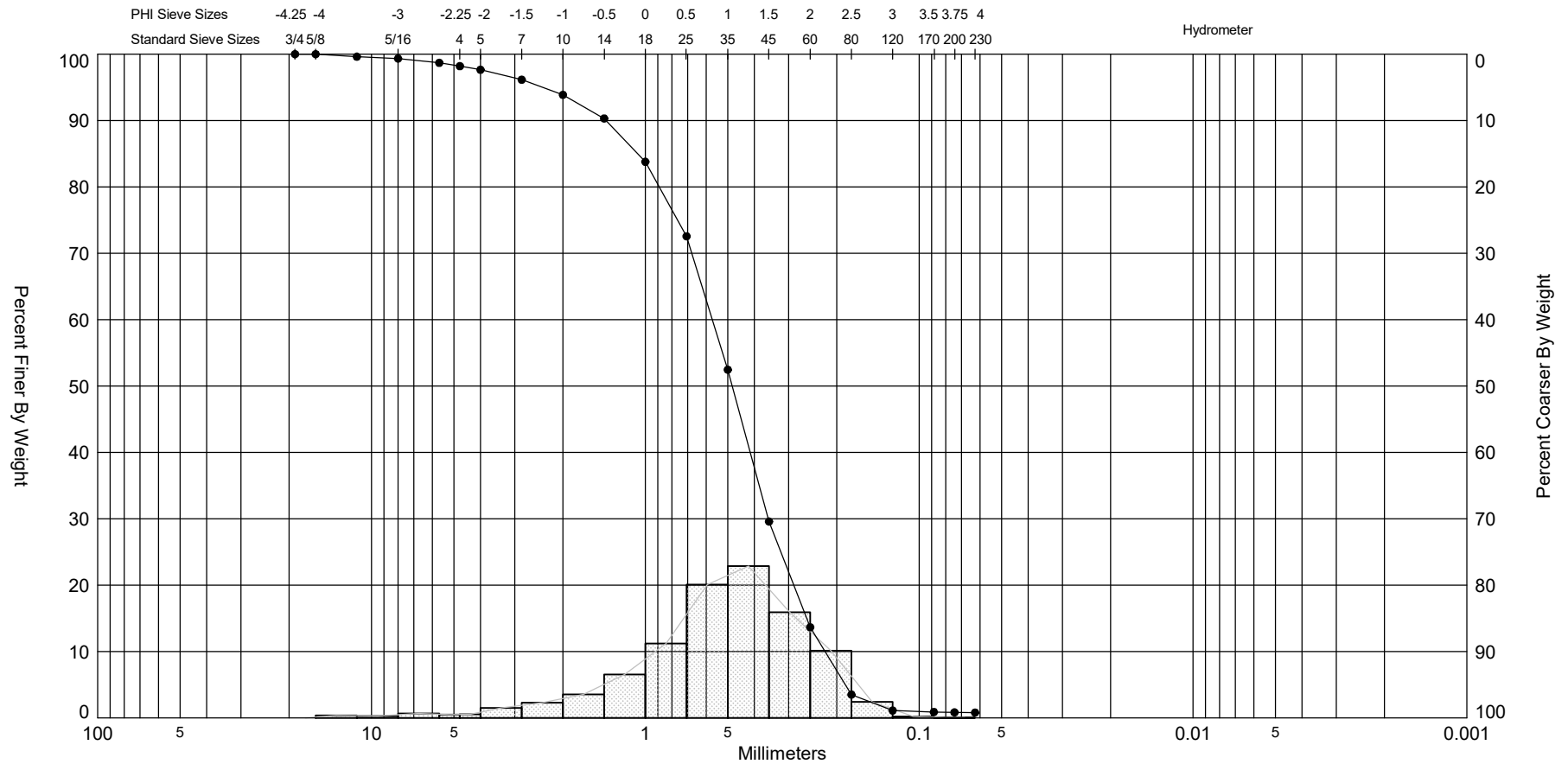
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Delray Beach, FL 33444



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

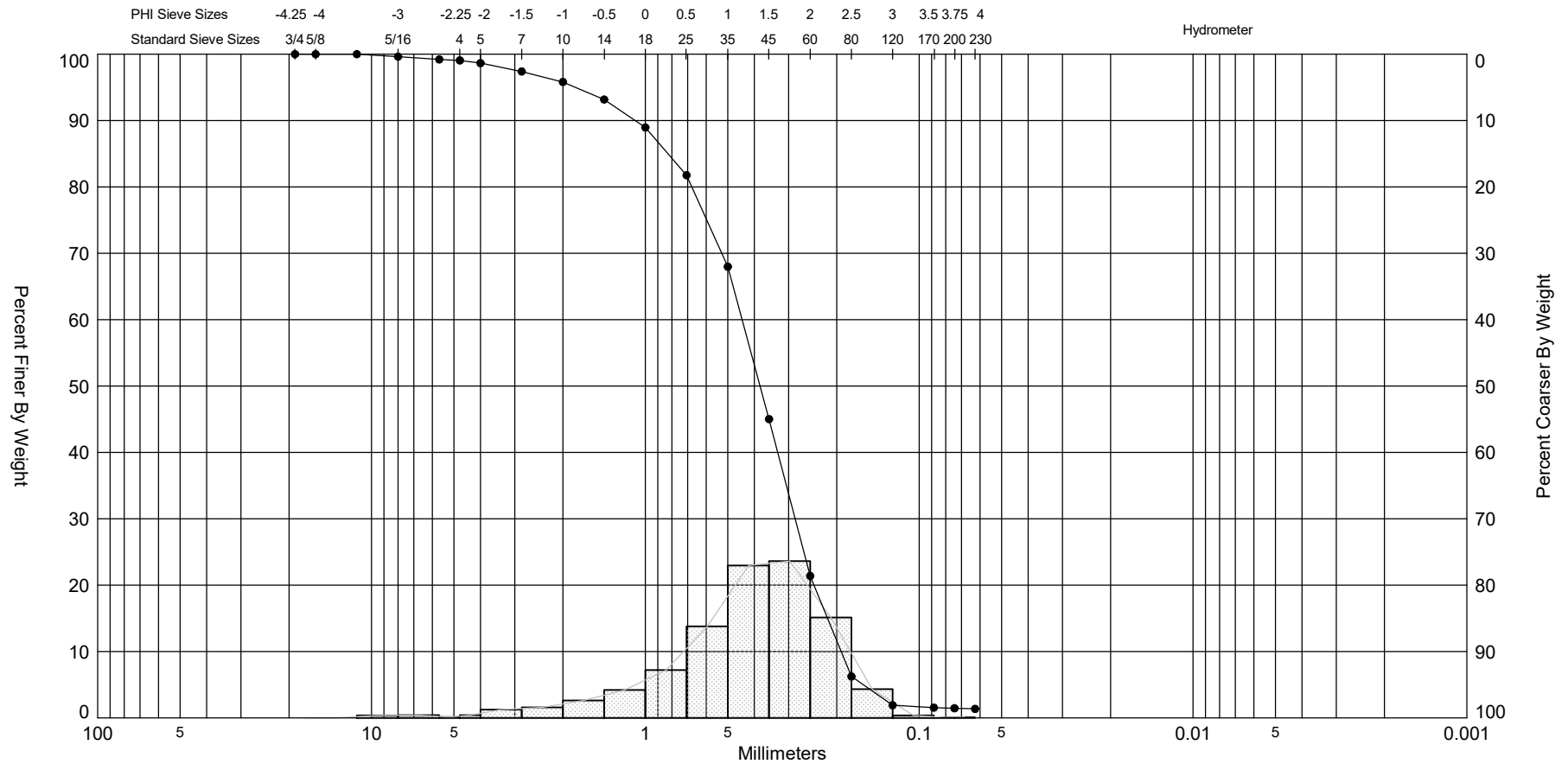
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-19 #S3	—●—	-43.5	SW	#200 - 1.83 #230 - 1.63	0.60	27.10	1.95	1.73	-1.83	8.13	0.91	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.4' - 10.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-09-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.364376
												Latitude (Y):	26.380987
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-20 #S1	—●—	-42.0	SW	#200 - 0.83 #230 - 0.80	0.70	41.30	1.05	0.89	-1.1	5	1.1	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 0.4' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-24-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.363301
												Latitude (Y):	26.384144
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

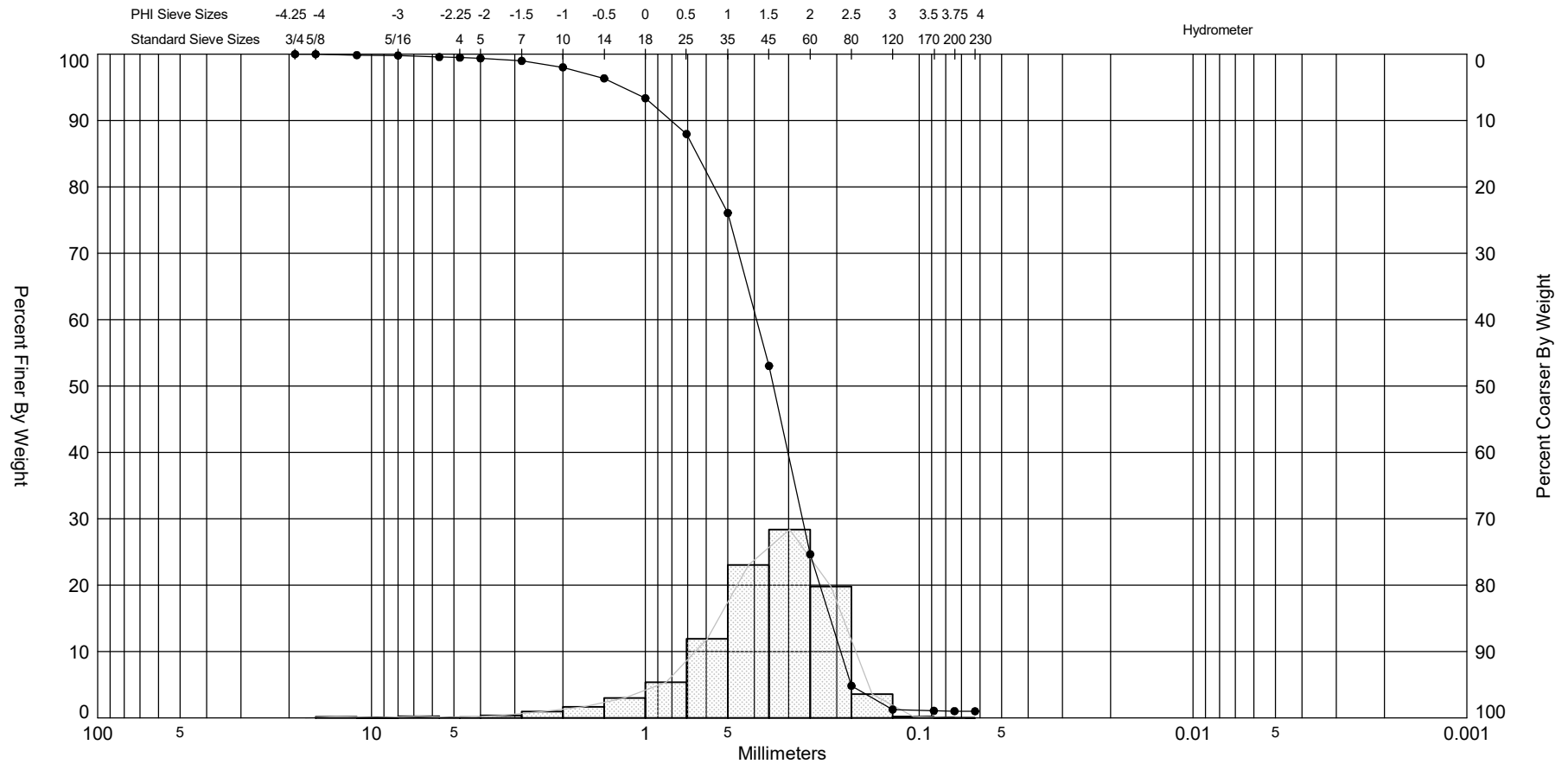
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Delray Beach, FL 33444



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

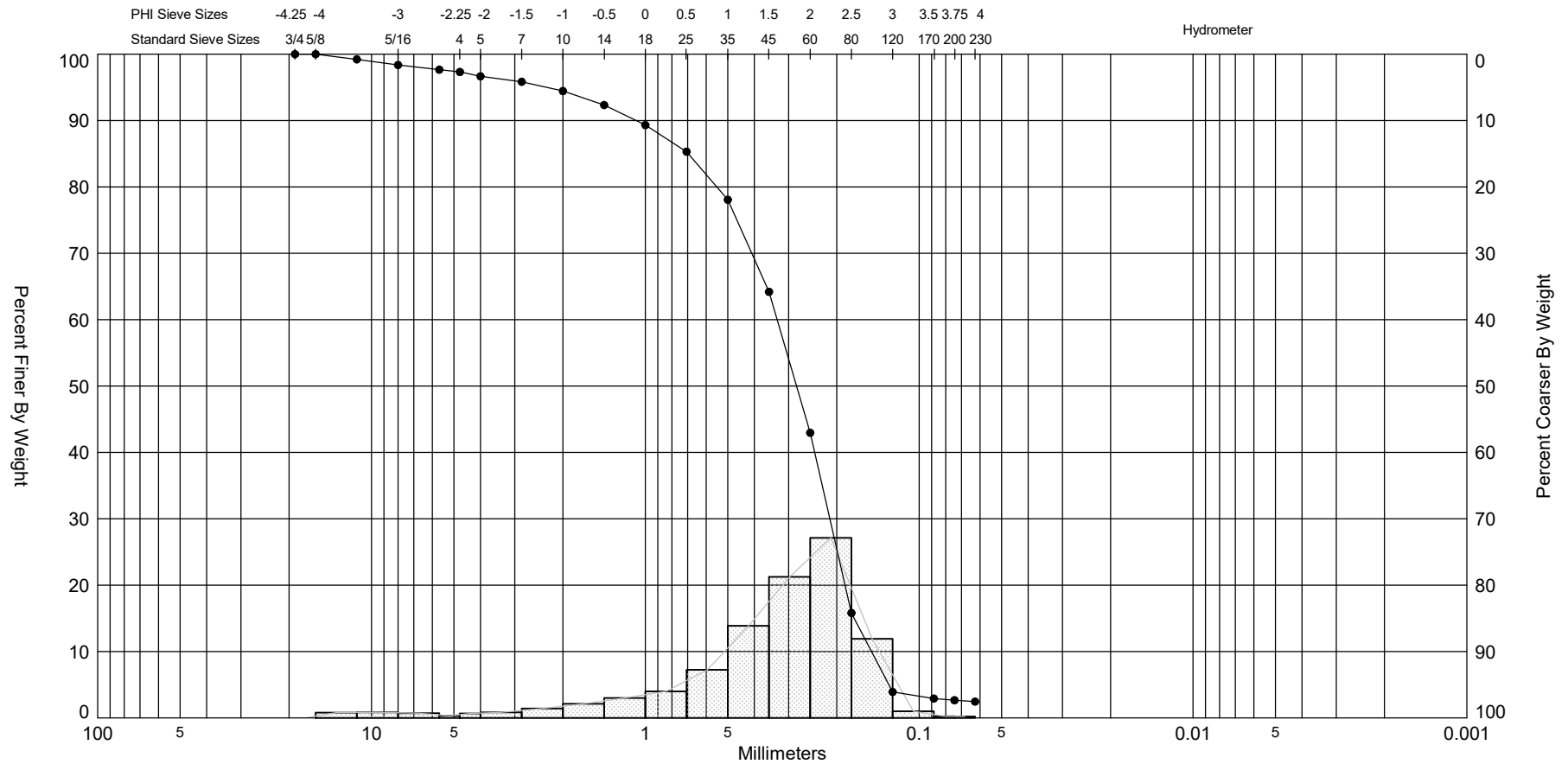
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-20 #S2	—●—	-42.4	SW	#200 - 1.45 #230 - 1.36	0.60	36.00	1.39	1.21	-1.23	5.29	1.04	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.4' - 5.2' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-04-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.363301
												Latitude (Y):	26.384144
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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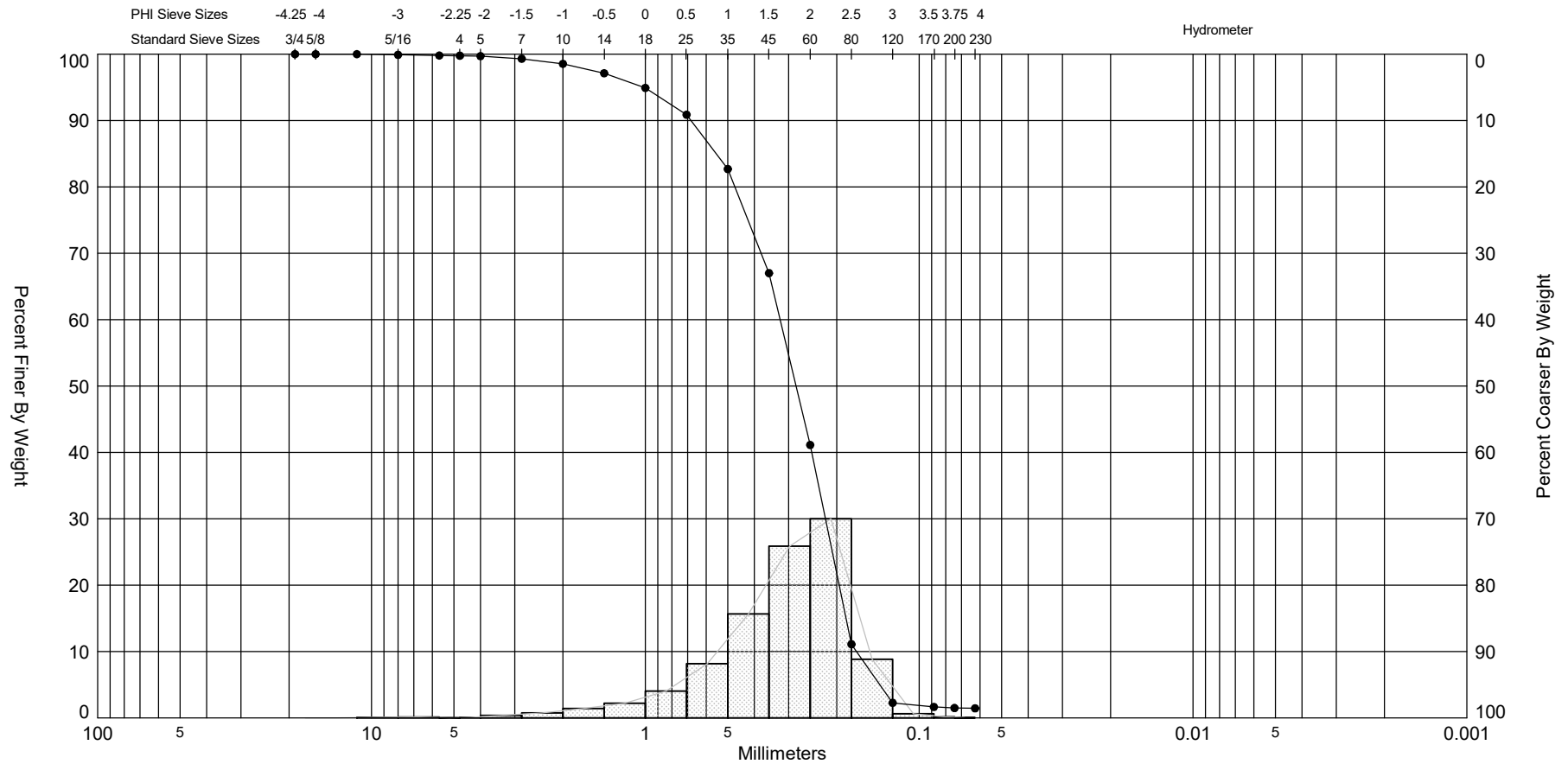
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-20 #S3	—●—	-47.2	SW	#200 - 1.02 #230 - 1.00	0.70	25.10	1.55	1.4	-1.47	7.04	0.88	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.2' - 10.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-23-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.363301
												Latitude (Y):	26.384144
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

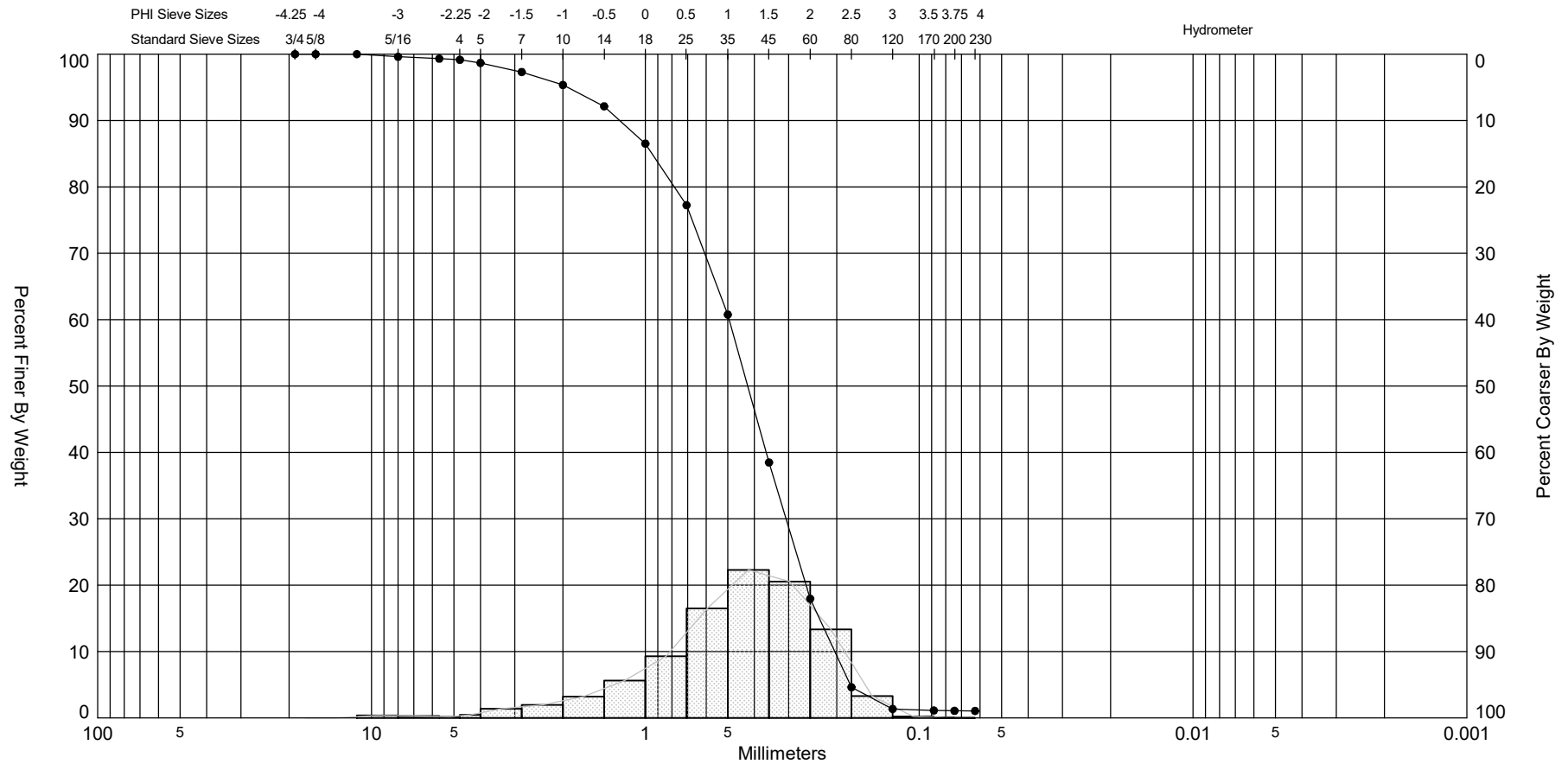


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-21 #S1	—●—	-37.5	SW	#200 - 2.66 #230 - 2.46	0.70	34.00	1.83	1.48	-1.8	6.8	1.27	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 5.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-02-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.37013
												Latitude (Y):	26.378068
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													

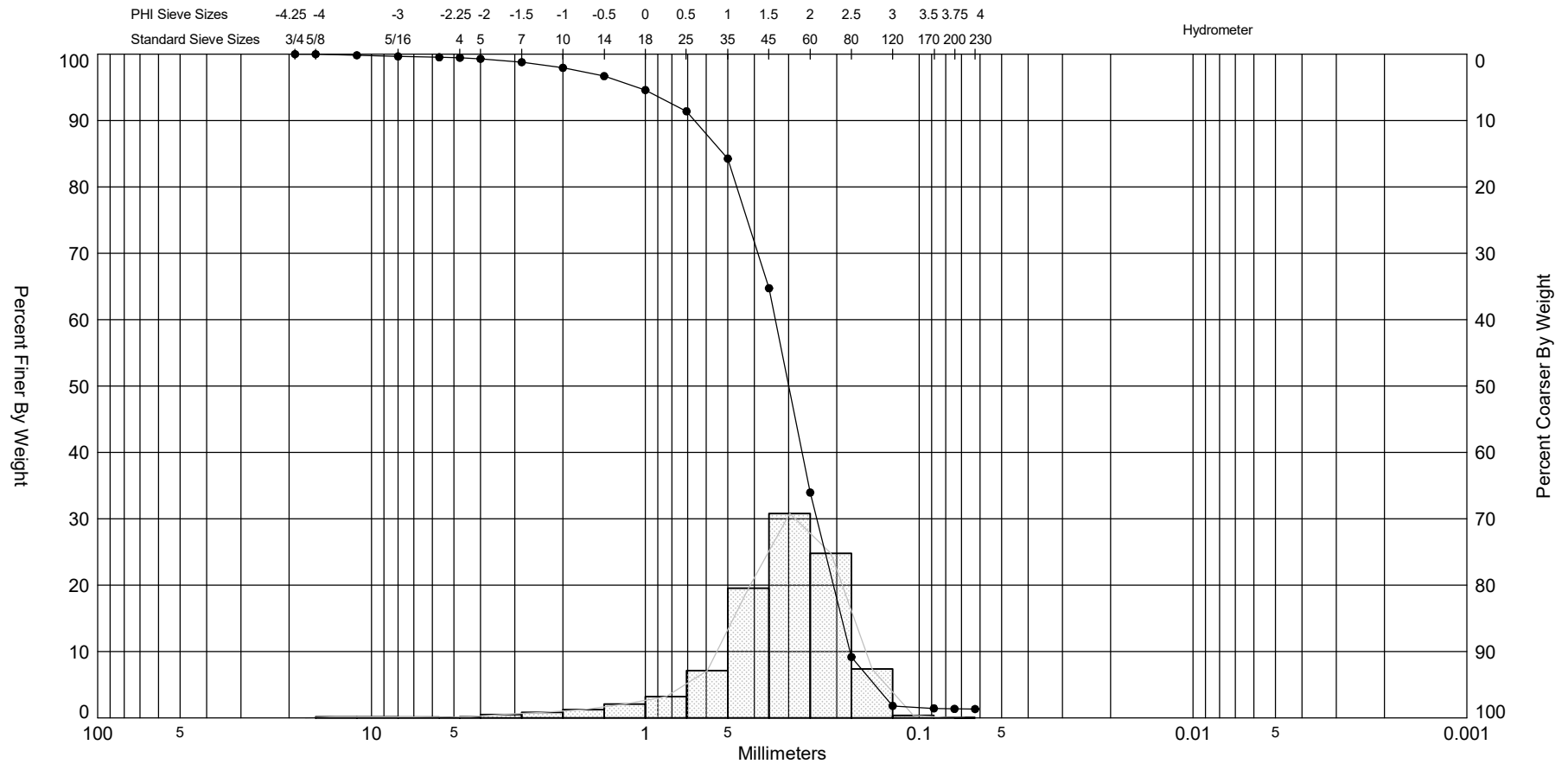


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-21 #S2	—●—	-42.5	SW	#200 - 1.49 #230 - 1.44	0.80	30.90	1.83	1.65	-1.4	6.2	0.87	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.0' - 10.0' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-23-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.37013
												Latitude (Y):	26.378068
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



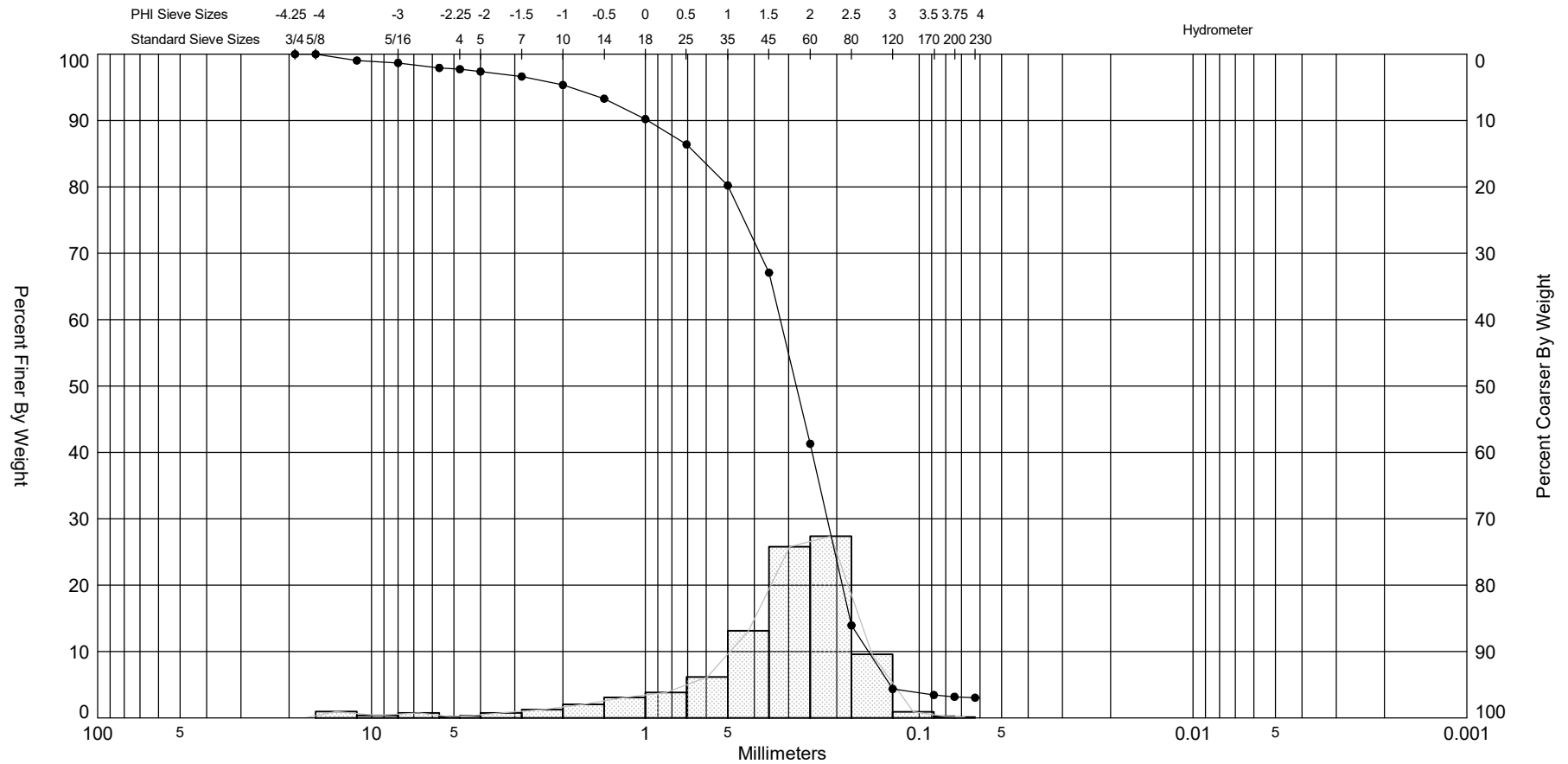
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

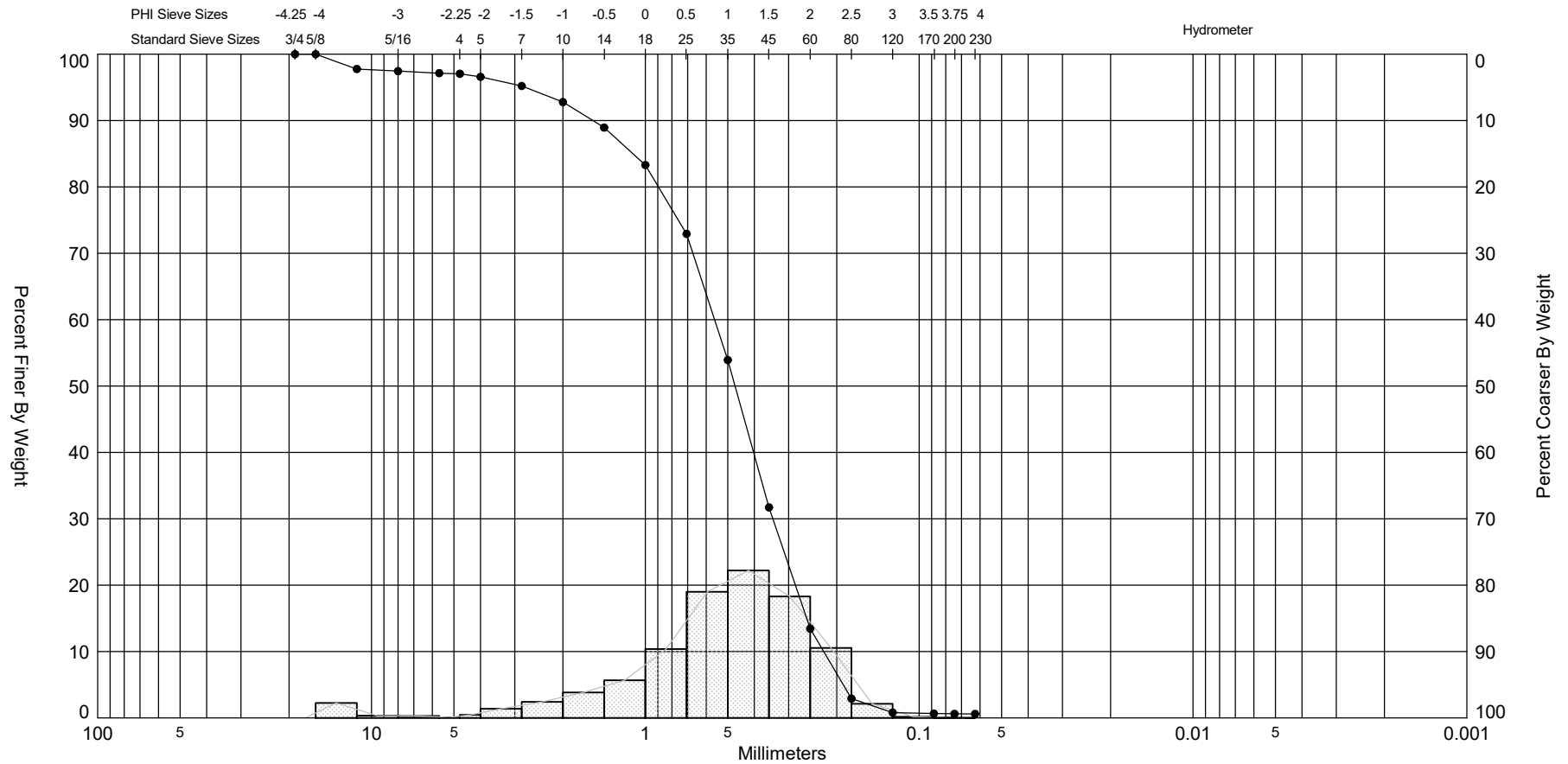
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-22 #S1	—●—	-41.0	SW	#200 - 1.07 #230 - 1.05	0.70	35.50	1.24	1.07	-1.04	4.58	1.04	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 1.8' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-27-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.36499
												Latitude (Y):	26.384577
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88



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	
VC21-1-22 #S2	—●—	-42.8	SW	#200 - 1.36 #230 - 1.33	0.60	24.60	1.74	1.59	-1.86	8.99	0.88	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 1.8' - 5.8' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-27-21
Depths and elevations based on measured values												Analyzed By:	KAT
						GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444						Longitude (X):	-82.36499
												Latitude (Y):	26.384577
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

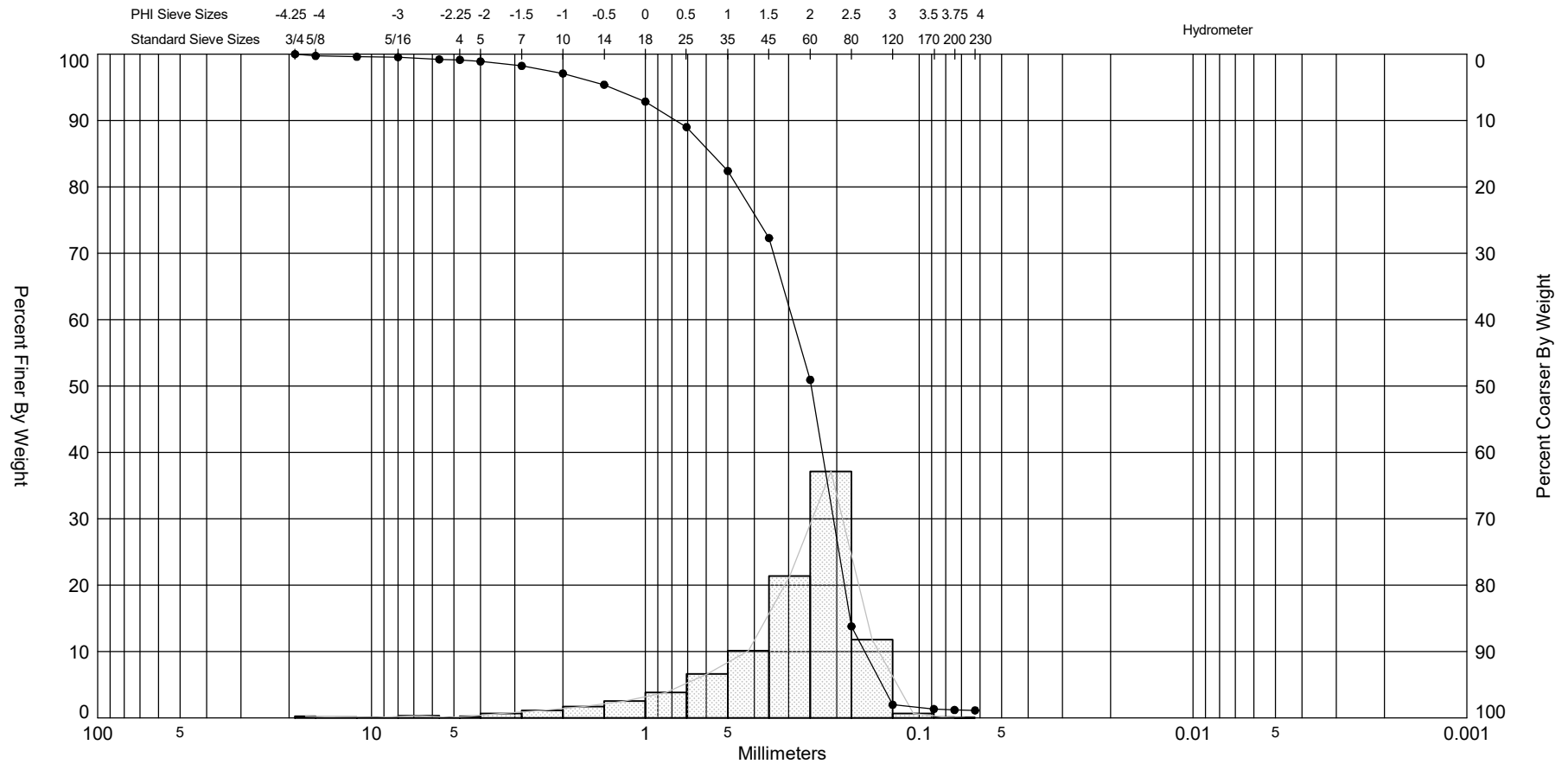




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

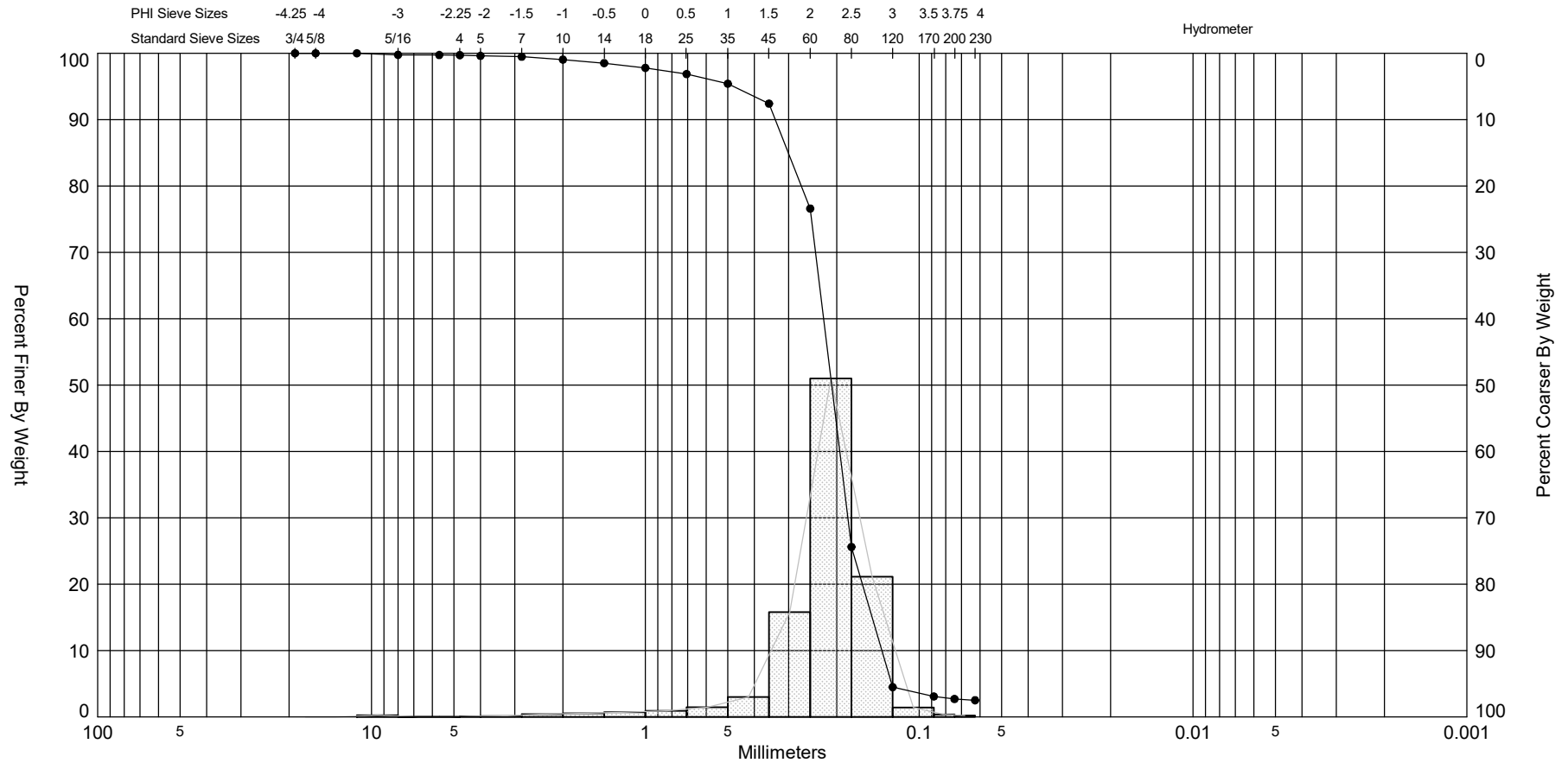
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
VC21-1-23 #S1	—●—	-38.9	SW	#200 - 0.61 #230 - 0.60	0.70	38.50	1.09	0.86	-1.54	6.32	1.23	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.0' - 0.5' Material Description: Light gray well graded sand with trace shell												Analysis Date:	12-27-21
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.36709
												Latitude (Y):	26.384574
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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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	
VC21-1-23 #S2	—●—	-39.4	SW	#200 - 1.19 #230 - 1.13	0.60	30.90	2.01	1.69	-1.99	8.52	1.04	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 0.5' - 5.3' Material Description: Light gray well graded sand with trace shell												Analysis Date:	01-03-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.36709
												Latitude (Y):	26.384574
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88
GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444													



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	
VC21-1-23 #S3	—●—	-44.2	SP	#200 - 2.70 #230 - 2.51	0.60	23.80	2.26	2.15	-3.08	18.66	0.7	Project Name:	Lovers Key Detail Level Cores
Comments: Sample Interval: 5.3' - 10.0' Material Description: Light gray poorly graded sand with trace shell												Analysis Date:	01-03-22
Depths and elevations based on measured values												Analyzed By:	KAT
												Longitude (X):	-82.36709
												Latitude (Y):	26.384574
												Horizontal System:	NAD 1983
												Vertical System:	NAVD 88

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Delray Beach, FL 33444

6.0 Sieve Tables

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-04 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.358658		Latitude (Y): 26.376889		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -39.9 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/2		Comments: Sample Interval: 0.0' - 2.1' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 640.40	Wash Weight (g): 632.10	Pan Retained (g): 0.30	Sieve Loss (%): 0.00	Fines (%): #200 - 1.37 #230 - 1.34	Organics (%): 0.90	Carbonates (%): 40.90	Shells (%): 4.17
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	7.70	1.20	7.70	1.20	
5/16"	-3.00	8.00	6.50	1.01	14.20	2.22	
3.5	-2.50	5.66	9.40	1.47	23.60	3.69	
4	-2.25	4.76	3.10	0.48	26.70	4.17	
5	-2.00	4.00	6.10	0.95	32.80	5.12	
7	-1.50	2.83	14.60	2.28	47.40	7.40	
10	-1.00	2.00	19.50	3.04	66.90	10.45	
14	-0.50	1.41	30.20	4.72	97.10	15.16	
18	0.00	1.00	51.40	8.03	148.50	23.19	
25	0.50	0.71	84.10	13.13	232.60	36.32	
35	1.00	0.50	134.30	20.97	366.90	57.29	
45	1.50	0.35	139.80	21.83	506.70	79.12	
60	2.00	0.25	75.40	11.77	582.10	90.90	
80	2.50	0.18	38.60	6.03	620.70	96.92	
120	3.00	0.13	9.80	1.53	630.50	98.45	
170	3.50	0.09	0.80	0.12	631.30	98.58	
200	3.75	0.07	0.30	0.05	631.60	98.63	
230	4.00	0.06	0.20	0.03	631.80	98.66	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.34	1.71	1.41	0.83	0.07	-0.45	-2.03	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.58	0.67	1.25	-1.18	4.72		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-04 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.358658		Latitude (Y): 26.376889		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -42.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 2.1' - 5.5' Material Description: Light gray well graded sand with trace shell and coral fragments			
Dry Weight (g): 669.80	Wash Weight (g): 660.90	Pan Retained (g): 0.60	Sieve Loss (%): 0.07	Fines (%): #200 - 1.54 #230 - 1.49	Organics (%): 0.70	Carbonates (%): 32.90	Shells (%): 4.26
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	15.10	2.25	15.10	2.25	
5/16"	-3.00	8.00	5.70	0.85	20.80	3.11	
3.5	-2.50	5.66	4.90	0.73	25.70	3.84	
4	-2.25	4.76	2.80	0.42	28.50	4.26	
5	-2.00	4.00	6.40	0.96	34.90	5.21	
7	-1.50	2.83	14.10	2.11	49.00	7.32	
10	-1.00	2.00	18.20	2.72	67.20	10.03	
14	-0.50	1.41	28.60	4.27	95.80	14.30	
18	0.00	1.00	57.70	8.61	153.50	22.92	
25	0.50	0.71	102.20	15.26	255.70	38.18	
35	1.00	0.50	149.30	22.29	405.00	60.47	
45	1.50	0.35	134.90	20.14	539.90	80.61	
60	2.00	0.25	68.90	10.29	608.80	90.89	
80	2.50	0.18	38.60	5.76	647.40	96.66	
120	3.00	0.13	10.40	1.55	657.80	98.21	
170	3.50	0.09	1.30	0.19	659.10	98.40	
200	3.75	0.07	0.40	0.06	659.50	98.46	
230	4.00	0.06	0.30	0.04	659.80	98.51	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.36	1.66	1.36	0.77	0.07	-0.40	-2.06	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.54	0.69	1.27	-1.27	5.25		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-04 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.358658		Latitude (Y): 26.376889		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -45.4 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.5' - 6.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 642.40	Wash Weight (g): 633.70	Pan Retained (g): 0.50	Sieve Loss (%): 0.05	Fines (%): #200 - 1.56 #230 - 1.48	Organics (%): 0.70	Carbonates (%): 40.90	Shells (%): 1.43
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	2.50	0.39	2.50	0.39	
3.5	-2.50	5.66	4.20	0.65	6.70	1.04	
4	-2.25	4.76	2.50	0.39	9.20	1.43	
5	-2.00	4.00	3.70	0.58	12.90	2.01	
7	-1.50	2.83	8.50	1.32	21.40	3.33	
10	-1.00	2.00	13.00	2.02	34.40	5.35	
14	-0.50	1.41	22.50	3.50	56.90	8.86	
18	0.00	1.00	46.10	7.18	103.00	16.03	
25	0.50	0.71	93.40	14.54	196.40	30.57	
35	1.00	0.50	146.40	22.79	342.80	53.36	
45	1.50	0.35	139.80	21.76	482.60	75.12	
60	2.00	0.25	81.70	12.72	564.30	87.84	
80	2.50	0.18	50.70	7.89	615.00	95.73	
120	3.00	0.13	14.80	2.30	629.80	98.04	
170	3.50	0.09	2.00	0.31	631.80	98.35	
200	3.75	0.07	0.60	0.09	632.40	98.44	
230	4.00	0.06	0.50	0.08	632.90	98.52	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.45	1.85	1.50	0.93	0.31	0.00	-1.09	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.83	0.56	1.04	-0.83	4.61		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-04 #S4							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.358658		Latitude (Y): 26.376889		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -46.4 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 6.5' - 11.6' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 1002.60	Wash Weight (g): 982.60	Pan Retained (g): 2.80	Sieve Loss (%): 0.06	Fines (%): #200 - 2.53 #230 - 2.33	Organics (%): 0.70	Carbonates (%): 35.20	Shells (%): 0.94
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	2.00	0.20	2.00	0.20	
5/16"	-3.00	8.00	1.00	0.10	3.00	0.30	
3.5	-2.50	5.66	4.10	0.41	7.10	0.71	
4	-2.25	4.76	2.30	0.23	9.40	0.94	
5	-2.00	4.00	1.10	0.11	10.50	1.05	
7	-1.50	2.83	7.80	0.78	18.30	1.83	
10	-1.00	2.00	12.70	1.27	31.00	3.09	
14	-0.50	1.41	24.40	2.43	55.40	5.53	
18	0.00	1.00	45.10	4.50	100.50	10.02	
25	0.50	0.71	64.40	6.42	164.90	16.45	
35	1.00	0.50	105.50	10.52	270.40	26.97	
45	1.50	0.35	160.80	16.04	431.20	43.01	
60	2.00	0.25	189.40	18.89	620.60	61.90	
80	2.50	0.18	192.90	19.24	813.50	81.14	
120	3.00	0.13	148.40	14.80	961.90	95.94	
170	3.50	0.09	9.60	0.96	971.50	96.90	
200	3.75	0.07	5.70	0.57	977.20	97.47	
230	4.00	0.06	2.00	0.20	979.20	97.67	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.97	2.60	2.34	1.69	0.91	0.47	-0.61	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.47	0.36	1.12	-1.1	4.82		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-05 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.360854		Latitude (Y): 26.376901		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -33.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 8.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 876.10	Wash Weight (g): 867.50	Pan Retained (g): 0.80	Sieve Loss (%): 0.01	Fines (%): #200 - 1.11 #230 - 1.08	Organics (%): 0.60	Carbonates (%): 36.30	Shells (%): 2.96
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	15.60	1.78	15.60	1.78	
3.5	-2.50	5.66	8.00	0.91	23.60	2.69	
4	-2.25	4.76	2.30	0.26	25.90	2.96	
5	-2.00	4.00	3.90	0.45	29.80	3.40	
7	-1.50	2.83	13.90	1.59	43.70	4.99	
10	-1.00	2.00	20.00	2.28	63.70	7.27	
14	-0.50	1.41	35.60	4.06	99.30	11.33	
18	0.00	1.00	54.20	6.19	153.50	17.52	
25	0.50	0.71	69.50	7.93	223.00	25.45	
35	1.00	0.50	135.20	15.43	358.20	40.89	
45	1.50	0.35	224.80	25.66	583.00	66.54	
60	2.00	0.25	176.30	20.12	759.30	86.67	
80	2.50	0.18	88.00	10.04	847.30	96.71	
120	3.00	0.13	17.80	2.03	865.10	98.74	
170	3.50	0.09	1.10	0.13	866.20	98.87	
200	3.75	0.07	0.20	0.02	866.40	98.89	
230	4.00	0.06	0.20	0.02	866.60	98.92	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.41	1.93	1.71	1.18	0.47	-0.12	-1.50	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.91	0.53	1.18	-1.37	5.2		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-05 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.360854		Latitude (Y): 26.376901		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -41.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 8.5' - 18.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 929.10	Wash Weight (g): 904.90	Pan Retained (g): 2.20	Sieve Loss (%): 0.06	Fines (%): #200 - 3.12 #230 - 2.91	Organics (%): 0.70	Carbonates (%): 34.00	Shells (%): 0.64
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	3.10	0.33	3.10	0.33	
3.5	-2.50	5.66	1.80	0.19	4.90	0.53	
4	-2.25	4.76	1.00	0.11	5.90	0.64	
5	-2.00	4.00	1.50	0.16	7.40	0.80	
7	-1.50	2.83	5.30	0.57	12.70	1.37	
10	-1.00	2.00	9.20	0.99	21.90	2.36	
14	-0.50	1.41	17.50	1.88	39.40	4.24	
18	0.00	1.00	33.30	3.58	72.70	7.82	
25	0.50	0.71	57.60	6.20	130.30	14.02	
35	1.00	0.50	105.60	11.37	235.90	25.39	
45	1.50	0.35	176.90	19.04	412.80	44.43	
60	2.00	0.25	185.90	20.01	598.70	64.44	
80	2.50	0.18	206.30	22.20	805.00	86.64	
120	3.00	0.13	83.50	8.99	888.50	95.63	
170	3.50	0.09	9.10	0.98	897.60	96.61	
200	3.75	0.07	2.50	0.27	900.10	96.88	
230	4.00	0.06	2.00	0.22	902.10	97.09	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.96	2.44	2.24	1.64	0.98	0.59	-0.39	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.46	0.36	1.01	-1.13	5.32		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-05 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.360854		Latitude (Y): 26.376901		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -51.0 NAVD 88	
USCS: SW-SM		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 18.0' - 18.8' Material Description: Light gray well graded silty sand with few shell			
Dry Weight (g): 772.70	Wash Weight (g): 714.50	Pan Retained (g): 0.00	Sieve Loss (%): 0.00	Fines (%): #200 - 8.18 #230 - 7.53	Organics (%): 1.00	Carbonates (%): 45.50	Shells (%): 6.85
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	3.40	0.44	3.40	0.44	
5/8"	-4.00	16.00	19.30	2.50	22.70	2.94	
7/16"	-3.50	11.31	2.10	0.27	24.80	3.21	
5/16"	-3.00	8.00	13.40	1.73	38.20	4.94	
3.5	-2.50	5.66	11.40	1.48	49.60	6.42	
4	-2.25	4.76	3.30	0.43	52.90	6.85	
5	-2.00	4.00	3.60	0.47	56.50	7.31	
7	-1.50	2.83	7.70	1.00	64.20	8.31	
10	-1.00	2.00	6.40	0.83	70.60	9.14	
14	-0.50	1.41	10.20	1.32	80.80	10.46	
18	0.00	1.00	13.30	1.72	94.10	12.18	
25	0.50	0.71	17.40	2.25	111.50	14.43	
35	1.00	0.50	24.70	3.20	136.20	17.63	
45	1.50	0.35	39.40	5.10	175.60	22.73	
60	2.00	0.25	94.10	12.18	269.70	34.90	
80	2.50	0.18	239.30	30.97	509.00	65.87	
120	3.00	0.13	169.80	21.97	678.80	87.85	
170	3.50	0.09	24.10	3.12	702.90	90.97	
200	3.75	0.07	6.60	0.85	709.50	91.82	
230	4.00	0.06	5.00	0.65	714.50	92.47	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	2.91	2.71	2.24	1.59	0.75	-2.98	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.59	0.33	1.7	-1.97	6.35		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-06 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.364413		Latitude (Y): 26.376725		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -37.4 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 5.7' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 714.10	Wash Weight (g): 705.20	Pan Retained (g): 0.50	Sieve Loss (%): 0.01	Fines (%): #200 - 1.40 #230 - 1.33	Organics (%): 0.60	Carbonates (%): 32.90	Shells (%): 0.25
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	1.30	0.18	1.30	0.18	
3.5	-2.50	5.66	0.30	0.04	1.60	0.22	
4	-2.25	4.76	0.20	0.03	1.80	0.25	
5	-2.00	4.00	0.60	0.08	2.40	0.34	
7	-1.50	2.83	3.20	0.45	5.60	0.78	
10	-1.00	2.00	7.10	0.99	12.70	1.78	
14	-0.50	1.41	10.80	1.51	23.50	3.29	
18	0.00	1.00	17.50	2.45	41.00	5.74	
25	0.50	0.71	26.00	3.64	67.00	9.38	
35	1.00	0.50	52.90	7.41	119.90	16.79	
45	1.50	0.35	131.50	18.41	251.40	35.21	
60	2.00	0.25	225.00	31.51	476.40	66.71	
80	2.50	0.18	181.10	25.36	657.50	92.07	
120	3.00	0.13	42.90	6.01	700.40	98.08	
170	3.50	0.09	3.00	0.42	703.40	98.50	
200	3.75	0.07	0.70	0.10	704.10	98.60	
230	4.00	0.06	0.50	0.07	704.60	98.67	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.74	2.34	2.16	1.73	1.22	0.95	-0.15	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.58	0.33	0.85	-1.54	6.93		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-06 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.364413		Latitude (Y): 26.376725		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -43.1 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.7' - 11.7' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 747.40	Wash Weight (g): 734.80	Pan Retained (g): 1.10	Sieve Loss (%): 0.08	Fines (%): #200 - 2.02 #230 - 1.91	Organics (%): 0.60	Carbonates (%): 31.70	Shells (%): 0.67
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	3.00	0.40	3.00	0.40	
3.5	-2.50	5.66	1.90	0.25	4.90	0.66	
4	-2.25	4.76	0.10	0.01	5.00	0.67	
5	-2.00	4.00	1.10	0.15	6.10	0.82	
7	-1.50	2.83	3.40	0.45	9.50	1.27	
10	-1.00	2.00	6.40	0.86	15.90	2.13	
14	-0.50	1.41	12.30	1.65	28.20	3.77	
18	0.00	1.00	21.60	2.89	49.80	6.66	
25	0.50	0.71	37.90	5.07	87.70	11.73	
35	1.00	0.50	77.90	10.42	165.60	22.16	
45	1.50	0.35	146.20	19.56	311.80	41.72	
60	2.00	0.25	188.70	25.25	500.50	66.97	
80	2.50	0.18	172.50	23.08	673.00	90.05	
120	3.00	0.13	53.80	7.20	726.80	97.24	
170	3.50	0.09	4.30	0.58	731.10	97.82	
200	3.75	0.07	1.20	0.16	732.30	97.98	
230	4.00	0.06	0.80	0.11	733.10	98.09	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.84	2.37	2.17	1.66	1.07	0.70	-0.29	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.49	0.36	0.95	-1.43	6.72		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-06A #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.364431		Latitude (Y): 26.376733		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -46.8 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 10.0' - 12.4' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 913.40	Wash Weight (g): 893.80	Pan Retained (g): 2.90	Sieve Loss (%): 0.00	Fines (%): #200 - 2.75 #230 - 2.46	Organics (%): 0.80	Carbonates (%): 47.80	Shells (%): 0.79
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	2.90	0.32	2.90	0.32	
5/16"	-3.00	8.00	2.40	0.26	5.30	0.58	
3.5	-2.50	5.66	1.60	0.18	6.90	0.76	
4	-2.25	4.76	0.30	0.03	7.20	0.79	
5	-2.00	4.00	1.10	0.12	8.30	0.91	
7	-1.50	2.83	7.80	0.85	16.10	1.76	
10	-1.00	2.00	12.60	1.38	28.70	3.14	
14	-0.50	1.41	24.60	2.69	53.30	5.84	
18	0.00	1.00	45.50	4.98	98.80	10.82	
25	0.50	0.71	74.40	8.15	173.20	18.96	
35	1.00	0.50	116.80	12.79	290.00	31.75	
45	1.50	0.35	160.80	17.60	450.80	49.35	
60	2.00	0.25	153.80	16.84	604.60	66.19	
80	2.50	0.18	189.80	20.78	794.40	86.97	
120	3.00	0.13	83.10	9.10	877.50	96.07	
170	3.50	0.09	8.00	0.88	885.50	96.95	
200	3.75	0.07	2.80	0.31	888.30	97.25	
230	4.00	0.06	2.60	0.28	890.90	97.54	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.94	2.43	2.21	1.52	0.74	0.32	-0.66	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.34	0.40	1.11	-1.03	4.93		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-07 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.362878		Latitude (Y): 26.378815		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -35.7 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 2.8' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 750.90	Wash Weight (g): 743.80	Pan Retained (g): 0.30	Sieve Loss (%): 0.04	Fines (%): #200 - 1.05 #230 - 1.03	Organics (%): 0.50	Carbonates (%): 27.10	Shells (%): 1.81
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	3.30	0.44	3.30	0.44	
5/16"	-3.00	8.00	2.70	0.36	6.00	0.80	
3.5	-2.50	5.66	5.20	0.69	11.20	1.49	
4	-2.25	4.76	2.40	0.32	13.60	1.81	
5	-2.00	4.00	2.80	0.37	16.40	2.18	
7	-1.50	2.83	10.10	1.35	26.50	3.53	
10	-1.00	2.00	14.30	1.90	40.80	5.43	
14	-0.50	1.41	25.10	3.34	65.90	8.78	
18	0.00	1.00	39.50	5.26	105.40	14.04	
25	0.50	0.71	60.90	8.11	166.30	22.15	
35	1.00	0.50	117.70	15.67	284.00	37.82	
45	1.50	0.35	198.50	26.43	482.50	64.26	
60	2.00	0.25	166.90	22.23	649.40	86.48	
80	2.50	0.18	79.10	10.53	728.50	97.02	
120	3.00	0.13	13.30	1.77	741.80	98.79	
170	3.50	0.09	1.00	0.13	742.80	98.92	
200	3.75	0.07	0.20	0.03	743.00	98.95	
230	4.00	0.06	0.20	0.03	743.20	98.97	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.40	1.94	1.74	1.23	0.59	0.12	-1.11	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.01	0.50	1.07	-1.45	5.99		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-07 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.362878		Latitude (Y): 26.378815		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -38.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 2.8' - 8.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 530.30	Wash Weight (g): 524.70	Pan Retained (g): 0.40	Sieve Loss (%): 0.08	Fines (%): #200 - 1.26 #230 - 1.21	Organics (%): 0.60	Carbonates (%): 28.30	Shells (%): 1.36
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.10	0.21	1.10	0.21	
5/16"	-3.00	8.00	3.60	0.68	4.70	0.89	
3.5	-2.50	5.66	2.40	0.45	7.10	1.34	
4	-2.25	4.76	0.10	0.02	7.20	1.36	
5	-2.00	4.00	1.10	0.21	8.30	1.57	
7	-1.50	2.83	3.30	0.62	11.60	2.19	
10	-1.00	2.00	5.60	1.06	17.20	3.24	
14	-0.50	1.41	8.60	1.62	25.80	4.87	
18	0.00	1.00	13.60	2.56	39.40	7.43	
25	0.50	0.71	21.30	4.02	60.70	11.45	
35	1.00	0.50	46.30	8.73	107.00	20.18	
45	1.50	0.35	118.60	22.36	225.60	42.54	
60	2.00	0.25	166.80	31.45	392.40	74.00	
80	2.50	0.18	105.10	19.82	497.50	93.81	
120	3.00	0.13	23.50	4.43	521.00	98.25	
170	3.50	0.09	2.10	0.40	523.10	98.64	
200	3.75	0.07	0.50	0.09	523.60	98.74	
230	4.00	0.06	0.30	0.06	523.90	98.79	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.63	2.25	2.03	1.62	1.11	0.76	-0.47	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.42	0.37	0.99	-1.99	9.05		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-07 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.362878		Latitude (Y): 26.378815		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -43.7 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 8.0' - 17.4' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 743.40	Wash Weight (g): 730.90	Pan Retained (g): 1.70	Sieve Loss (%): 0.00	Fines (%): #200 - 2.10 #230 - 1.91	Organics (%): 0.60	Carbonates (%): 29.40	Shells (%): 1.45
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	5.00	0.67	5.00	0.67	
5/16"	-3.00	8.00	3.50	0.47	8.50	1.14	
3.5	-2.50	5.66	2.00	0.27	10.50	1.41	
4	-2.25	4.76	0.30	0.04	10.80	1.45	
5	-2.00	4.00	2.60	0.35	13.40	1.80	
7	-1.50	2.83	6.50	0.87	19.90	2.68	
10	-1.00	2.00	9.60	1.29	29.50	3.97	
14	-0.50	1.41	14.20	1.91	43.70	5.88	
18	0.00	1.00	21.70	2.92	65.40	8.80	
25	0.50	0.71	37.80	5.08	103.20	13.88	
35	1.00	0.50	73.00	9.82	176.20	23.70	
45	1.50	0.35	138.30	18.60	314.50	42.31	
60	2.00	0.25	198.50	26.70	513.00	69.01	
80	2.50	0.18	164.50	22.13	677.50	91.14	
120	3.00	0.13	43.50	5.85	721.00	96.99	
170	3.50	0.09	5.00	0.67	726.00	97.66	
200	3.75	0.07	1.80	0.24	727.80	97.90	
230	4.00	0.06	1.40	0.19	729.20	98.09	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.83	2.34	2.14	1.64	1.03	0.61	-0.73	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.4	0.38	1.1	-1.79	7.83		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-08 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.365185		Latitude (Y): 26.378808		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -32.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 2.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 1016.70	Wash Weight (g): 1007.60	Pan Retained (g): 0.80	Sieve Loss (%): 0.04	Fines (%): #200 - 1.03 #230 - 1.01	Organics (%): 0.70	Carbonates (%): 32.90	Shells (%): 1.13
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.20	0.12	1.20	0.12	
5/16"	-3.00	8.00	5.60	0.55	6.80	0.67	
3.5	-2.50	5.66	3.10	0.30	9.90	0.97	
4	-2.25	4.76	1.60	0.16	11.50	1.13	
5	-2.00	4.00	4.20	0.41	15.70	1.54	
7	-1.50	2.83	11.80	1.16	27.50	2.70	
10	-1.00	2.00	19.40	1.91	46.90	4.61	
14	-0.50	1.41	34.30	3.37	81.20	7.99	
18	0.00	1.00	54.40	5.35	135.60	13.34	
25	0.50	0.71	84.00	8.26	219.60	21.60	
35	1.00	0.50	150.10	14.76	369.70	36.36	
45	1.50	0.35	249.10	24.50	618.80	60.86	
60	2.00	0.25	242.10	23.81	860.90	84.68	
80	2.50	0.18	124.70	12.27	985.60	96.94	
120	3.00	0.13	18.90	1.86	1004.50	98.80	
170	3.50	0.09	1.30	0.13	1005.80	98.93	
200	3.75	0.07	0.40	0.04	1006.20	98.97	
230	4.00	0.06	0.20	0.02	1006.40	98.99	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.42	1.99	1.80	1.28	0.62	0.16	-0.94	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.07	0.48	1.03	-1.32	5.51		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-08 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.365185		Latitude (Y): 26.378808		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -35.0 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 2.5' - 12.3' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 1003.40	Wash Weight (g): 994.70	Pan Retained (g): 0.00	Sieve Loss (%): 0.00	Fines (%): #200 - 0.92 #230 - 0.87	Organics (%): 0.60	Carbonates (%): 23.70	Shells (%): 0.59
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	2.10	0.21	2.10	0.21	
5/16"	-3.00	8.00	2.20	0.22	4.30	0.43	
3.5	-2.50	5.66	1.30	0.13	5.60	0.56	
4	-2.25	4.76	0.30	0.03	5.90	0.59	
5	-2.00	4.00	1.10	0.11	7.00	0.70	
7	-1.50	2.83	3.50	0.35	10.50	1.05	
10	-1.00	2.00	6.00	0.60	16.50	1.64	
14	-0.50	1.41	10.10	1.01	26.60	2.65	
18	0.00	1.00	17.10	1.70	43.70	4.36	
25	0.50	0.71	29.90	2.98	73.60	7.34	
35	1.00	0.50	65.40	6.52	139.00	13.85	
45	1.50	0.35	153.60	15.31	292.60	29.16	
60	2.00	0.25	312.40	31.13	605.00	60.29	
80	2.50	0.18	315.50	31.44	920.50	91.74	
120	3.00	0.13	70.00	6.98	990.50	98.71	
170	3.50	0.09	3.10	0.31	993.60	99.02	
200	3.75	0.07	0.60	0.06	994.20	99.08	
230	4.00	0.06	0.50	0.05	994.70	99.13	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.73	2.38	2.23	1.83	1.36	1.07	0.11	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.67	0.31	0.85	-2.16	11.05		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-08 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.365185		Latitude (Y): 26.378808		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -45.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 12.5' - 17.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 529.40	Wash Weight (g): 520.00	Pan Retained (g): 0.20	Sieve Loss (%): 0.00	Fines (%): #200 - 1.95 #230 - 1.81	Organics (%): 0.70	Carbonates (%): 32.87	Shells (%): 0.72
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	2.60	0.49	2.60	0.49	
3.5	-2.50	5.66	0.80	0.15	3.40	0.64	
4	-2.25	4.76	0.40	0.08	3.80	0.72	
5	-2.00	4.00	0.60	0.11	4.40	0.83	
7	-1.50	2.83	2.40	0.45	6.80	1.28	
10	-1.00	2.00	5.70	1.08	12.50	2.36	
14	-0.50	1.41	8.60	1.62	21.10	3.99	
18	0.00	1.00	14.50	2.74	35.60	6.72	
25	0.50	0.71	28.70	5.42	64.30	12.15	
35	1.00	0.50	60.60	11.45	124.90	23.59	
45	1.50	0.35	94.40	17.83	219.30	41.42	
60	2.00	0.25	112.60	21.27	331.90	62.69	
80	2.50	0.18	134.20	25.35	466.10	88.04	
120	3.00	0.13	48.60	9.18	514.70	97.22	
170	3.50	0.09	3.50	0.66	518.20	97.88	
200	3.75	0.07	0.90	0.17	519.10	98.05	
230	4.00	0.06	0.70	0.13	519.80	98.19	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.88	2.42	2.24	1.70	1.04	0.67	-0.32	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.51	0.35	0.99	-1.37	6.28		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-09 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.368207		Latitude (Y): 26.379768		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -32.4 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 1.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 891.80	Wash Weight (g): 884.30	Pan Retained (g): 1.20	Sieve Loss (%): 0.02	Fines (%): #200 - 1.02 #230 - 1.00	Organics (%): 0.70	Carbonates (%): 31.70	Shells (%): 1.10
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.70	0.19	1.70	0.19	
5/16"	-3.00	8.00	0.90	0.10	2.60	0.29	
3.5	-2.50	5.66	5.90	0.66	8.50	0.95	
4	-2.25	4.76	1.30	0.15	9.80	1.10	
5	-2.00	4.00	4.20	0.47	14.00	1.57	
7	-1.50	2.83	12.90	1.45	26.90	3.02	
10	-1.00	2.00	21.70	2.43	48.60	5.45	
14	-0.50	1.41	35.00	3.92	83.60	9.37	
18	0.00	1.00	50.20	5.63	133.80	15.00	
25	0.50	0.71	86.50	9.70	220.30	24.70	
35	1.00	0.50	165.90	18.60	386.20	43.31	
45	1.50	0.35	220.30	24.70	606.50	68.01	
60	2.00	0.25	173.30	19.43	779.80	87.44	
80	2.50	0.18	87.70	9.83	867.50	97.28	
120	3.00	0.13	13.90	1.56	881.40	98.83	
170	3.50	0.09	1.00	0.11	882.40	98.95	
200	3.75	0.07	0.30	0.03	882.70	98.98	
230	4.00	0.06	0.20	0.02	882.90	99.00	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.38	1.91	1.68	1.14	0.51	0.05	-1.09	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.95	0.52	1.03	-1.13	4.86		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-09 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.368207		Latitude (Y): 26.379768		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -33.9 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 1.5' - 3.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 904.80	Wash Weight (g): 894.60	Pan Retained (g): 0.20	Sieve Loss (%): 0.00	Fines (%): #200 - 1.17 #230 - 1.15	Organics (%): 0.60	Carbonates (%): 28.30	Shells (%): 0.59
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	1.90	0.21	1.90	0.21	
3.5	-2.50	5.66	2.30	0.25	4.20	0.46	
4	-2.25	4.76	1.10	0.12	5.30	0.59	
5	-2.00	4.00	1.40	0.15	6.70	0.74	
7	-1.50	2.83	5.50	0.61	12.20	1.35	
10	-1.00	2.00	8.90	0.98	21.10	2.33	
14	-0.50	1.41	15.50	1.71	36.60	4.05	
18	0.00	1.00	27.10	3.00	63.70	7.04	
25	0.50	0.71	52.40	5.79	116.10	12.83	
35	1.00	0.50	117.30	12.96	233.40	25.80	
45	1.50	0.35	209.70	23.18	443.10	48.97	
60	2.00	0.25	247.20	27.32	690.30	76.29	
80	2.50	0.18	171.50	18.95	861.80	95.25	
120	3.00	0.13	30.40	3.36	892.20	98.61	
170	3.50	0.09	1.60	0.18	893.80	98.78	
200	3.75	0.07	0.40	0.04	894.20	98.83	
230	4.00	0.06	0.20	0.02	894.40	98.85	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.49	2.20	1.98	1.52	0.97	0.62	-0.34	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.36	0.39	0.9	-1.41	6.46		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-09 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.368207		Latitude (Y): 26.379768		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -35.4 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 3.0' - 10.5' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 1045.70	Wash Weight (g): 1033.80	Pan Retained (g): 0.20	Sieve Loss (%): 0.00	Fines (%): #200 - 1.24 #230 - 1.16	Organics (%): 0.60	Carbonates (%): 36.30	Shells (%): 0.25
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.90	0.09	0.90	0.09	
5/16"	-3.00	8.00	0.90	0.09	1.80	0.17	
3.5	-2.50	5.66	0.70	0.07	2.50	0.24	
4	-2.25	4.76	0.10	0.01	2.60	0.25	
5	-2.00	4.00	0.40	0.04	3.00	0.29	
7	-1.50	2.83	3.20	0.31	6.20	0.59	
10	-1.00	2.00	6.70	0.64	12.90	1.23	
14	-0.50	1.41	14.00	1.34	26.90	2.57	
18	0.00	1.00	24.60	2.35	51.50	4.92	
25	0.50	0.71	46.50	4.45	98.00	9.37	
35	1.00	0.50	93.40	8.93	191.40	18.30	
45	1.50	0.35	172.50	16.50	363.90	34.80	
60	2.00	0.25	290.20	27.75	654.10	62.55	
80	2.50	0.18	308.00	29.45	962.10	92.01	
120	3.00	0.13	65.00	6.22	1027.10	98.22	
170	3.50	0.09	4.50	0.43	1031.60	98.65	
200	3.75	0.07	1.10	0.11	1032.70	98.76	
230	4.00	0.06	0.90	0.09	1033.60	98.84	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.74	2.36	2.21	1.77	1.20	0.87	0.01	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.61	0.33	0.84	-1.45	6.89		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-09 #S4							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.368207		Latitude (Y): 26.379768		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -42.9 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 10.5' - 18.0' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 988.60	Wash Weight (g): 975.30	Pan Retained (g): 1.00	Sieve Loss (%): 0.00	Fines (%): #200 - 1.58 #230 - 1.45	Organics (%): 0.30	Carbonates (%): 27.10	Shells (%): 0.35
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	1.20	0.12	1.20	0.12	
3.5	-2.50	5.66	1.60	0.16	2.80	0.28	
4	-2.25	4.76	0.70	0.07	3.50	0.35	
5	-2.00	4.00	1.20	0.12	4.70	0.48	
7	-1.50	2.83	4.20	0.42	8.90	0.90	
10	-1.00	2.00	6.30	0.64	15.20	1.54	
14	-0.50	1.41	9.50	0.96	24.70	2.50	
18	0.00	1.00	13.50	1.37	38.20	3.86	
25	0.50	0.71	21.20	2.14	59.40	6.01	
35	1.00	0.50	47.00	4.75	106.40	10.76	
45	1.50	0.35	116.90	11.82	223.30	22.59	
60	2.00	0.25	266.80	26.99	490.10	49.58	
80	2.50	0.18	385.60	39.00	875.70	88.58	
120	3.00	0.13	88.70	8.97	964.40	97.55	
170	3.50	0.09	6.90	0.70	971.30	98.25	
200	3.75	0.07	1.70	0.17	973.00	98.42	
230	4.00	0.06	1.30	0.13	974.30	98.55	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.86	2.44	2.33	2.01	1.54	1.22	0.27	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.81	0.29	0.81	-2.05	9.77		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-10 #S1							
Analysis Date: 01-03-22							
Analyzed By: KAT							
Longitude (X): -82.367116		Latitude (Y): 26.382695		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -37.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 0.6' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 567.80	Wash Weight (g): 563.00	Pan Retained (g): 0.10	Sieve Loss (%): 0.00	Fines (%): #200 - 0.92 #230 - 0.86	Organics (%): 0.60	Carbonates (%): 31.60	Shells (%): 0.21
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.20	0.04	0.20	0.04	
4	-2.25	4.76	1.00	0.18	1.20	0.21	
5	-2.00	4.00	1.50	0.26	2.70	0.48	
7	-1.50	2.83	4.70	0.83	7.40	1.30	
10	-1.00	2.00	8.70	1.53	16.10	2.84	
14	-0.50	1.41	14.80	2.61	30.90	5.44	
18	0.00	1.00	25.10	4.42	56.00	9.86	
25	0.50	0.71	48.30	8.51	104.30	18.37	
35	1.00	0.50	91.90	16.19	196.20	34.55	
45	1.50	0.35	121.50	21.40	317.70	55.95	
60	2.00	0.25	129.20	22.75	446.90	78.71	
80	2.50	0.18	96.30	16.96	543.20	95.67	
120	3.00	0.13	18.00	3.17	561.20	98.84	
170	3.50	0.09	1.10	0.19	562.30	99.03	
200	3.75	0.07	0.30	0.05	562.60	99.08	
230	4.00	0.06	0.30	0.05	562.90	99.14	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.48	2.16	1.92	1.36	0.70	0.36	-0.58	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.22	0.43	0.94	-0.89	4.03		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-10 #S2							
Analysis Date: 12-30-21							
Analyzed By: KAT							
Longitude (X): -82.367116		Latitude (Y): 26.382695		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -37.6 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.6' - 7.7' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 509.70	Wash Weight (g): 504.30	Pan Retained (g): 0.70	Sieve Loss (%): 0.00	Fines (%): #200 - 1.28 #230 - 1.20	Organics (%): 0.60	Carbonates (%): 35.40	Shells (%): 0.82
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.70	0.33	1.70	0.33	
5/16"	-3.00	8.00	1.60	0.31	3.30	0.65	
3.5	-2.50	5.66	0.70	0.14	4.00	0.78	
4	-2.25	4.76	0.20	0.04	4.20	0.82	
5	-2.00	4.00	0.90	0.18	5.10	1.00	
7	-1.50	2.83	3.20	0.63	8.30	1.63	
10	-1.00	2.00	5.90	1.16	14.20	2.79	
14	-0.50	1.41	9.40	1.84	23.60	4.63	
18	0.00	1.00	12.90	2.53	36.50	7.16	
25	0.50	0.71	17.90	3.51	54.40	10.67	
35	1.00	0.50	31.00	6.08	85.40	16.75	
45	1.50	0.35	61.90	12.14	147.30	28.90	
60	2.00	0.25	119.40	23.43	266.70	52.32	
80	2.50	0.18	179.20	35.16	445.90	87.48	
120	3.00	0.13	52.80	10.36	498.70	97.84	
170	3.50	0.09	3.50	0.69	502.20	98.53	
200	3.75	0.07	1.00	0.20	503.20	98.72	
230	4.00	0.06	0.40	0.08	503.60	98.80	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.86	2.45	2.32	1.95	1.34	0.94	-0.43	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.67	0.31	1.02	-1.96	8.41		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-10 #S3							
Analysis Date: 12-30-21							
Analyzed By: KAT							
Longitude (X): -82.367116		Latitude (Y): 26.382695		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -44.7 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 7.7' - 14.8' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 540.10	Wash Weight (g): 526.10	Pan Retained (g): 0.90	Sieve Loss (%): 0.04	Fines (%): #200 - 3.09 #230 - 2.80	Organics (%): 0.70	Carbonates (%): 28.80	Shells (%): 0.30
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.80	0.15	0.80	0.15	
3.5	-2.50	5.66	0.70	0.13	1.50	0.28	
4	-2.25	4.76	0.10	0.02	1.60	0.30	
5	-2.00	4.00	0.70	0.13	2.30	0.43	
7	-1.50	2.83	2.00	0.37	4.30	0.80	
10	-1.00	2.00	3.00	0.56	7.30	1.35	
14	-0.50	1.41	4.10	0.76	11.40	2.11	
18	0.00	1.00	5.30	0.98	16.70	3.09	
25	0.50	0.71	6.70	1.24	23.40	4.33	
35	1.00	0.50	11.90	2.20	35.30	6.54	
45	1.50	0.35	35.40	6.55	70.70	13.09	
60	2.00	0.25	103.60	19.18	174.30	32.27	
80	2.50	0.18	221.90	41.08	396.20	73.36	
120	3.00	0.13	114.70	21.24	510.90	94.59	
170	3.50	0.09	10.40	1.93	521.30	96.52	
200	3.75	0.07	2.10	0.39	523.40	96.91	
230	4.00	0.06	1.60	0.30	525.00	97.20	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.11	2.75	2.54	2.22	1.81	1.58	0.65	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.06	0.24	0.8	-2.37	12.11		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-11 #S1							
Analysis Date: 01-03-22							
Analyzed By: KAT							
Longitude (X):		Latitude (Y):		Coordinate System:		Elevation (ft):	
-82.370432		26.379752		Geographic (Latitude/Longitude)		-33.4 NAVD 88	
USCS:		Munsell:		Comments:			
SW		Wet - 10YR-7/1		Sample Interval: 0.0' - 7.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
585.70	582.20	0.30	0.02	#200 - 0.70 #230 - 0.67	0.50	26.80	0.32
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.70	0.12	0.70	0.12	
5/16"	-3.00	8.00	0.70	0.12	1.40	0.24	
3.5	-2.50	5.66	0.40	0.07	1.80	0.31	
4	-2.25	4.76	0.10	0.02	1.90	0.32	
5	-2.00	4.00	0.40	0.07	2.30	0.39	
7	-1.50	2.83	2.10	0.36	4.40	0.75	
10	-1.00	2.00	5.40	0.92	9.80	1.67	
14	-0.50	1.41	11.10	1.90	20.90	3.57	
18	0.00	1.00	18.70	3.19	39.60	6.76	
25	0.50	0.71	32.00	5.46	71.60	12.22	
35	1.00	0.50	66.90	11.42	138.50	23.65	
45	1.50	0.35	137.70	23.51	276.20	47.16	
60	2.00	0.25	164.40	28.07	440.60	75.23	
80	2.50	0.18	118.10	20.16	558.70	95.39	
120	3.00	0.13	21.70	3.70	580.40	99.10	
170	3.50	0.09	1.00	0.17	581.40	99.27	
200	3.75	0.07	0.20	0.03	581.60	99.30	
230	4.00	0.06	0.20	0.03	581.80	99.33	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.49	2.22	2.00	1.55	1.03	0.67	-0.28	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.41	0.38	0.86	-1.36	6.56		

Granularmetric Report				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Depths and elevations based on measured values							
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-11 #S2							
Analysis Date: 01-03-22							
Analyzed By: KAT							
Longitude (X):		Latitude (Y):		Coordinate System:		Elevation (ft):	
-82.370432		26.379752		Geographic (Latitude/Longitude)		-40.4 NAVD 88	
USCS:		Munsell:		Comments:			
SW		Wet - 10YR-7/1		Sample Interval: 7.0' - 14.1' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.21 #230 - 1.14	Organics (%):	Carbonates (%):	Shells (%):
868.40	858.90	0.20	0.02		0.50	30.00	0.44
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.20	0.14	1.20	0.14	
5/16"	-3.00	8.00	1.50	0.17	2.70	0.31	
3.5	-2.50	5.66	1.00	0.12	3.70	0.43	
4	-2.25	4.76	0.10	0.01	3.80	0.44	
5	-2.00	4.00	0.80	0.09	4.60	0.53	
7	-1.50	2.83	3.70	0.43	8.30	0.96	
10	-1.00	2.00	7.50	0.86	15.80	1.82	
14	-0.50	1.41	13.50	1.55	29.30	3.37	
18	0.00	1.00	23.90	2.75	53.20	6.13	
25	0.50	0.71	43.60	5.02	96.80	11.15	
35	1.00	0.50	97.00	11.17	193.80	22.32	
45	1.50	0.35	182.60	21.03	376.40	43.34	
60	2.00	0.25	242.60	27.94	619.00	71.28	
80	2.50	0.18	197.10	22.70	816.10	93.98	
120	3.00	0.13	38.20	4.40	854.30	98.38	
170	3.50	0.09	2.80	0.32	857.10	98.70	
200	3.75	0.07	0.80	0.09	857.90	98.79	
230	4.00	0.06	0.60	0.07	858.50	98.86	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.62	2.28	2.08	1.62	1.06	0.72	-0.20	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.46	0.36	0.88	-1.49	7.27		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-11A #S3							
Analysis Date: 12-30-21							
Analyzed By: KAT							
Longitude (X): -82.370407		Latitude (Y): 26.379764		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -48.2 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 13.6' - 18.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 544.10	Wash Weight (g): 534.30	Pan Retained (g): 0.10	Sieve Loss (%): 0.00	Fines (%): #200 - 2.02 #230 - 1.82	Organics (%): 0.70	Carbonates (%): 36.10	Shells (%): 0.68
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	2.60	0.48	2.60	0.48	
5/16"	-3.00	8.00	0.50	0.09	3.10	0.57	
3.5	-2.50	5.66	0.30	0.06	3.40	0.62	
4	-2.25	4.76	0.30	0.06	3.70	0.68	
5	-2.00	4.00	0.90	0.17	4.60	0.85	
7	-1.50	2.83	1.90	0.35	6.50	1.19	
10	-1.00	2.00	4.00	0.74	10.50	1.93	
14	-0.50	1.41	6.20	1.14	16.70	3.07	
18	0.00	1.00	9.10	1.67	25.80	4.74	
25	0.50	0.71	2.60	0.48	28.40	5.22	
35	1.00	0.50	35.60	6.54	64.00	11.76	
45	1.50	0.35	59.90	11.01	123.90	22.77	
60	2.00	0.25	131.60	24.19	255.50	46.96	
80	2.50	0.18	204.00	37.49	459.50	84.45	
120	3.00	0.13	66.10	12.15	525.60	96.60	
170	3.50	0.09	6.10	1.12	531.70	97.72	
200	3.75	0.07	1.40	0.26	533.10	97.98	
230	4.00	0.06	1.10	0.20	534.20	98.18	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.93	2.49	2.37	2.04	1.55	1.19	0.27	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.82	0.28	0.91	-2.39	12.32		

Granularmetric Report				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Depths and elevations based on measured values							
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-12 #S1							
Analysis Date: 01-03-22							
Analyzed By: KAT							
Longitude (X):		Latitude (Y):		Coordinate System:		Elevation (ft):	
-82.371466		26.380745		Geographic (Latitude/Longitude)		-34.3 NAVD 88	
USCS:		Munsell:		Comments:			
SP		Wet - 10YR-7/2		Sample Interval: 0.0' - 2.0' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
739.40	733.50	0.40	0.04	#200 - 0.92 #230 - 0.89	0.50	23.50	0.07
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.50	0.07	0.50	0.07	
4	-2.25	4.76	0.00	0.00	0.50	0.07	
5	-2.00	4.00	0.90	0.12	1.40	0.19	
7	-1.50	2.83	2.20	0.30	3.60	0.49	
10	-1.00	2.00	5.20	0.70	8.80	1.19	
14	-0.50	1.41	10.60	1.43	19.40	2.62	
18	0.00	1.00	18.00	2.43	37.40	5.06	
25	0.50	0.71	34.80	4.71	72.20	9.76	
35	1.00	0.50	78.20	10.58	150.40	20.34	
45	1.50	0.35	173.80	23.51	324.20	43.85	
60	2.00	0.25	226.20	30.59	550.40	74.44	
80	2.50	0.18	155.00	20.96	705.40	95.40	
120	3.00	0.13	25.80	3.49	731.20	98.89	
170	3.50	0.09	1.20	0.16	732.40	99.05	
200	3.75	0.07	0.20	0.03	732.60	99.08	
230	4.00	0.06	0.20	0.03	732.80	99.11	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.49	2.23	2.01	1.60	1.10	0.79	-0.01	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.47	0.36	0.78	-1.2	5.47		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-12 #S2							
Analysis Date: 01-04-22							
Analyzed By: KAT							
Longitude (X): -82.371466		Latitude (Y): 26.380745		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -36.3 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 2.0' - 8.5' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 650.50	Wash Weight (g): 645.50	Pan Retained (g): 0.50	Sieve Loss (%): 0.15	Fines (%): #200 - 1.05 #230 - 1.00	Organics (%): 0.50	Carbonates (%): 30.80	Shells (%): 0.22
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.10	0.02	0.10	0.02	
3.5	-2.50	5.66	1.20	0.18	1.30	0.20	
4	-2.25	4.76	0.10	0.02	1.40	0.22	
5	-2.00	4.00	0.70	0.11	2.10	0.32	
7	-1.50	2.83	3.50	0.54	5.60	0.86	
10	-1.00	2.00	6.20	0.95	11.80	1.81	
14	-0.50	1.41	10.60	1.63	22.40	3.44	
18	0.00	1.00	17.70	2.72	40.10	6.16	
25	0.50	0.71	30.50	4.69	70.60	10.85	
35	1.00	0.50	66.80	10.27	137.40	21.12	
45	1.50	0.35	147.20	22.63	284.60	43.75	
60	2.00	0.25	193.00	29.67	477.60	73.42	
80	2.50	0.18	137.90	21.20	615.50	94.62	
120	3.00	0.13	26.10	4.01	641.60	98.63	
170	3.50	0.09	1.70	0.26	643.30	98.89	
200	3.75	0.07	0.40	0.06	643.70	98.95	
230	4.00	0.06	0.30	0.05	644.00	99.00	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.55	2.25	2.04	1.61	1.09	0.75	-0.21	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.46	0.36	0.84	-1.31	5.86		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-12 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X):		Latitude (Y):		Coordinate System:		Elevation (ft):	
-82.371466		26.380745		Geographic (Latitude/Longitude)		-42.8 NAVD 88	
USCS:		Munsell:		Comments:			
SP		Wet - 10YR-7/1		Sample Interval: 8.5' - 15.0' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
809.10	800.00	0.30	0.46	#200 - 1.83 #230 - 1.62	0.60	27.30	0.09
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.46	0.06	0.46	0.06	
4	-2.25	4.76	0.25	0.03	0.71	0.09	
5	-2.00	4.00	0.48	0.06	1.19	0.15	
7	-1.50	2.83	1.69	0.21	2.88	0.36	
10	-1.00	2.00	4.21	0.52	7.09	0.88	
14	-0.50	1.41	7.00	0.87	14.09	1.74	
18	0.00	1.00	12.49	1.54	26.58	3.29	
25	0.50	0.71	23.46	2.90	50.04	6.18	
35	1.00	0.50	57.33	7.09	107.37	13.27	
45	1.50	0.35	132.43	16.37	239.80	29.64	
60	2.00	0.25	223.30	27.60	463.10	57.24	
80	2.50	0.18	254.20	31.42	717.30	88.65	
120	3.00	0.13	67.85	8.39	785.15	97.04	
170	3.50	0.09	7.00	0.87	792.15	97.91	
200	3.75	0.07	2.15	0.27	794.30	98.17	
230	4.00	0.06	1.70	0.21	796.00	98.38	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.88	2.43	2.28	1.87	1.36	1.08	0.30	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.74	0.30	0.78	-1.24	6.17		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-12A #S4							
Analysis Date: 12-30-21							
Analyzed By: KAT							
Longitude (X): -82.371454		Latitude (Y): 26.380738		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -46.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 12.2' - 20.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 637.00	Wash Weight (g): 621.10	Pan Retained (g): 2.80	Sieve Loss (%): 0.03	Fines (%): #200 - 3.45 #230 - 2.97	Organics (%): 0.80	Carbonates (%): 40.30	Shells (%): 0.75
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.30	0.20	1.30	0.20	
5/16"	-3.00	8.00	1.20	0.19	2.50	0.39	
3.5	-2.50	5.66	2.20	0.35	4.70	0.74	
4	-2.25	4.76	0.10	0.02	4.80	0.75	
5	-2.00	4.00	0.70	0.11	5.50	0.86	
7	-1.50	2.83	3.50	0.55	9.00	1.41	
10	-1.00	2.00	5.60	0.88	14.60	2.29	
14	-0.50	1.41	8.30	1.30	22.90	3.59	
18	0.00	1.00	10.80	1.70	33.70	5.29	
25	0.50	0.71	13.10	2.06	46.80	7.35	
35	1.00	0.50	21.10	3.31	67.90	10.66	
45	1.50	0.35	39.00	6.12	106.90	16.78	
60	2.00	0.25	101.70	15.97	208.60	32.75	
80	2.50	0.18	259.50	40.74	468.10	73.49	
120	3.00	0.13	128.60	20.19	596.70	93.67	
170	3.50	0.09	14.50	2.28	611.20	95.95	
200	3.75	0.07	3.80	0.60	615.00	96.55	
230	4.00	0.06	3.10	0.49	618.10	97.03	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.29	2.76	2.54	2.21	1.76	1.44	-0.09	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.97	0.26	0.98	-2.27	10.23		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-13 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.369305		Latitude (Y): 26.382685		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -34.1 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 0.4' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 604.30	Wash Weight (g): 597.90	Pan Retained (g): 0.20	Sieve Loss (%): 0.08	Fines (%): #200 - 1.19 #230 - 1.17	Organics (%): 0.50	Carbonates (%): 32.90	Shells (%): 1.75
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	2.70	0.45	2.70	0.45	
3.5	-2.50	5.66	6.30	1.04	9.00	1.49	
4	-2.25	4.76	1.60	0.26	10.60	1.75	
5	-2.00	4.00	5.00	0.83	15.60	2.58	
7	-1.50	2.83	9.60	1.59	25.20	4.17	
10	-1.00	2.00	13.50	2.23	38.70	6.40	
14	-0.50	1.41	20.10	3.33	58.80	9.73	
18	0.00	1.00	35.40	5.86	94.20	15.59	
25	0.50	0.71	67.60	11.19	161.80	26.77	
35	1.00	0.50	126.70	20.97	288.50	47.74	
45	1.50	0.35	149.40	24.72	437.90	72.46	
60	2.00	0.25	100.70	16.66	538.60	89.13	
80	2.50	0.18	49.20	8.14	587.80	97.27	
120	3.00	0.13	8.10	1.34	595.90	98.61	
170	3.50	0.09	0.80	0.13	596.70	98.74	
200	3.75	0.07	0.40	0.07	597.10	98.81	
230	4.00	0.06	0.10	0.02	597.20	98.83	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.36	1.85	1.58	1.05	0.42	0.02	-1.31	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.86	0.55	1.06	-1.16	4.95		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-13 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.369305		Latitude (Y): 26.382685		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -34.5 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.4' - 5.5' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 605.40	Wash Weight (g): 598.90	Pan Retained (g): 0.30	Sieve Loss (%): 0.00	Fines (%): #200 - 1.17 #230 - 1.12	Organics (%): 0.50	Carbonates (%): 23.70	Shells (%): 0.13
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.50	0.08	0.50	0.08	
4	-2.25	4.76	0.30	0.05	0.80	0.13	
5	-2.00	4.00	0.70	0.12	1.50	0.25	
7	-1.50	2.83	2.80	0.46	4.30	0.71	
10	-1.00	2.00	5.10	0.84	9.40	1.55	
14	-0.50	1.41	9.50	1.57	18.90	3.12	
18	0.00	1.00	15.80	2.61	34.70	5.73	
25	0.50	0.71	30.00	4.96	64.70	10.69	
35	1.00	0.50	71.90	11.88	136.60	22.56	
45	1.50	0.35	131.70	21.75	268.30	44.32	
60	2.00	0.25	170.70	28.20	439.00	72.51	
80	2.50	0.18	131.60	21.74	570.60	94.25	
120	3.00	0.13	25.40	4.20	596.00	98.45	
170	3.50	0.09	1.80	0.30	597.80	98.74	
200	3.75	0.07	0.50	0.08	598.30	98.83	
230	4.00	0.06	0.30	0.05	598.60	98.88	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.59	2.26	2.06	1.60	1.06	0.72	-0.14	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.46	0.36	0.83	-1.15	5.25		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-13 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.369305		Latitude (Y): 26.382685		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -39.6 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.5' - 10.3' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 1140.30	Wash Weight (g): 1121.60	Pan Retained (g): 1.00	Sieve Loss (%): 0.00	Fines (%): #200 - 1.83 #230 - 1.73	Organics (%): 0.50	Carbonates (%): 21.40	Shells (%): 0.16
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.50	0.04	0.50	0.04	
3.5	-2.50	5.66	0.80	0.07	1.30	0.11	
4	-2.25	4.76	0.50	0.04	1.80	0.16	
5	-2.00	4.00	0.40	0.04	2.20	0.19	
7	-1.50	2.83	3.60	0.32	5.80	0.51	
10	-1.00	2.00	6.70	0.59	12.50	1.10	
14	-0.50	1.41	12.70	1.11	25.20	2.21	
18	0.00	1.00	21.60	1.89	46.80	4.10	
25	0.50	0.71	38.10	3.34	84.90	7.45	
35	1.00	0.50	94.90	8.32	179.80	15.77	
45	1.50	0.35	228.30	20.02	408.10	35.79	
60	2.00	0.25	331.50	29.07	739.60	64.86	
80	2.50	0.18	308.00	27.01	1047.60	91.87	
120	3.00	0.13	64.80	5.68	1112.40	97.55	
170	3.50	0.09	5.30	0.46	1117.70	98.02	
200	3.75	0.07	1.70	0.15	1119.40	98.17	
230	4.00	0.06	1.20	0.11	1120.60	98.27	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.78	2.35	2.19	1.74	1.23	1.01	0.13	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.62	0.33	0.79	-1.32	6.46		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-13 #S4							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.369305		Latitude (Y): 26.382685		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -44.4 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 10.3' - 15.2' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 1216.60	Wash Weight (g): 1186.70	Pan Retained (g): 3.90	Sieve Loss (%): 0.04	Fines (%): #200 - 3.06 #230 - 2.82	Organics (%): 0.70	Carbonates (%): 30.60	Shells (%): 0.68
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	3.50	0.29	3.50	0.29	
5/16"	-3.00	8.00	1.70	0.14	5.20	0.43	
3.5	-2.50	5.66	2.70	0.22	7.90	0.65	
4	-2.25	4.76	0.40	0.03	8.30	0.68	
5	-2.00	4.00	3.40	0.28	11.70	0.96	
7	-1.50	2.83	11.00	0.90	22.70	1.87	
10	-1.00	2.00	15.00	1.23	37.70	3.10	
14	-0.50	1.41	22.50	1.85	60.20	4.95	
18	0.00	1.00	30.40	2.50	90.60	7.45	
25	0.50	0.71	40.60	3.34	131.20	10.78	
35	1.00	0.50	78.10	6.42	209.30	17.20	
45	1.50	0.35	155.50	12.78	364.80	29.99	
60	2.00	0.25	271.20	22.29	636.00	52.28	
80	2.50	0.18	403.90	33.20	1039.90	85.48	
120	3.00	0.13	123.10	10.12	1163.00	95.59	
170	3.50	0.09	12.60	1.04	1175.60	96.63	
200	3.75	0.07	3.80	0.31	1179.40	96.94	
230	4.00	0.06	2.90	0.24	1182.30	97.18	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.97	2.48	2.34	1.95	1.30	0.91	-0.49	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.65	0.32	1.04	-1.77	7.43		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-14 #S1							
Analysis Date: 01-04-22							
Analyzed By: KAT							
Longitude (X): -82.360924		Latitude (Y): 26.374903		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -39.6 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 4.9' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 767.60	Wash Weight (g): 761.40	Pan Retained (g): 1.00	Sieve Loss (%): 0.05	Fines (%): #200 - 1.04 #230 - 0.99	Organics (%): 0.70	Carbonates (%): 43.20	Shells (%): 2.15
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	7.90	1.03	7.90	1.03	
5/16"	-3.00	8.00	3.50	0.46	11.40	1.49	
3.5	-2.50	5.66	3.50	0.46	14.90	1.94	
4	-2.25	4.76	1.60	0.21	16.50	2.15	
5	-2.00	4.00	3.40	0.44	19.90	2.59	
7	-1.50	2.83	8.50	1.11	28.40	3.70	
10	-1.00	2.00	15.20	1.98	43.60	5.68	
14	-0.50	1.41	29.80	3.88	73.40	9.56	
18	0.00	1.00	50.70	6.61	124.10	16.17	
25	0.50	0.71	77.60	10.11	201.70	26.28	
35	1.00	0.50	127.90	16.66	329.60	42.94	
45	1.50	0.35	180.90	23.57	510.50	66.51	
60	2.00	0.25	137.90	17.97	648.40	84.47	
80	2.50	0.18	86.50	11.27	734.90	95.74	
120	3.00	0.13	22.50	2.93	757.40	98.67	
170	3.50	0.09	1.70	0.22	759.10	98.89	
200	3.75	0.07	0.50	0.07	759.60	98.96	
230	4.00	0.06	0.40	0.05	760.00	99.01	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.47	1.99	1.74	1.15	0.44	-0.01	-1.17	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.94	0.52	1.15	-1.33	5.86		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-14 #S2							
Analysis Date: 01-04-22							
Analyzed By: KAT							
Longitude (X): -82.360924		Latitude (Y): 26.374903		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -44.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 4.9' - 10.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 714.10	Wash Weight (g): 704.90	Pan Retained (g): 2.80	Sieve Loss (%): 0.07	Fines (%): #200 - 1.89 #230 - 1.75	Organics (%): 0.70	Carbonates (%): 27.50	Shells (%): 1.61
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	3.90	0.55	3.90	0.55	
7/16"	-3.50	11.31	4.10	0.57	8.00	1.12	
5/16"	-3.00	8.00	1.80	0.25	9.80	1.37	
3.5	-2.50	5.66	1.50	0.21	11.30	1.58	
4	-2.25	4.76	0.20	0.03	11.50	1.61	
5	-2.00	4.00	1.00	0.14	12.50	1.75	
7	-1.50	2.83	3.70	0.52	16.20	2.27	
10	-1.00	2.00	6.70	0.94	22.90	3.21	
14	-0.50	1.41	13.10	1.83	36.00	5.04	
18	0.00	1.00	22.80	3.19	58.80	8.23	
25	0.50	0.71	37.80	5.29	96.60	13.53	
35	1.00	0.50	70.10	9.82	166.70	23.34	
45	1.50	0.35	96.90	13.57	263.60	36.91	
60	2.00	0.25	199.00	27.87	462.60	64.78	
80	2.50	0.18	171.30	23.99	633.90	88.77	
120	3.00	0.13	60.70	8.50	694.60	97.27	
170	3.50	0.09	4.70	0.66	699.30	97.93	
200	3.75	0.07	1.30	0.18	700.60	98.11	
230	4.00	0.06	1.00	0.14	701.60	98.25	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.87	2.40	2.21	1.73	1.06	0.63	-0.51	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.47	0.36	1.12	-2.01	9.24		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-15 #S1							
Analysis Date: 12-23-21							
Analyzed By: KAT							
Longitude (X): -82.363045		Latitude (Y): 26.374988		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -39.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 5.1' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 730.90	Wash Weight (g): 723.30	Pan Retained (g): 0.30	Sieve Loss (%): -0.03	Fines (%): #200 - 1.08 #230 - 1.05	Organics (%): 0.80	Carbonates (%): 38.90	Shells (%): 1.40
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	5.50	0.75	5.50	0.75	
5/16"	-3.00	8.00	0.70	0.10	6.20	0.85	
3.5	-2.50	5.66	3.50	0.48	9.70	1.33	
4	-2.25	4.76	0.50	0.07	10.20	1.40	
5	-2.00	4.00	2.70	0.37	12.90	1.76	
7	-1.50	2.83	6.00	0.82	18.90	2.59	
10	-1.00	2.00	10.40	1.42	29.30	4.01	
14	-0.50	1.41	19.60	2.68	48.90	6.69	
18	0.00	1.00	30.70	4.20	79.60	10.89	
25	0.50	0.71	46.10	6.31	125.70	17.20	
35	1.00	0.50	86.60	11.85	212.30	29.05	
45	1.50	0.35	162.90	22.29	375.20	51.33	
60	2.00	0.25	186.10	25.46	561.30	76.80	
80	2.50	0.18	128.30	17.55	689.60	94.35	
120	3.00	0.13	30.40	4.16	720.00	98.51	
170	3.50	0.09	2.40	0.33	722.40	98.84	
200	3.75	0.07	0.60	0.08	723.00	98.92	
230	4.00	0.06	0.20	0.03	723.20	98.95	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.58	2.21	1.96	1.47	0.83	0.40	-0.82	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.25	0.42	1.08	-1.62	7.05		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-15 #S2							
Analysis Date: 12-23-21							
Analyzed By: KAT							
Longitude (X): -82.363045		Latitude (Y): 26.374988		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -44.6 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.1' - 10.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 619.80	Wash Weight (g): 607.00	Pan Retained (g): 0.40	Sieve Loss (%): 0.00	Fines (%): #200 - 2.19 #230 - 2.13	Organics (%): 0.70	Carbonates (%): 33.10	Shells (%): 0.21
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	1.10	0.18	1.10	0.18	
4	-2.25	4.76	0.20	0.03	1.30	0.21	
5	-2.00	4.00	1.10	0.18	2.40	0.39	
7	-1.50	2.83	2.40	0.39	4.80	0.77	
10	-1.00	2.00	5.50	0.89	10.30	1.66	
14	-0.50	1.41	10.40	1.68	20.70	3.34	
18	0.00	1.00	18.20	2.94	38.90	6.28	
25	0.50	0.71	26.90	4.34	65.80	10.62	
35	1.00	0.50	51.70	8.34	117.50	18.96	
45	1.50	0.35	108.00	17.42	225.50	36.38	
60	2.00	0.25	164.40	26.52	389.90	62.91	
80	2.50	0.18	164.30	26.51	554.20	89.42	
120	3.00	0.13	47.70	7.70	601.90	97.11	
170	3.50	0.09	3.40	0.55	605.30	97.66	
200	3.75	0.07	0.90	0.15	606.20	97.81	
230	4.00	0.06	0.40	0.06	606.60	97.87	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.86	2.40	2.23	1.76	1.17	0.82	-0.22	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.58	0.33	0.89	-1.28	5.45		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-16 #S1							
Analysis Date: 12-23-21							
Analyzed By: KAT							
Longitude (X): -82.360776		Latitude (Y): 26.378778		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -39.2 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 0.9' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 563.80	Wash Weight (g): 558.60	Pan Retained (g): 0.00	Sieve Loss (%): 0.07	Fines (%): #200 - 1.03 #230 - 0.99	Organics (%): 0.90	Carbonates (%): 43.80	Shells (%): 1.15
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	2.50	0.44	2.50	0.44	
3.5	-2.50	5.66	2.90	0.51	5.40	0.96	
4	-2.25	4.76	1.10	0.20	6.50	1.15	
5	-2.00	4.00	3.40	0.60	9.90	1.76	
7	-1.50	2.83	9.10	1.61	19.00	3.37	
10	-1.00	2.00	13.10	2.32	32.10	5.69	
14	-0.50	1.41	22.00	3.90	54.10	9.60	
18	0.00	1.00	34.80	6.17	88.90	15.77	
25	0.50	0.71	52.60	9.33	141.50	25.10	
35	1.00	0.50	97.30	17.26	238.80	42.36	
45	1.50	0.35	150.10	26.62	388.90	68.98	
60	2.00	0.25	106.50	18.89	495.40	87.87	
80	2.50	0.18	50.50	8.96	545.90	96.83	
120	3.00	0.13	10.90	1.93	556.80	98.76	
170	3.50	0.09	1.00	0.18	557.80	98.94	
200	3.75	0.07	0.20	0.04	558.00	98.97	
230	4.00	0.06	0.20	0.04	558.20	99.01	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.40	1.90	1.66	1.14	0.49	0.01	-1.15	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.94	0.52	1.05	-1.1	4.69		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-16 #S2							
Analysis Date: 12-23-21							
Analyzed By: KAT							
Longitude (X): -82.360776		Latitude (Y): 26.378778		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -40.1 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.9' - 5.4' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 488.70	Wash Weight (g): 485.00	Pan Retained (g): 0.20	Sieve Loss (%): 0.10	Fines (%): #200 - 0.92 #230 - 0.90	Organics (%): 0.80	Carbonates (%): 40.70	Shells (%): 0.76
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	1.10	0.23	1.10	0.23	
3.5	-2.50	5.66	2.10	0.43	3.20	0.65	
4	-2.25	4.76	0.50	0.10	3.70	0.76	
5	-2.00	4.00	1.60	0.33	5.30	1.08	
7	-1.50	2.83	5.40	1.10	10.70	2.19	
10	-1.00	2.00	9.10	1.86	19.80	4.05	
14	-0.50	1.41	15.80	3.23	35.60	7.28	
18	0.00	1.00	24.80	5.07	60.40	12.36	
25	0.50	0.71	38.20	7.82	98.60	20.18	
35	1.00	0.50	69.50	14.22	168.10	34.40	
45	1.50	0.35	121.30	24.82	289.40	59.22	
60	2.00	0.25	110.00	22.51	399.40	81.73	
80	2.50	0.18	66.20	13.55	465.60	95.27	
120	3.00	0.13	17.20	3.52	482.80	98.79	
170	3.50	0.09	1.10	0.23	483.90	99.02	
200	3.75	0.07	0.30	0.06	484.20	99.08	
230	4.00	0.06	0.10	0.02	484.30	99.10	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.49	2.08	1.85	1.31	0.67	0.23	-0.85	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.14	0.45	1.01	-1.11	4.79		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-16 #S3							
Analysis Date: 12-27-21							
Analyzed By: KAT							
Longitude (X): -82.360776		Latitude (Y): 26.378778		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -44.6 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.4' - 10.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 545.60	Wash Weight (g): 538.50	Pan Retained (g): 0.60	Sieve Loss (%): 0.04	Fines (%): #200 - 1.50 #230 - 1.45	Organics (%): 0.80	Carbonates (%): 35.70	Shells (%): 0.53
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	1.70	0.31	1.70	0.31	
3.5	-2.50	5.66	0.90	0.16	2.60	0.48	
4	-2.25	4.76	0.30	0.05	2.90	0.53	
5	-2.00	4.00	0.80	0.15	3.70	0.68	
7	-1.50	2.83	3.30	0.60	7.00	1.28	
10	-1.00	2.00	6.50	1.19	13.50	2.47	
14	-0.50	1.41	12.80	2.35	26.30	4.82	
18	0.00	1.00	21.90	4.01	48.20	8.83	
25	0.50	0.71	35.30	6.47	83.50	15.30	
35	1.00	0.50	64.90	11.90	148.40	27.20	
45	1.50	0.35	116.20	21.30	264.60	48.50	
60	2.00	0.25	143.70	26.34	408.30	74.84	
80	2.50	0.18	99.90	18.31	508.20	93.15	
120	3.00	0.13	26.40	4.84	534.60	97.98	
170	3.50	0.09	2.20	0.40	536.80	98.39	
200	3.75	0.07	0.60	0.11	537.40	98.50	
230	4.00	0.06	0.30	0.05	537.70	98.55	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.69	2.25	2.00	1.53	0.91	0.53	-0.48	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.34	0.40	0.95	-1.22	5.53		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-17 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.36186		Latitude (Y): 26.381693		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -41.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 1.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 741.50	Wash Weight (g): 735.40	Pan Retained (g): 0.60	Sieve Loss (%): 0.04	Fines (%): #200 - 0.98 #230 - 0.94	Organics (%): 0.60	Carbonates (%): 29.40	Shells (%): 1.50
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	2.80	0.38	2.80	0.38	
5/16"	-3.00	8.00	2.10	0.28	4.90	0.66	
3.5	-2.50	5.66	4.90	0.66	9.80	1.32	
4	-2.25	4.76	1.30	0.18	11.10	1.50	
5	-2.00	4.00	3.70	0.50	14.80	2.00	
7	-1.50	2.83	9.90	1.34	24.70	3.33	
10	-1.00	2.00	16.10	2.17	40.80	5.50	
14	-0.50	1.41	28.70	3.87	69.50	9.37	
18	0.00	1.00	42.30	5.70	111.80	15.08	
25	0.50	0.71	71.00	9.58	182.80	24.65	
35	1.00	0.50	133.60	18.02	316.40	42.67	
45	1.50	0.35	187.60	25.30	504.00	67.97	
60	2.00	0.25	143.60	19.37	647.60	87.34	
80	2.50	0.18	69.60	9.39	717.20	96.72	
120	3.00	0.13	15.40	2.08	732.60	98.80	
170	3.50	0.09	1.30	0.18	733.90	98.98	
200	3.75	0.07	0.30	0.04	734.20	99.02	
230	4.00	0.06	0.30	0.04	734.50	99.06	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.41	1.91	1.68	1.14	0.51	0.05	-1.12	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.95	0.52	1.07	-1.24	5.42		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-17 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.36186		Latitude (Y): 26.381693		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -42.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 1.0' - 5.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 1065.60	Wash Weight (g): 1053.50	Pan Retained (g): 1.30	Sieve Loss (%): 0.03	Fines (%): #200 - 1.38 #230 - 1.29	Organics (%): 0.50	Carbonates (%): 29.40	Shells (%): 0.99
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	4.70	0.44	4.70	0.44	
5/16"	-3.00	8.00	1.10	0.10	5.80	0.54	
3.5	-2.50	5.66	4.10	0.38	9.90	0.93	
4	-2.25	4.76	0.70	0.07	10.60	0.99	
5	-2.00	4.00	2.20	0.21	12.80	1.20	
7	-1.50	2.83	7.40	0.69	20.20	1.90	
10	-1.00	2.00	11.60	1.09	31.80	2.98	
14	-0.50	1.41	20.60	1.93	52.40	4.92	
18	0.00	1.00	33.00	3.10	85.40	8.01	
25	0.50	0.71	52.40	4.92	137.80	12.93	
35	1.00	0.50	99.40	9.33	237.20	22.26	
45	1.50	0.35	194.10	18.22	431.30	40.47	
60	2.00	0.25	293.50	27.54	724.80	68.02	
80	2.50	0.18	251.50	23.60	976.30	91.62	
120	3.00	0.13	68.40	6.42	1044.70	98.04	
170	3.50	0.09	4.90	0.46	1049.60	98.50	
200	3.75	0.07	1.30	0.12	1050.90	98.62	
230	4.00	0.06	1.00	0.09	1051.90	98.71	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.76	2.34	2.15	1.67	1.08	0.66	-0.49	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.46	0.36	1.01	-1.71	7.67		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-17 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.36186		Latitude (Y): 26.381693		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -46.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.5' - 10.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 893.00	Wash Weight (g): 873.30	Pan Retained (g): 0.10	Sieve Loss (%): 0.00	Fines (%): #200 - 2.28 #230 - 2.22	Organics (%): 0.60	Carbonates (%): 31.70	Shells (%): 0.74
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	2.70	0.30	2.70	0.30	
3.5	-2.50	5.66	3.40	0.38	6.10	0.68	
4	-2.25	4.76	0.50	0.06	6.60	0.74	
5	-2.00	4.00	2.80	0.31	9.40	1.05	
7	-1.50	2.83	7.40	0.83	16.80	1.88	
10	-1.00	2.00	11.60	1.30	28.40	3.18	
14	-0.50	1.41	18.00	2.02	46.40	5.20	
18	0.00	1.00	72.20	8.09	118.60	13.28	
25	0.50	0.71	35.60	3.99	154.20	17.27	
35	1.00	0.50	62.40	6.99	216.60	24.26	
45	1.50	0.35	119.90	13.43	336.50	37.68	
60	2.00	0.25	223.80	25.06	560.30	62.74	
80	2.50	0.18	220.40	24.68	780.70	87.42	
120	3.00	0.13	88.90	9.96	869.60	97.38	
170	3.50	0.09	1.60	0.18	871.20	97.56	
200	3.75	0.07	1.40	0.16	872.60	97.72	
230	4.00	0.06	0.60	0.07	873.20	97.78	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.88	2.43	2.25	1.75	1.03	0.34	-0.55	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.45	0.37	1.09	-1.28	4.8		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-18 #S1							
Analysis Date: 12-20-21							
Analyzed By: KAT							
Longitude (X): -82.367308		Latitude (Y): 26.376911		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -41.9 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 5.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 764.30	Wash Weight (g): 753.10	Pan Retained (g): 1.10	Sieve Loss (%): 0.00	Fines (%): #200 - 1.70 #230 - 1.61	Organics (%): 0.70	Carbonates (%): 33.90	Shells (%): 1.01
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	3.50	0.46	3.50	0.46	
5/16"	-3.00	8.00	1.30	0.17	4.80	0.63	
3.5	-2.50	5.66	1.70	0.22	6.50	0.85	
4	-2.25	4.76	1.20	0.16	7.70	1.01	
5	-2.00	4.00	1.50	0.20	9.20	1.20	
7	-1.50	2.83	5.00	0.65	14.20	1.86	
10	-1.00	2.00	8.70	1.14	22.90	3.00	
14	-0.50	1.41	14.70	1.92	37.60	4.92	
18	0.00	1.00	22.90	3.00	60.50	7.92	
25	0.50	0.71	37.50	4.91	98.00	12.82	
35	1.00	0.50	69.80	9.13	167.80	21.95	
45	1.50	0.35	125.80	16.46	293.60	38.41	
60	2.00	0.25	186.80	24.44	480.40	62.85	
80	2.50	0.18	207.00	27.08	687.40	89.94	
120	3.00	0.13	58.30	7.63	745.70	97.57	
170	3.50	0.09	4.50	0.59	750.20	98.16	
200	3.75	0.07	1.10	0.14	751.30	98.30	
230	4.00	0.06	0.70	0.09	752.00	98.39	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.83	2.39	2.22	1.74	1.09	0.67	-0.49	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.5	0.35	1.03	-1.7	7.51		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-18 #S2							
Analysis Date: 12-21-21							
Analyzed By: KAT							
Longitude (X): -82.367308		Latitude (Y): 26.376911		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -46.9 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.0' - 9.7' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 563.50	Wash Weight (g): 548.50	Pan Retained (g): 0.90	Sieve Loss (%): 0.02	Fines (%): #200 - 3.09 #230 - 2.84	Organics (%): 0.80	Carbonates (%): 36.50	Shells (%): 0.37
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.20	0.04	0.20	0.04	
3.5	-2.50	5.66	1.30	0.23	1.50	0.27	
4	-2.25	4.76	0.60	0.11	2.10	0.37	
5	-2.00	4.00	1.30	0.23	3.40	0.60	
7	-1.50	2.83	2.00	0.35	5.40	0.96	
10	-1.00	2.00	4.40	0.78	9.80	1.74	
14	-0.50	1.41	8.20	1.46	18.00	3.19	
18	0.00	1.00	13.00	2.31	31.00	5.50	
25	0.50	0.71	19.50	3.46	50.50	8.96	
35	1.00	0.50	35.70	6.34	86.20	15.30	
45	1.50	0.35	76.70	13.61	162.90	28.91	
60	2.00	0.25	134.50	23.87	297.40	52.78	
80	2.50	0.18	176.50	31.32	473.90	84.10	
120	3.00	0.13	64.20	11.39	538.10	95.49	
170	3.50	0.09	6.20	1.10	544.30	96.59	
200	3.75	0.07	1.80	0.32	546.10	96.91	
230	4.00	0.06	1.40	0.25	547.50	97.16	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.98	2.50	2.35	1.94	1.36	1.03	-0.11	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.72	0.30	0.92	-1.5	6.5		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-19 #S1							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.364376		Latitude (Y): 26.380987		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -38.1 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 0.8' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 750.17	Wash Weight (g): 743.30	Pan Retained (g): 0.30	Sieve Loss (%): 0.03	Fines (%): #200 - 1.02 #230 - 0.98	Organics (%): 0.50	Carbonates (%): 24.80	Shells (%): 1.55
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	2.60	0.35	2.60	0.35	
7/16"	-3.50	11.31	5.10	0.68	7.70	1.03	
5/16"	-3.00	8.00	1.40	0.19	9.10	1.21	
3.5	-2.50	5.66	1.90	0.25	11.00	1.47	
4	-2.25	4.76	0.60	0.08	11.60	1.55	
5	-2.00	4.00	2.40	0.32	14.00	1.87	
7	-1.50	2.83	8.50	1.13	22.50	3.00	
10	-1.00	2.00	13.00	1.73	35.50	4.73	
14	-0.50	1.41	23.70	3.16	59.20	7.89	
18	0.00	1.00	40.30	5.37	99.50	13.26	
25	0.50	0.71	66.90	8.92	166.40	22.18	
35	1.00	0.50	118.70	15.82	285.10	38.00	
45	1.50	0.35	171.80	22.90	456.90	60.91	
60	2.00	0.25	170.90	22.78	627.80	83.69	
80	2.50	0.18	95.90	12.78	723.70	96.47	
120	3.00	0.13	17.00	2.27	740.70	98.74	
170	3.50	0.09	1.40	0.19	742.10	98.92	
200	3.75	0.07	0.40	0.05	742.50	98.98	
230	4.00	0.06	0.30	0.04	742.80	99.02	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.44	2.01	1.81	1.26	0.59	0.15	-0.96	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.06	0.48	1.1	-1.55	6.99		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-19 #S2							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.364376		Latitude (Y): 26.380987		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -38.9 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.8' - 5.4' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 928.00	Wash Weight (g): 918.50	Pan Retained (g): 0.30	Sieve Loss (%): 0.03	Fines (%): #200 - 1.12 #230 - 1.09	Organics (%): 0.50	Carbonates (%): 23.70	Shells (%): 0.30
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	1.30	0.14	1.30	0.14	
3.5	-2.50	5.66	1.00	0.11	2.30	0.25	
4	-2.25	4.76	0.50	0.05	2.80	0.30	
5	-2.00	4.00	1.00	0.11	3.80	0.41	
7	-1.50	2.83	4.00	0.43	7.80	0.84	
10	-1.00	2.00	5.70	0.61	13.50	1.45	
14	-0.50	1.41	9.60	1.03	23.10	2.49	
18	0.00	1.00	16.50	1.78	39.60	4.27	
25	0.50	0.71	29.70	3.20	69.30	7.47	
35	1.00	0.50	70.50	7.60	139.80	15.06	
45	1.50	0.35	154.70	16.67	294.50	31.73	
60	2.00	0.25	288.90	31.13	583.40	62.87	
80	2.50	0.18	276.00	29.74	859.40	92.61	
120	3.00	0.13	54.50	5.87	913.90	98.48	
170	3.50	0.09	3.10	0.33	917.00	98.81	
200	3.75	0.07	0.60	0.06	917.60	98.88	
230	4.00	0.06	0.30	0.03	917.90	98.91	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.70	2.36	2.20	1.79	1.30	1.03	0.11	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.64	0.32	0.81	-1.73	8.16		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-19 #S3							
Analysis Date: 12-09-21							
Analyzed By: KAT							
Longitude (X): -82.364376		Latitude (Y): 26.380987		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -43.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.4' - 10.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 892.20	Wash Weight (g): 878.40	Pan Retained (g): 0.60	Sieve Loss (%): 0.01	Fines (%): #200 - 1.83 #230 - 1.63	Organics (%): 0.60	Carbonates (%): 27.10	Shells (%): 0.41
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.00	0.11	1.00	0.11	
5/16"	-3.00	8.00	0.40	0.04	1.40	0.16	
3.5	-2.50	5.66	1.80	0.20	3.20	0.36	
4	-2.25	4.76	0.50	0.06	3.70	0.41	
5	-2.00	4.00	1.30	0.15	5.00	0.56	
7	-1.50	2.83	5.10	0.57	10.10	1.13	
10	-1.00	2.00	8.50	0.95	18.60	2.08	
14	-0.50	1.41	13.00	1.46	31.60	3.54	
18	0.00	1.00	16.80	1.88	48.40	5.42	
25	0.50	0.71	24.40	2.73	72.80	8.16	
35	1.00	0.50	52.50	5.88	125.30	14.04	
45	1.50	0.35	116.00	13.00	241.30	27.05	
60	2.00	0.25	227.80	25.53	469.10	52.58	
80	2.50	0.18	308.10	34.53	777.20	87.11	
120	3.00	0.13	90.10	10.10	867.30	97.21	
170	3.50	0.09	8.00	0.90	875.30	98.11	
200	3.75	0.07	0.60	0.07	875.90	98.17	
230	4.00	0.06	1.80	0.20	877.70	98.37	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.89	2.45	2.32	1.95	1.42	1.08	-0.11	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.73	0.30	0.91	-1.83	8.13		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-20 #S1							
Analysis Date: 01-24-22							
Analyzed By: KAT							
Longitude (X): -82.363301		Latitude (Y): 26.384144		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -42.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 0.4' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 711.40	Wash Weight (g): 706.20	Pan Retained (g): 0.50	Sieve Loss (%): 0.00	Fines (%): #200 - 0.83 #230 - 0.80	Organics (%): 0.70	Carbonates (%): 41.30	Shells (%): 1.81
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	2.70	0.38	2.70	0.38	
5/16"	-3.00	8.00	2.00	0.28	4.70	0.66	
3.5	-2.50	5.66	4.60	0.65	9.30	1.31	
4	-2.25	4.76	3.60	0.51	12.90	1.81	
5	-2.00	4.00	3.80	0.53	16.70	2.35	
7	-1.50	2.83	10.70	1.50	27.40	3.85	
10	-1.00	2.00	16.20	2.28	43.60	6.13	
14	-0.50	1.41	25.30	3.56	68.90	9.69	
18	0.00	1.00	46.50	6.54	115.40	16.22	
25	0.50	0.71	79.80	11.22	195.20	27.44	
35	1.00	0.50	143.00	20.10	338.20	47.54	
45	1.50	0.35	162.80	22.88	501.00	70.42	
60	2.00	0.25	113.30	15.93	614.30	86.35	
80	2.50	0.18	72.10	10.13	686.40	96.49	
120	3.00	0.13	17.10	2.40	703.50	98.89	
170	3.50	0.09	1.60	0.22	705.10	99.11	
200	3.75	0.07	0.40	0.06	705.50	99.17	
230	4.00	0.06	0.20	0.03	705.70	99.20	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.43	1.93	1.64	1.05	0.39	-0.02	-1.25	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.89	0.54	1.1	-1.1	5		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-20 #S2							
Analysis Date: 01-04-21							
Analyzed By: KAT							
Longitude (X): -82.363301		Latitude (Y): 26.384144		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -42.4 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.4' - 5.2' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 676.30	Wash Weight (g): 669.20	Pan Retained (g): 1.80	Sieve Loss (%): 0.04	Fines (%): #200 - 1.45 #230 - 1.36	Organics (%): 0.60	Carbonates (%): 36.00	Shells (%): 0.94
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	2.51	0.37	2.51	0.37	
3.5	-2.50	5.66	2.92	0.43	5.43	0.80	
4	-2.25	4.76	0.96	0.14	6.39	0.94	
5	-2.00	4.00	2.77	0.41	9.16	1.35	
7	-1.50	2.83	8.51	1.26	17.67	2.61	
10	-1.00	2.00	10.69	1.58	28.36	4.19	
14	-0.50	1.41	17.86	2.64	46.22	6.83	
18	0.00	1.00	28.50	4.21	74.72	11.05	
25	0.50	0.71	48.63	7.19	123.35	18.24	
35	1.00	0.50	93.20	13.78	216.55	32.02	
45	1.50	0.35	155.25	22.96	371.80	54.98	
60	2.00	0.25	159.90	23.64	531.70	78.62	
80	2.50	0.18	102.40	15.14	634.10	93.76	
120	3.00	0.13	29.30	4.33	663.40	98.09	
170	3.50	0.09	2.40	0.35	665.80	98.45	
200	3.75	0.07	0.70	0.10	666.50	98.55	
230	4.00	0.06	0.60	0.09	667.10	98.64	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.64	2.18	1.92	1.39	0.75	0.34	-0.85	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.21	0.43	1.04	-1.23	5.29		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-20 #S3							
Analysis Date: 12-23-21							
Analyzed By: KAT							
Longitude (X): -82.363301		Latitude (Y): 26.384144		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -47.2 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.2' - 10.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 863.60	Wash Weight (g): 856.20	Pan Retained (g): 0.80	Sieve Loss (%): 0.05	Fines (%): #200 - 1.02 #230 - 1.00	Organics (%): 0.70	Carbonates (%): 25.10	Shells (%): 0.51
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.30	0.15	1.30	0.15	
5/16"	-3.00	8.00	0.40	0.05	1.70	0.20	
3.5	-2.50	5.66	2.00	0.23	3.70	0.43	
4	-2.25	4.76	0.70	0.08	4.40	0.51	
5	-2.00	4.00	1.00	0.12	5.40	0.63	
7	-1.50	2.83	3.30	0.38	8.70	1.01	
10	-1.00	2.00	8.40	0.97	17.10	1.98	
14	-0.50	1.41	14.40	1.67	31.50	3.65	
18	0.00	1.00	25.80	2.99	57.30	6.64	
25	0.50	0.71	46.60	5.40	103.90	12.03	
35	1.00	0.50	102.80	11.90	206.70	23.93	
45	1.50	0.35	198.90	23.03	405.60	46.97	
60	2.00	0.25	245.10	28.38	650.70	75.35	
80	2.50	0.18	171.10	19.81	821.80	95.16	
120	3.00	0.13	30.90	3.58	852.70	98.74	
170	3.50	0.09	1.70	0.20	854.40	98.93	
200	3.75	0.07	0.40	0.05	854.80	98.98	
230	4.00	0.06	0.20	0.02	855.00	99.00	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.50	2.22	1.99	1.55	1.02	0.67	-0.27	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.4	0.38	0.88	-1.47	7.04		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-21 #S1							
Analysis Date: 01-02-22							
Analyzed By: KAT							
Longitude (X):		Latitude (Y):		Coordinate System:		Elevation (ft):	
-82.37013		26.378068		Geographic (Latitude/Longitude)		-37.5 NAVD 88	
USCS:		Munsell:		Comments:			
SW		Wet - 10YR-7/1		Sample Interval: 0.0' - 5.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
743.40	729.20	3.60	0.07	#200 - 2.66 #230 - 2.46	0.70	34.00	2.68
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	5.80	0.78	5.80	0.78	
5/16"	-3.00	8.00	6.30	0.85	12.10	1.63	
3.5	-2.50	5.66	5.30	0.71	17.40	2.34	
4	-2.25	4.76	2.50	0.34	19.90	2.68	
5	-2.00	4.00	4.90	0.66	24.80	3.34	
7	-1.50	2.83	6.10	0.82	30.90	4.16	
10	-1.00	2.00	10.40	1.40	41.30	5.56	
14	-0.50	1.41	15.70	2.11	57.00	7.67	
18	0.00	1.00	22.40	3.01	79.40	10.68	
25	0.50	0.71	29.80	4.01	109.20	14.69	
35	1.00	0.50	53.80	7.24	163.00	21.93	
45	1.50	0.35	103.20	13.88	266.20	35.81	
60	2.00	0.25	157.90	21.24	424.10	57.05	
80	2.50	0.18	201.80	27.15	625.90	84.19	
120	3.00	0.13	88.40	11.89	714.30	96.09	
170	3.50	0.09	7.40	1.00	721.70	97.08	
200	3.75	0.07	1.90	0.26	723.60	97.34	
230	4.00	0.06	1.50	0.20	725.10	97.54	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.95	2.50	2.33	1.83	1.11	0.59	-1.20	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.48	0.36	1.27	-1.8	6.8		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-21 #S2							
Analysis Date: 12-23-21							
Analyzed By: KAT							
Longitude (X): -82.37013		Latitude (Y): 26.378068		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -42.5 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.0' - 10.0' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 575.90	Wash Weight (g): 567.90	Pan Retained (g): 0.40	Sieve Loss (%): -0.02	Fines (%): #200 - 1.49 #230 - 1.44	Organics (%): 0.80	Carbonates (%): 30.90	Shells (%): 0.23
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.60	0.10	0.60	0.10	
3.5	-2.50	5.66	0.60	0.10	1.20	0.21	
4	-2.25	4.76	0.10	0.02	1.30	0.23	
5	-2.00	4.00	0.40	0.07	1.70	0.30	
7	-1.50	2.83	2.30	0.40	4.00	0.69	
10	-1.00	2.00	4.40	0.76	8.40	1.46	
14	-0.50	1.41	8.20	1.42	16.60	2.88	
18	0.00	1.00	12.70	2.21	29.30	5.09	
25	0.50	0.71	23.30	4.05	52.60	9.13	
35	1.00	0.50	47.10	8.18	99.70	17.31	
45	1.50	0.35	90.30	15.68	190.00	32.99	
60	2.00	0.25	149.10	25.89	339.10	58.88	
80	2.50	0.18	172.90	30.02	512.00	88.90	
120	3.00	0.13	50.80	8.82	562.80	97.73	
170	3.50	0.09	3.60	0.63	566.40	98.35	
200	3.75	0.07	0.90	0.16	567.30	98.51	
230	4.00	0.06	0.30	0.05	567.60	98.56	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.85	2.42	2.27	1.83	1.25	0.92	-0.02	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.65	0.32	0.87	-1.4	6.2		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-22 #S1							
Analysis Date: 12-27-21							
Analyzed By: KAT							
Longitude (X): -82.36499		Latitude (Y): 26.384577		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -41.0 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 1.8' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 543.60	Wash Weight (g): 538.00	Pan Retained (g): 0.10	Sieve Loss (%): 0.00	Fines (%): #200 - 1.07 #230 - 1.05	Organics (%): 0.70	Carbonates (%): 35.50	Shells (%): 0.85
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	2.10	0.39	2.10	0.39	
3.5	-2.50	5.66	1.60	0.29	3.70	0.68	
4	-2.25	4.76	0.90	0.17	4.60	0.85	
5	-2.00	4.00	2.60	0.48	7.20	1.32	
7	-1.50	2.83	7.40	1.36	14.60	2.69	
10	-1.00	2.00	10.60	1.95	25.20	4.64	
14	-0.50	1.41	17.50	3.22	42.70	7.86	
18	0.00	1.00	30.60	5.63	73.30	13.48	
25	0.50	0.71	50.40	9.27	123.70	22.76	
35	1.00	0.50	89.60	16.48	213.30	39.24	
45	1.50	0.35	121.10	22.28	334.40	61.52	
60	2.00	0.25	111.60	20.53	446.00	82.05	
80	2.50	0.18	72.50	13.34	518.50	95.38	
120	3.00	0.13	17.80	3.27	536.30	98.66	
170	3.50	0.09	1.20	0.22	537.50	98.88	
200	3.75	0.07	0.30	0.06	537.80	98.93	
230	4.00	0.06	0.10	0.02	537.90	98.95	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.49	2.07	1.83	1.24	0.57	0.14	-0.94	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.07	0.48	1.04	-1.04	4.58		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-22 #S2							
Analysis Date: 12-27-21							
Analyzed By: KAT							
Longitude (X): -82.36499		Latitude (Y): 26.384577		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -42.8 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 1.8' - 5.8' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 686.10	Wash Weight (g): 677.10	Pan Retained (g): 0.10	Sieve Loss (%): 0.00	Fines (%): #200 - 1.36 #230 - 1.33	Organics (%): 0.60	Carbonates (%): 24.60	Shells (%): 0.54
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	1.20	0.17	1.20	0.17	
5/16"	-3.00	8.00	1.10	0.16	2.30	0.34	
3.5	-2.50	5.66	0.90	0.13	3.20	0.47	
4	-2.25	4.76	0.50	0.07	3.70	0.54	
5	-2.00	4.00	1.20	0.17	4.90	0.71	
7	-1.50	2.83	3.40	0.50	8.30	1.21	
10	-1.00	2.00	5.80	0.85	14.10	2.06	
14	-0.50	1.41	8.60	1.25	22.70	3.31	
18	0.00	1.00	14.40	2.10	37.10	5.41	
25	0.50	0.71	22.00	3.21	59.10	8.61	
35	1.00	0.50	48.90	7.13	108.00	15.74	
45	1.50	0.35	134.00	19.53	242.00	35.27	
60	2.00	0.25	211.20	30.78	453.20	66.05	
80	2.50	0.18	170.00	24.78	623.20	90.83	
120	3.00	0.13	50.50	7.36	673.70	98.19	
170	3.50	0.09	2.60	0.38	676.30	98.57	
200	3.75	0.07	0.50	0.07	676.80	98.64	
230	4.00	0.06	0.20	0.03	677.00	98.67	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.78	2.36	2.18	1.74	1.24	1.01	-0.10	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.59	0.33	0.88	-1.86	8.99		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-22 #S3							
Analysis Date: 12-27-21							
Analyzed By: KAT							
Longitude (X): -82.36499		Latitude (Y): 26.384577		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -46.8 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.8' - 9.7' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 560.10	Wash Weight (g): 543.80	Pan Retained (g): 0.20	Sieve Loss (%): 0.09	Fines (%): #200 - 3.18 #230 - 3.04	Organics (%): 0.80	Carbonates (%): 32.60	Shells (%): 2.27
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	5.40	0.96	5.40	0.96	
5/16"	-3.00	8.00	2.00	0.36	7.40	1.32	
3.5	-2.50	5.66	4.20	0.75	11.60	2.07	
4	-2.25	4.76	1.10	0.20	12.70	2.27	
5	-2.00	4.00	2.00	0.36	14.70	2.62	
7	-1.50	2.83	4.20	0.75	18.90	3.37	
10	-1.00	2.00	7.10	1.27	26.00	4.64	
14	-0.50	1.41	11.50	2.05	37.50	6.70	
18	0.00	1.00	17.30	3.09	54.80	9.78	
25	0.50	0.71	21.40	3.82	76.20	13.60	
35	1.00	0.50	34.60	6.18	110.80	19.78	
45	1.50	0.35	73.60	13.14	184.40	32.92	
60	2.00	0.25	144.40	25.78	328.80	58.70	
80	2.50	0.18	153.20	27.35	482.00	86.06	
120	3.00	0.13	53.70	9.59	535.70	95.64	
170	3.50	0.09	5.10	0.91	540.80	96.55	
200	3.75	0.07	1.50	0.27	542.30	96.82	
230	4.00	0.06	0.80	0.14	543.10	96.96	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.97	2.46	2.30	1.83	1.20	0.69	-0.91	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.51	0.35	1.2	-1.95	7.77		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-23 #S1							
Analysis Date: 12-27-21							
Analyzed By: KAT							
Longitude (X): -82.36709		Latitude (Y): 26.384574		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -38.9 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.0' - 0.5' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 587.00	Wash Weight (g): 583.60	Pan Retained (g): 0.10	Sieve Loss (%): 0.00	Fines (%): #200 - 0.61 #230 - 0.60	Organics (%): 0.70	Carbonates (%): 38.50	Shells (%): 2.95
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	13.10	2.23	13.10	2.23	
5/16"	-3.00	8.00	1.90	0.32	15.00	2.56	
3.5	-2.50	5.66	1.80	0.31	16.80	2.86	
4	-2.25	4.76	0.50	0.09	17.30	2.95	
5	-2.00	4.00	2.80	0.48	20.10	3.42	
7	-1.50	2.83	8.00	1.36	28.10	4.79	
10	-1.00	2.00	14.30	2.44	42.40	7.22	
14	-0.50	1.41	22.50	3.83	64.90	11.06	
18	0.00	1.00	33.20	5.66	98.10	16.71	
25	0.50	0.71	60.80	10.36	158.90	27.07	
35	1.00	0.50	111.60	19.01	270.50	46.08	
45	1.50	0.35	130.30	22.20	400.80	68.28	
60	2.00	0.25	107.30	18.28	508.10	86.56	
80	2.50	0.18	61.80	10.53	569.90	97.09	
120	3.00	0.13	12.40	2.11	582.30	99.20	
170	3.50	0.09	0.90	0.15	583.20	99.35	
200	3.75	0.07	0.20	0.03	583.40	99.39	
230	4.00	0.06	0.10	0.02	583.50	99.40	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.40	1.93	1.68	1.09	0.40	-0.06	-1.46	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	0.86	0.55	1.23	-1.54	6.32		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-23 #S2							
Analysis Date: 01-03-22							
Analyzed By: KAT							
Longitude (X): -82.36709		Latitude (Y): 26.384574		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -39.4 NAVD 88	
USCS: SW		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 0.5' - 5.3' Material Description: Light gray well graded sand with trace shell			
Dry Weight (g): 700.40	Wash Weight (g): 693.60	Pan Retained (g): 0.50	Sieve Loss (%): 0.09	Fines (%): #200 - 1.19 #230 - 1.13	Organics (%): 0.60	Carbonates (%): 30.90	Shells (%): 0.86
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	1.80	0.26	1.80	0.26	
7/16"	-3.50	11.31	0.90	0.13	2.70	0.39	
5/16"	-3.00	8.00	0.50	0.07	3.20	0.46	
3.5	-2.50	5.66	2.30	0.33	5.50	0.79	
4	-2.25	4.76	0.50	0.07	6.00	0.86	
5	-2.00	4.00	1.70	0.24	7.70	1.10	
7	-1.50	2.83	4.70	0.67	12.40	1.77	
10	-1.00	2.00	8.00	1.14	20.40	2.91	
14	-0.50	1.41	11.90	1.70	32.30	4.61	
18	0.00	1.00	17.80	2.54	50.10	7.15	
25	0.50	0.71	26.90	3.84	77.00	10.99	
35	1.00	0.50	46.30	6.61	123.30	17.60	
45	1.50	0.35	70.80	10.11	194.10	27.71	
60	2.00	0.25	149.60	21.36	343.70	49.07	
80	2.50	0.18	260.10	37.14	603.80	86.21	
120	3.00	0.13	82.70	11.81	686.50	98.02	
170	3.50	0.09	4.60	0.66	691.10	98.67	
200	3.75	0.07	1.00	0.14	692.10	98.81	
230	4.00	0.06	0.40	0.06	692.50	98.87	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.87	2.47	2.35	2.01	1.37	0.88	-0.42	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.69	0.31	1.04	-1.99	8.52		

Granularmetric Report Depths and elevations based on measured values				 GFA International Inc. 1215 Wallace Drive Delray Beach, FL 33444			
Project Name: Lovers Key Detail Level Cores							
Sample Name: VC21-1-23 #S3							
Analysis Date: 01-03-22							
Analyzed By: KAT							
Longitude (X): -82.36709		Latitude (Y): 26.384574		Coordinate System: Geographic (Latitude/Longitude)		Elevation (ft): -44.2 NAVD 88	
USCS: SP		Munsell: Wet - 10YR-7/1		Comments: Sample Interval: 5.3' - 10.0' Material Description: Light gray poorly graded sand with trace shell			
Dry Weight (g): 580.70	Wash Weight (g): 566.60	Pan Retained (g): 0.00	Sieve Loss (%): 0.09	Fines (%): #200 - 2.70 #230 - 2.51	Organics (%): 0.60	Carbonates (%): 23.80	Shells (%): 0.28
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	1.40	0.24	1.40	0.24	
3.5	-2.50	5.66	0.10	0.02	1.50	0.26	
4	-2.25	4.76	0.10	0.02	1.60	0.28	
5	-2.00	4.00	0.60	0.10	2.20	0.38	
7	-1.50	2.83	0.80	0.14	3.00	0.52	
10	-1.00	2.00	2.50	0.43	5.50	0.95	
14	-0.50	1.41	3.10	0.53	8.60	1.48	
18	0.00	1.00	4.20	0.72	12.80	2.20	
25	0.50	0.71	5.40	0.93	18.20	3.13	
35	1.00	0.50	8.40	1.45	26.60	4.58	
45	1.50	0.35	17.50	3.01	44.10	7.59	
60	2.00	0.25	91.80	15.81	135.90	23.40	
80	2.50	0.18	296.10	50.99	432.00	74.39	
120	3.00	0.13	122.60	21.11	554.60	95.51	
170	3.50	0.09	8.20	1.41	562.80	96.92	
200	3.75	0.07	2.20	0.38	565.00	97.30	
230	4.00	0.06	1.10	0.19	566.10	97.49	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.99	2.73	2.51	2.26	2.02	1.77	1.07	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.15	0.23	0.7	-3.08	18.66		

7.0 Penetrometer Reports



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-04

Coordinate System

Latitude / Longitude

Latitude 26.376889

Longitude -82.358658

Date 10/26/2021

Start Time 09:53:03

End Time 09:59:27

Total Time 00:06:24

Top of Hole -39.9'
Elevation

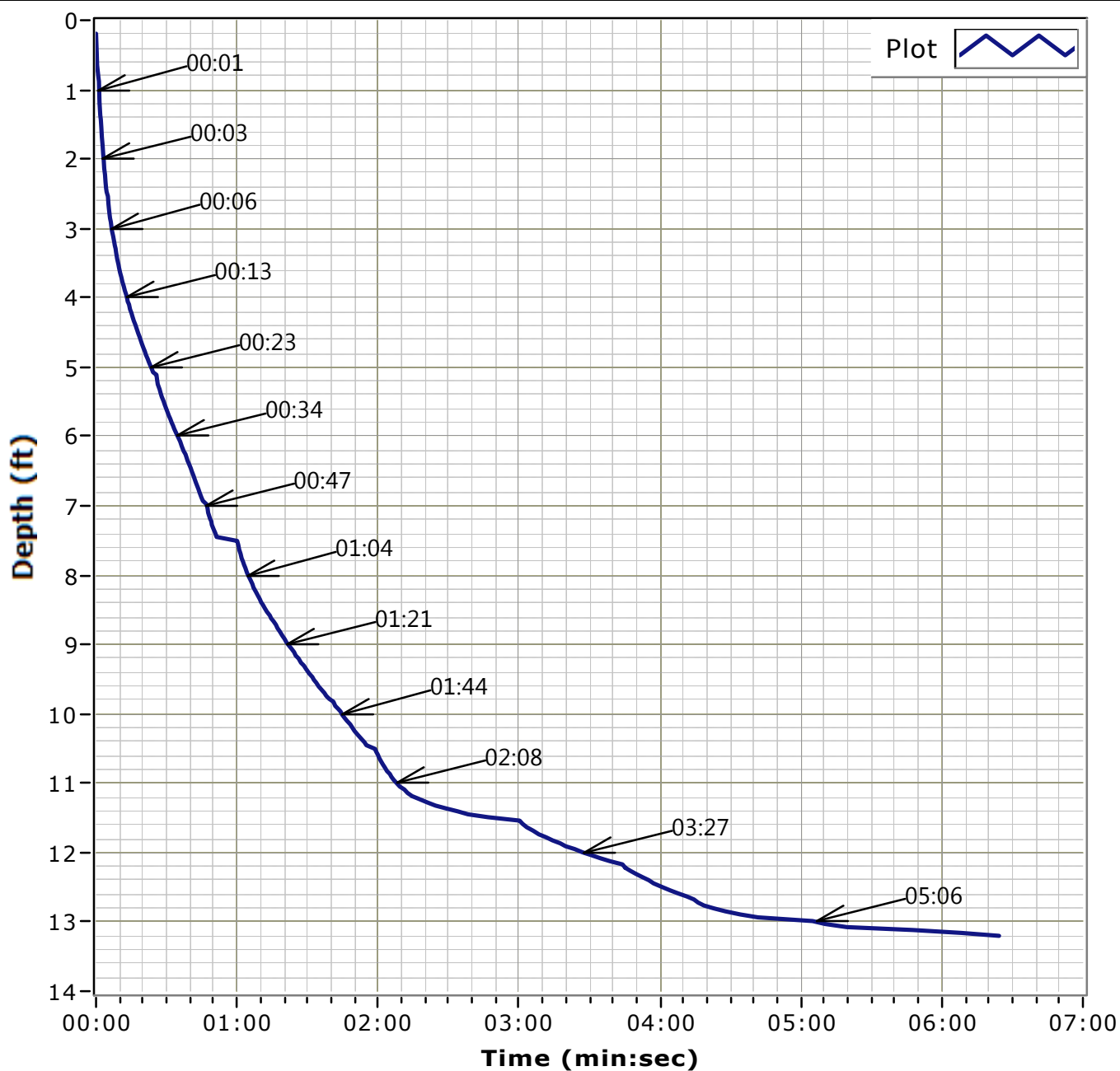
Penetration 13.2'

Recovery 11.6'

Recovery % 87.9%

Comments

3:03 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-05

Coordinate System

Latitude / Longitude

Latitude 26.376901

Longitude -82.360854

Date 10/27/2021

Start Time 12:12:16

End Time 12:23:13

Total Time 00:10:57

Top of Hole -33.0'
Elevation

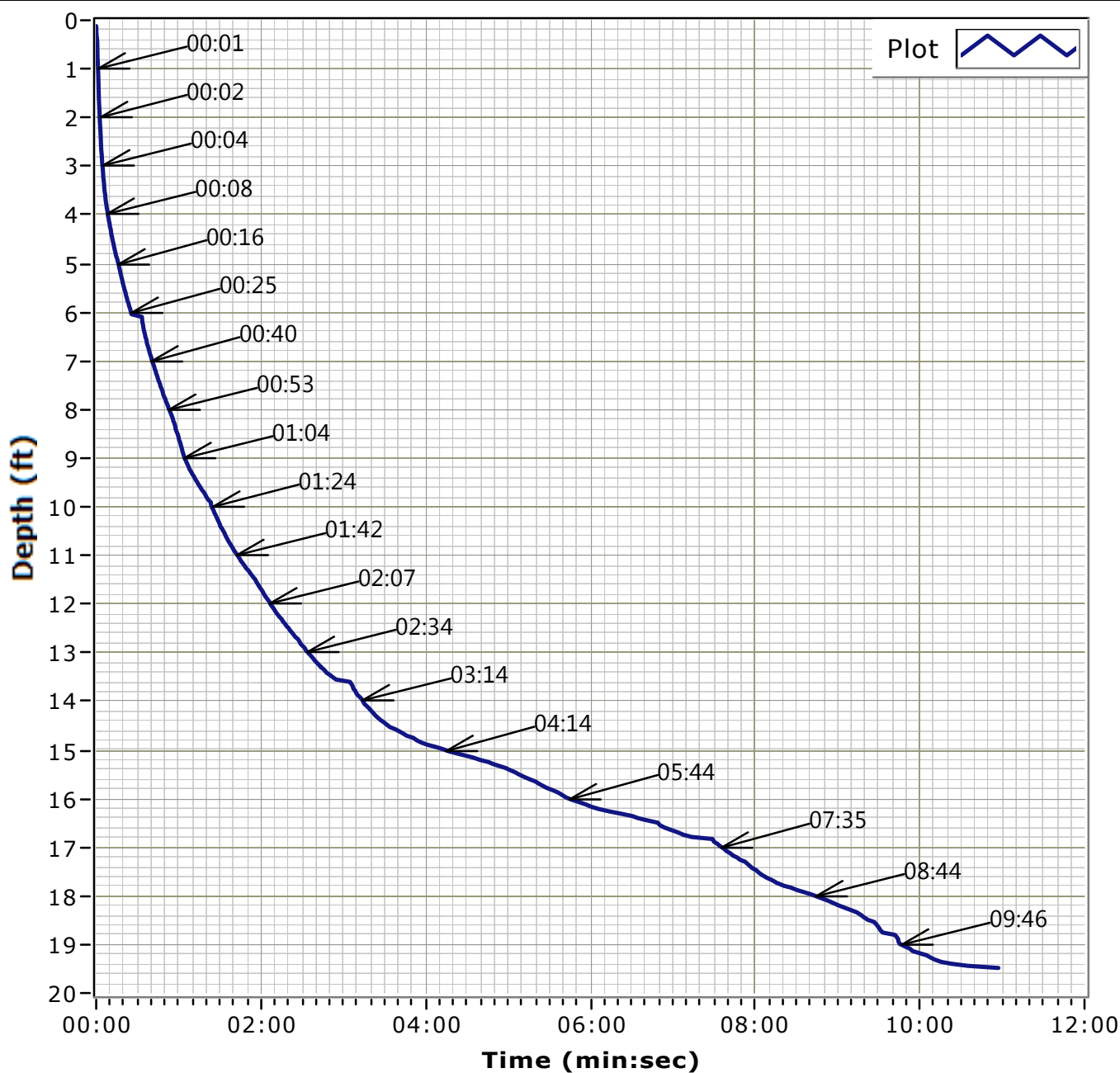
Penetration 19.5'

Recovery 18.8'

Recovery % 96.4%

Comments

2:03 FOR LAST FOOT
REFUSAL
ROCK IN BIT



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-06

Coordinate System

Latitude / Longitude

Latitude 26.376725

Longitude -82.364413

Date 10/26/2021

Start Time 11:03:42

End Time 11:14:52

Total Time 00:11:10

Top of Hole -37.4'
Elevation

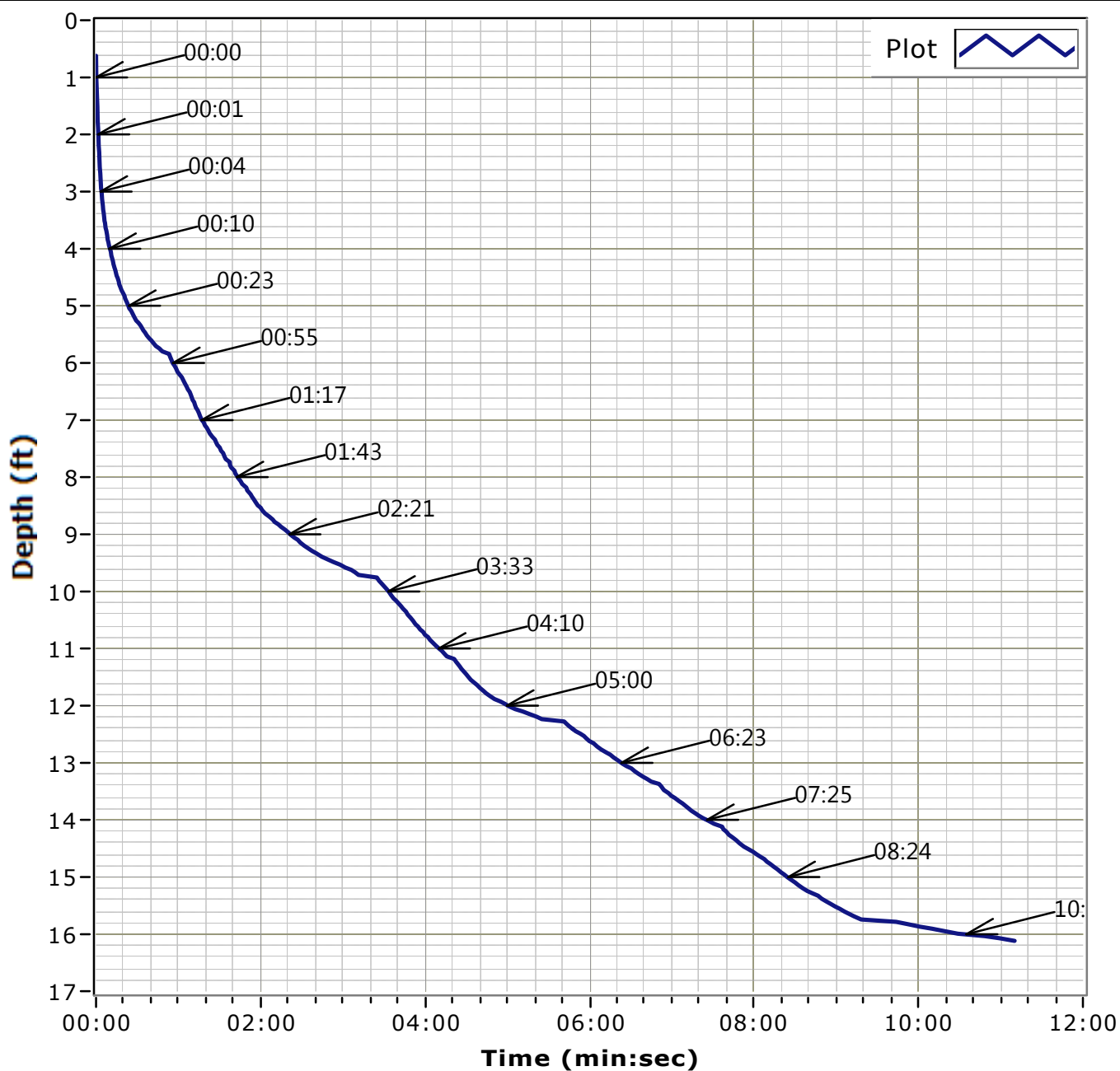
Penetration 16.1'

Recovery 11.7'

Recovery % 72.7%

Comments

3:09 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-06A

Date 10/27/2021

Coordinate System

Latitude / Longitude

Start Time 13:12:51

End Time 13:16:16

Top of Hole -36.8'
Elevation

Penetration 12.8'

Latitude 26.376733

Total Time 00:03:25

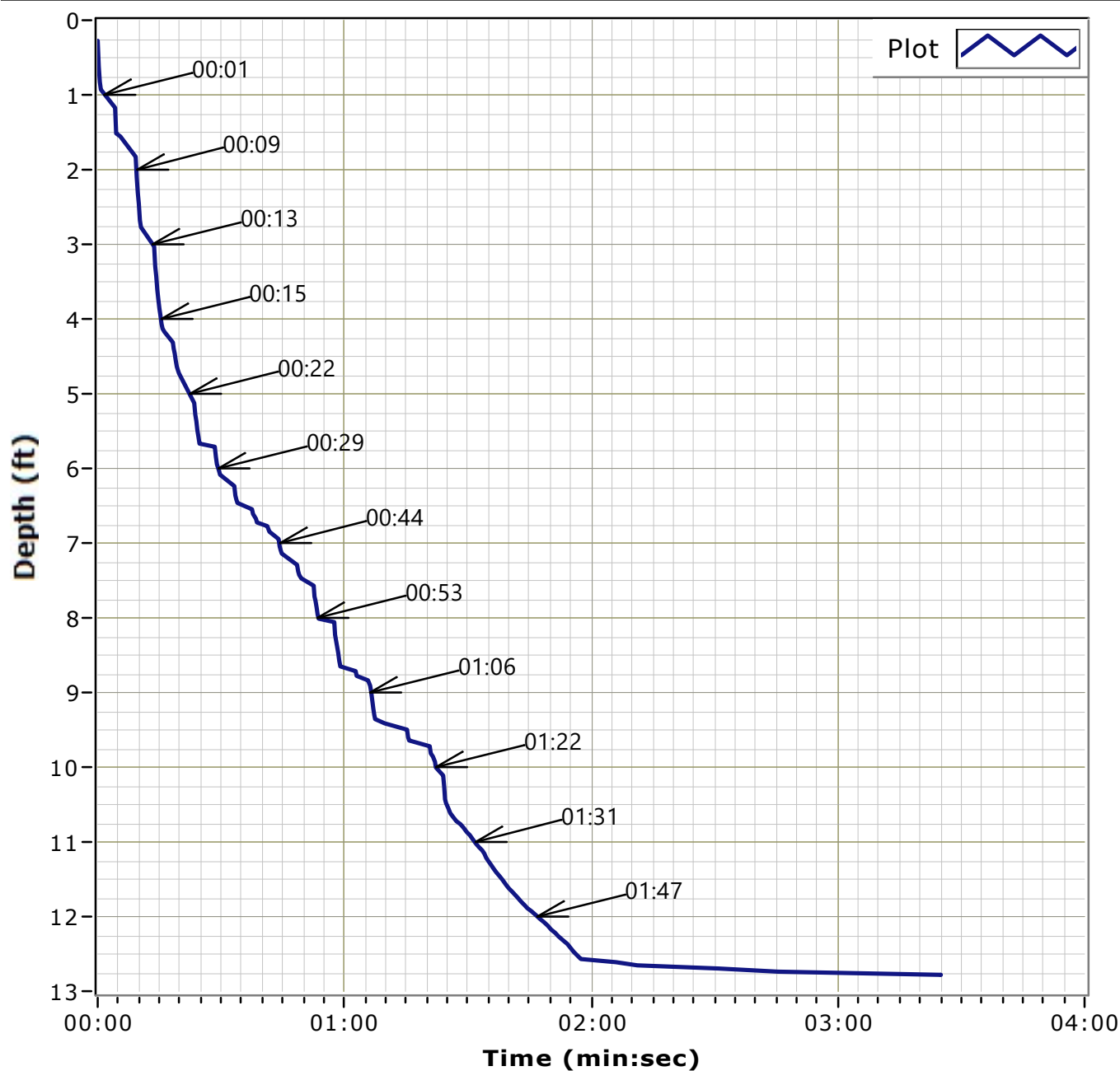
Recovery 2.8'

Longitude -82.364431

Recovery % 100%

Comments

JETTED TO 10'
VIBRACORED TO 12.8'
3:10 FOR THE FOOT



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-07

Date 10/27/2021

Top of Hole -35.7'
Elevation

Coordinate System

Latitude / Longitude

Start Time 10:32:42

End Time 10:40:08

Penetration 17.4'

Latitude 26.378815

Total Time 00:07:25

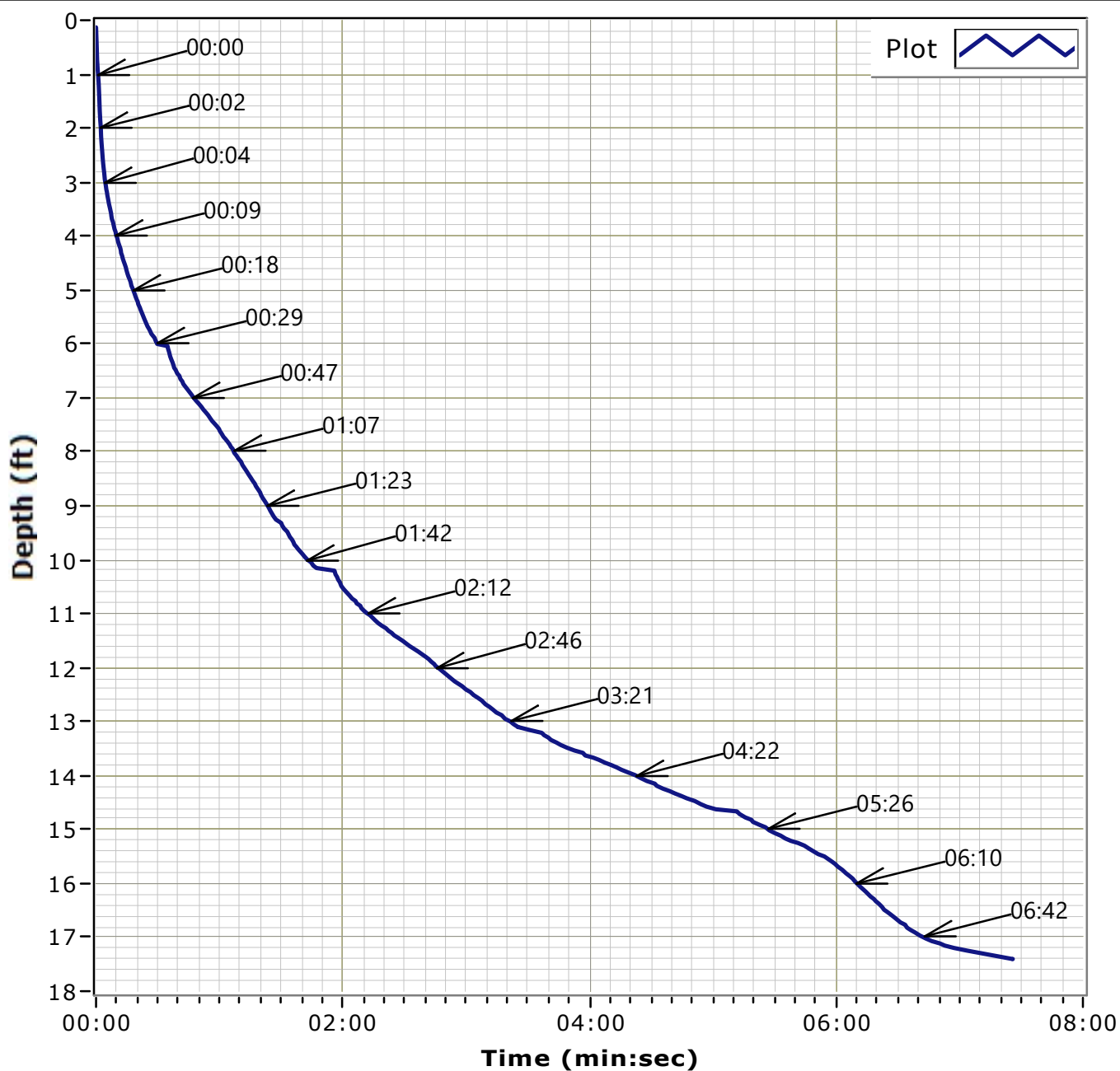
Recovery 17.4'

Longitude -82.362878

Recovery % 100%

Comments

3:02 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-08

Date 10/27/2021

Top of Hole -32.5'
Elevation

Coordinate System

Latitude / Longitude

Start Time 10:53:23

End Time 11:06:49

Penetration 17.5'

Latitude 26.378808

Total Time 00:13:25

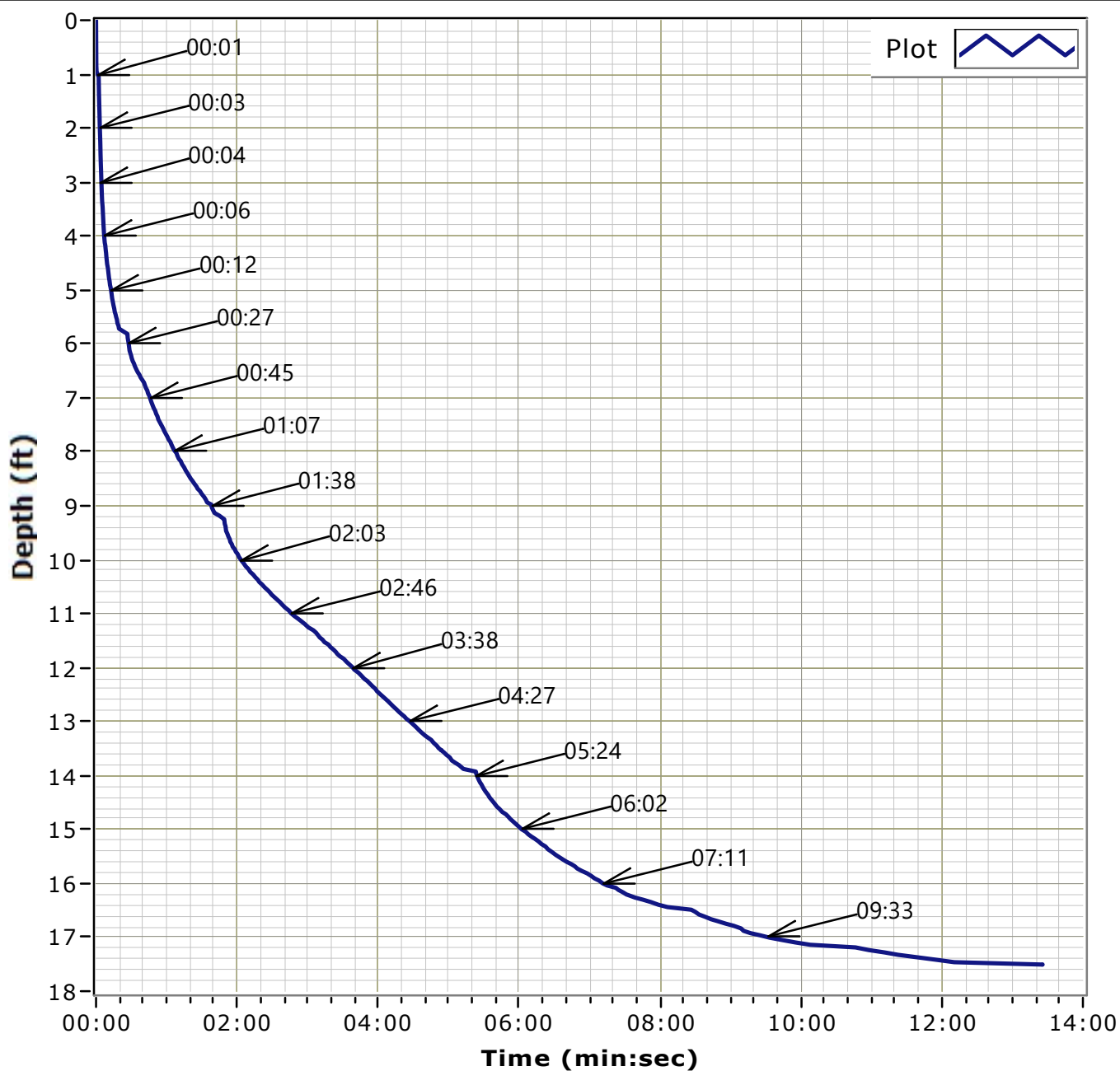
Recovery 17.5'

Longitude -82.365185

Recovery % 100%

Comments

5:01 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
S E R V I C E S

Core Identifier VC21-1-09

Date 10/27/2021

Top of Hole -32.4'
Elevation

Coordinate System

Start Time 11:19:56

Latitude / Longitude

End Time 11:33:21

Penetration 19.1'

Latitude 26.379768

Total Time 00:13:25

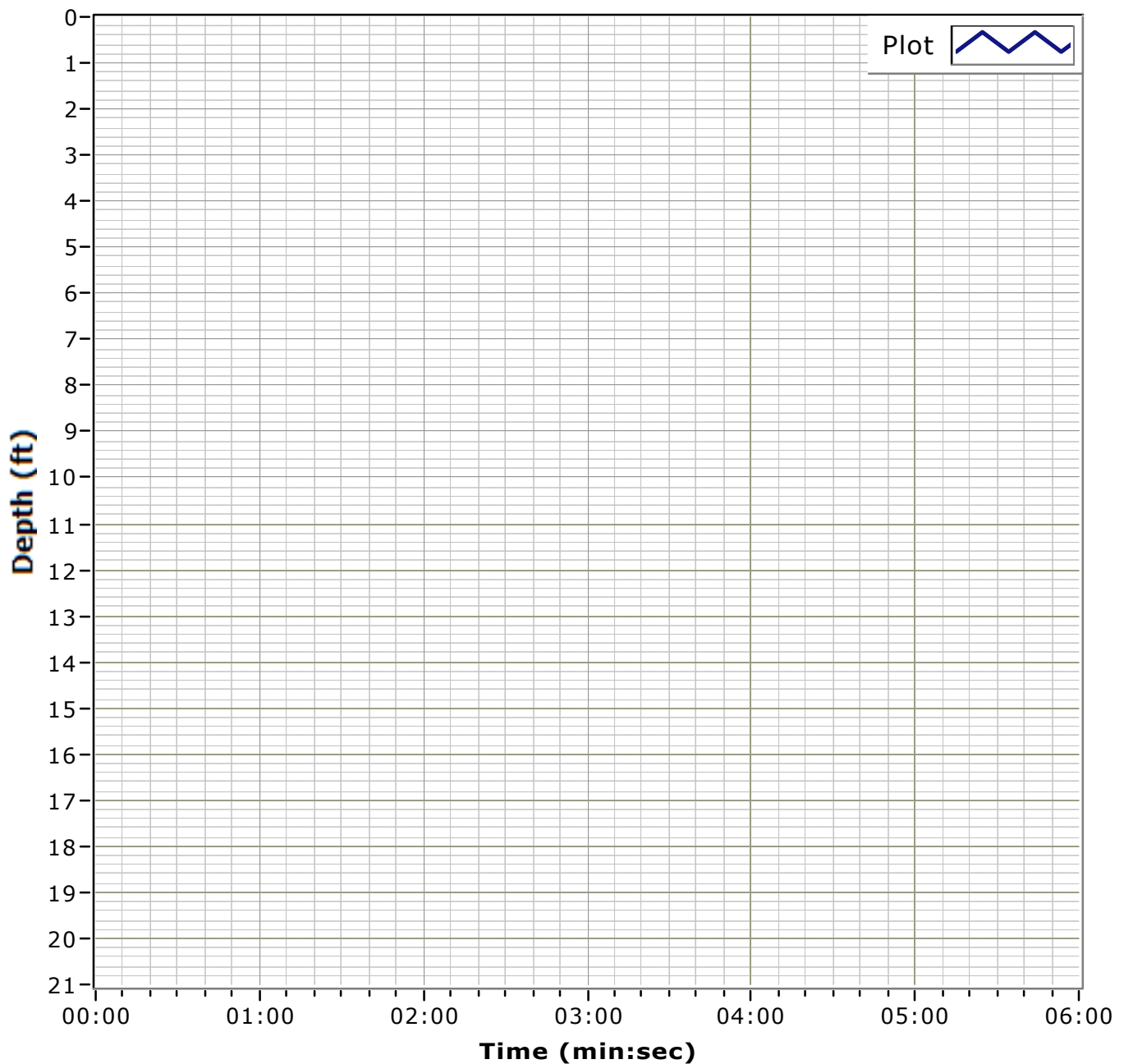
Recovery 18.0'

Longitude -82.368207

Recovery % 94.2%

Comments

4:05 FOR LAST FOOT
REFUSAL
GRAPH ERROR



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-10

Date 10/26/2021

Top of Hole -37.0'
Elevation

Coordinate System

Latitude / Longitude

Start Time 14:28:18

End Time 14:34:00

Penetration 14.8'

Latitude 26.382695

Total Time 00:05:41

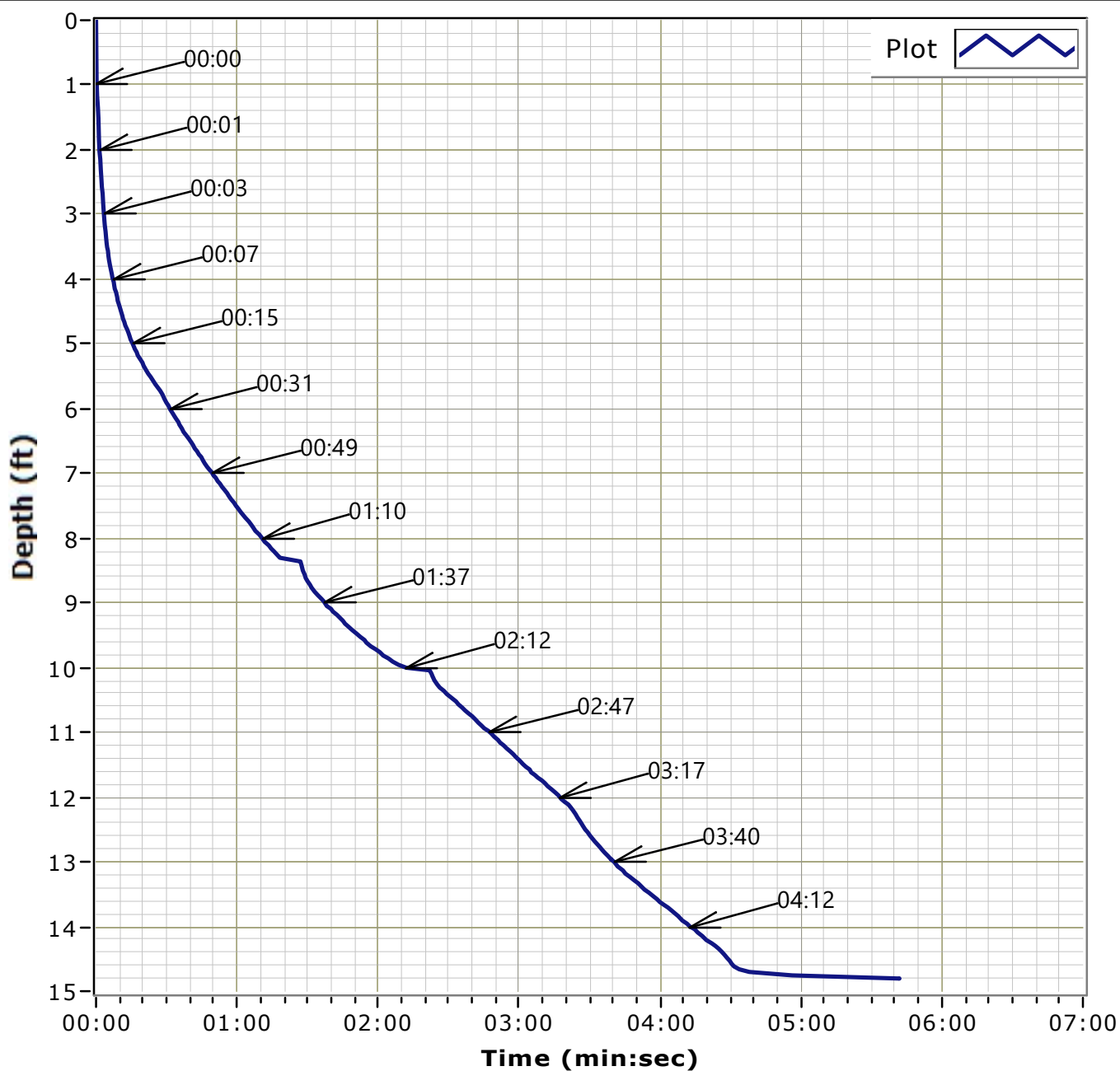
Recovery 14.8'

Longitude -82.367116

Recovery % 100%

Comments

2:12 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-11

Coordinate System

Latitude / Longitude

Date 10/26/2021

Start Time 13:02:42

End Time 13:10:09

Total Time 00:07:27

Top of Hole -33.4'
Elevation

Penetration 14.1'

Recovery 14.1'

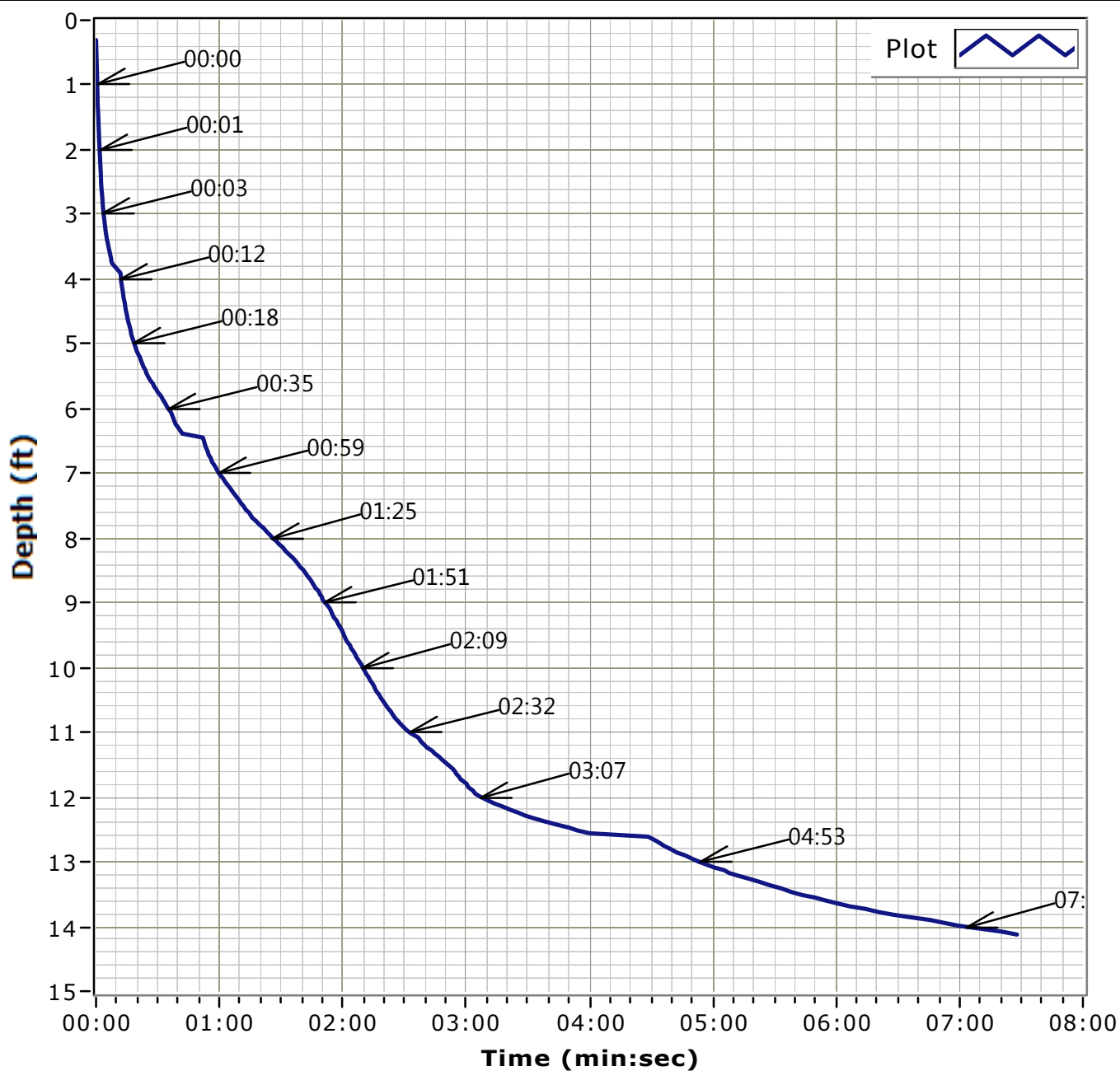
Recovery % 100%

Latitude 26.379752

Longitude -82.370432

Comments

2:32 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-11A

Date 10/27/2021

Top of Hole -34.6'
Elevation

Coordinate System

Latitude / Longitude

Start Time 13:39:07

End Time 13:44:10

Penetration 18.5'

Latitude 26.379764

Total Time 00:05:02

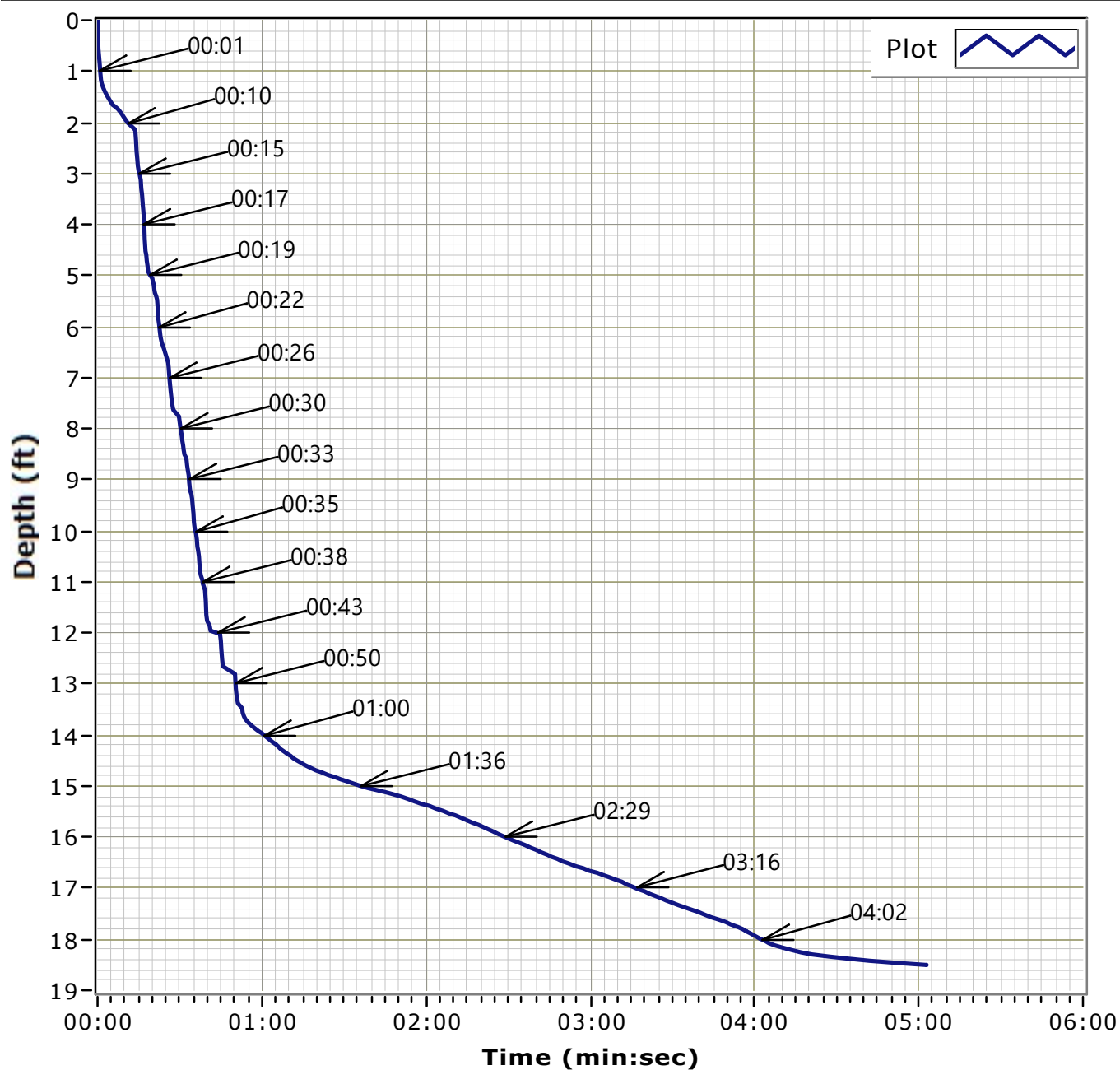
Recovery 4.9'

Longitude -82.370407

Recovery % 100%

Comments

JETTED TO 13.6'



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-12

Coordinate System

Latitude / Longitude

Latitude 26.380745

Longitude -82.371466

Date 10/26/2021

Start Time 13:27:50

End Time 13:35:57

Total Time 00:08:07

Top of Hole -34.3'
Elevation

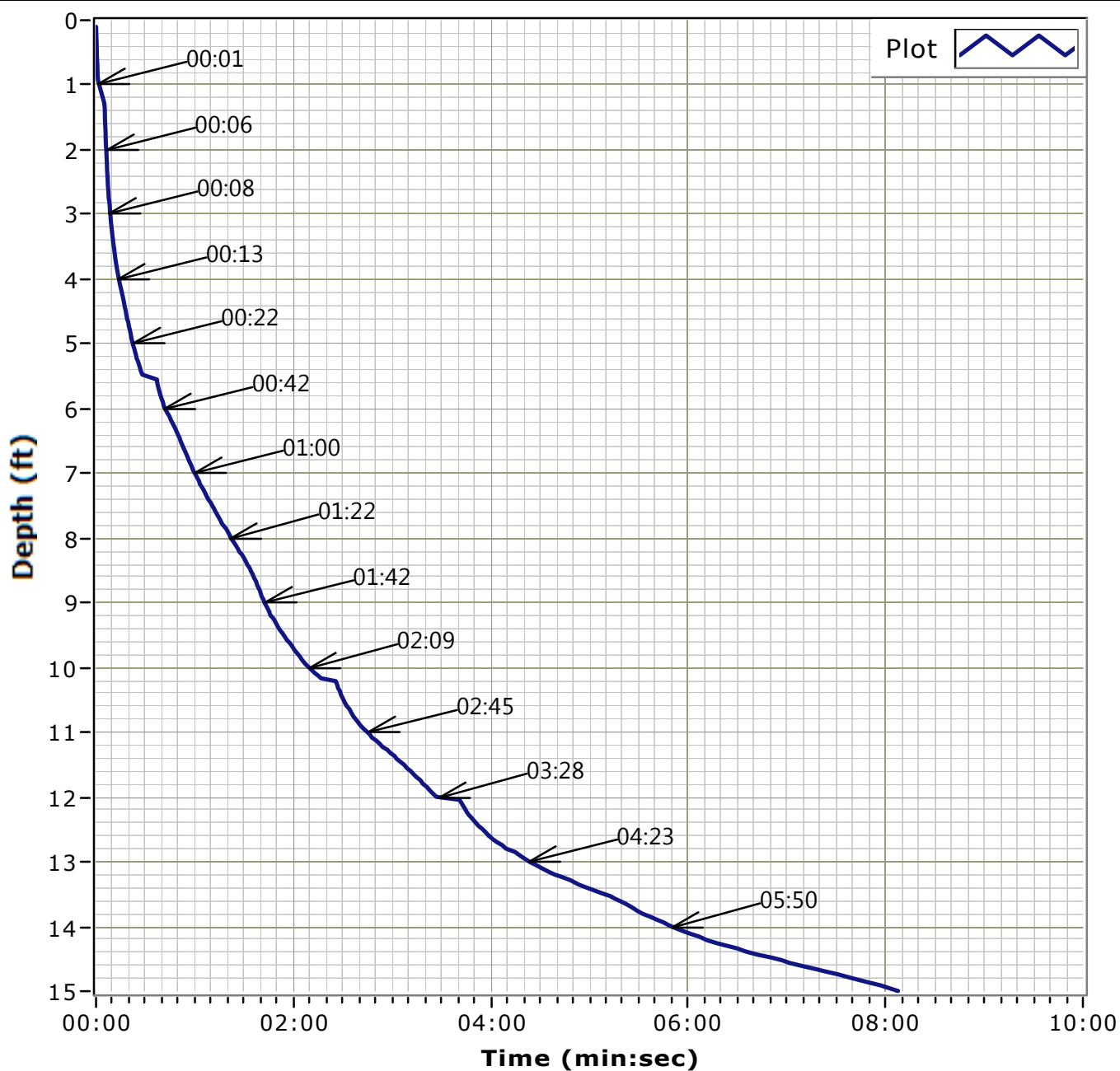
Penetration 15.0'

Recovery 15.0'

Recovery % 100%

Comments

2:14 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-12A

Coordinate System

Latitude / Longitude

Date 10/27/2021

Start Time 13:55:49

End Time 14:00:30

Total Time 00:04:41

Top of Hole -34.3'
Elevation

Penetration 20.1'

Recovery 7.8'

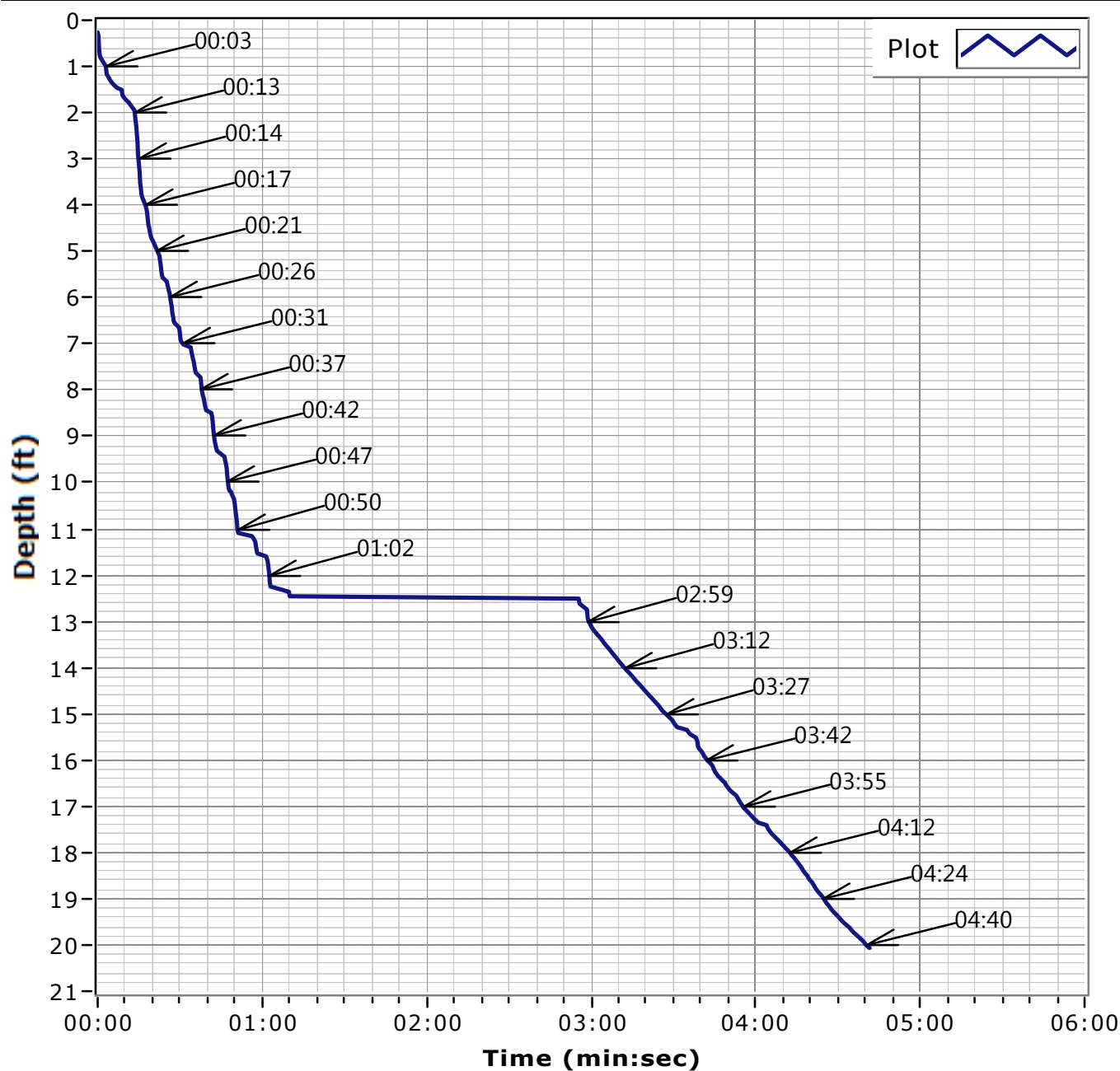
Recovery % 98.7%

Latitude 26.380738

Longitude -82.371454

Comments

JETTED TO 12.2'



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-13

Coordinate System

Latitude / Longitude

Latitude 26.382685

Longitude -82.369305

Date 10/26/2021

Start Time 13:51:01

End Time 13:58:49

Total Time 00:07:48

Top of Hole -34.1'
Elevation

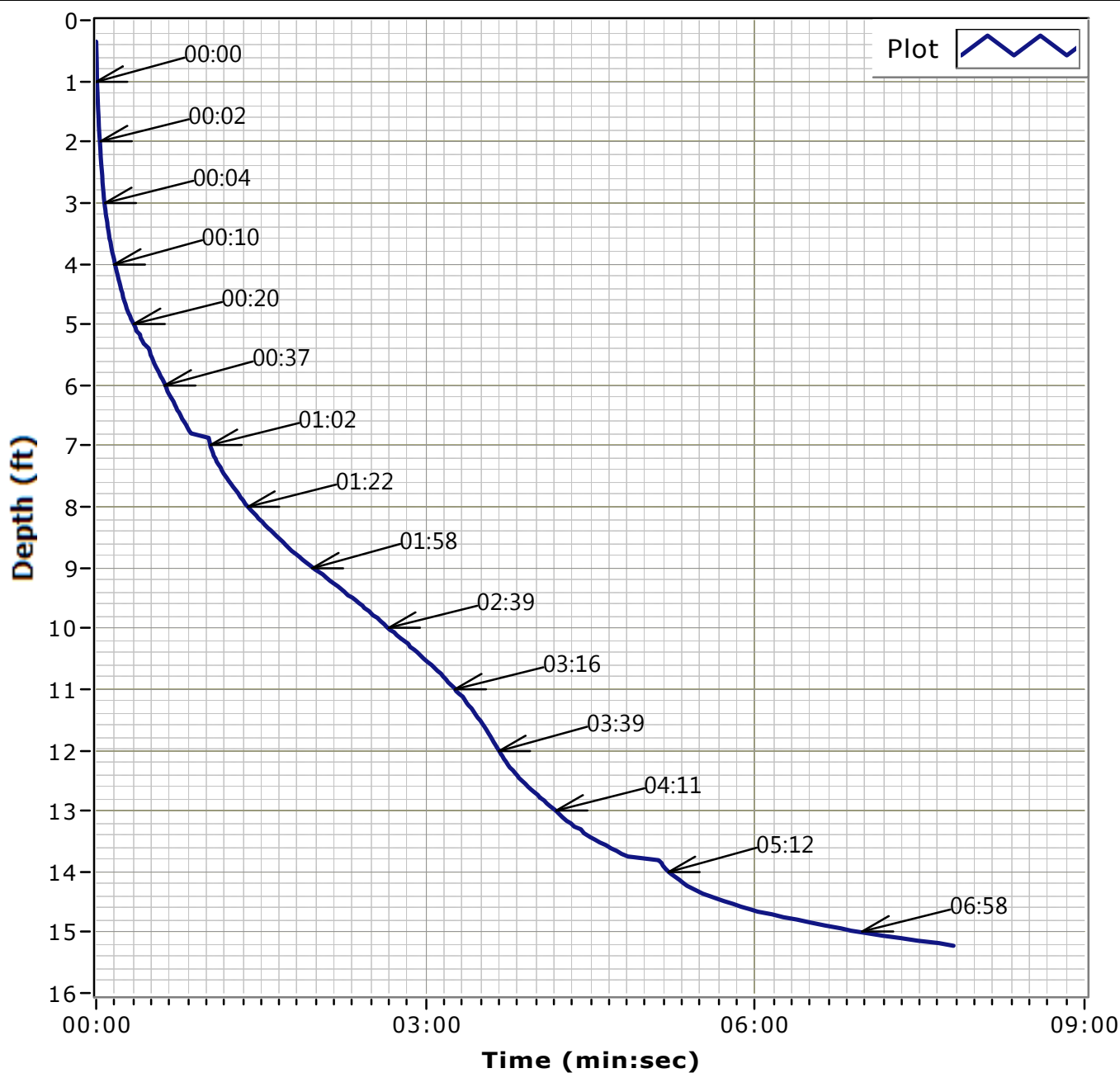
Penetration 15.2'

Recovery 15.2'

Recovery % 100%

Comments

2:32 FOR LAST FOOT
REFUSAL



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-14

Coordinate System

Latitude / Longitude

Latitude 26.374903

Longitude -82.360924

Date 10/26/2021

Start Time 10:23:47

End Time 10:26:32

Total Time 00:02:44

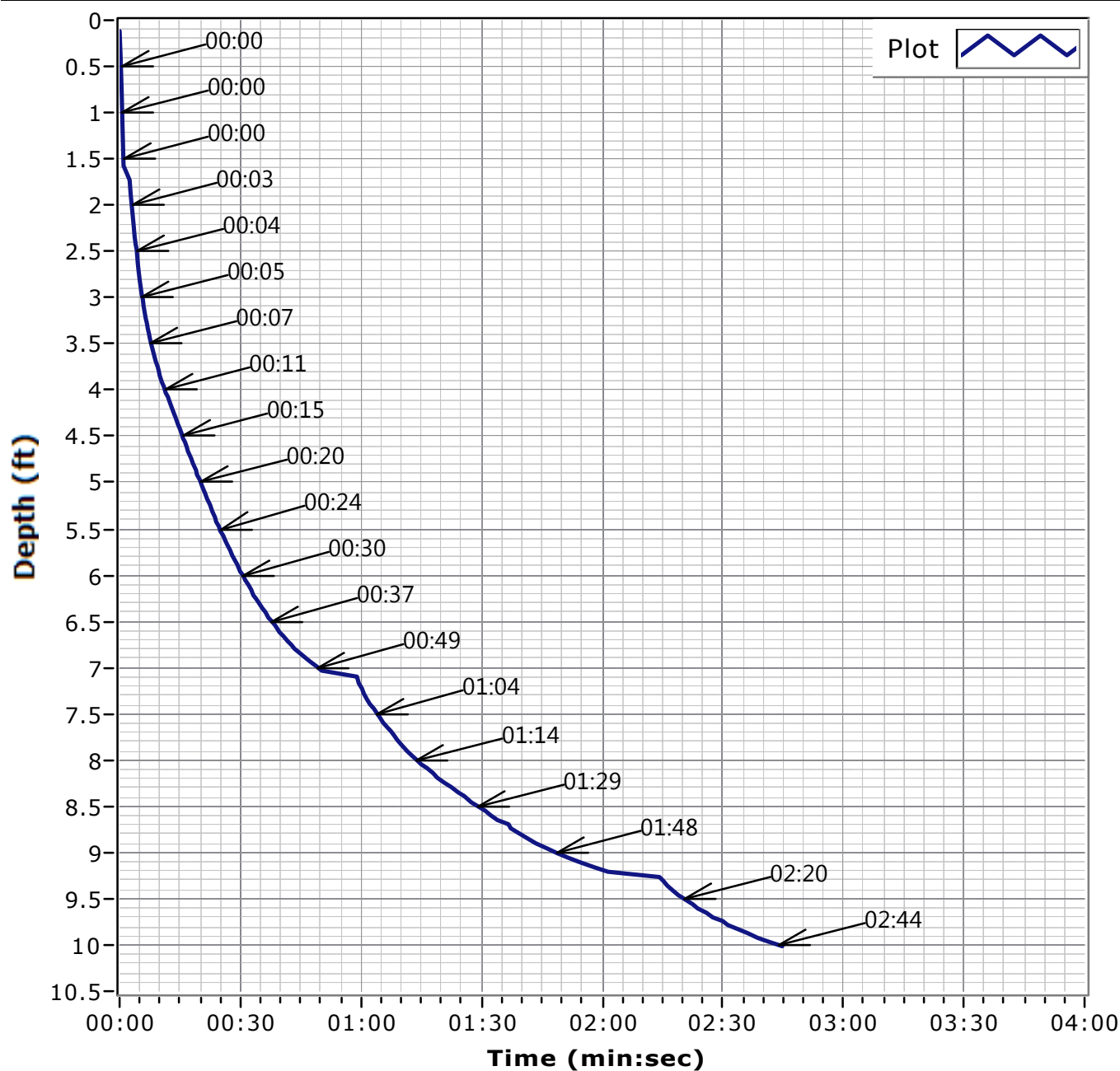
Top of Hole -39.6'
Elevation

Penetration 10.0'

Recovery 10.0'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-15

Coordinate System

Latitude / Longitude

Latitude 26.374988

Longitude -82.363045

Date 10/26/2021

Start Time 10:44:50

End Time 10:47:01

Total Time 00:02:11

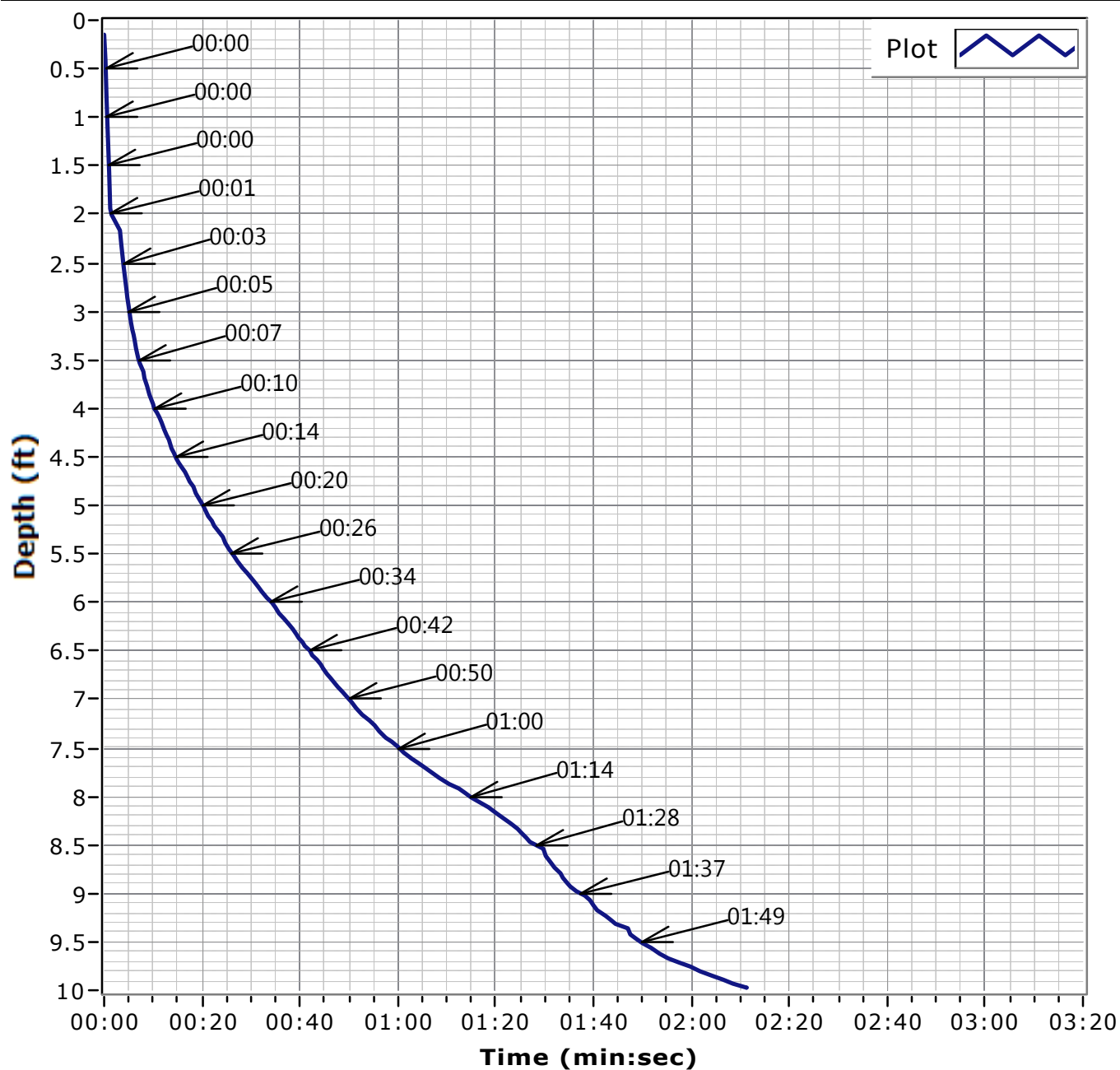
Top of Hole -39.5'
Elevation

Penetration 10.0'

Recovery 10.0'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-16

Coordinate System

Latitude / Longitude

Latitude 26.378778

Longitude -82.360776

Date 10/26/2021

Start Time 16:17:02

End Time 16:18:57

Total Time 00:01:55

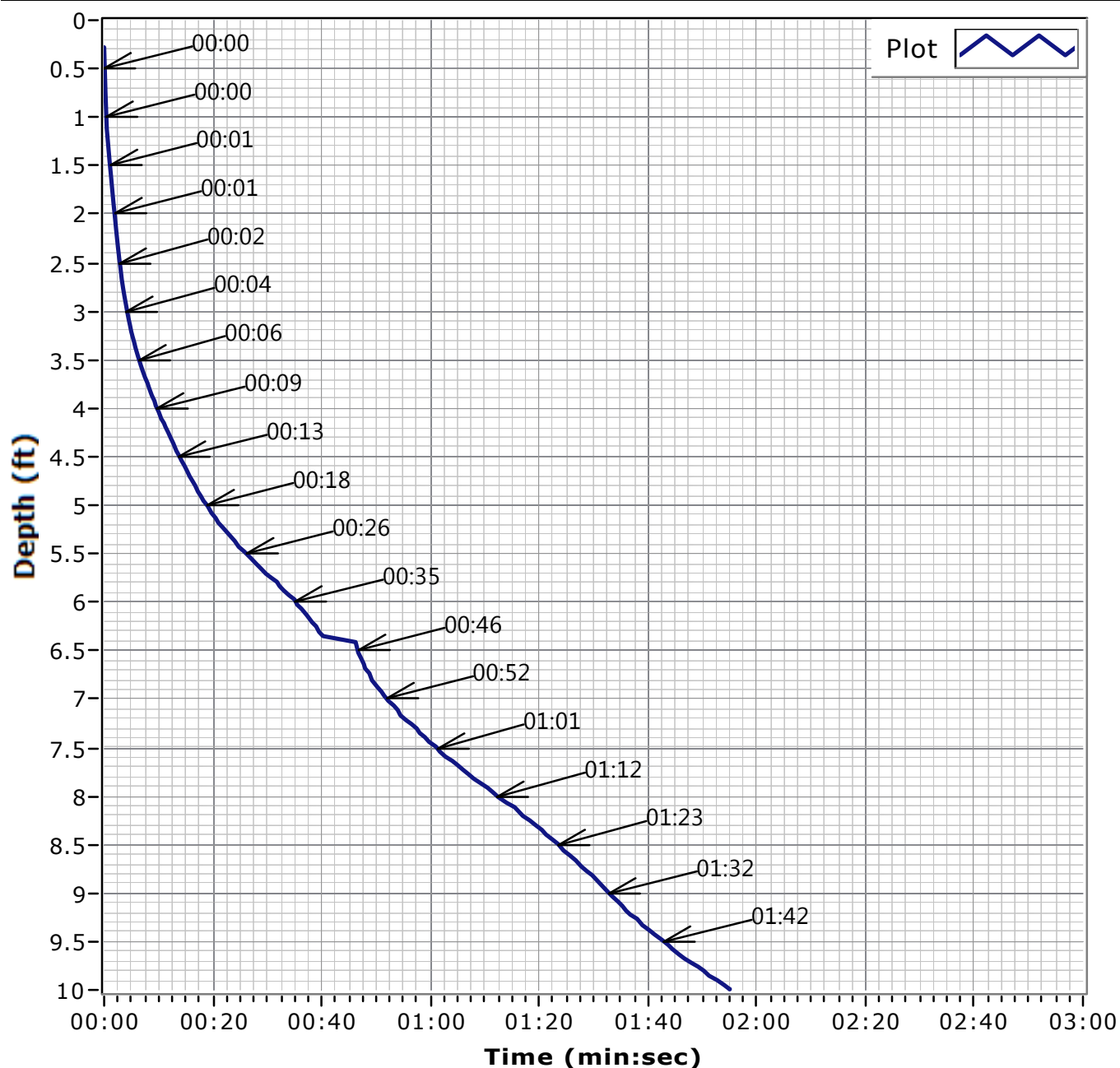
Top of Hole
Elevation -39.2'

Penetration 10.0'

Recovery 10'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-17

Coordinate System

Latitude / Longitude

Latitude 26.381693

Longitude -82.361860

Date 10/26/2021

Start Time 15:42:24

End Time 15:45:06

Total Time 00:02:41

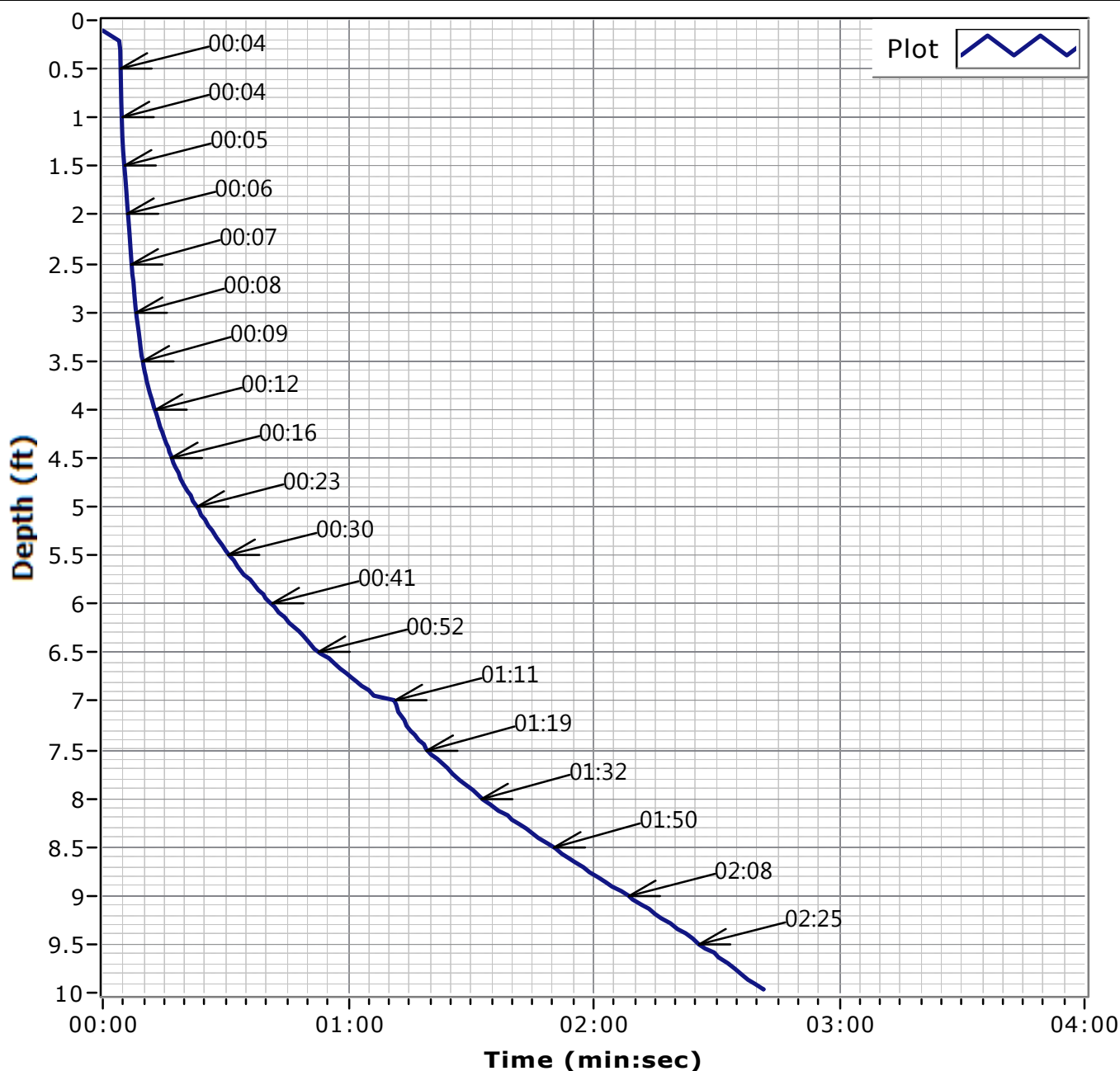
Top of Hole -41.0'
Elevation

Penetration 10.0'

Recovery 10.0'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-18

Coordinate System

Latitude / Longitude

Latitude 26.376911

Longitude -82.367308

Date 10/26/2021

Start Time 11:50:58

End Time 11:52:28

Total Time 00:01:29

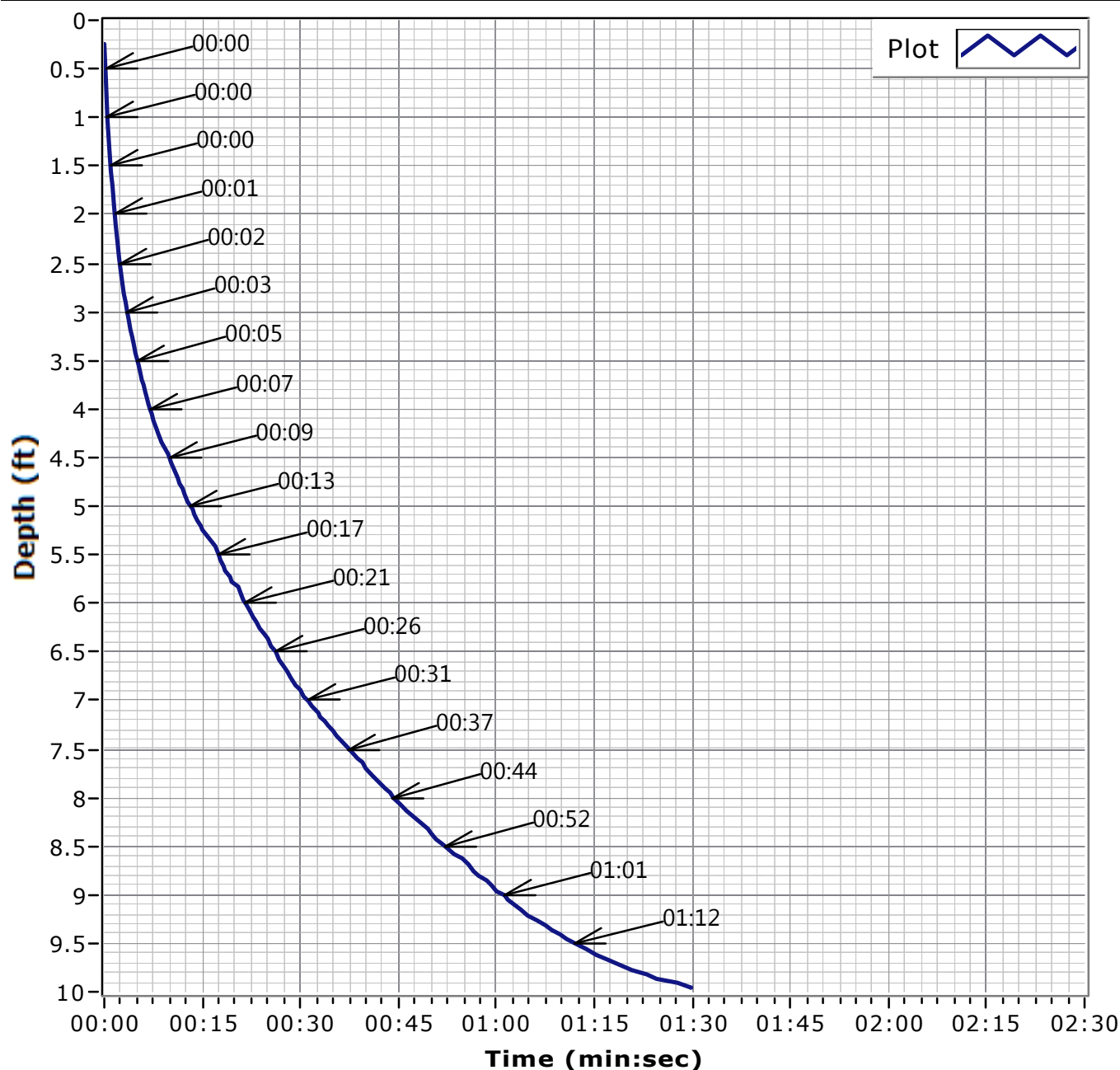
Top of Hole -41.9'
Elevation

Penetration 10.0'

Recovery 10.0'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-19

Coordinate System

Latitude / Longitude

Latitude 26.380987

Longitude -82.364376

Date 10/26/2021

Start Time 16:01:20

End Time 16:03:58

Total Time 00:02:37

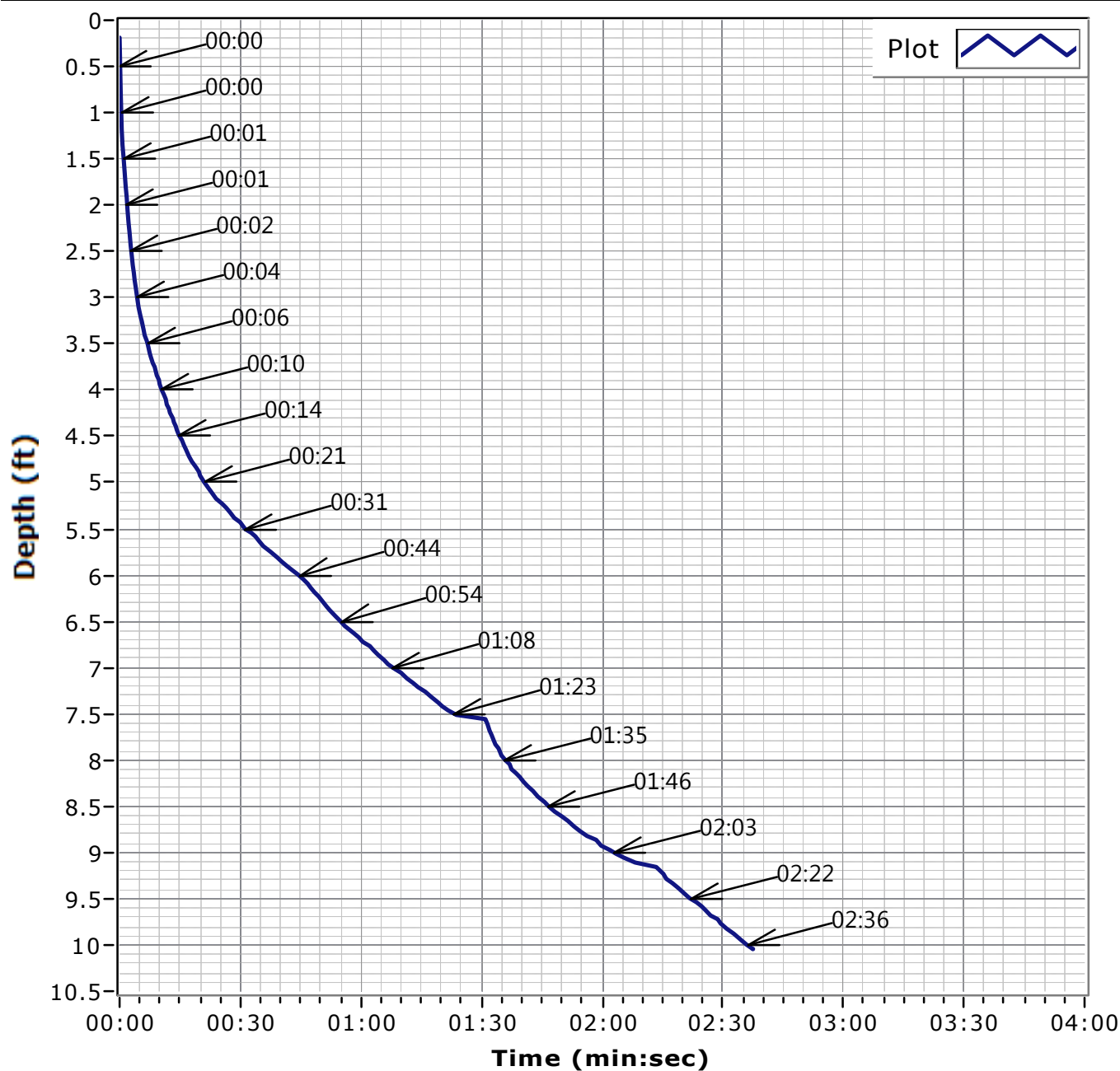
Top of Hole Elevation -38.1'

Penetration 10.0'

Recovery 10.0'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-20

Coordinate System

Latitude / Longitude

Latitude 26.384144

Longitude -82.363301

Date 10/26/2021

Start Time 15:26:49

End Time 15:29:13

Total Time 00:02:23

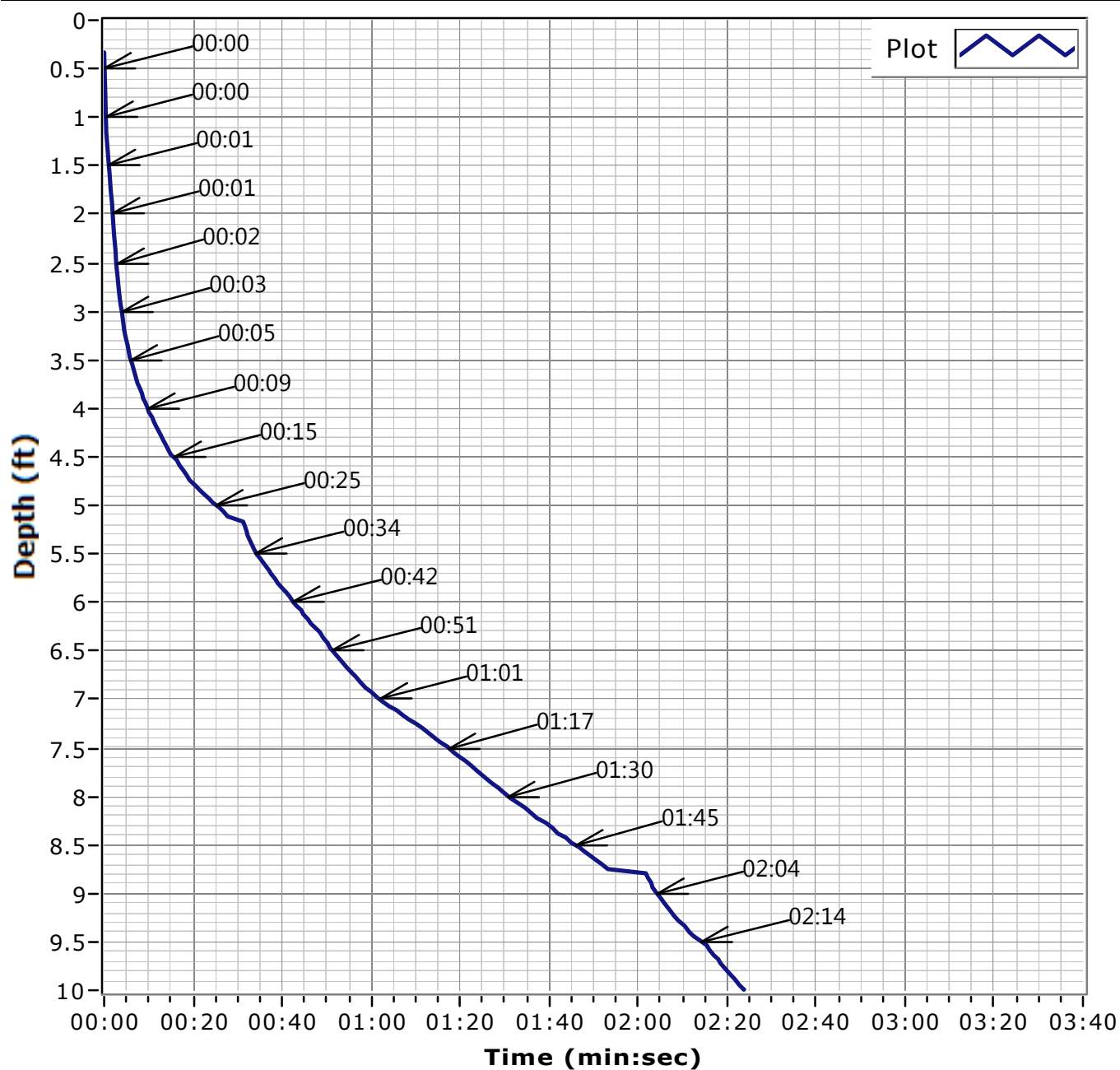
Top of Hole Elevation -42.0'

Penetration 10.0'

Recovery 10.0'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-21

Coordinate System

Latitude / Longitude

Latitude 26.378068

Longitude -82.370130

Date 10/26/2021

Start Time 12:45:14

End Time 12:47:27

Total Time 00:02:13

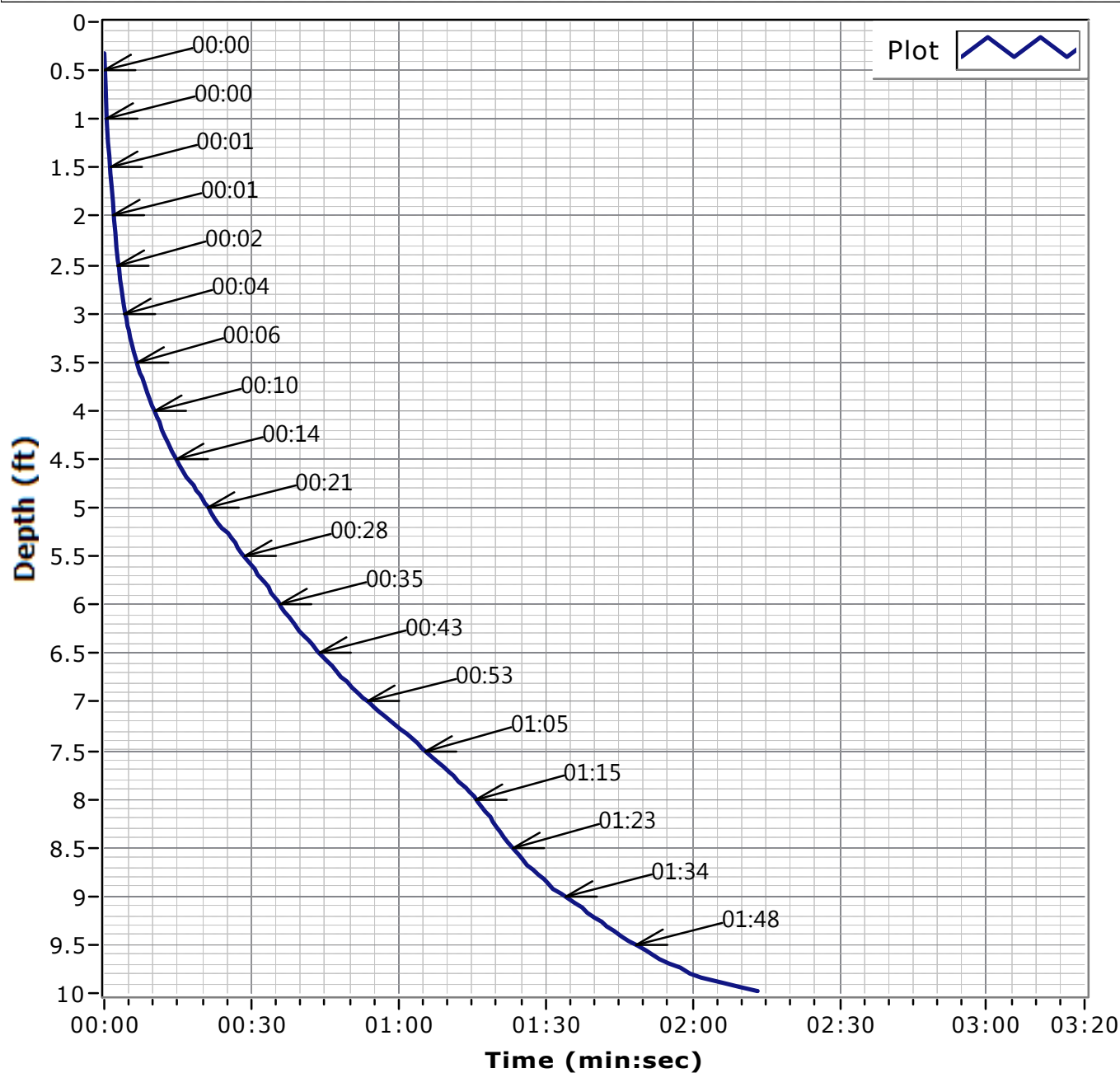
Top of Hole -37.5'
Elevation

Penetration 10.0'

Recovery 10.0'

Recovery % 100%

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
SERVICES

Core Identifier VC21-1-22

Coordinate System

Latitude / Longitude

Date 10/26/2021

Start Time 15:10:46

End Time 15:14:01

Total Time 00:03:15

Top of Hole -41.0'
Elevation

Penetration 10.0'

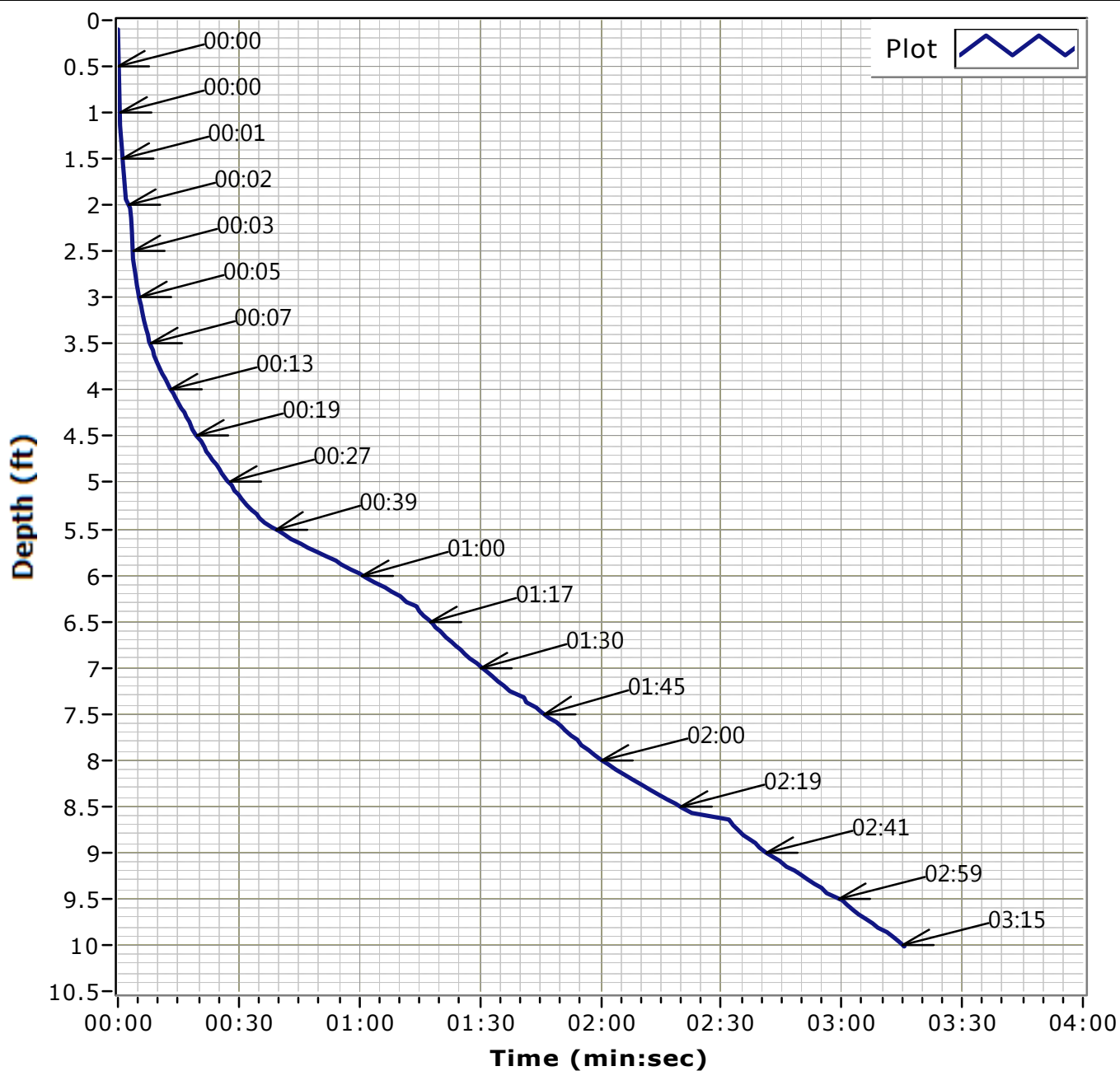
Recovery 10.0'

Recovery % 100%

Latitude 26.384577

Longitude -82.364990

Comments



Project

LOVER'S KEY
DETAIL LEVEL CORES
2021

Amdrill
VIBRACORE
S E R V I C E S

Core Identifier VC21-1-23

Date 10/26/2021

Top of Hole -38.9'
Elevation

Coordinate System

Latitude / Longitude

Start Time 14:50:37

End Time 14:54:49

Penetration 10.0'

Latitude 26.384574

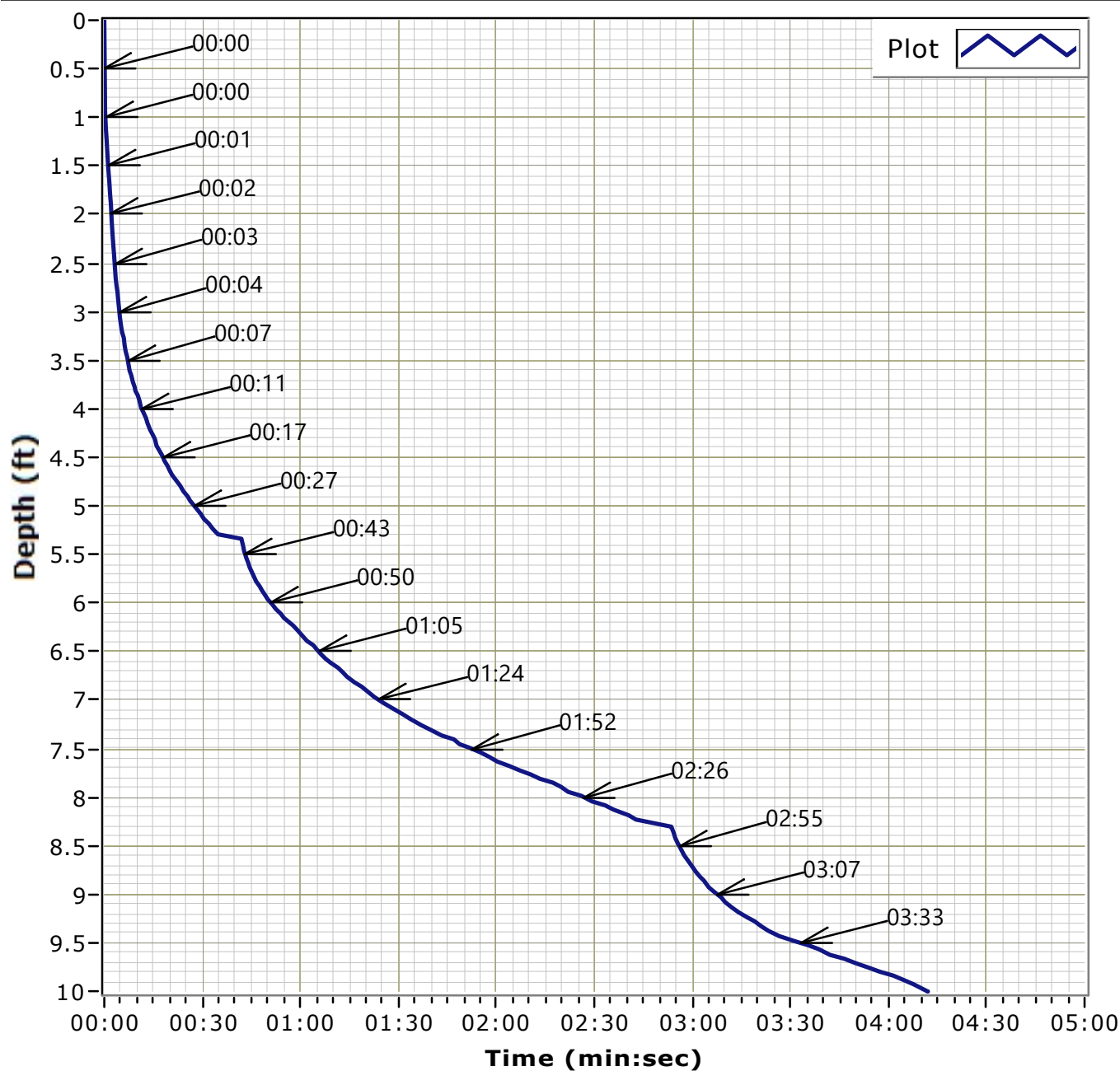
Total Time 00:04:12

Recovery 10.0'

Longitude -82.367090

Recovery % 100%

Comments



8.0 Vibracore Photographs





Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-04

Top of Core
Elevation
NAVD 88
-39.9 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-05

Top of Core
Elevation
NAVD 88
-33.0 Ft

Scale in Tenths of Feet



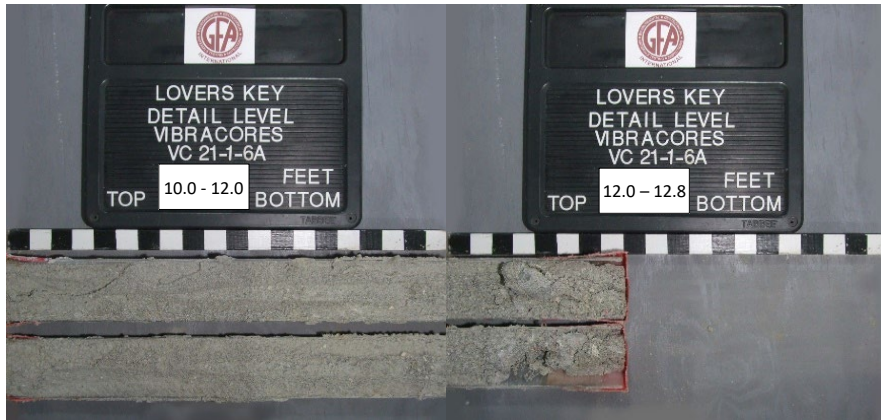
Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-06

Top of Core
Elevation
NAVD 88
-37.4 Ft

Scale in Tenths of Feet



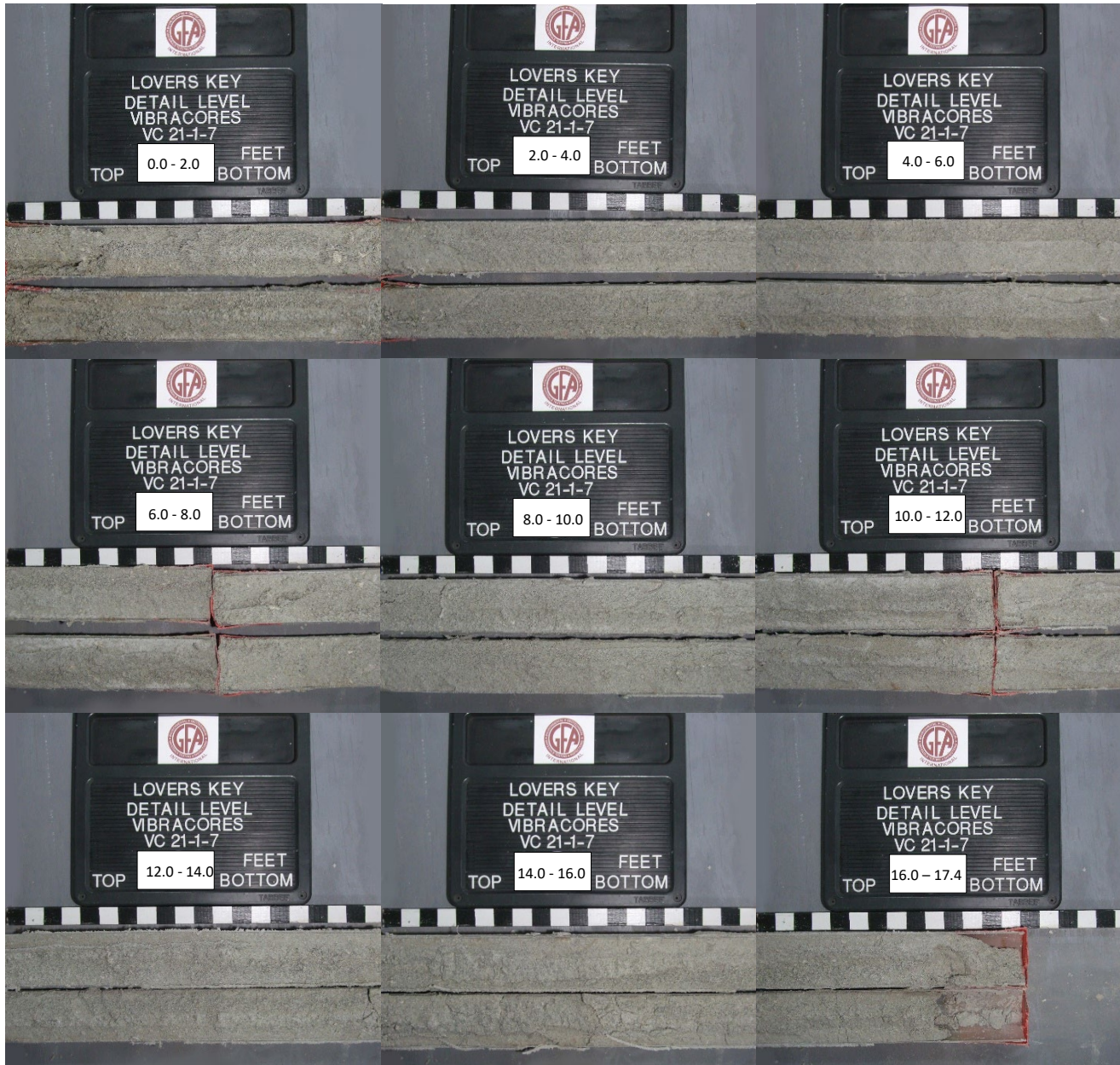
Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-06A

Top of Core
Elevation
NAVD 88
-36.8 Ft

Scale in Tenths of Feet



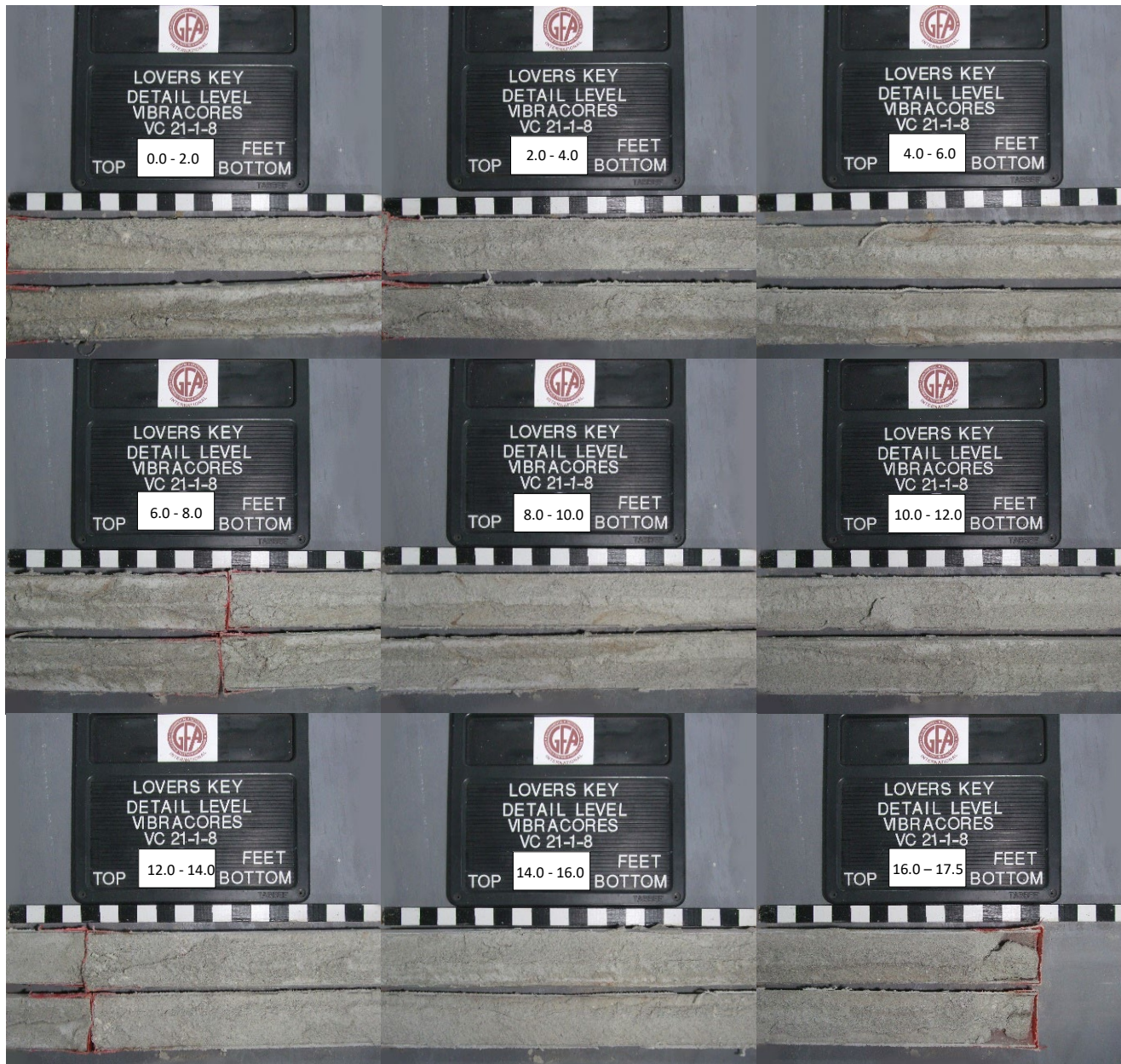
Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-07

Top of Core
Elevation
NAVD 88
-35.7 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-08

Top of Core
Elevation
NAVD 88
-32.5 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-09

Top of Core
Elevation
NAVD 88
-32.4 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-10

Top of Core
Elevation
NAVD 88
-37.0 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-11

Top of Core
Elevation
NAVD 88
-33.4 Ft

Scale in Tenths of Feet



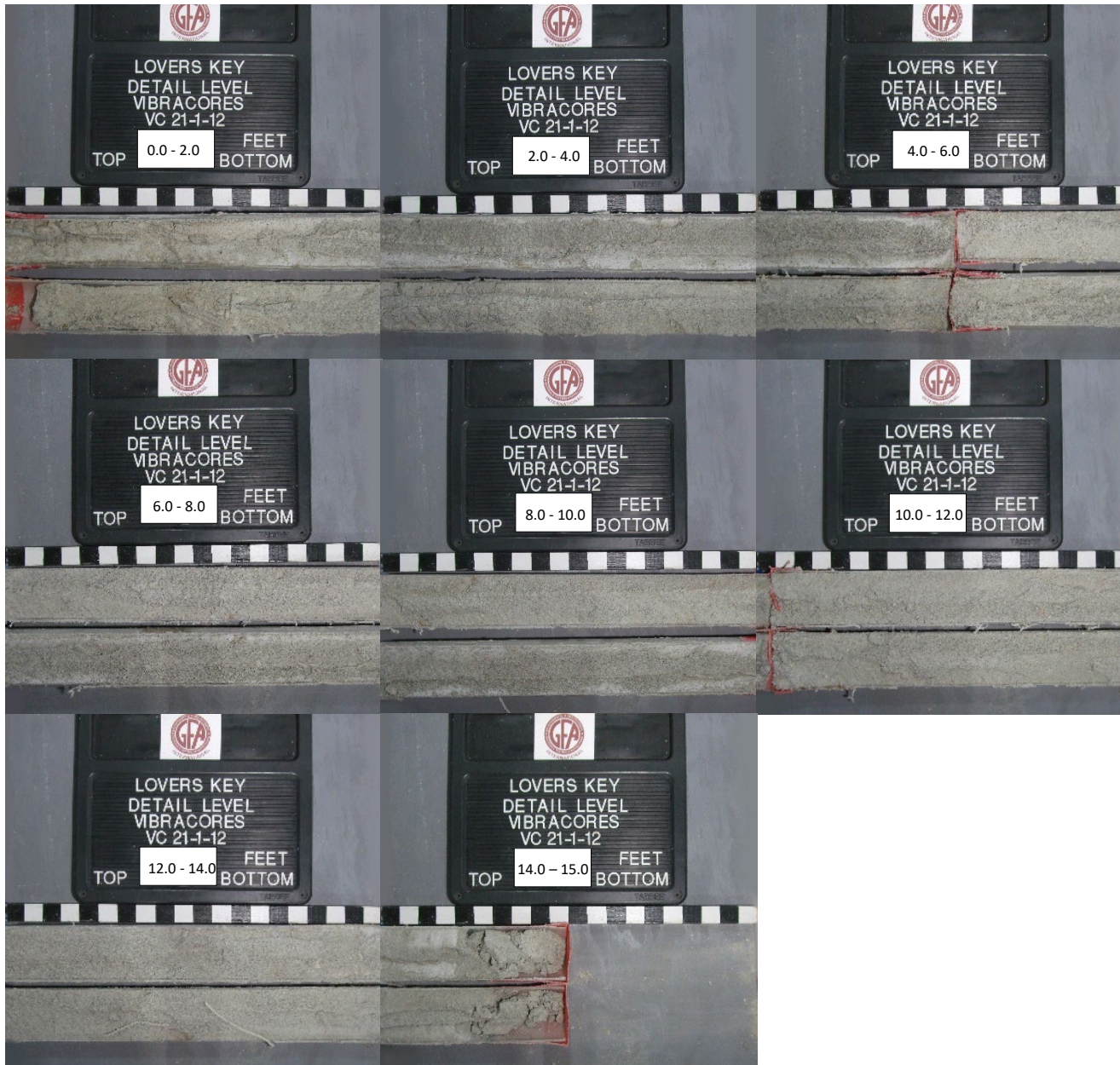
Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-11A

Top of Core
Elevation
NAVD 88
-34.6 Ft

Scale in Tenths of Feet



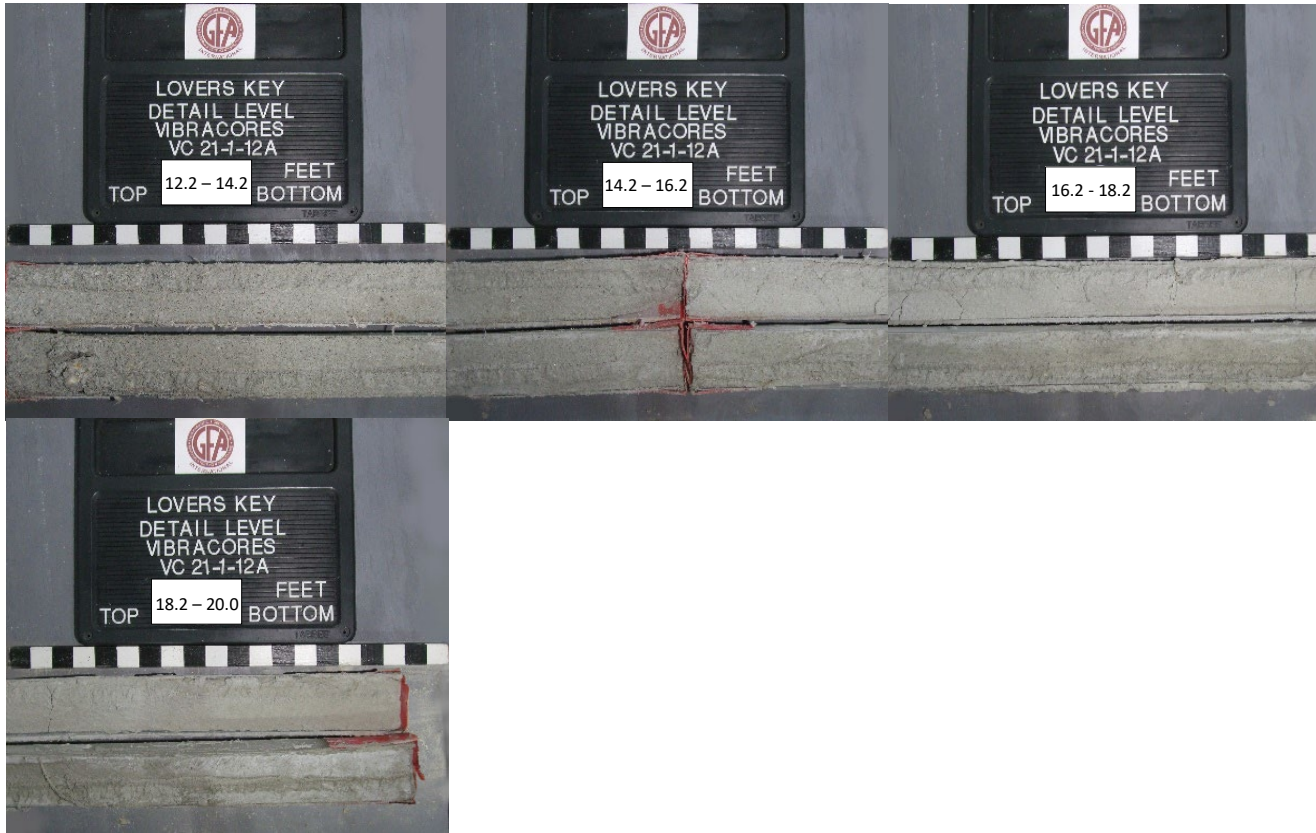
Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-12

Top of Core
Elevation
NAVD 88
-34.3 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-12A

Top of Core
Elevation
NAVD 88
-34.3 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-13

Top of Core
Elevation
NAVD 88
-34.1 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-14

Top of Core
Elevation
NAVD 88
-39.6 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-15

Top of Core
Elevation
NAVD 88
-39.5 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-16

Top of Core
Elevation
NAVD 88
-39.2 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-17

Top of Core
Elevation
NAVD 88
-41.0 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-18

Top of Core
Elevation
NAVD 88
-41.9 Ft

Scale in Tenths of Feet



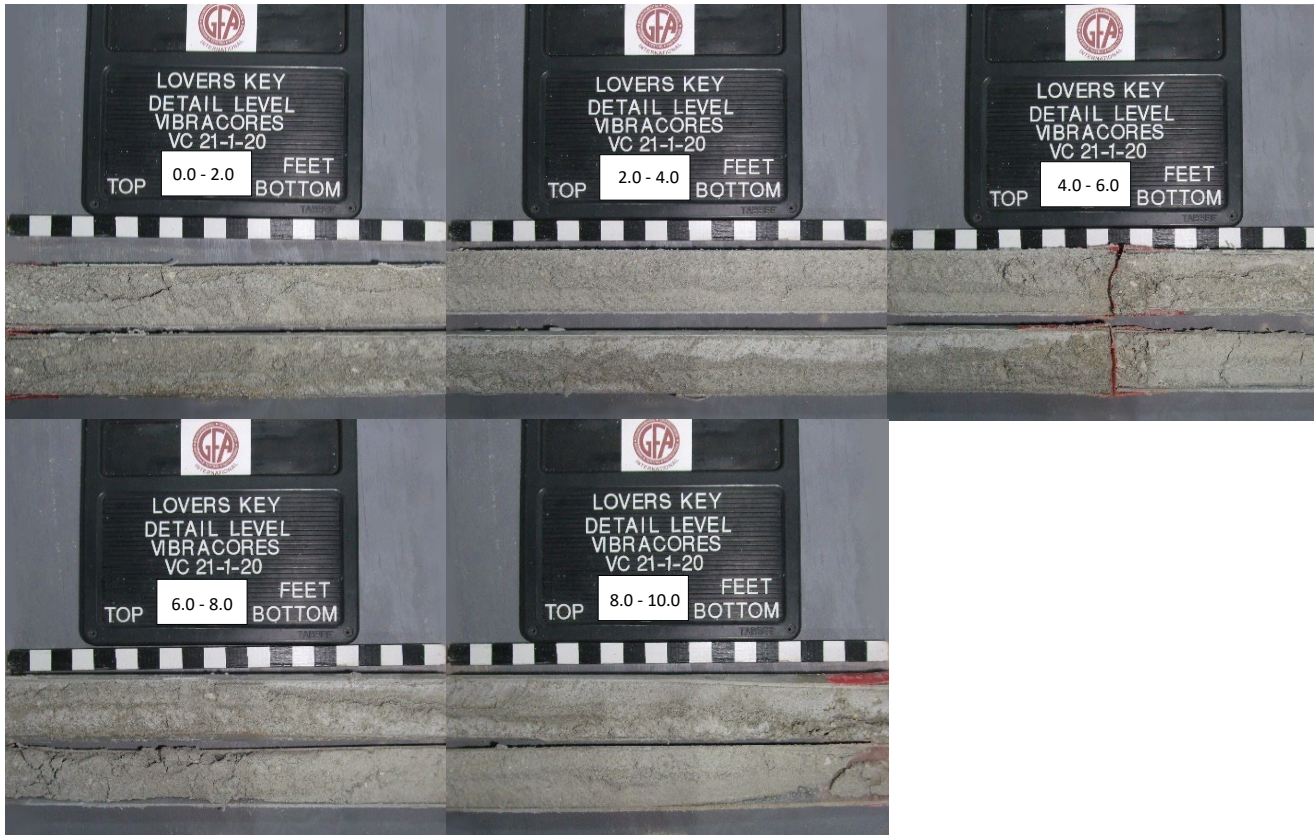
Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-19

Top of Core
Elevation
NAVD 88
-38.1 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-20

Top of Core
Elevation
NAVD 88
-42.0 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-21

Top of Core
Elevation
NAVD 88
-37.5 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-22

Top of Core
Elevation
NAVD 88
-41.0 Ft

Scale in Tenths of Feet



Lovers Key Beach Nourishment Sand Search

Detail Level Geotechnical
Investigation
2021

VC21-1-23

Top of Core
Elevation
NAVD 88
-38.9 Ft

Scale in Tenths of Feet