

Geotechnical Data Report

Bayou Bonfouca Borrow Area Sediment
Sampling
St. Tammany Parish, Louisiana

for

Coast & Harbor Engineering

DJuly 16, 2013



Geotechnical Data Report

Bayou Bonfouca Borrow Area Sediment Sampling
St. Tammany Parish, Louisiana

for

Coast and Harbor Engineering, Inc.

July 16, 2013



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File No. 16715-023-01

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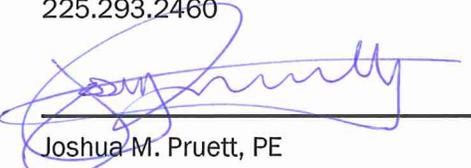
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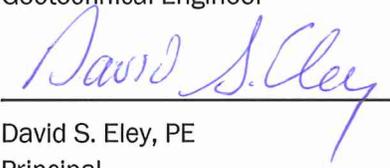
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INTRODUCTION

GeoEngineers, Inc. (GeoEngineers) is pleased to present this data report for sediment sampling in Lake Pontchartrain in conjunction with the PO-104 Bayou Bonfouca Marsh Creation Project (referred to hereafter as the PO-104 project) in Big Branch National Wildlife Management Area. Our sampling and testing work was done in accordance with our proposal and our subconsultant agreement with Coast and Harbor Engineering (Coast & Harbor), dated May 6, 2013 and signed by us on May 22, 2013. The work was authorized under Louisiana Coastal Protection and Restoration Authority (CPRA) Contract No. 2503-12-16, "Engineering Services for Coastal Protection and Restoration Projects", for which Coast and Harbor is the prime engineering contractor.

The purpose of our exploration was to determine the distribution of fine grained soil, sand and shell in the PO-104 project borrow area by sampling the top 6-inches of soil and conducting limited grain size distribution testing in our lab. The PO-104 borrow area is located in Lake Pontchartrain, southeast of Slidell, directly south of where Bayou Bonfouca joins the lake, as shown in Figures 1 and 2. Our exploration took place as described in the section on field exploration at the locations shown in Figure 2.

This document presents our scope of services, a brief description of our field exploration and laboratory testing methodologies, and a summary table showing the results of our lab testing. Report limitations are discussed at the end of this document.

SCOPE OF SERVICES

GeoEngineers has completed the following services in support of this project:

1. Contacted Louisiana One-Call to clear sub-surface utilities in the PO-104 borrow area.
2. Mobilized a ski barge and equipment to push a 3-inch diameter split spoon sampler. Probed the Collins/ExxonMobil finished product pipeline for location and depth of cover at two locations requested by CPRA and Coast and Harbor.
3. Provided the sampling crew with geodetic coordinates (latitude and longitude in degree-minute-second format) for each sampling location. Locations were verified by GeoEngineers personnel using a handheld GPS device.
4. Sampled the top 6-inches below mudline at each sampling location. Sampling procedures are described below in the field exploration section of the report.
5. Tested each sample by washing through a #10 (2.0 mm) sieve and a #200 (0.075 mm) sieve to determine the percent (%) retained on each sieve and the % finer than the #200 sieve.
6. Presented sieve testing results for each sample in this report.

The special field exploration and laboratory testing considerations listed in the scope of services section of our proposal generally applied in our development of exploration results.

SITE CONDITIONS

During field exploration, the borrow area mudline was generally about nine (9) feet below the water surface. Wind conditions interrupted our sampling activities for a couple days. The water was too rough to allow safe sampling. Daily field reports from our field exploration activities are included in Appendix A.

FIELD EXPLORATION

On June 10, 2013, the crew went to probe two points between the borrow area and the shoreline to determine the location and depth of cover for the Collins finished product pipeline managed by ExxonMobil near the project area: one near the shoreline and one offshore. This probing was requested by CPRA at the potential pipeline crossing locations listed in the table below and was not part of the original scope of this project. Potential pipeline crossing locations are also identified on Figure 1. The purpose of the probing was to determine the depth of soil cover over the pipeline to determine required equipment and methods for crossing the pipeline during construction of the PO-104 project. Of the two locations, the crew was unable to locate the pipeline in the offshore area. Water depth at the near shore location at the time of probing was approximately 3 feet. Depth of soil cover at the near shore location was 8.2 feet.

TABLE 1. POTENTIAL PIPELINE CROSSING LOCATIONS AND DEPTH OF COVER

Potential Location Identification	Northing	Easting	Water Depth (ft)	Depth of Soil Cover (ft)
Near shore crossing location	639,069.21	3,741,406.29	3	8.2
Offshore crossing location*	637,415.35	3,741,128.08	N/A	N/A

*Northings and Eastings provided to us by CPRA and Coast and Harbor. We were unable to locate the pipe to probe for depth of cover at the offshore location.

Proposed sample locations were provided to us on May 21, 2013 by Coast and Harbor. Samples were collected from the Lake Pontchartrain mudline within the accuracy of a handheld GPS device (approximately 20 to 40 feet) of the proposed sample locations between June 10 and June 15, 2013. The ski barge was equipped with drill rods and 3-inch diameter split-spoon samplers. A few samples were collected by dropping/pushing the sampler by hand about a foot past the mudline from the deck of the barge; however, this technique turned out to be slow and ineffective, because it was difficult to recover any sample. It quickly became apparent that our sampling concept at this site would not be achievable with the equipment on hand. The sampling method was changed to grab sampling using PVC pipe with a tennis ball stopper tethered to the end. A string attached to the tennis ball allowed the crew to stop the sample from leaving the pipe as they pulled it onto the deck, while leaving the end of the pipe open to penetrate the mudline on the way down. Additional details of the field exploration are located in the daily field reports in Appendix A.

LABORATORY TESTING RESULTS

Simplified wet sieve testing was conducted on all samples collected during field exploration. Samples were prepared and tested in general accordance with ASTM D422 and AASHTO T 27, with the exception that only two sieve sizes were used: the U.S. #10 sieve (gap size = 2 mm) and the U.S. #200 sieve (gap size = 0.075 mm). The AASHTO specification was applied during testing because the “gravel” size is determined by retention on the U.S. #10 sieve, which we used to determine the shell content of the soil. Sand content was determined by retention on the U.S. #200 sieve. Fines (silt and clay – undistinguished by the sieve test) were determined by the percent of the material passing (i.e., finer than) the #200 sieve. Lab testing results, sample location, and a description of the sample are summarized on the table below, along with the Unified Soil Classification (USCS) soil symbol. Laboratory descriptions are included on the test reports in Appendix B. Only two sieve sizes were used, so the line connecting points in the Appendix B report graphs is not a true reflection of the grain size distribution, but an approximation based on limited available information. At an average of about 60% per sample, sand was the primary component of the majority of samples. However, a relatively small amount of clay in a sample will govern the behavior of the soil. As long as there is enough clay to disrupt contact between sand particles the material will manifest some cohesion and compressibility.

TABLE 2. RESULTS OF SAMPLE TESTING

Bore/ Sample No.	LA State Plane Coordinates		% Shell (>2.0 mm)	% Sand (0.075 mm – 2 mm)	% Fines (<0.075 mm)	Soil Description
	Northing	Easting				
1	634,531.4	3,742,123.6	16.7	45.1	38.2	Silty clayey sand with shell fragments (SC-SM)
2	634,504.9	3,742,422.2	0.3	71.9	27.8	Silty clayey sand (SC-SM)
3	634,488.3	3,742,703.1	15.3	48	36.7	Silty clayey sand with shells (SC-SM)
4	634,451.7	3,743,001.8	5.4	57.6	37	Silty clayey sand with shells (SC-SM)
5	634,384.5	3,743,274.6	9.2	60.4	30.4	Silty clayey sand with shells (SC-SM)
6	634,367.6	3,743,538.0	1.9	61.4	36.7	Silty clayey sand (SC-SM)
7	634,340.8	3,743,810.3	4.7	59.7	35.6	Silty clayey sand with shell fragments (SC-SM)
8	634,304.1	3,744,100.3	0.3	50.8	48.9	Silty clayey sand (SC-SM)
9	634,267.3	3,744,381.4	5.3	53.7	41	Silty clayey sand with shell fragments (SC-SM)
10	634,250.5	3,744,644.8	11.7	53.8	34.5	Silty clayey sand with shell fragments (SC-SM)
11	634,096.9	3,742,111.6	8.2	62.1	29.7	Silty clayey sand with shell fragments (SC-SM)
12	634,070.0	3,742,383.8	1.5	65.5	33	Silty clayey sand with trace shell (SC-SM)
13	634,033.2	3,742,665.0	1	61.5	37.5	Silty clayey sand (SC-SM)
14	634,006.5	3,742,946.1	8.6	45.1	46.3	Silty clayey sand with shells (SC-SM)

Bore/ Sample No.	LA State Plane Coordinates		% Shell (>2.0 mm)	% Sand (0.075 mm – 2 mm)	% Fines (<0.075 mm)	Soil Description
	Northing	Easting				
15	633,969.7	3,743,227.3	21.3	28.6	50.1	Sandy clay with silt and shells (CL)
16	633,932.7	3,743,499.7	3	68.3	28.7	Silty clayey sand with shell fragments (SC-SM)
17	633,916.0	3,743,771.9	7.3	59.9	32.8	Silty clayey sand with shells (SC-SM)
18	633,879.2	3,744,053.1	18.1	41.3	40.6	Silty clayey sand with shells (SC-SM)
19	633,852.4	3,744,325.4	8.6	56.3	35.1	Silty clayey sand with shell fragments (SC-SM)
20	633,825.7	3,744,606.4	3.6	69.1	27.3	Silty clayey sand with shell fragments (SC-SM)
21	633,682.0	3,742,064.2	9.9	49.6	40.5	Silty clayey sand with shell fragments (SC-SM)
22	633,645.2	3,742,345.4	15	39.7	45.3	Silty clayey sand with shell fragments (SC-SM)
23	633,608.3	3,742,617.8	11.9	29.9	58.2	Sandy clay with shells and 1" clay layer at bottom (CL)
24	633,581.5	3,742,898.9	0.1	32.1	67.8	Sandy clay (CL)
25	633,554.7	3,743,171.2	6.5	52.3	41.2	Silty clayey sand with shell fragments (SC-SM)
26	633,517.8	3,743,443.6	2.6	36.3	61.1	Sandy clay with shells (CL)
27	633,491.1	3,743,724.7	1.9	41.1	57	Sandy clay with shell fragments (CL)
28	633,454.1	3,743,997.1	2.3	33.9	63.8	Sandy clay with 1 ½" clayey silt layer at top (CL)
29	633,427.4	3,744,278.2	8.2	25.4	66.4	Sandy clay with shells (CL)
30	633,380.5	3,744,559.5	10.1	14.6	75.3	Sandy clay with shells (CL)
31	633,246.9	3,742,008.3	6.4	59.2	34.4	Silty clayey sand with shell fragments (SC-SM)
32	633,220.2	3,742,289.4	6.1	67	26.9	Silty clayey sand with shell fragments (SC-SM)
33	633,193.3	3,742,561.7	0.5	72	27.5	Silty clayey sand (SC-SM)
34	633,156.5	3,742,842.9	13.9	60.2	25.9	Silty clayey sand with shells (SC-SM)
35	633,119.7	3,743,124.1	4.3	71.6	24.1	Silty clayey sand (SC-SM)
36	633,082.9	3,743,405.3	1.7	67.4	30.9	Silty clayey sand with shells (SC-SM)
37	633,056.0	3,743,677.6	16.5	49.6	33.9	Silty clayey sand with shells (SC-SM)
38	633,029.2	3,743,949.9	8.2	59.9	31.9	Silty clayey sand with shells (SC-SM)
39	633,002.5	3,744,231.0	4.6	63.4	32	Silty clayey sand with shell fragments (SC-SM)
40	632,965.7	3,744,512.2	5.6	56.5	37.9	Silty clayey sand with shell fragments (SC-SM)
41	632,832.1	3,741,961.0	1.7	64.6	33.7	Silty clayey sand with shell fragments (SC-SM)

Bore/ Sample No.	LA State Plane Coordinates		% Shell (>2.0 mm)	% Sand (0.075 mm – 2 mm)	% Fines (<0.075 mm)	Soil Description
	Northing	Easting				
42	632,785.1	3,742,242.3	7	70.1	22.9	Silty sand with shell fragments (SM)
43	632,758.3	3,742,514.6	0.5	79.9	19.6	Silty clayey sand with shell fragments (SC-SM)
44	632,741.6	3,742,786.8	0.4	76.7	22.9	Silty clayey sand with shell fragments (SC-SM)
45	632,704.9	3,743,076.8	0.7	82.9	16.4	Silty clayey sand with shell fragments (SC-SM)
46	632,667.9	3,743,349.2	6.6	70.4	23	Silty sand with shell fragments (SM)
47	632,631.0	3,743,621.6	8.2	65.6	26.2	Silty sand with shells (SM)
48	632,605.3	3,743,981.6	4.9	74	21.1	Silty sand with trace clay (SM)
49	632,567.4	3,744,175.1	3	77.8	19.2	Silty clayey sand with shell fragments (SC-SM)
50	632,540.8	3,744,465.0	1.7	83.5	14.8	Silty sand with trace clay and shell fragments (SM)
51	632,397.0	3,741,913.9	3.7	72.5	23.8	Silty clayey sand with shell fragments (SC-SM)
52	632,360.1	3,742,186.3	3.2	73.3	23.5	Clayey sand (SC)
53	632,333.5	3,742,476.2	0.3	78.8	20.9	Silty clayey sand with shell fragments (SC-SM)
54	632,306.5	3,742,739.7	0.8	77.7	21.5	Silty clayey sand with shell fragments (SC-SM)
55	632,269.7	3,743,020.9	3.8	71.2	25	Silty clayey sand with shell fragments (SC-SM)
56	632,243.0	3,743,302.0	5.9	72.9	21.2	Silty sand with trace clay and shell fragments (SM)
57	632,206.1	3,743,574.4	8	63.3	28.7	Silty clayey sand with shell fragments (SC-SM)
58	632,179.4	3,743,855.5	2.4	73.3	24.3	Silty clayey sand with shell fragments (SC-SM)
59	632,142.7	3,744,145.5	0.1	36.1	63.8	Sandy clay with trace silt (CL)
60	632,115.7	3,744,409.0	1.7	40.4	57.9	Sandy clay with shell fragments (CL)
61	631,972.1	3,741,866.7	5	74.6	20.4	Silty sand with shell fragments (SM)
62	631,935.2	3,742,139.1	5.1	78.2	16.7	Silty sand with shell fragments (SC-SM)
63	631,908.4	3,742,420.2	6.3	62.7	31	Silty clayey sand with shell fragments (SC-SM)
64	631,881.6	3,742,692.5	0.2	43.4	56.4	Sandy silt (ML)
65	631,844.8	3,742,973.7	0.1	58.2	41.7	Silty clayey sand (SC-SM)
66	631,818.1	3,743,254.8	0.8	57.6	41.6	Silty clayey sand (SC-SM)
67	631,781.1	3,743,527.2	0.1	42.2	57.7	Sandy silt (ML)
68	631,754.4	3,743,808.3	0.9	32.1	67	Sandy silt (ML)

Bore/ Sample No.	LA State Plane Coordinates		% Shell (>2.0 mm)	% Sand (0.075 mm – 2 mm)	% Fines (<0.075 mm)	Soil Description
	Northing	Easting				
69	631,717.5	3,744,080.7	0.5	50.7	48.8	Silty clayey sand with shell fragments (SC-SM)
70	631,690.8	3,744,361.8	0.1	63.4	36.5	Silty clayey sand (SC-SM)
71	631,547.1	3,741,810.7	2.1	82.4	15.5	Silty sand with shell fragments (SM)
72	631,520.3	3,742,091.8	0.8	79.7	19.5	Silty clayey sand with shell fragments (SC-SM)
73	631,483.4	3,742,364.2	10.3	57.3	32.4	Silty sand with trace clay and shells (SM)
74	631,456.7	3,742,645.3	0.2	69.7	30.1	Silty clayey sand with shell fragments (SC-SM)
75	631,409.8	3,742,926.6	0.7	78.4	20.9	Silty clayey sand with shell fragments (SC-SM)
76	631,393.0	3,743,198.8	7.9	57	35.1	Silty clayey sand with shell fragments (SC-SM)
77	631,356.2	3,743,480.0	0.5	83.6	15.9	Silty clayey sand with trace organics and shell fragments (SC-SM)
78	631,319.3	3,743,752.5	2.7	62	35.3	Silty clayey sand with trace organics and shell fragments (SC-SM)
79	631,292.6	3,744,033.5	2.6	55.5	41.9	Silty clayey sand with shell fragments (SC-SM)
80	631,255.7	3,744,306.0	5.8	37.8	56.4	Sandy clay with silt and shells (CL)
81	631,162.6	3,741,762.9	2.5	72.4	25.1	Silty clayey sand with shell fragments (SC-SM)
82	631,095.4	3,742,044.5	7.2	58.2	34.6	Silty clayey sand with shell fragments (SC-SM)
83	631,048.3	3,742,308.3	11	48.4	40.6	Silty clayey sand with shells (SC-SM)
84	631,031.9	3,742,606.8	6.9	58.1	35	Silty clayey sand with shell fragments (SC-SM)
85	630,994.8	3,742,870.5	20.5	33	46.5	Sandy clay with silt and shells (CL)
86	630,958.1	3,743,160.5	7.7	59.6	32.7	Silty clayey sand with shell fragments (SC-SM)
87	630,931.4	3,743,441.6	1.1	64.1	34.8	Silty clayey sand with shell fragments (SC-SM)
88	630,894.4	3,743,705.3	14.1	35.9	50	Sandy clay with shells (CL)
89	630,867.6	3,743,986.3	3.5	62.2	34.3	Silty clayey sand with shells (SC-SM)
90	630,830.6	3,744,250.0	9.6	46	44.4	Silty clayey sand with shell fragments (SC-SM)
91	630,697.2	3,741,716.2	23	22	55	Sandy clay with shells (CL)
92	630,660.4	3,741,997.4	11.2	34.6	54.2	Sandy clay with shells (CL)
93	630,633.6	3,742,269.8	11.3	42.9	45.8	Silty clayey sand with shells (SC-SM)
94	630,596.7	3,742,551.0	4.2	70.6	25.2	Silty clayey sand with shell fragments (SC-SM)

Bore/ Sample No.	LA State Plane Coordinates		% Shell (>2.0 mm)	% Sand (0.075 mm – 2 mm)	% Fines (<0.075 mm)	Soil Description
	Northing	Easting				
95	630,569.9	3,742,823.3	9.2	50.8	40	Silty clayey sand with shell fragments (SC-SM)
96	630,533.1	3,743,104.5	5.1	54.8	40.1	Silty clayey sand with shell fragments (SC-SM)
97	630,506.1	3,743,368.1	10.7	48.1	41.2	Silty clayey sand with shell fragments (SC-SM)
98	630,488.6	3,743,578.8	4.3	60.7	35	Silty clayey sand with shell fragments (SC-SM)
99	630,483.1	3,743,938.6	8.8	47.8	43.4	Silty clayey sand with shell fragments (SC-SM)
100	630,405.8	3,744,211.6	3.9	69.7	26.4	Silty clayey sand with shell fragments (SC-SM)

Figure 3 gives a graphical representation of the distribution of sand content in the top few inches of soil across the entire borrow area. Figure 3 is for illustration purposes only and may not reflect the actual condition of the soil between sample locations. Please refer to Appendix C for a discussion on soil conditions outside of soil explorations.

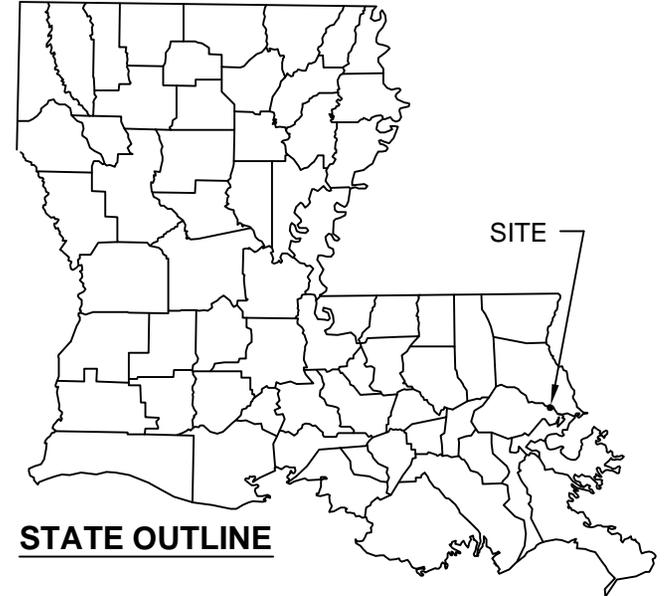
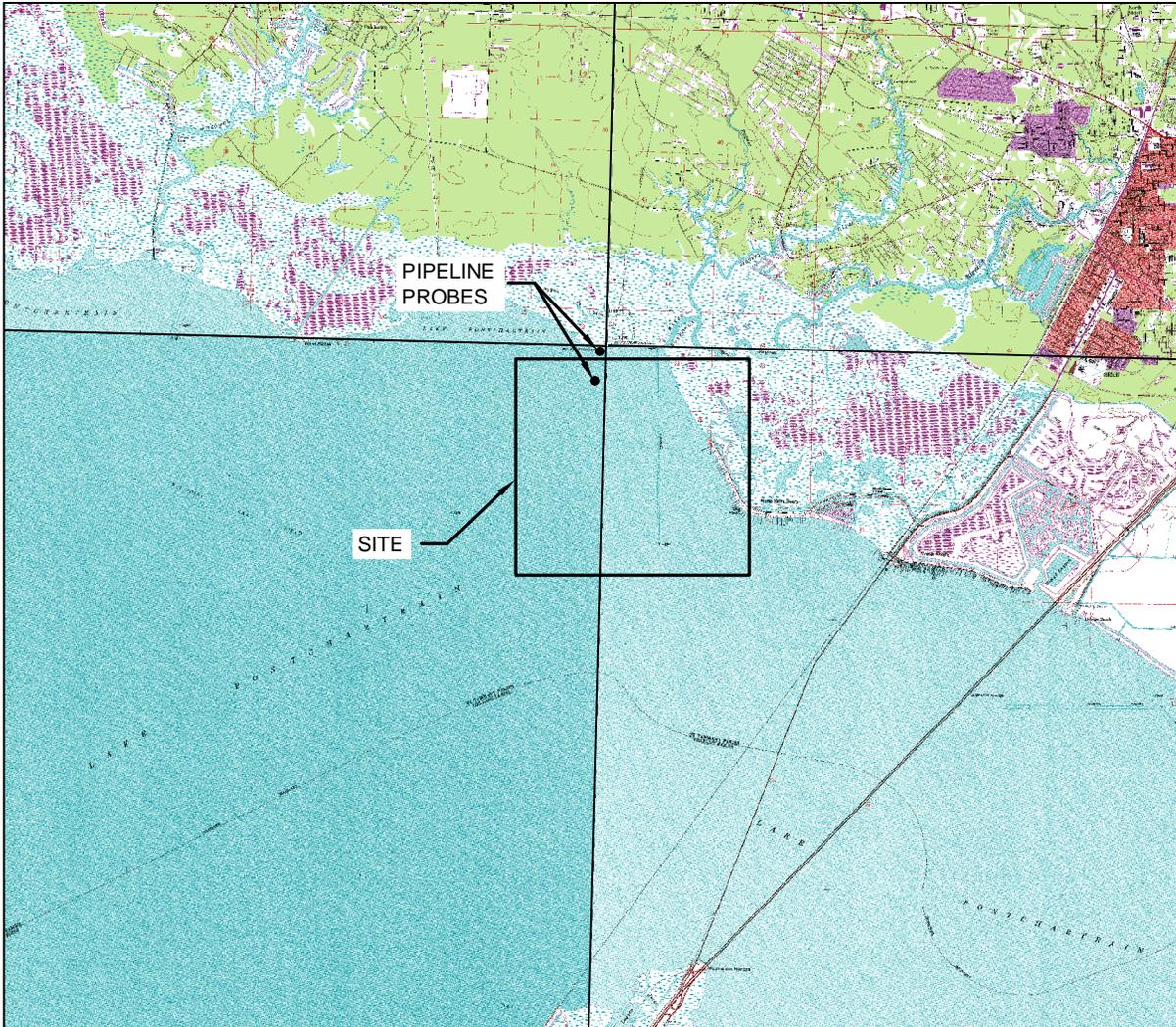
LIMITATIONS

The information presented in this report is based on the soil exploration and testing completed for this study, and judgments made by the certifying engineers. This report is specific to this site and should not be used other than for to support the design of the Bayou Bonfouca Marsh Creation (PO-104) project located in St. Tammany Parish, Louisiana.

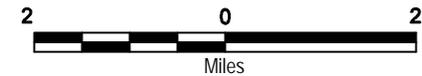
Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions express or implied should be understood.

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Please refer to Appendix C titled “Report Limitations and Guidelines for Use” for additional information pertaining to use of this report.



STATE OUTLINE



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Topographic map taken from USGS, 24K Template, Quads: North Shore, South Point, Slidell and Lacombe, Dated: 1994

VICINITY MAP

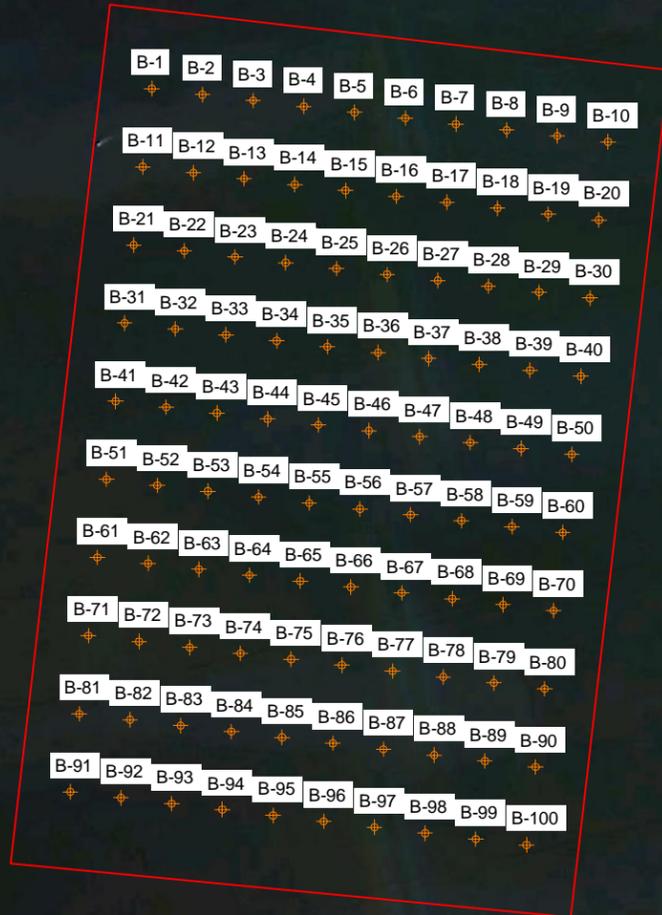
PO-104 Bayou Bonfouca Marsh Creation
Borrow Area Sediment Sampling
St. Tammany Parish, Louisiana



Figure 1

JMP : KMC

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BORING DETAILS		
Boring #	LA State Plane Coordinates	
	Northing	Easting
B-1	634,531.4	3,742,123.6
B-2	634,504.9	3,742,422.2
B-3	634,488.3	3,742,703.1
B-4	634,451.7	3,743,001.8
B-5	634,384.5	3,743,274.6
B-6	634,367.6	3,743,538.0
B-7	634,340.8	3,743,810.3
B-8	634,304.1	3,744,100.3
B-9	634,267.3	3,744,381.4
B-10	634,250.5	3,744,644.8
B-11	634,096.9	3,742,111.6
B-12	634,070.0	3,742,383.8
B-13	634,033.2	3,742,665.0
B-14	634,006.5	3,742,946.1
B-15	633,969.7	3,743,227.3
B-16	633,932.7	3,743,499.7
B-17	633,916.0	3,743,771.9
B-18	633,879.2	3,744,053.1
B-19	633,852.4	3,744,325.4
B-20	633,825.7	3,744,606.4
B-21	633,682.0	3,742,064.2
B-22	633,645.2	3,742,345.4
B-23	633,608.3	3,742,617.8
B-24	633,581.5	3,742,898.9
B-25	633,554.7	3,743,171.2
B-26	633,517.8	3,743,443.6
B-27	633,491.1	3,743,724.7
B-28	633,454.1	3,743,997.1
B-29	633,427.4	3,744,278.2
B-30	633,380.5	3,744,559.5
B-31	633,246.9	3,742,008.3
B-32	633,220.2	3,742,289.4
B-33	633,193.3	3,742,561.7
B-34	633,156.5	3,742,842.9
B-35	633,119.7	3,743,124.1
B-36	633,082.9	3,743,405.3
B-37	633,056.0	3,743,677.6
B-38	633,029.2	3,743,949.9
B-39	633,002.5	3,744,231.0
B-40	632,965.7	3,744,512.2
B-41	632,832.1	3,741,961.0
B-42	632,785.1	3,742,242.3
B-43	632,758.3	3,742,514.6
B-44	632,741.6	3,742,786.8
B-45	632,704.9	3,743,076.8
B-46	632,667.9	3,743,349.2
B-47	632,631.0	3,743,621.6
B-48	632,605.3	3,743,891.6
B-49	632,567.4	3,744,175.1
B-50	632,540.8	3,744,465.0

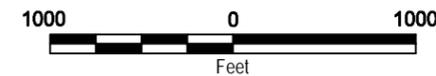
BORING DETAILS		
Boring #	LA State Plane Coordinates	
	Northing	Easting
B-51	632,397.0	3,741,913.9
B-52	632,360.1	3,742,186.3
B-53	632,333.5	3,742,476.2
B-54	632,306.5	3,742,739.7
B-55	632,269.7	3,743,020.9
B-56	632,243.0	3,743,302.0
B-57	632,206.1	3,743,574.4
B-58	632,179.4	3,743,855.5
B-59	632,142.7	3,744,145.5
B-60	632,115.7	3,744,409.0
B-61	631,972.1	3,741,866.7
B-62	631,935.2	3,742,139.1
B-63	631,908.4	3,742,420.2
B-64	631,881.6	3,742,692.5
B-65	631,844.8	3,742,973.7
B-66	631,818.1	3,743,254.8
B-67	631,781.1	3,743,527.2
B-68	631,754.4	3,743,808.3
B-69	631,717.5	3,744,080.7
B-70	631,690.8	3,744,361.8
B-71	631,547.1	3,741,810.7
B-72	631,520.3	3,742,091.8
B-73	631,483.4	3,742,364.2
B-74	631,456.7	3,742,645.3
B-75	631,409.8	3,742,926.6
B-76	631,393.0	3,743,198.8
B-77	631,356.2	3,743,480.0
B-78	631,319.3	3,743,752.5
B-79	631,292.6	3,744,033.5
B-80	631,255.7	3,744,306.0
B-81	631,162.6	3,741,762.9
B-82	631,095.4	3,742,044.5
B-83	631,048.3	3,742,308.3
B-84	631,031.9	3,742,606.8
B-85	630,994.8	3,742,870.5
B-86	630,958.1	3,743,160.5
B-87	630,931.4	3,743,441.6
B-88	630,894.4	3,743,705.3
B-89	630,867.6	3,743,986.3
B-90	630,830.6	3,744,250.0
B-91	630,697.2	3,741,716.2
B-92	630,660.4	3,741,997.4
B-93	630,633.6	3,742,269.8
B-94	630,596.7	3,742,551.0
B-95	630,569.9	3,742,823.3
B-96	630,533.1	3,743,104.5
B-97	630,506.1	3,743,368.1
B-98	630,488.6	3,743,578.8
B-99	630,483.1	3,743,938.6
B-100	630,405.8	3,744,211.6

LEGEND

-  B-1 Grab Sample
-  Borrow Area

Notes:
 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Aerial image was taken from Google Earth Pro., Licensed to GeoEngineers, Inc., Imagery dated: 11/29/2011

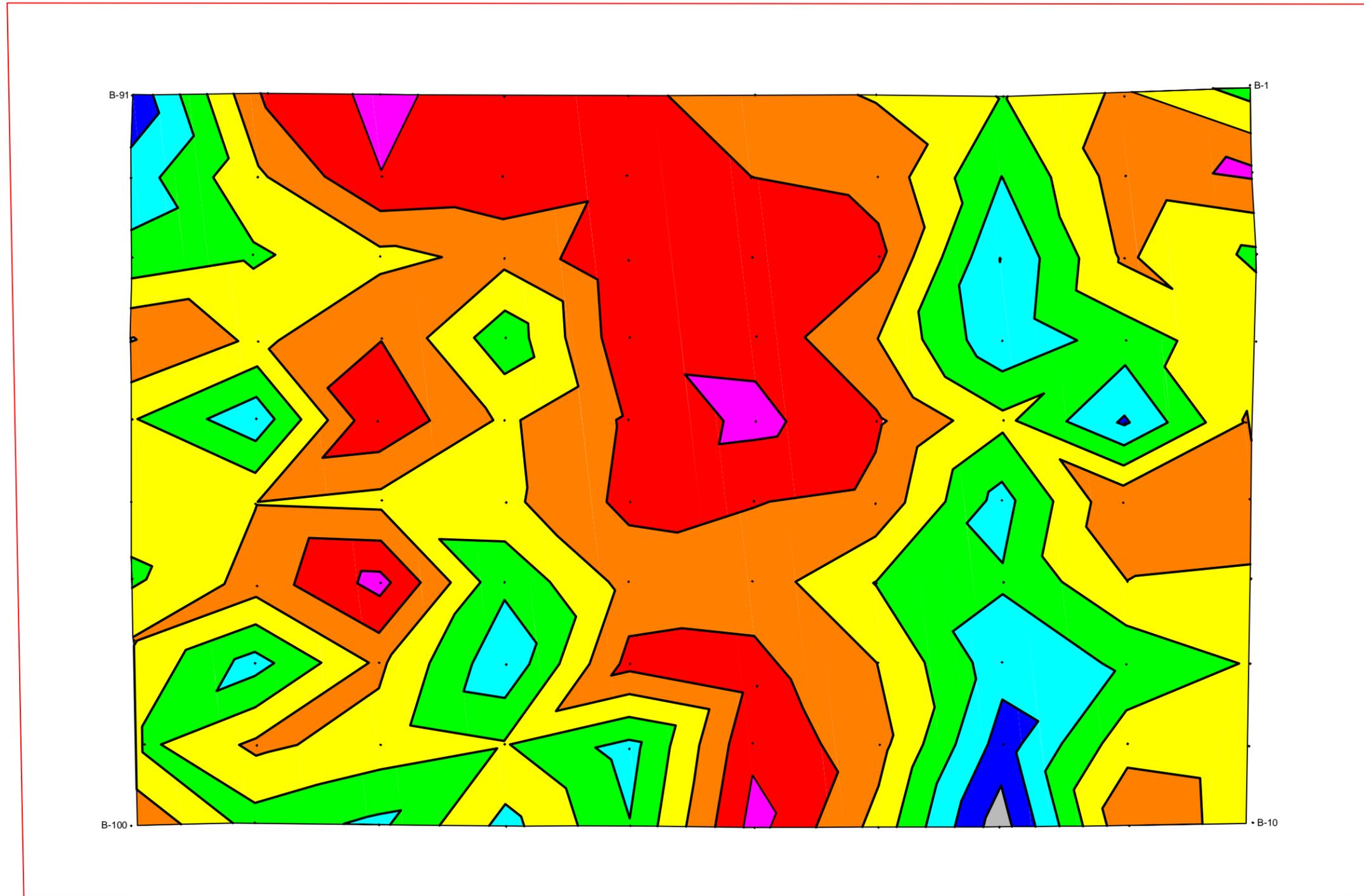


SEDIMENT SAMPLING PLAN

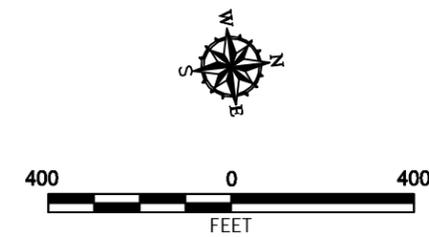
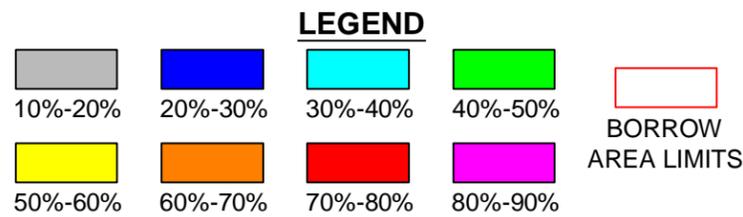
PO-104 Bayou Bonfouca Marsh Creation
 Borrow Area Sediment Sampling
 St. Tammany Parish, Louisiana



Figure 2



Notes:
 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.



SAND CONCENTRATIONS THROUGH BORROW AREA	
PO-104 Bayou Bonfouca Marsh Creation Borrow Area Sediment Sampling St. Tammany Parish, Louisiana	
GEOENGINEERS 	Figure 3

A topographic map background with blue contour lines and a dashed blue path. The map shows various elevation contours and a winding path that starts in the upper left and moves towards the lower right.

APPENDIX A
Daily Field Reports



11955 LAKELAND PARK BLVD.
BATON ROUGE, LA. 70809
(225) 293-2460

FIELD REPORT

File Number:
16715-023-01

Project:
LDNR/Bayou Bonfouca Sediment Sampling

Date:
10 June 2013

Owner:
Coast and Harbor Engineering

Time of Arrival:
1000

Report Number:
1

Prepared by:
Donnie Smith

Location:
Lake Ponchartrain/St. Tammany Parish,
LA

Time of Departure
1330

Page:
1 of 6

Purpose of visit:
Field Exploration

Weather:
Partly Cloudy in the AM/Scattered
Thunderstorms in the PM

Travel Time:
3.50 hrs.

Permit Number:
N/A

Upon arrival to the site I assessed personal safety hazards: Yes or Referred to Site Safety Plan and Safety Tailgate if applicable
Safety Hazards Were Addressed by : Performing tool box safety meeting Other (describe)

BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE	BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE
1	1	1	100%	51	1		
2	1	1	100%	52	1		
3	1			53	1		
4	1			54	1		
5	1			55	1		
6	1			56	1		
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15	1			65	1		
16	1			66	1		
17	1			67	1		
18	1			68	1		
19	1			69	1		
20	1			70	1		
21	1			71	1		
22	1			72	1		

THIS FIELD REPORT IS PRELIMINARY

A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

FIELD REPRESENTATIVE

Donnie Smith

DATE

10 June 2013

THIS FIELD REPORT IS FINAL

A final report is an instrument of professional service. Any conclusions drawn from this report should be discussed with and evaluated by the professional involved.

REVIEWED BY

DATE

13 June 2013

This report presents opinions formed as a result of our observation of activities relating to our services only. We rely on the contractor to comply with the plans and specification throughout the duration of the project irrespective of the presence of our representative. Our work does not include supervision or direction of the work of others. Our firm will not be responsible for job or site safety of others on this project. **DISCLAIMER:** Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Attachments:

Distribution:

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49	1			99	1		
50	1			100	1		

Summary of Daily Activities:

All personnel and equipment were mobilized to site. After meeting with Mr. Kenny Lacoste of ExxonMobil Pipeline, we successfully probed for cover depth of existing line at one location (close to bank) but were unsuccessful at the second location (away from bank). We then began sediment sampling before thunderstorms/lightening forced us to return to shore.

Crew Members/Rig Type:

Driller: Terry Jeansonne (SER)

Roughnecks: Cody Marcotte (SER)

Technician: Donnie Smith (GeoEngineers)

N/A – sampling done by dropping 3-inch SPT spoon to mud line from ski barge

One Call Number: 130228363

Observations:

0745 - 1000: I, Donnie Smith of GeoEngineers, departed Baton Rouge, LA and travel to marina in Slidell, LA, stopping to pick up additional supplies along the way (dry erase board). I also contacted Mr. Kenny Lacoste of ExxonMobile at 0900. Mr. Lacoste stated that he will meet us on location at 1100.

1000 – 1015: Arrived at marina. SER personnel are on site and have launched ski barge. We loaded supplies and departed landing.

1015 – 1030: Traveled from landing to Bonfouca Nearshore Exxon Crossing.

1030 – 1045: Stood by for arrival of Mr. Lacoste.

1045 – 1115: Mr. Lacoste arrives on location and the pipeline was located and probed at near shore coordinates provided. Probing revealed that there is 8.2-feet of cover over the pipeline in approximately 3-feet of water.

1115 – 1150: We moved to coordinates provided for the Bonfouca Offshore Exxon Crossing. Mr. Lacoste's locator is not working this far from shore and we were unable to locate or probe pipeline. Mr. Lacoste departed site.

1150 – 1200: Traveled to sediment sampling location and began with boring 1.

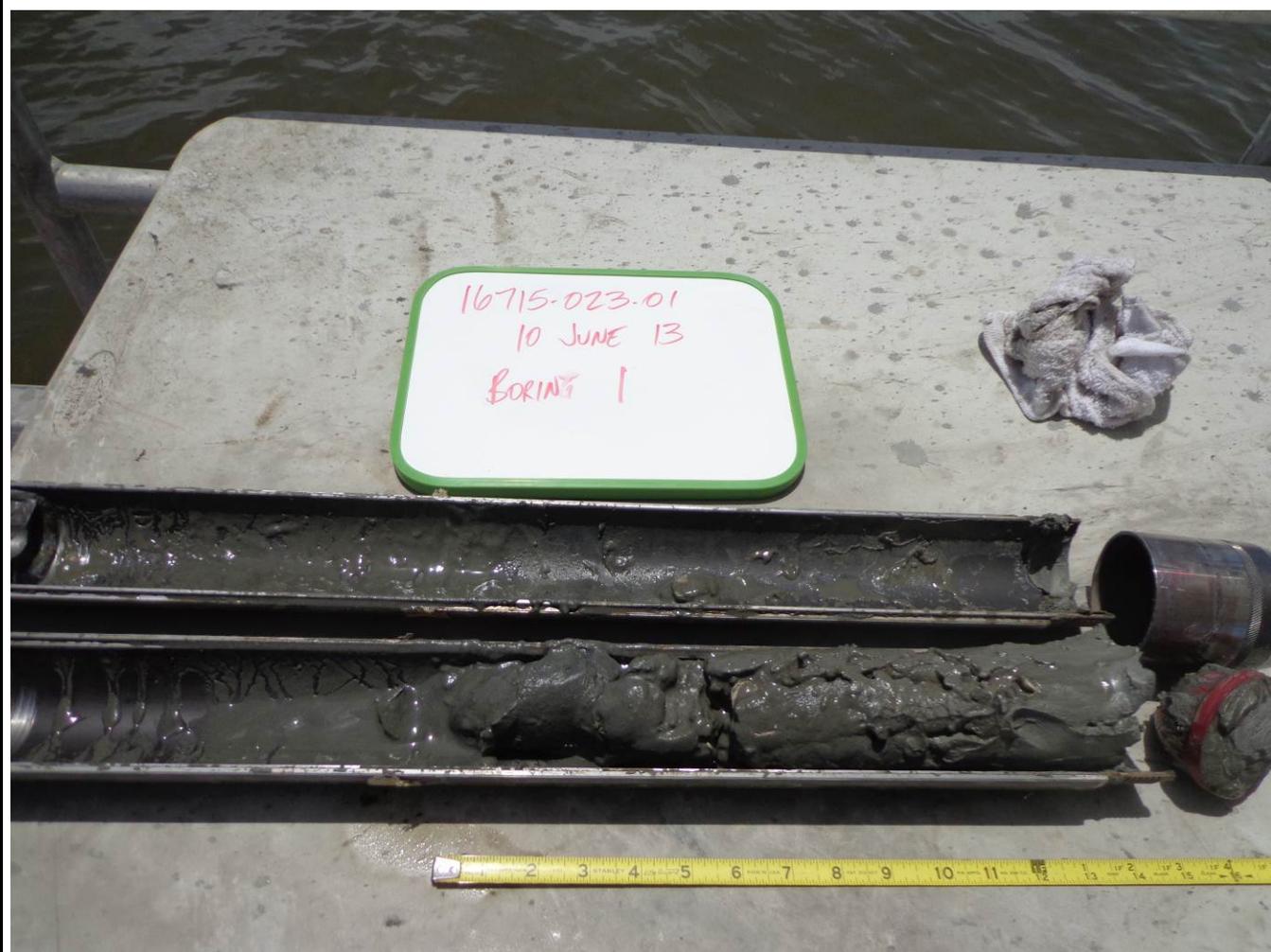
1200 – 1300: We sampled borings 1 and 2. There is a great deal of difficulty retaining or achieving recovery with the current sampling techniques being practiced. The soil at the mud line is very soft and doesn't appear to be making it beyond the catcher and inside the SPT sampler without several attempts, and what recovery we were able to get could possibly be from beyond the mud line.

1300 – 1315: Returned to landing due to thunder/lightening in the area.

1315 – 1330: Terry Jeansonne of SER and I spoke with Mr. Josh Pruett of GeoEngineers and explained our recovery issues. After discussing alternate sampling tools and techniques, we decided to round up additional equipment while waiting for inclement weather/lightening to pass.

1330 – 1600: All additional supplies were obtained. Due to the threat of lightning still in the area and after consulting radar/weather forecasts, we made the decision to knock off for the day and start fresh in the morning.

1600 – 1645: Traveled to and checked in hotel. We will resume sampling operations at 0700 tomorrow morning.



SPT Sample of Boring 1



3-Inch SPT Spoon with Subs and Drill Stem



SPT Sample of Boring 2. All Material Retained was in the Shoe and Never Cleared Catcher; It is Highly Likely That This Material is Not a True Representative Sample of the Mud Line. We will Re-Sample this Location Tomorrow



11955 LAKELAND PARK BLVD.
BATON ROUGE, LA. 70809
(225) 293-2460

FIELD REPORT

File Number:
16715-023-01

Project:
LDNR/Bayou Bonfouca Sediment Sampling

Date:
11 June 2013

Owner:
Coast and Harbor Engineering

Time of Arrival:
0700

Report Number:
2

Prepared by:
Donnie Smith

Location:
Lake Ponchartrain/St. Tammany Parish,
LA

Time of Departure:
1700

Page:
1 of 7

Purpose of visit:
Field Exploration

Weather:
Mostly Clear and Sunny

Travel Time:
0.50 hrs.

Permit Number:
N/A

Upon arrival to the site I assessed personal safety hazards: Yes or Referred to Site Safety Plan and Safety Tailgate if applicable
Safety Hazards Were Addressed by: Performing tool box safety meeting Other (describe)

BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE	BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE
1	1		100%	51	1		
2	1	1	100%	52	1		
3	1	1	100%	53	1		
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21	1	1	100%	71	1		
22	1	1	100%	72	1		
23	1	1	100%	73	1		
24	1	1	100%	74	1		

THIS FIELD REPORT IS PRELIMINARY

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FIELD REPRESENTATIVE

Donnie Smith

DATE

11 June 2013

X THIS FIELD REPORT IS FINAL

A final report is an instrument of professional service. Any conclusions drawn from this report should be discussed with and evaluated by the professional involved.

REVIEWED BY

DATE

13 June 2013

This report presents opinions formed as a result of our observation of activities relating to our services only. We rely on the contractor to comply with the plans and specification throughout the duration of the project irrespective of the presence of our representative. Our work does not include supervision or direction of the work of others. Our firm will not be responsible for job or site safety of others on this project. **DISCLAIMER:** Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

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45	1			95	1		
46	1			96	1		
47	1			97	1		
48	1			98	1		
49	1			99	1		
50	1			100	1		

Summary of Daily Activities:

Using a new sampling technique, we re-sampled boring 2 and completed borings 3 – 40. Water depth at all of these locations was 9-feet.

Crew Members/Rig Type:

Driller: Terry Jeansonne (SER)

Roughnecks: Cody Marcotte (SER)

Technician: Donnie Smith (GeoEngineers)

Rig Type: N/A

One Call Number: 130228363

Observations:

0645 - 0700: I, Donnie Smith of GeoEngineers, departed hotel and traveled to marina.

0700 – 0715: SER crew and I loaded supplies and departed landing.

0715 – 0730: Safety meeting/traveled to site.

0730 – 1145: Completed borings 2 through 20, sampling the top 6-inches of mud line (boring 2 was re-sampled from yesterday for true representative sediment sample). Sampling technique/tool consists of 1.5-inch PVC pipe, rope, anchor bolts and a tennis ball. Rope runs through the PVC pipe and is connected to the tennis ball at the bottom. The pipe is used to penetrate the mud line and “spud” a sample, and then the rope is used to pull the ball flush with the bottom of pipe which creates suction and holds the sample inside the pipe.

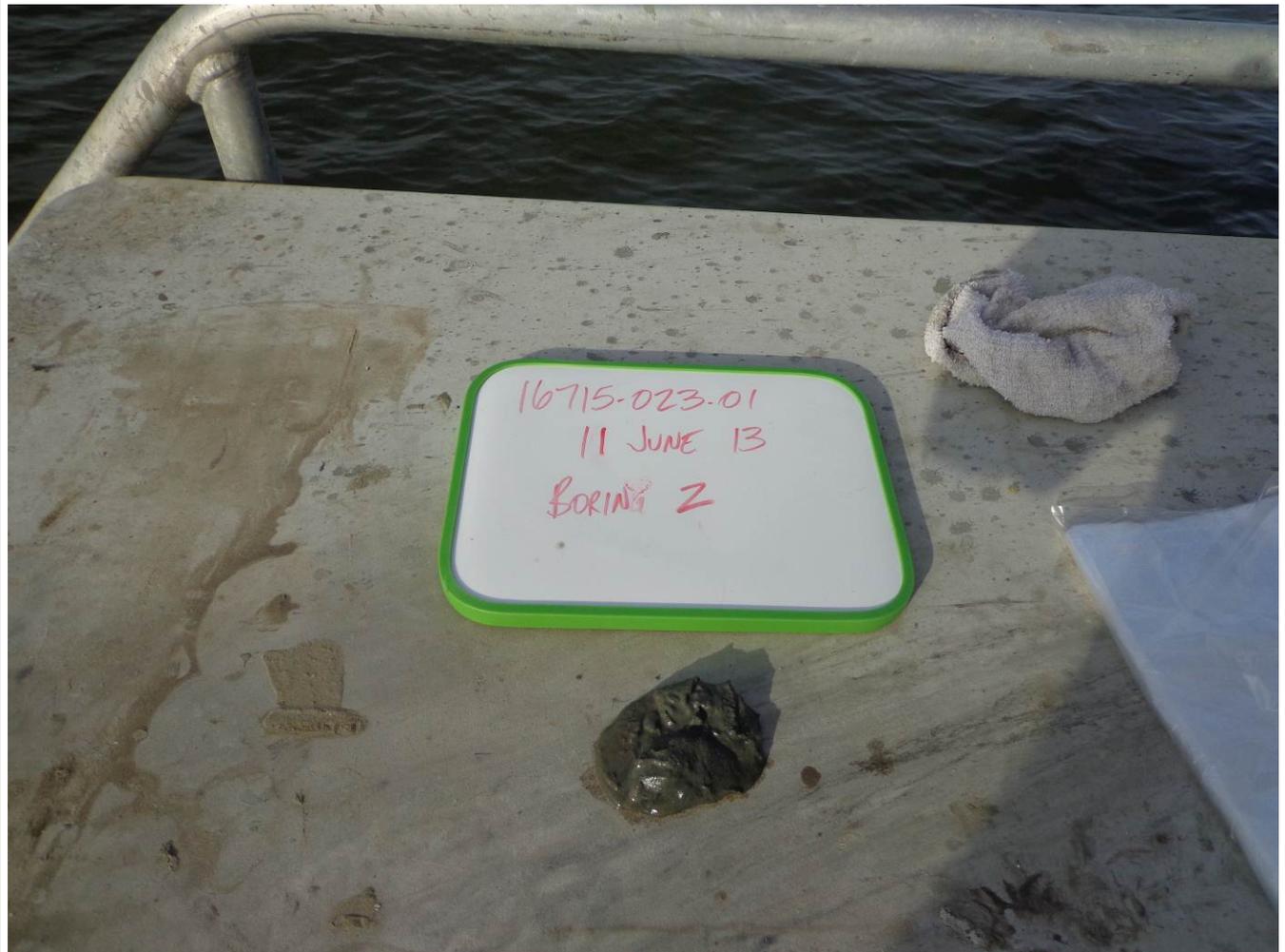
1145 – 1215: Lunch break.

1215 – 1630: Completed borings 21 through 40, sampling the top 6-inches of mud line. We took frequent 5 to 10-minute water breaks as needed.

1630 – 1645: Returned to landing.

1645 – 1700: Unloaded equipment and samples; docked boat into slips.

1700 - 1715: Returned to hotel.



Re-Sampled Boring 2 for True Representative Mud Line Sample



Using Sampling Tool to Obtain Sediment Sample at Boring 3



Retrieving Sample from Tool at Boring 3



Sampling Tool



Example of Sediment Sample



11955 LAKELAND PARK BLVD.
BATON ROUGE, LA. 70809
(225) 293-2460

FIELD REPORT

File Number:
16715-023-01

Project:
LDNR/Bayou Bonfouca Sediment Sampling

Date:
12 June 2013

Owner:
Coast and Harbor Engineering

Time of Arrival:
0700

Report Number:
3

Prepared by:
Donnie Smith

Location:
Lake Ponchatrain/St. Tammany Parish, LA

Time of Departure
1700

Page:
1 of 4

Purpose of visit:
Field Exploration

Weather:
Mostly Clear and Sunny

Travel Time:
0.50 hrs.

Permit Number:
N/A

Upon arrival to the site I assessed personal safety hazards: Yes or Referred to Site Safety Plan and Safety Tailgate if applicable
Safety Hazards Were Addressed by : Performing tool box safety meeting Other (describe)

BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE	BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE
1	1		100%	51	1	1	100%
2	1		100%	52	1	1	100%
3	1		100%	53	1	1	100%
4	1		100%	54	1	1	100%
5	1		100%	55	1	1	100%
6	1		100%	56	1	1	100%
7	1		100%	57	1	1	100%
8	1		100%	58	1	1	100%
9	1		100%	59	1	1	100%
10	1		100%	60	1	1	100%
11	1		100%	61	1	1	100%
12	1		100%	62	1	1	100%
13	1		100%	63	1	1	100%
14	1		100%	64	1	1	100%
15	1		100%	65	1	1	100%
16	1		100%	66	1	1	100%
17	1		100%	67	1	1	100%
18	1		100%	68	1	1	100%
19	1		100%	69	1	1	100%
20	1		100%	70	1	1	100%
21	1		100%	71	1	1	100%
22	1		100%	72	1	1	100%
23	1		100%	73	1	1	100%
24	1		100%	74	1	1	100%
25	1		100%	75	1	1	100%
26	1		100%	76	1	1	100%

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FIELD REPRESENTATIVE

Donnie Smith

DATE

12 June 2013

THIS FIELD REPORT IS FINAL

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REVIEWED BY

DATE

13 June 2013

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Attachments:

Distribution:

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32	1		100%	82	1		
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34	1		100%	84	1		
35	1		100%	85	1		
36	1		100%	86	1		
37	1		100%	87	1		
38	1		100%	88	1		
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44	1	1	100%	94	1		
45	1	1	100%	95	1		
46	1	1	100%	96	1		
47	1	1	100%	97	1		
48	1	1	100%	98	1		
49	1	1	100%	99	1		
50	1	1	100%	100	1		

Summary of Daily Activities:

We completed borings 41-80. Water depth at all of these locations was 9-feet.

Crew Members/Rig Type:

Driller: Terry Jeansonne (SER)

Roughnecks: Cody Marcotte (SER)

Technician: Donnie Smith (GeoEngineers)

Rig Type: N/A

One Call Number: 130228363

Observations:

0645 - 0700: I, Donnie Smith of GeoEngineers, departed hotel and traveled to marina.

0700 – 0715: SER crew and I loaded supplies and departed landing.

0715 – 0730: Safety meeting/traveled to site.

0730 – 1130: Completed borings 41 through 60, sampling the top 6-inches of mud line. Crew took frequent 5 to 10-minute water breaks as needed.

1130 - 1200: Lunch break.

1200 - 1630: Completed borings 61 through 80, sampling the top 6-inches of mud line. We took frequent 5 to 10-minute water breaks as needed.

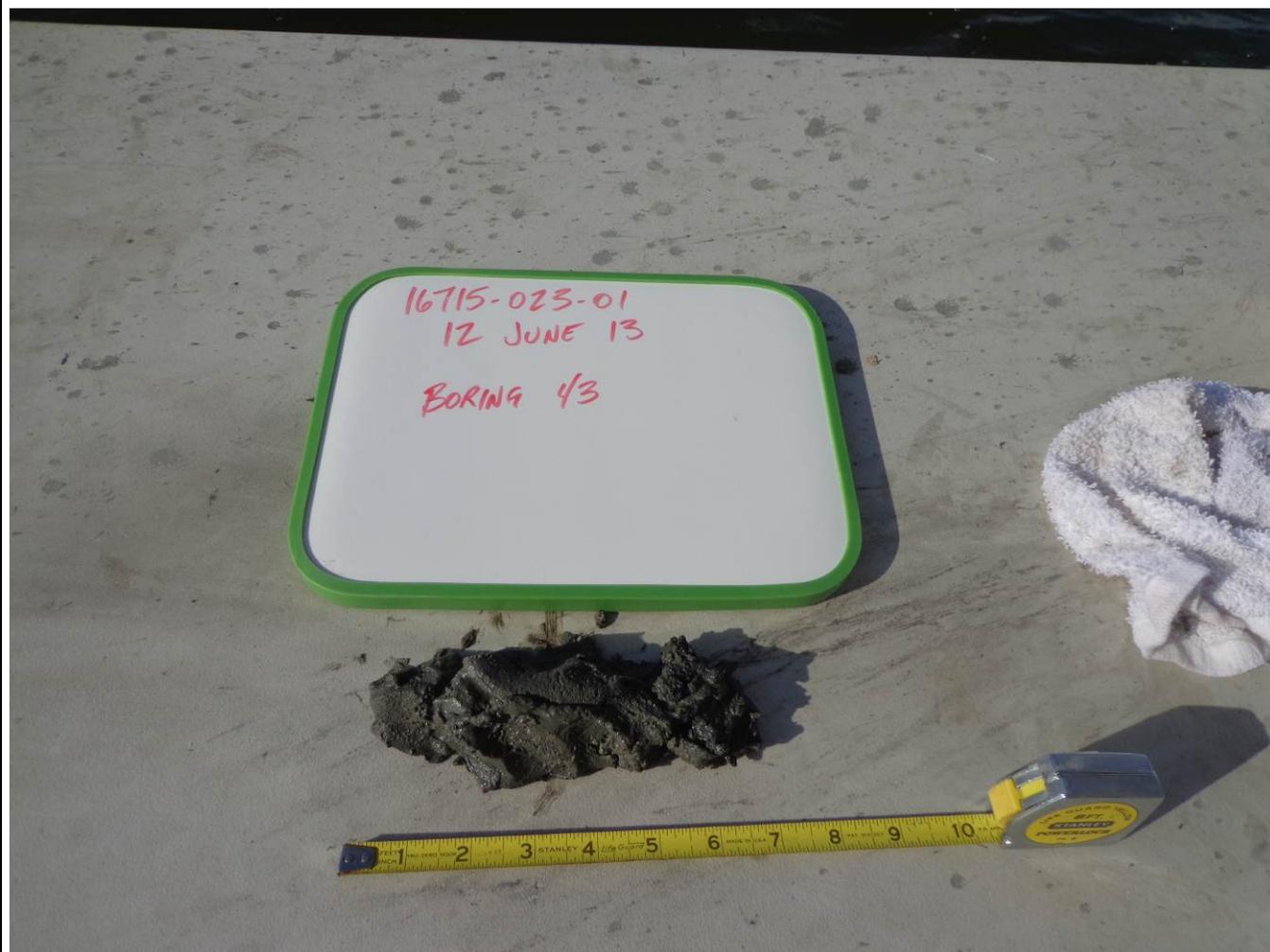
1630 – 1645: Returned to landing.

1645 – 1700: Unloaded equipment and samples; docked boat into slips.

1700 - 1715: Returned to hotel.



Preparing Sampling Tool



An Example of Average Sediment Sample. Material has Mainly Consisted of Clayey Silt (CL-ML)



11955 LAKELAND PARK BLVD.
BATON ROUGE, LA. 70809
(225) 293-2460

FIELD REPORT

File Number:
16715-023-01

Project:	LDNR/Bayou Bonfouca Sediment Sampling	Date: 13 June 2013
Owner:	Coast and Harbor Engineering	Time of Arrival: 0700
Report Number:	4	Page: 1 of 7
Prepared by: Donnie Smith	Location: Lake Ponchartrain/St. Tammany Parish, LA	Time of Departure: 1200
Purpose of visit: Field Exploration	Weather: Mostly Clear; Windy	Travel Time: 2.00 hrs.
		Permit Number: N/A

Upon arrival to the site I assessed personal safety hazards: Yes or Referred to Site Safety Plan and Safety Tailgate if applicable
Safety Hazards Were Addressed by: Performing tool box safety meeting Other (describe)

BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE	BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE
1	1		100%	51	1		100%
2	1		100%	52	1		100%
3	1		100%	53	1		100%
4	1		100%	54	1		100%
5	1		100%	55	1		100%
6	1		100%	56	1		100%
7	1		100%	57	1		100%
8	1		100%	58	1		100%
9	1		100%	59	1		100%
10	1		100%	60	1		100%
11	1		100%	61	1		100%
12	1		100%	62	1		100%
13	1		100%	63	1		100%
14	1		100%	64	1		100%
15	1		100%	65	1		100%
16	1		100%	66	1		100%
17	1		100%	67	1		100%
18	1		100%	68	1		100%
19	1		100%	69	1		100%
20	1		100%	70	1		100%
21	1		100%	71	1		100%
22	1		100%	72	1		100%
23	1		100%	73	1		100%

THIS FIELD REPORT IS PRELIMINARY

A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

FIELD REPRESENTATIVE

Donnie Smith

DATE

13 June 2013

X THIS FIELD REPORT IS FINAL

A final report is an instrument of professional service. Any conclusions drawn from this report should be discussed with and evaluated by the professional involved.

REVIEWED BY

DATE

13 June 2013

This report presents opinions formed as a result of our observation of activities relating to our services only. We rely on the contractor to comply with the plans and specification throughout the duration of the project irrespective of the presence of our representative. Our work does not include supervision or direction of the work of others. Our firm will not be responsible for job or site safety of others on this project. **DISCLAIMER:** Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Attachments:

Distribution:

24	1		100%	74	1		100%
25	1		100%	75	1		100%
26	1		100%	76	1		100%
27	1		100%	77	1		100%
28	1		100%	78	1		100%
29	1		100%	79	1		100%
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42	1		100%	92	1		
43	1		100%	93	1		
44	1		100%	94	1		
45	1		100%	95	1		
46	1		100%	96	1		
47	1		100%	97	1		
48	1		100%	98	1		
49	1		100%	99	1		
50	1		100%	100	1		

Summary of Daily Activities:

Due to rough water (2 to 3-foot seas) created by wind (5 to 10-mph), we were unable to complete borings 81-100. Based on current weather forecast, wind and seas are predicted to be calm again on Saturday 15 June 2013. We will resume sampling on that date. SER left the ski barge on the trailer at the Bayou Liberty Marina and all personnel temporarily de-mobilized from site.

Crew Members/Rig Type:

Driller: Terry Jeansonne (SER)

Roughnecks: Cody Marcotte (SER)

Technician: Donnie Smith (GeoEngineers)

Rig Type: N/A

One Call Number: 130228363

Observations:

0630 - 0645: I, Donnie Smith of GeoEngineers, departed hotel and traveled to marina.

0645 - 0700: SER crew and I loaded supplies, held a brief safety meeting and departed landing.

0700 – 0715: Traveled to site.

0715 – 0815: Water on Lake Pontchartrain is rough (2 to 3-foot seas) due to wind (7-mph average with 10-mph gusts). Boat is rocking, making it very difficult to work and stay on boring location. After several attempts to sample boring 81, I contacted Mr. Josh Pruett of GeoEngineers. Based on the safety concerns the waves are creating, the decision was made to return to the landing and monitor weather/wind conditions.

0815 – 0830: Returned to landing.

0830 – 0945: Stood by at marina.

0945 – 1015: Returned to site location. Conditions remain the same.

1015 – 1030: Returned to landing. I called Mr. Josh Pruett and after consulting weather forecast, the decision was made to call things off until Saturday 15 June 2013. Current forecast for that date calls for calm seas.

1030 – 1115: Unloaded supplies and loaded ski barge onto trailer. We will leave the ski barge parked at the marina to avoid additional mobilization/de-mobilization.

1115 – 1130: Returned to hotel.

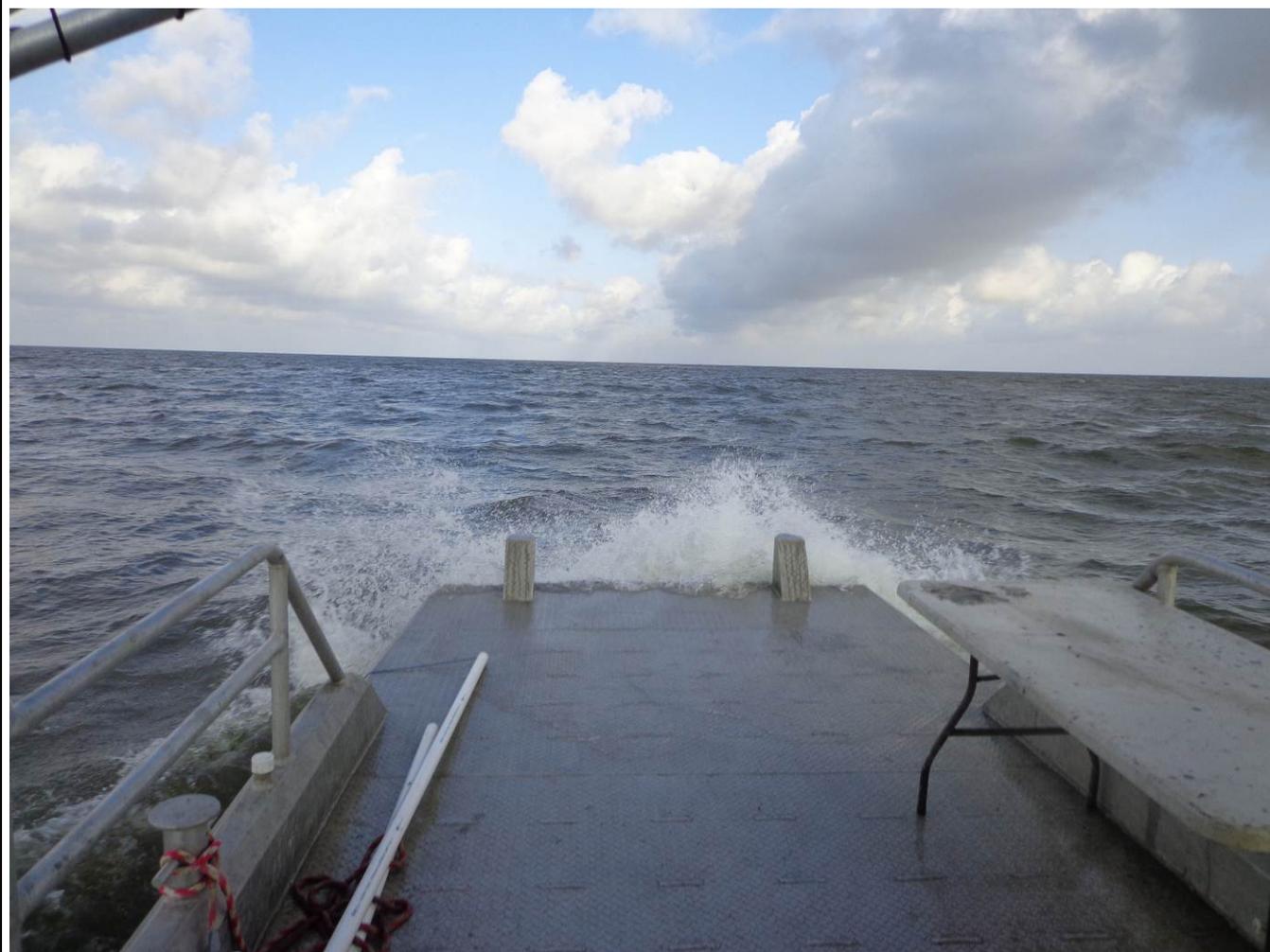
1130 – 1200: Checked out of hotel and departed for Baton Rouge.

1200 – 1330: Returned to BTR (Baton Rouge) lab.

1330 – 1400: Unloaded and checked in all JHAs, boring logs and samples from borings 1-80 for lab analysis.



Attempting to Sample Boring 81



Waves at Boring 81



Attempting to Sample Boring 81



Sea Conditions at Boring 81



FIELD REPORT

File Number:
16715-023-01

11955 LAKELAND PARK BLVD.
BATON ROUGE, LA. 70809
(225) 293-2460

Project:
LDNR/Bayou Bonfouca Sediment Sampling

Date:
15 June 2013

Owner:
Coast and Harbor Engineering

Time of Arrival:
0645

Report Number:
5

Prepared by:
Donnie Smith

Location:
Lake Ponchartrain/St. Tammany Parish, LA

Time of Departure
1230

Page:
1 of 4

Purpose of visit:
Field Exploration

Weather:
Clear and Sunny

Travel Time:
3.75 hrs.

Permit Number:
N/A

Upon arrival to the site I assessed personal safety hazards: Yes or Referred to Site Safety Plan and Safety Tailgate if applicable
Safety Hazards Were Addressed by: Performing tool box safety meeting Other (describe)

BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE	BORING NUMBER	DEPTH (FEET)	TODAY (FEET)	% COMPLETE
1	1		100%	51	1		100%
2	1		100%	52	1		100%
3	1		100%	53	1		100%
4	1		100%	54	1		100%
5	1		100%	55	1		100%
6	1		100%	56	1		100%
7	1		100%	57	1		100%
8	1		100%	58	1		100%
9	1		100%	59	1		100%
10	1		100%	60	1		100%
11	1		100%	61	1		100%
12	1		100%	62	1		100%
13	1		100%	63	1		100%
14	1		100%	64	1		100%
15	1		100%	65	1		100%
16	1		100%	66	1		100%
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20	1		100%	70	1		100%
21	1		100%	71	1		100%
22	1		100%	72	1		100%
23	1		100%	73	1		100%
24	1		100%	74	1		100%
25	1		100%	75	1		100%
26	1		100%	76	1		100%

THIS FIELD REPORT IS PRELIMINARY

A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those indicated in a preliminary report.

FIELD REPRESENTATIVE

Donnie Smith

DATE

15 June 2013

X THIS FIELD REPORT IS FINAL

A final report is an instrument of professional service. Any conclusions drawn from this report should be discussed with and evaluated by the professional involved.

REVIEWED BY

DATE

11 July 2013

This report presents opinions formed as a result of our observation of activities relating to our services only. We rely on the contractor to comply with the plans and specification throughout the duration of the project irrespective of the presence of our representative. Our work does not include supervision or direction of the work of others. Our firm will not be responsible for job or site safety of others on this project. **DISCLAIMER:** Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Attachments:

Distribution:

27	1		100%	77	1		100%
28	1		100%	78	1		100%
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30	1		100%	80	1	1	100%
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33	1		100%	83	1	1	100%
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37	1		100%	87	1	1	100%
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45	1		100%	95	1	1	100%
46	1		100%	96	1	1	100%
47	1		100%	97	1	1	100%
48	1		100%	98	1	1	100%
49	1		100%	99	1	1	100%
50	1		100%	100	1	1	100%

Summary of Daily Activities:

After returning to site, we completed all remaining borings (81-100). All equipment and personnel were then de-mobilized from site.

Crew Members/Rig Type:

Driller: Terry Jeansonne (SER)

Roughnecks: Cody Marcotte (SER)

Technician: Donnie Smith (GeoEngineers)

Rig Type: N/A

One Call Number: 130228363

Observations:

0500 - 0645: I, Donnie Smith of GeoEngineers, departed the BTR (Baton Rouge) office and traveled to marina in Slidell, LA.

0645 – 0715: SER are on site. We launched ski barge, loaded supplies and departed landing.

0715 - 0730: Traveled to site.

0730 – 1145: After brief safety meeting, we completed borings 81 through 100, sampling the top 6-inches of mud line. We took frequent 5 to 10-minute water breaks as needed.

1145 – 1200: Returned to marina.

1200 – 1230: Loaded supplies and samples, loaded ski barge on trailer and departed site.

1230 – 1430: Returned to BTR lab.

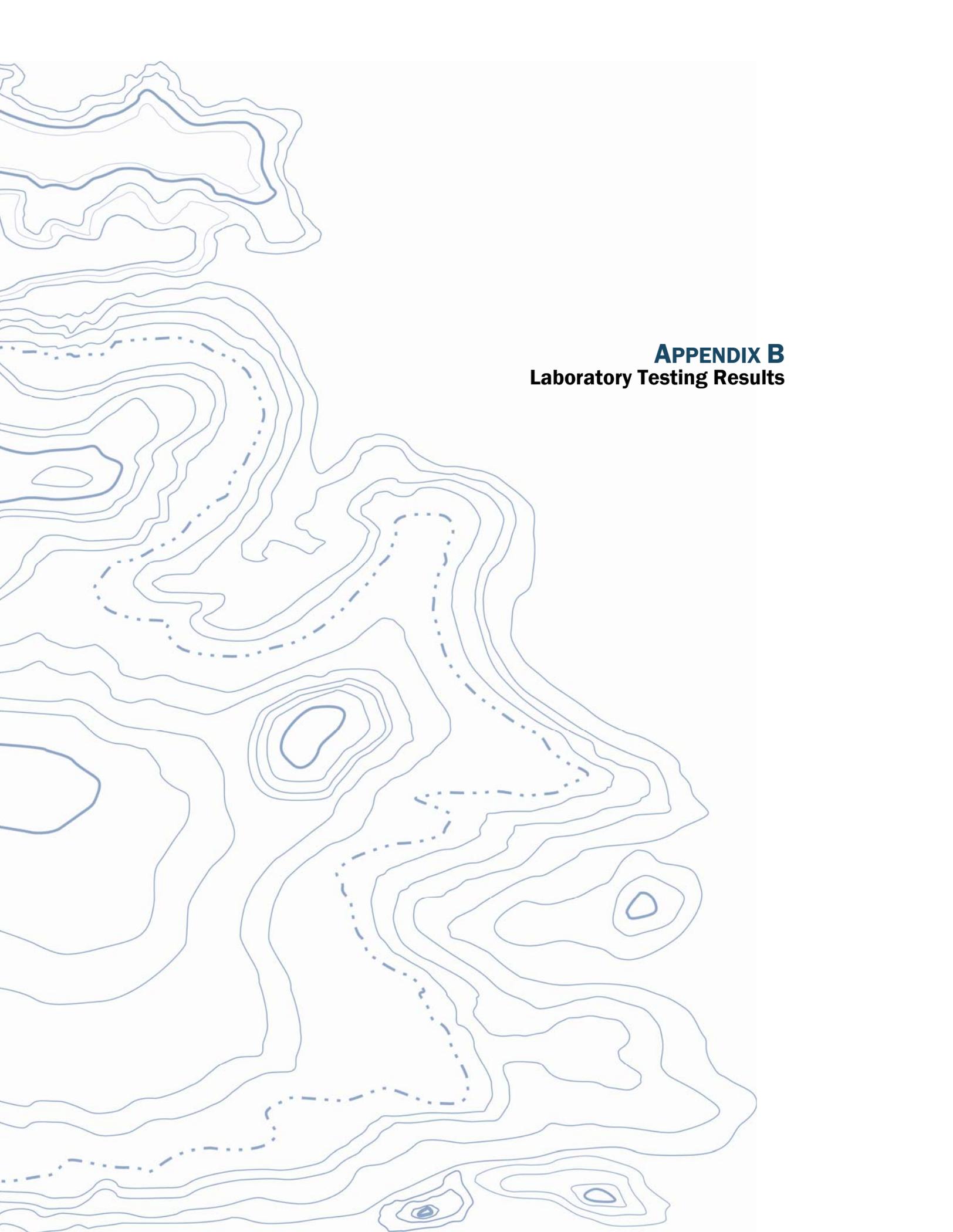
1430 – 1500: Unloaded and checked in all JHAs, boring logs and samples from borings 81-100 for lab analysis.



Sampling at Boring 85



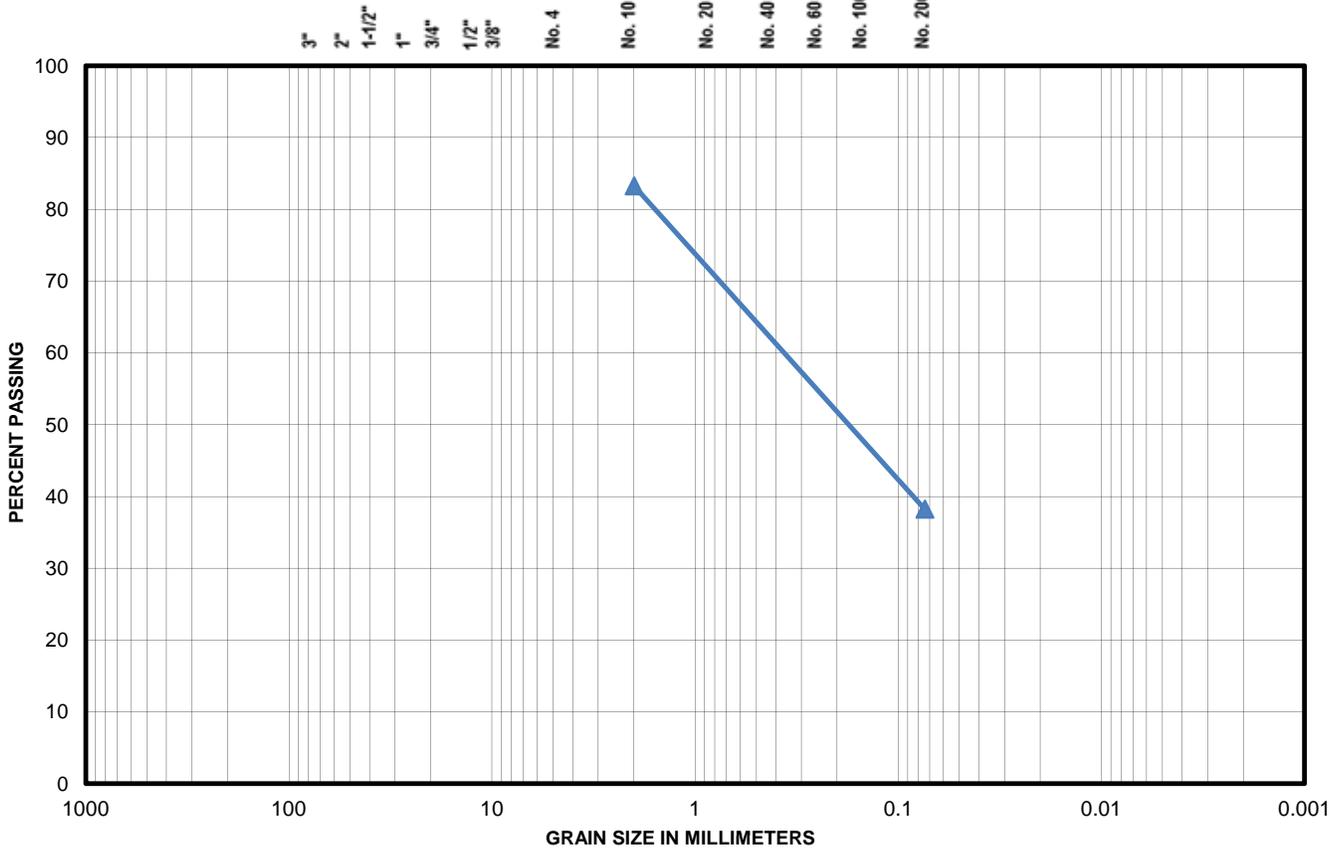
Example of Typical Sample/Recovery

A topographic map background with blue contour lines of varying thickness and a dashed blue line path. The map is partially visible on the left side of the page.

APPENDIX B

Laboratory Testing Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	16.7	Sand %	45.1
USC Classification	SC-SM	Fines (Silt & Clay) %	38.2
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	83.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	38.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	1	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

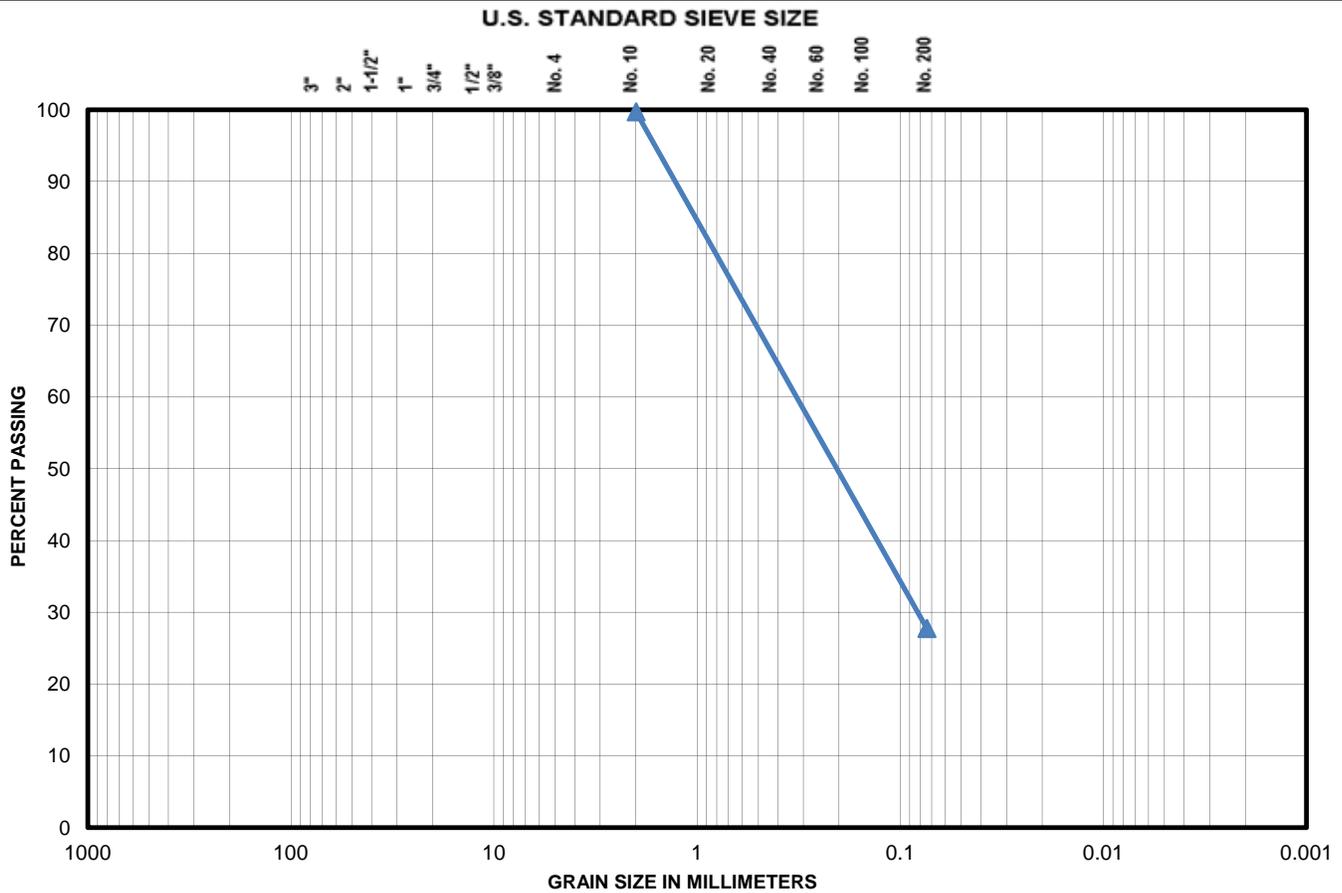


11955 Lakeland Park Blvd. Suite 100 Baton Rouge, La 70809

AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-1. Sample No. 1 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.3	Sand %	71.9
USC Classification	SC-SM	Fines (Silt & Clay) %	27.8
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	27.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	2	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



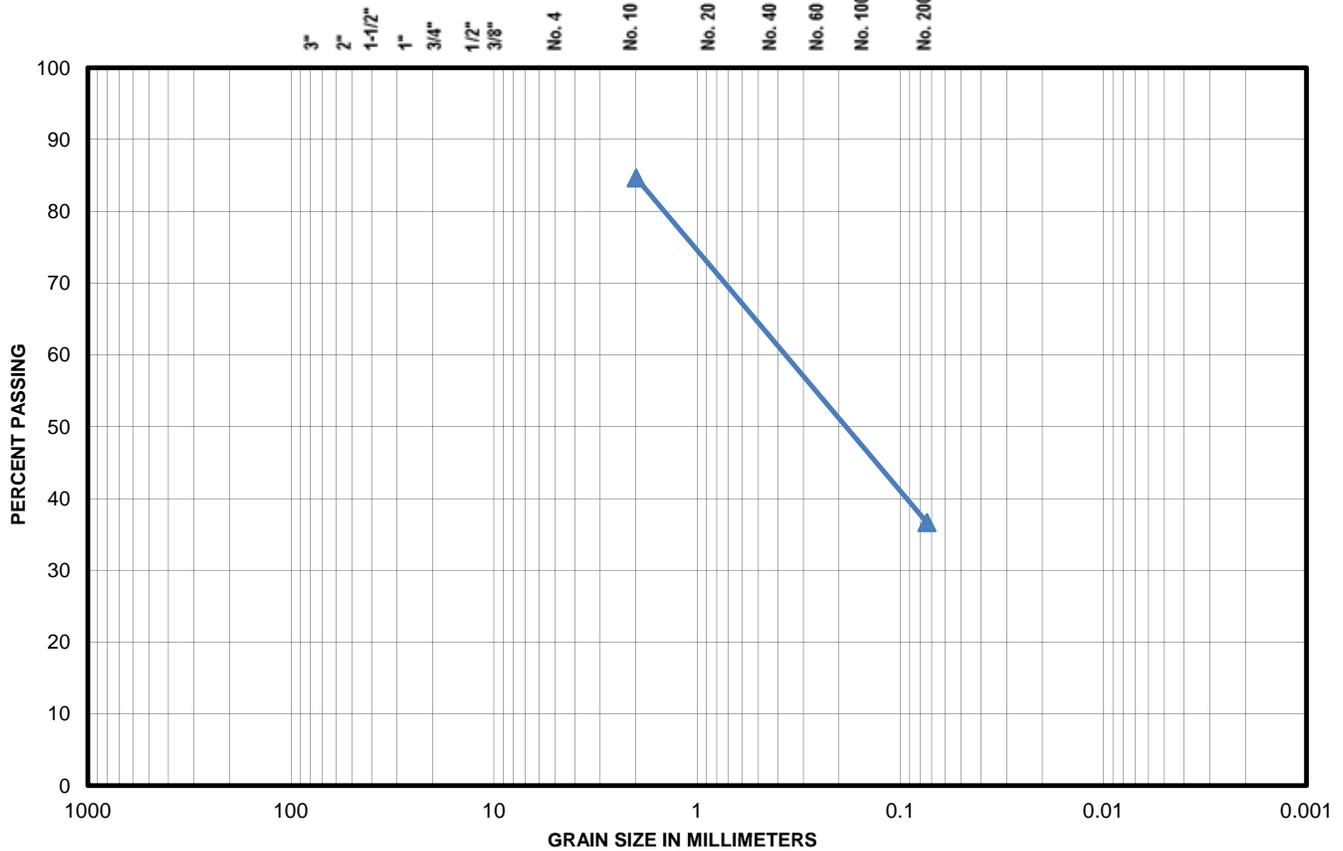
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-2. Sample No. 2 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	15.3	Sand %	48.0
USC Classification	SC-SM	Fines (Silt & Clay) %	36.7
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	84.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	36.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	3	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



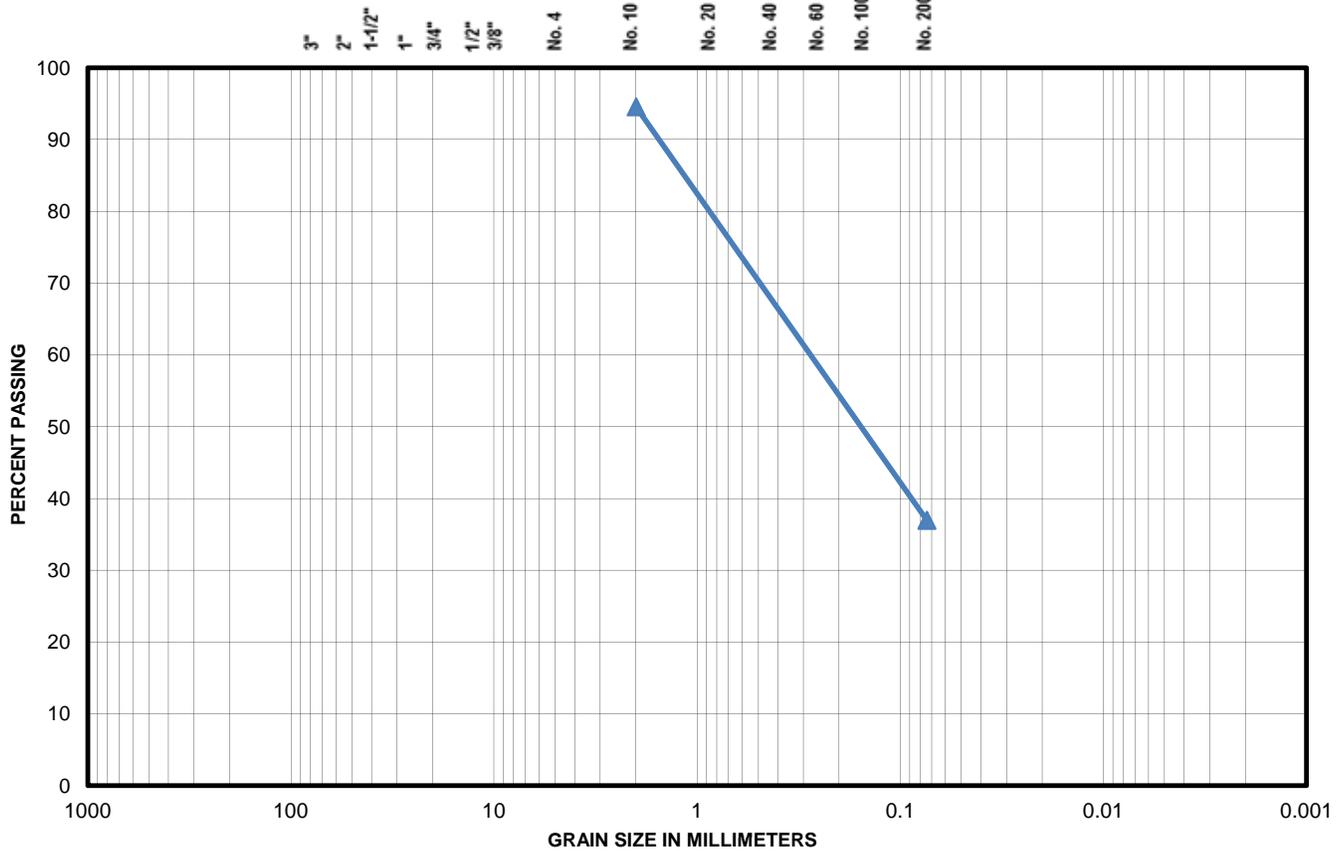
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-3. Sample No. 3 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.4	Sand %	57.6
USC Classification	SC-SM	Fines (Silt & Clay) %	37.0
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	94.6
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	37.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	4	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



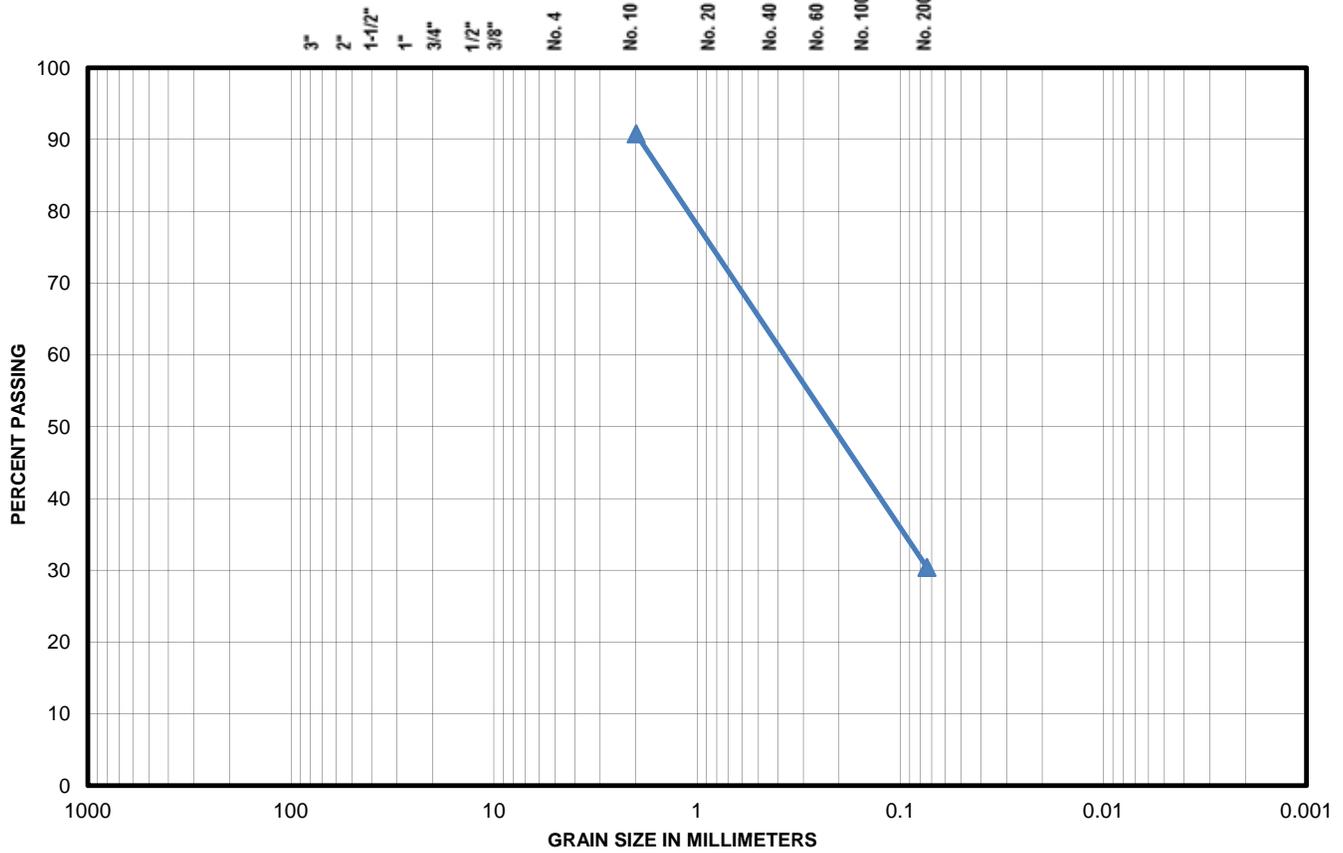
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-4. Sample No. 4 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	9.2	Sand %	60.4
USC Classification	SC-SM	Fines (Silt & Clay) %	30.4
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	90.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	30.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	5	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

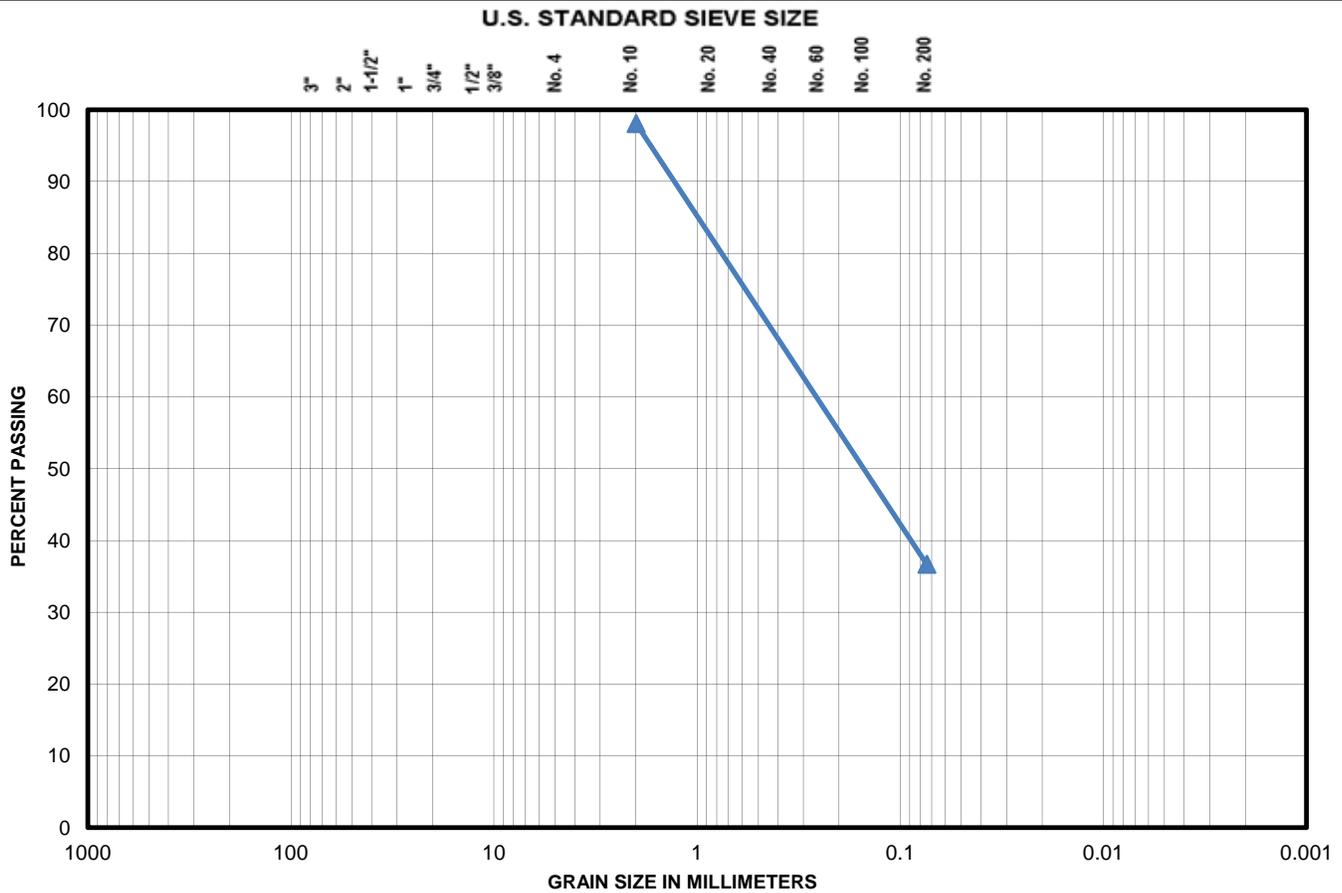


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-5. Sample No. 5 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.9	Sand %	61.4
USC Classification	SC-SM	Fines (Silt & Clay) %	36.7
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	36.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/11/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	6	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



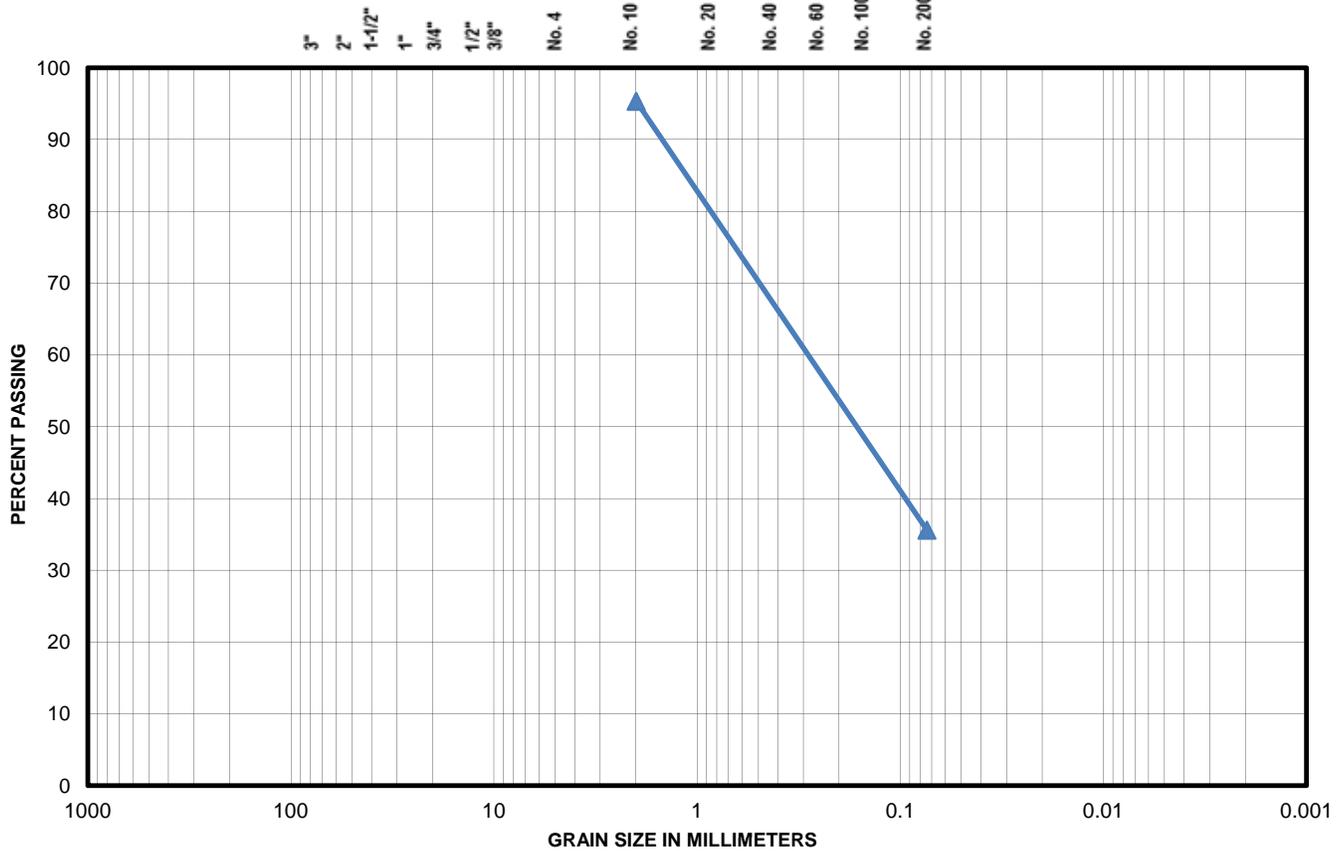
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-6. Sample No. 6 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	4.7	Sand %	59.7
USC Classification	SC-SM	Fines (Silt & Clay) %	35.6
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	95.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	35.6

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	7	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

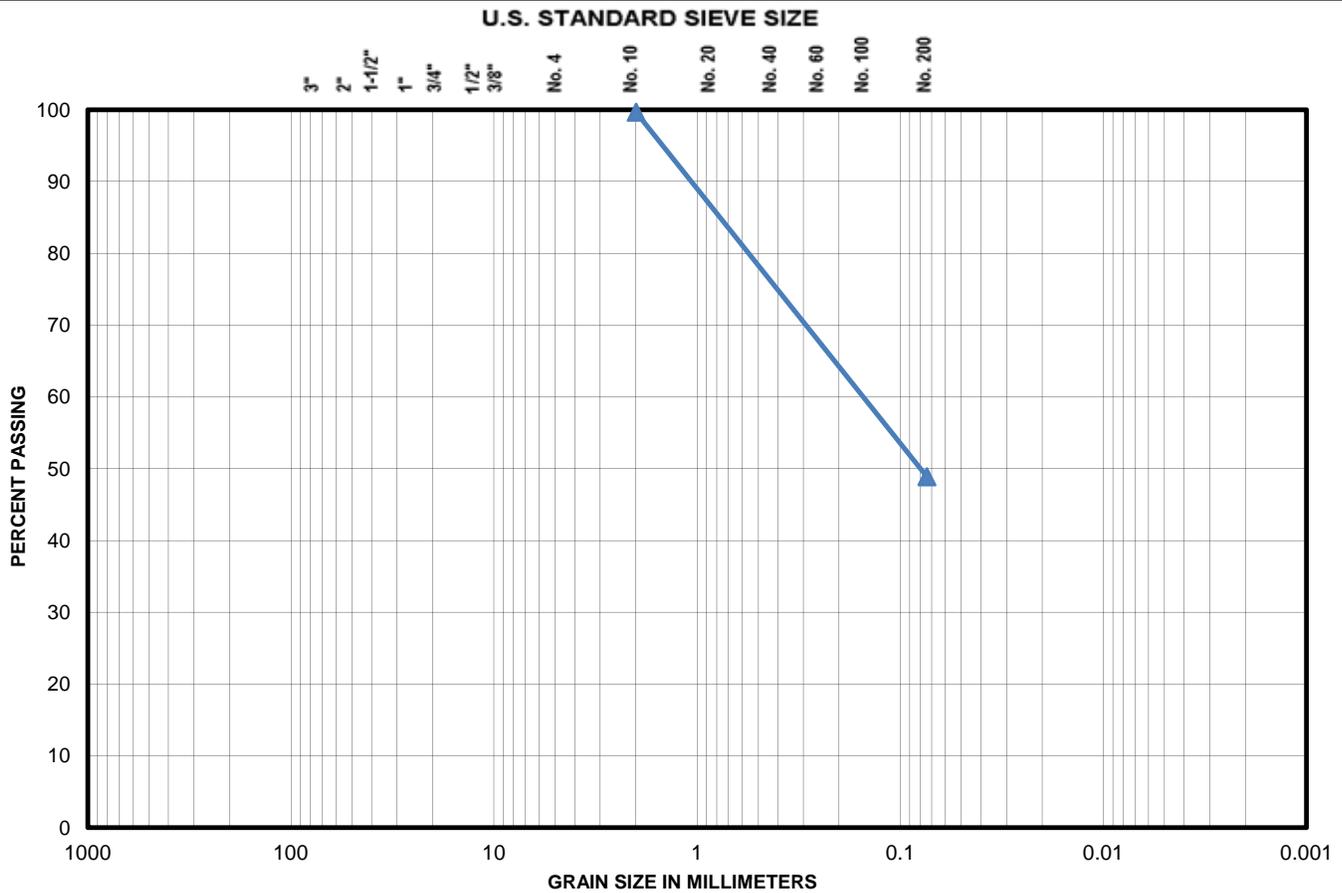


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-7. Sample No. 7 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.3	Sand %	50.8
USC Classification	SC-SM	Fines (Silt & Clay) %	48.9
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	48.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	8	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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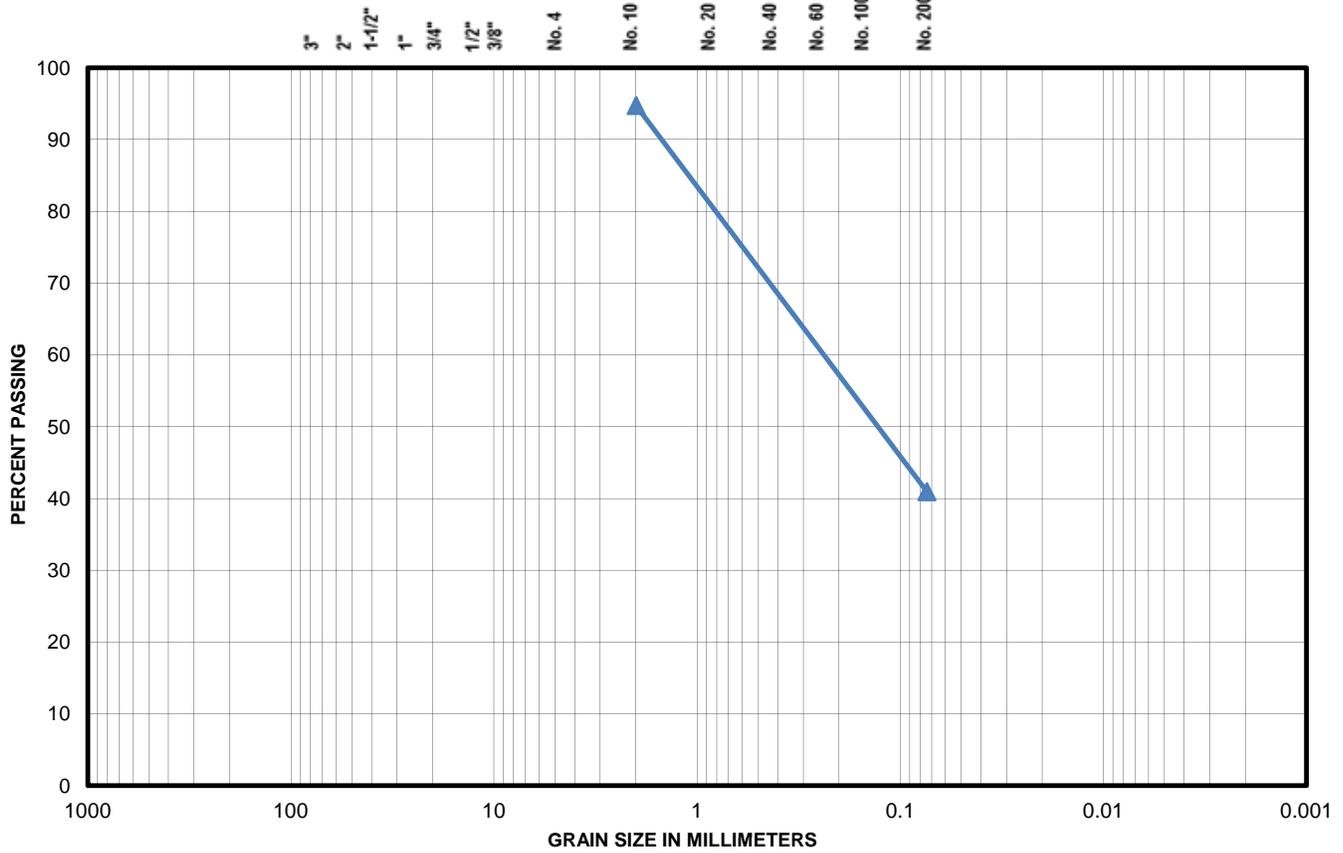
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-8. Sample No. 8 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.3	Sand %	53.7
USC Classification	SC-SM	Fines (Silt & Clay) %	41.0
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	94.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	41.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/19/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	9	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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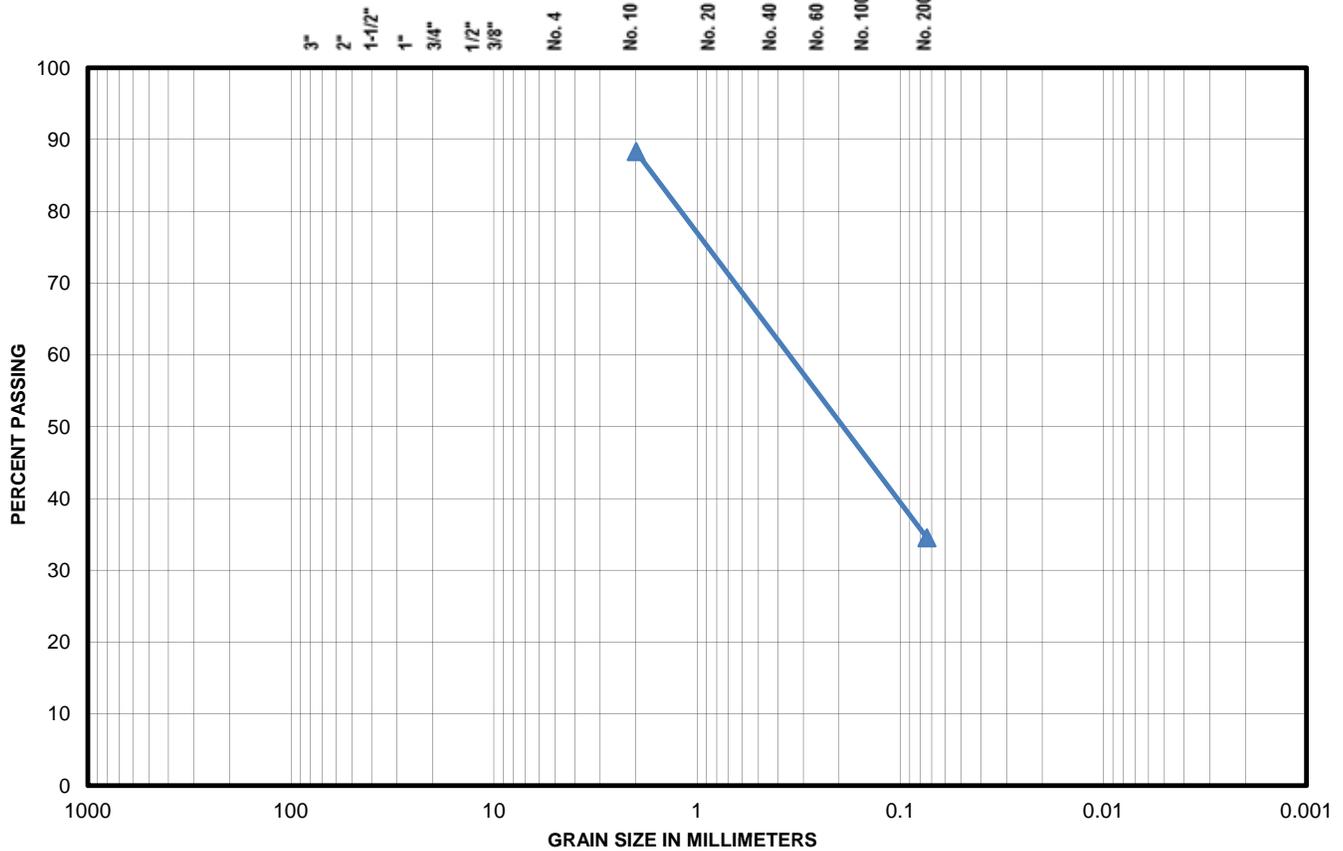
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-9. Sample No. 9 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	11.7	Sand %	53.8
USC Classification	SC-SM	Fines (Silt & Clay) %	34.5
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	88.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	34.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	10	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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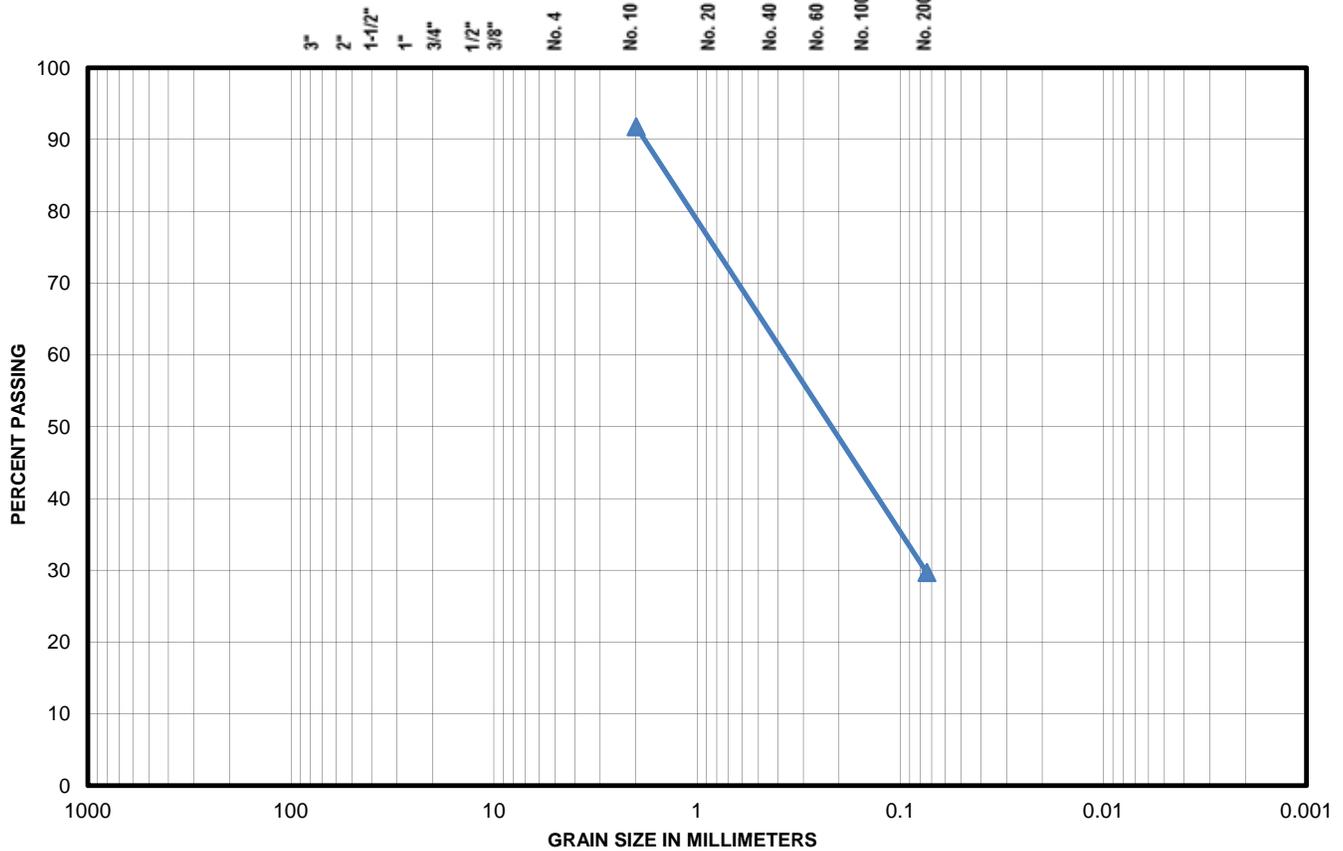
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-10. Sample No. 10 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.2	Sand %	62.1
USC Classification	SC-SM	Fines (Silt & Clay) %	29.7
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	91.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	29.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	11	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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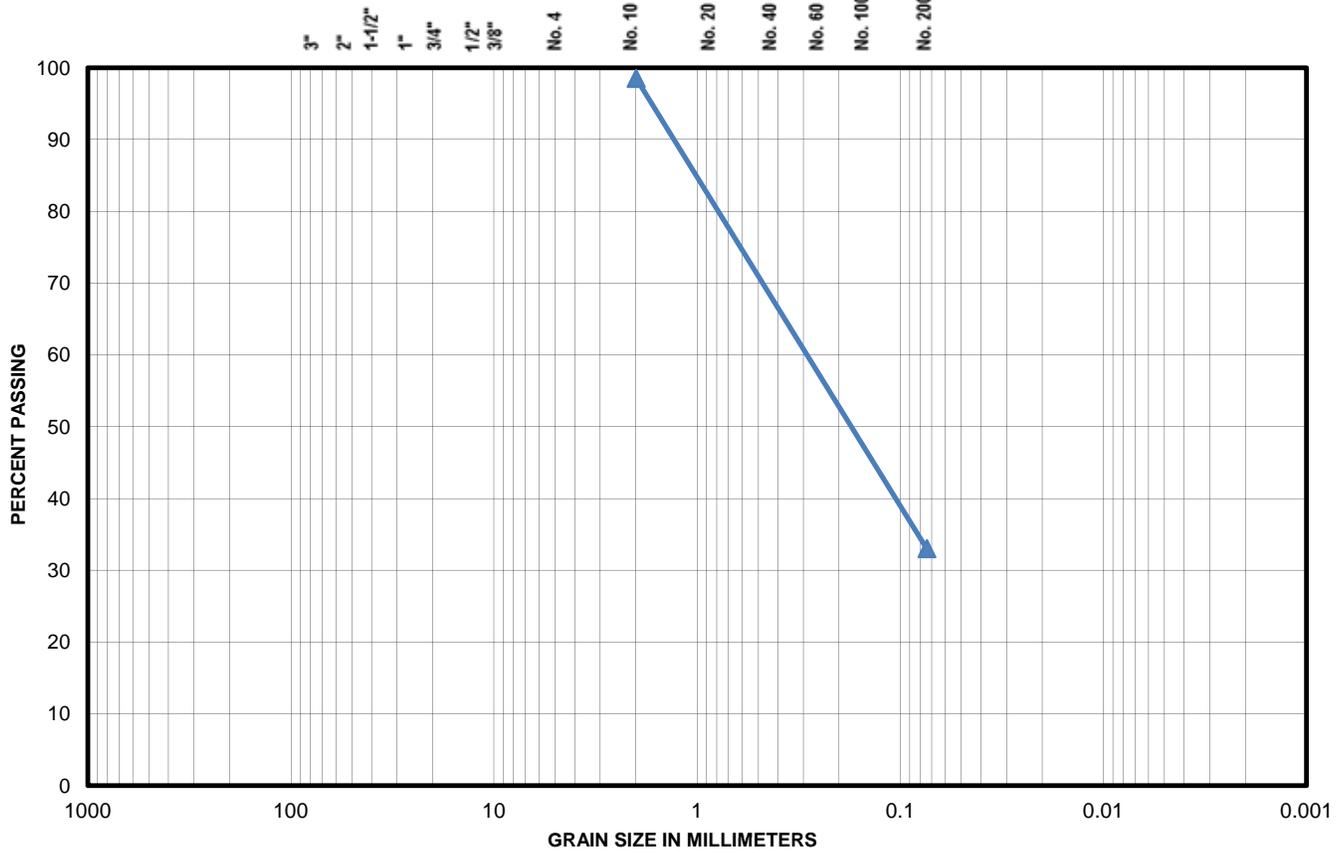
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-11. Sample No. 11 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.5	Sand %	65.5
USC Classification	SC-SM	Fines (Silt & Clay) %	33.0
Description	Gray silty clayey sand with trace shell (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	33.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	12	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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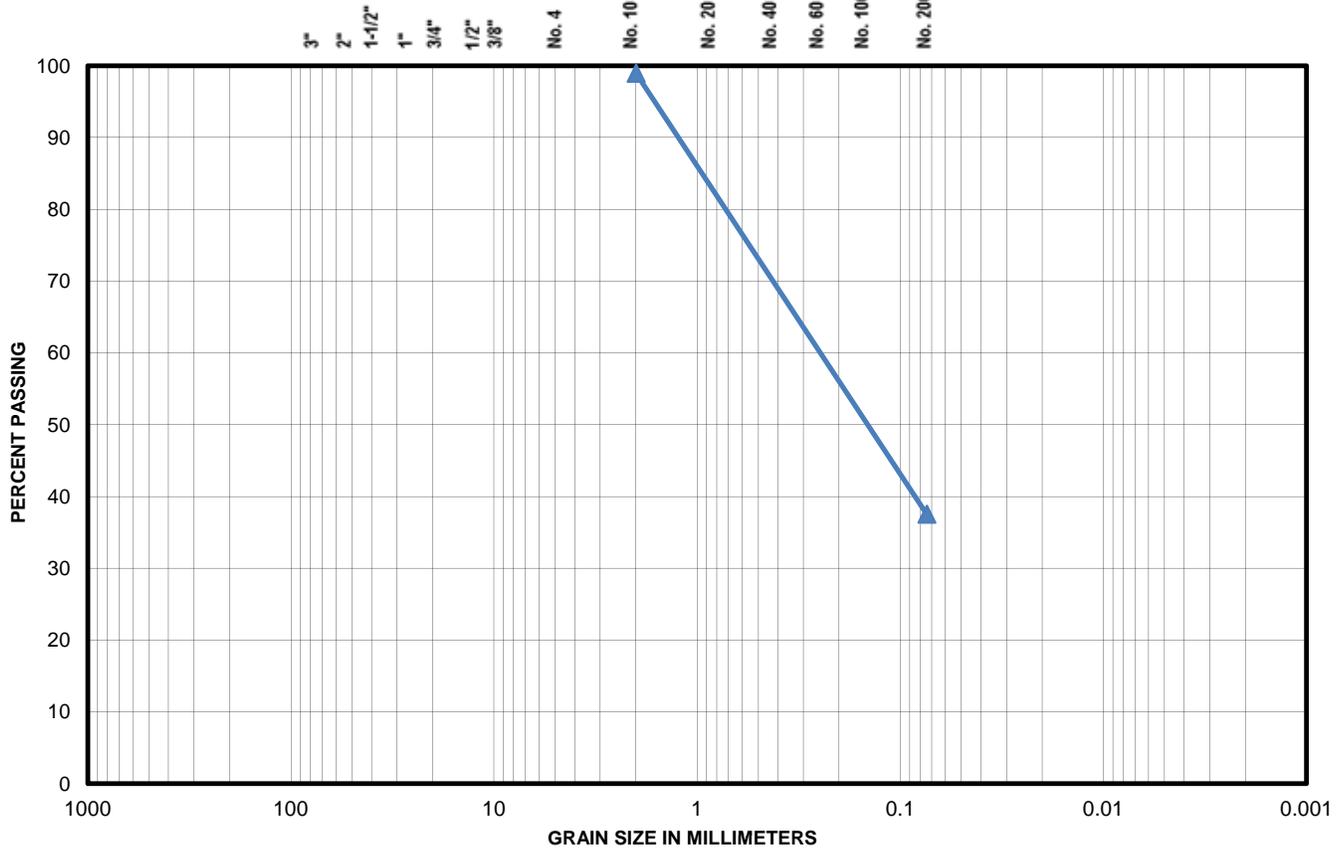
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-12. Sample No. 12 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.0	Sand %	61.5
USC Classification	SC-SM	Fines (Silt & Clay) %	37.5
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	37.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/24/2013
Project No.	16715-023-01	Tested By	ab
Boring No.	13	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



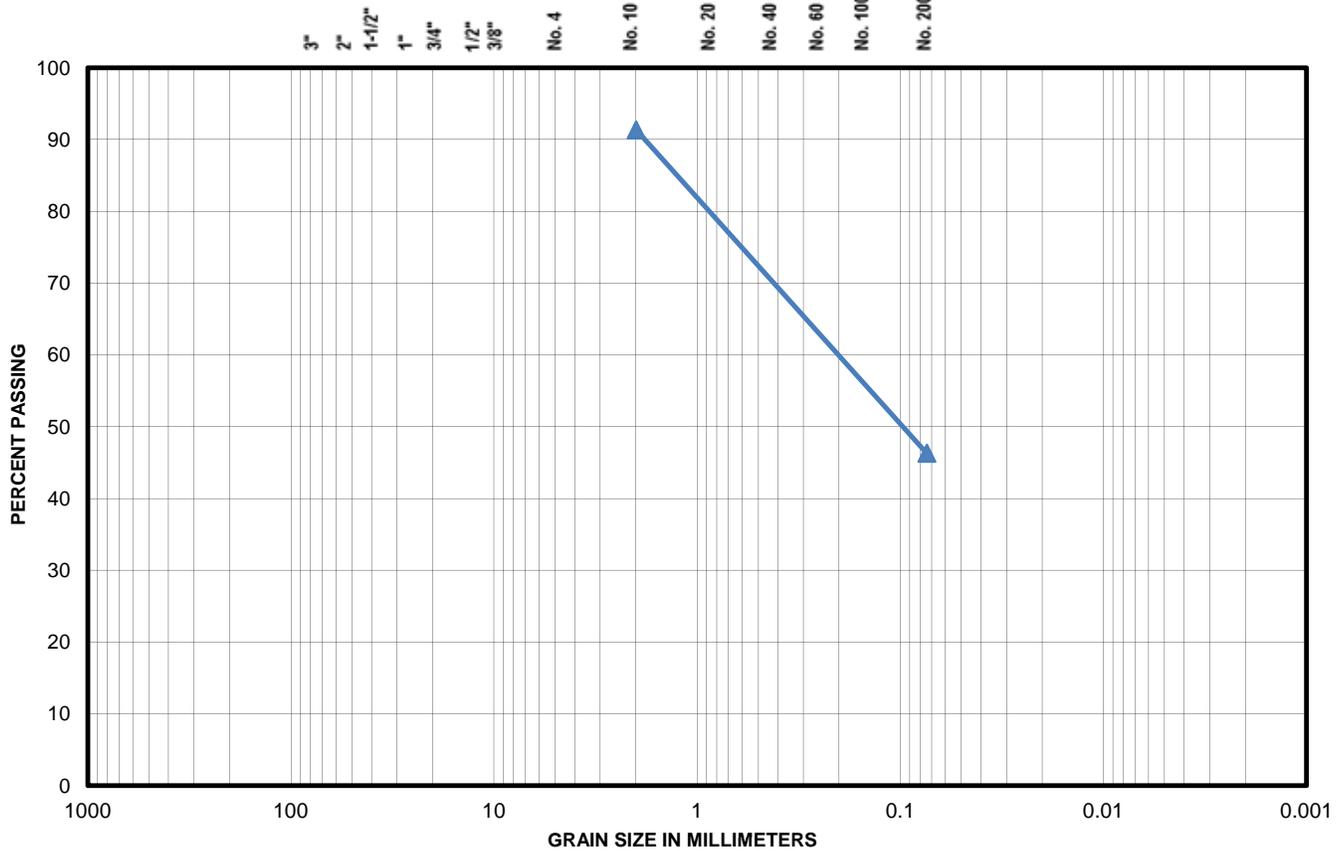
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-13. Sample No. 13 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.6	Sand %	45.1
USC Classification	SC-SM	Fines (Silt & Clay) %	46.3
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	91.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	46.3

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	14	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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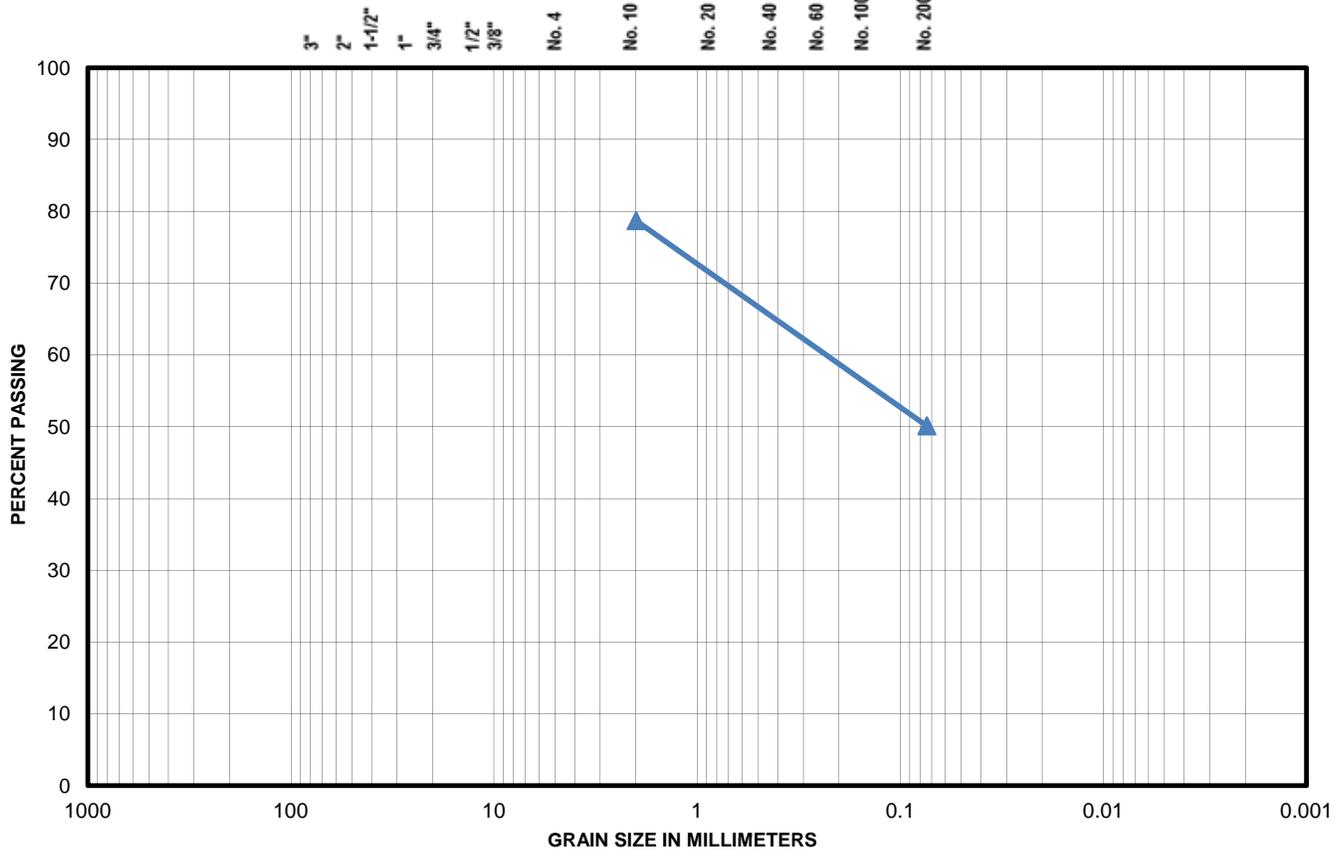
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-14. Sample No. 14 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	21.3	Sand %	28.6
USC Classification	CL	Fines (Silt & Clay) %	50.1
Description	Gray sandy clay with silt and shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	78.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	50.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	15	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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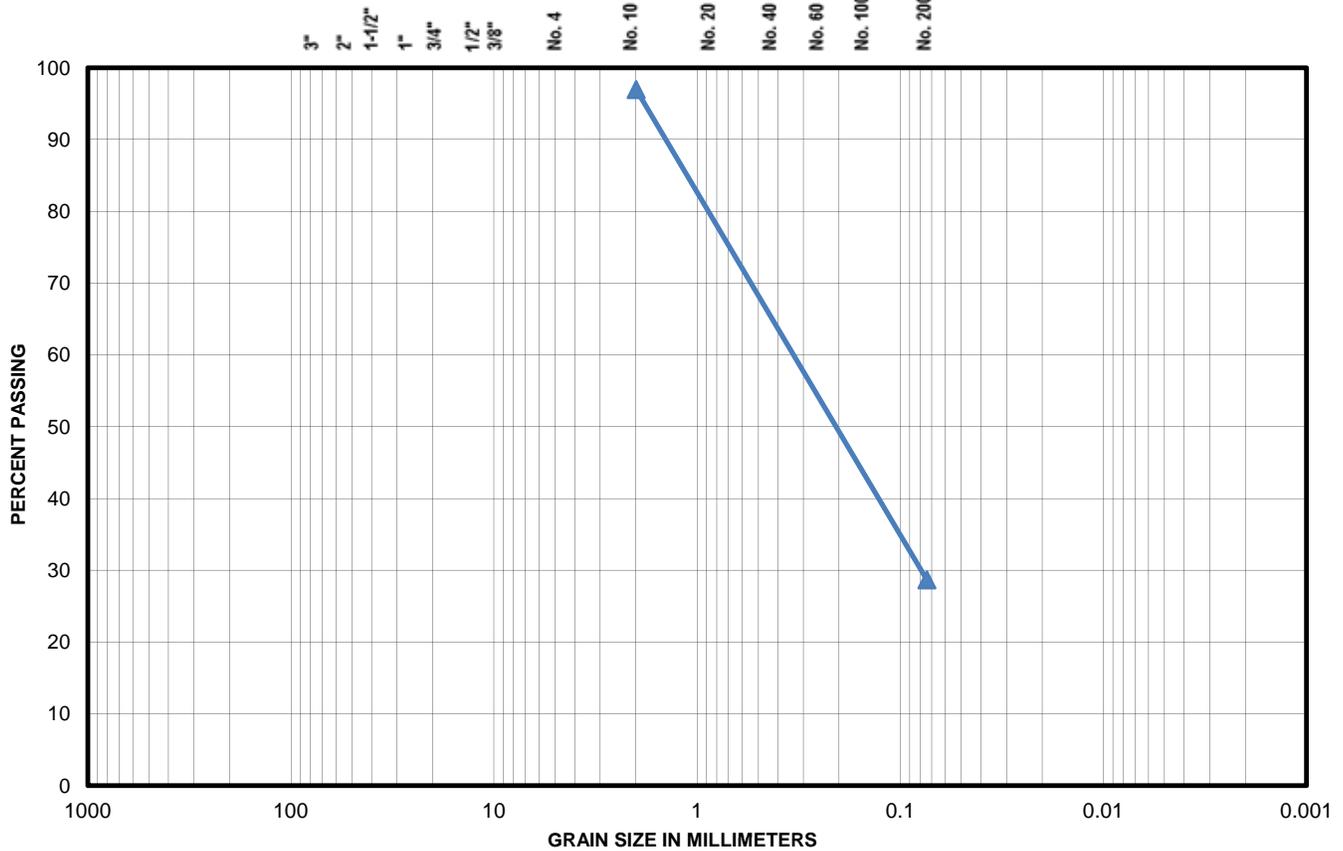
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-15. Sample No. 15 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.0	Sand %	68.3
USC Classification	SC-SM	Fines (Silt & Clay) %	28.7
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	28.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	16	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



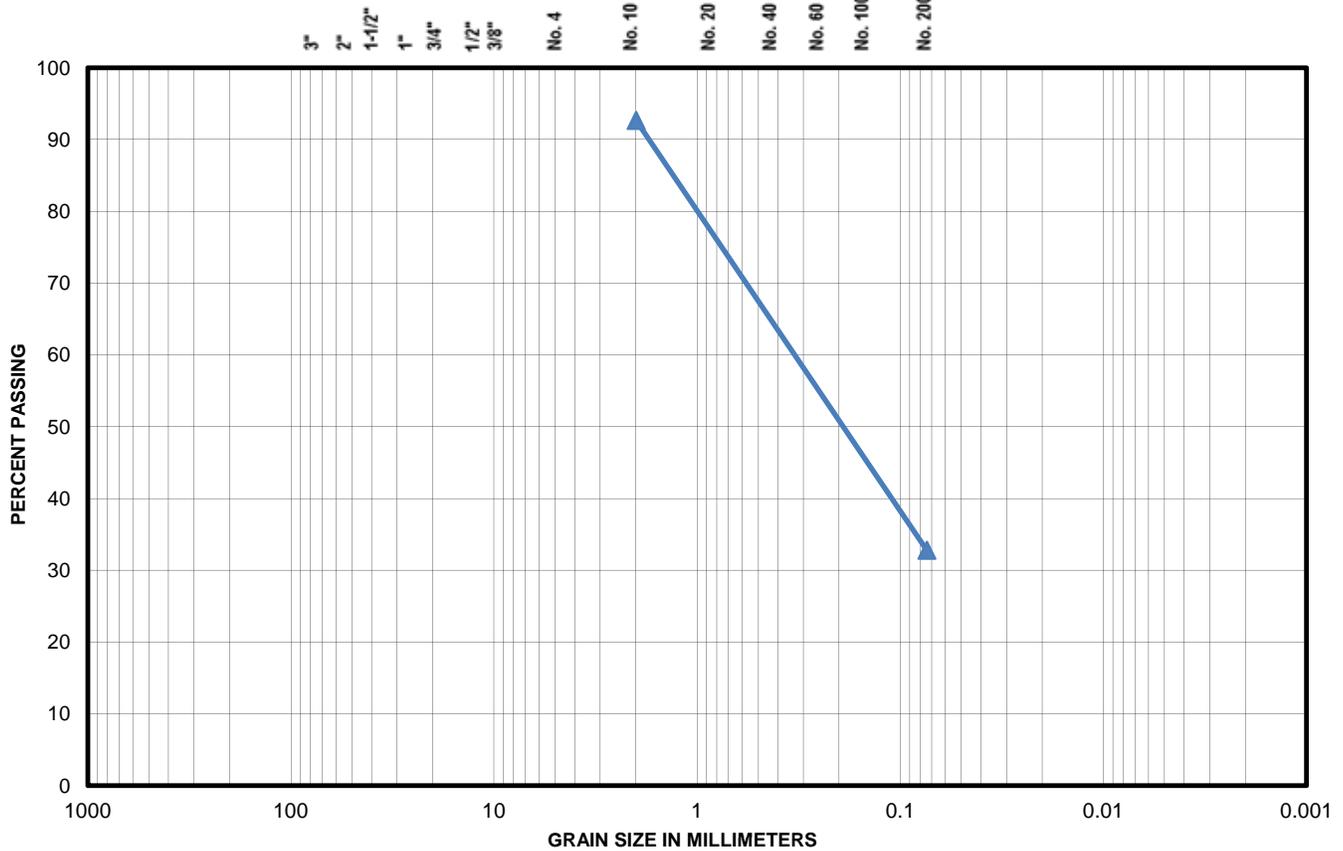
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-16. Sample No. 16 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	7.3	Sand %	59.9
USC Classification	SC-SM	Fines (Silt & Clay) %	32.8
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	92.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	32.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/11/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	17	Checked By	clp
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



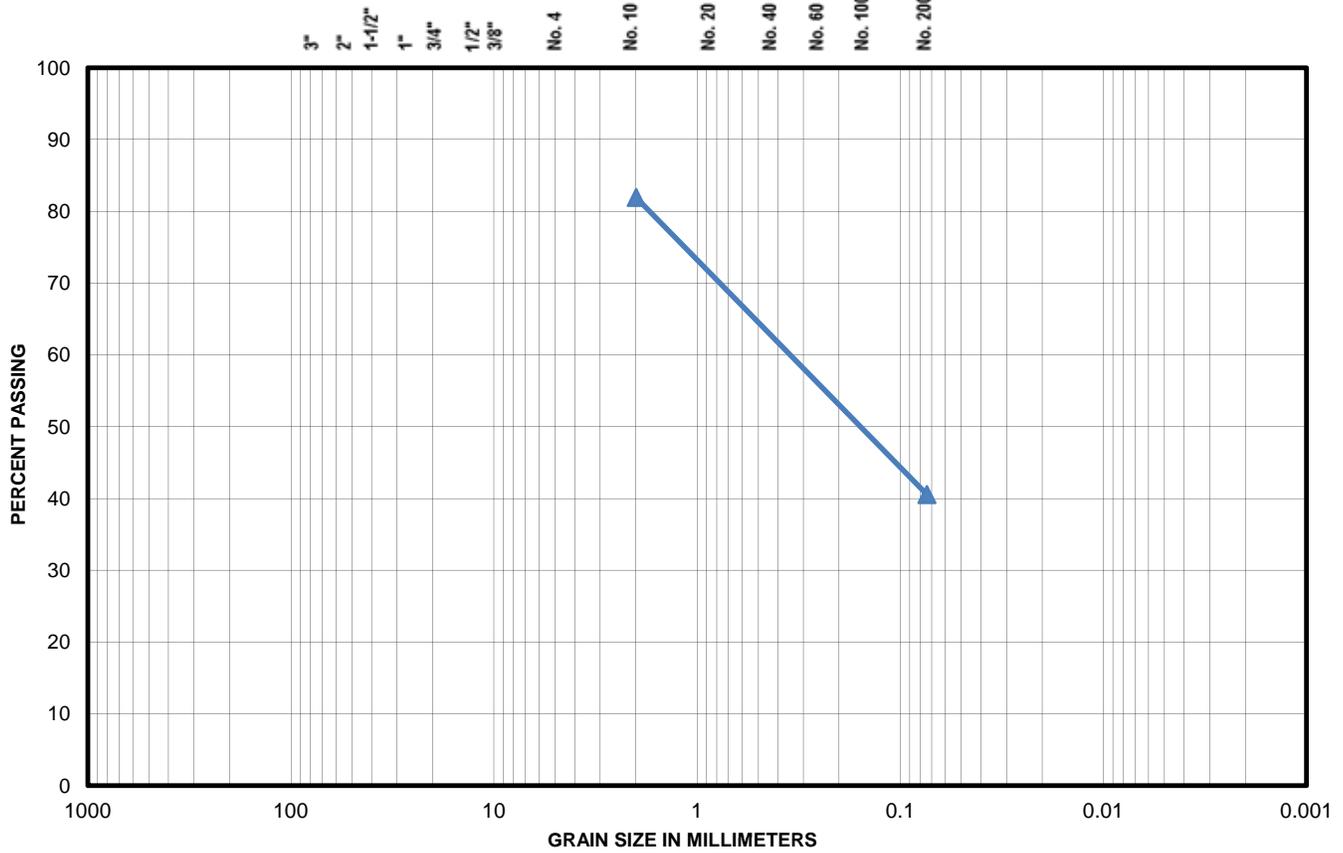
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-17. Sample No. 17 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	18.1	Sand %	41.3
USC Classification	SC-SM	Fines (Silt & Clay) %	40.6
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	81.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	40.6

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	18	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



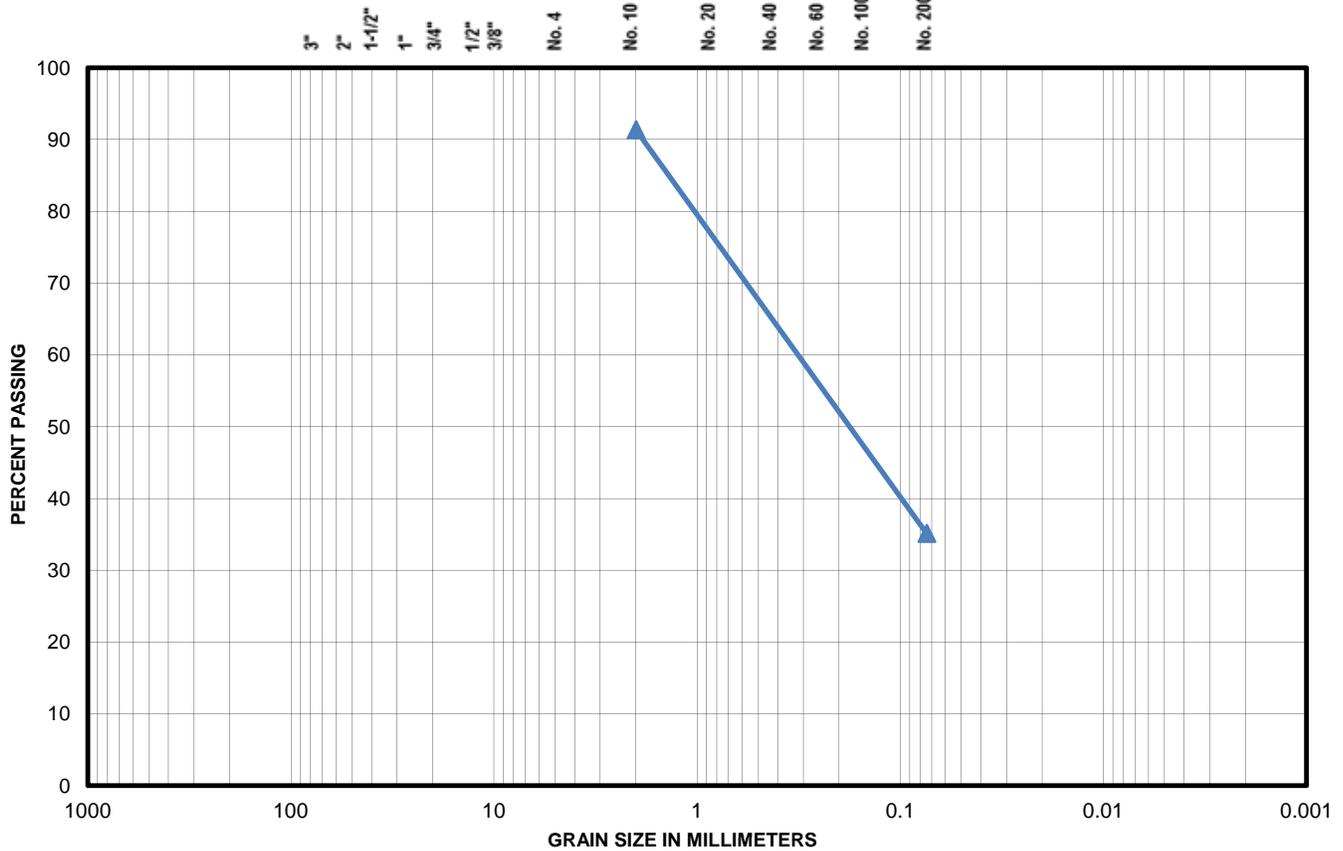
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-18. Sample No. 18 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.6	Sand %	56.3
USC Classification	SC-SM	Fines (Silt & Clay) %	35.1
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	91.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	35.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	19	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



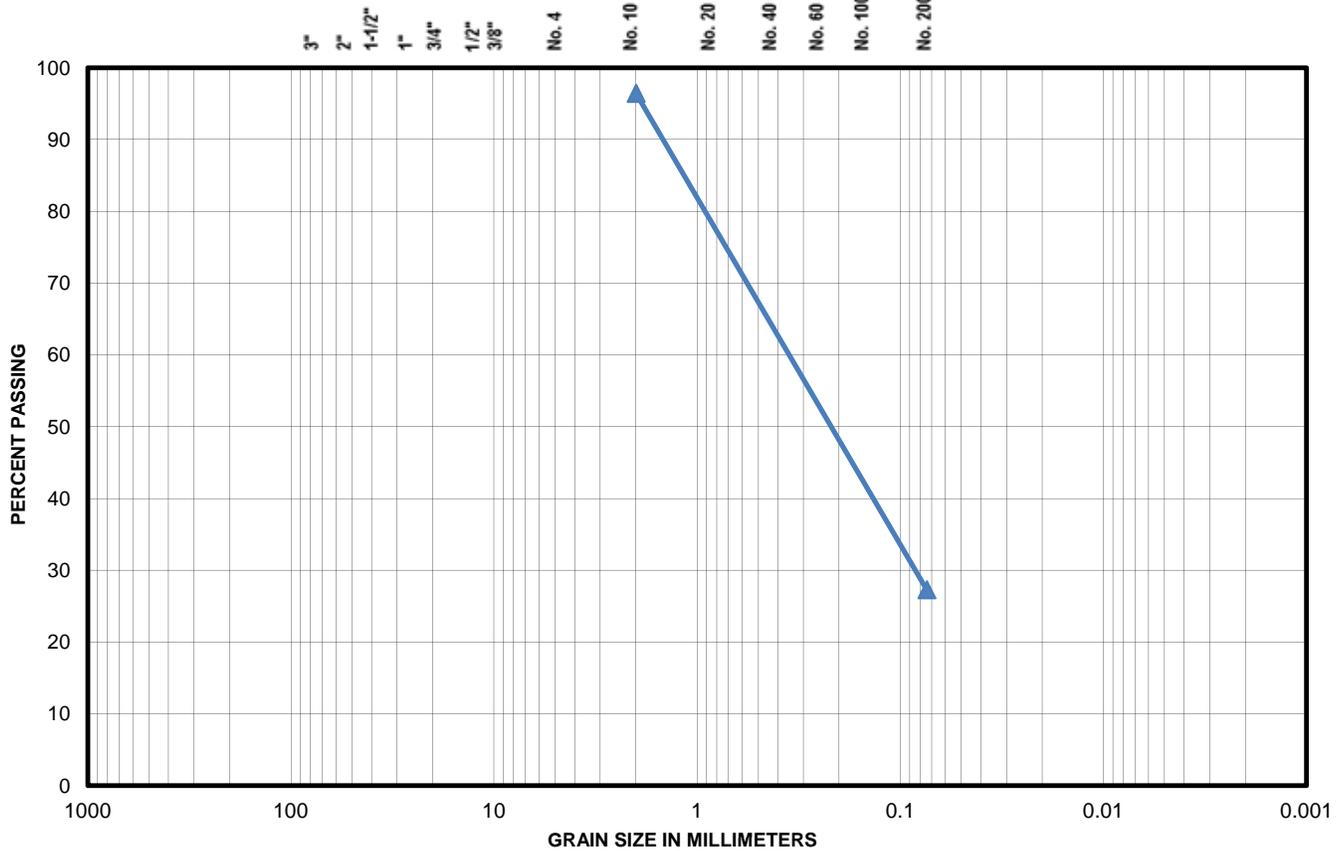
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-19. Sample No. 19 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.6	Sand %	69.1
USC Classification	SC-SM	Fines (Silt & Clay) %	27.3
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	96.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	27.3

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	20	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



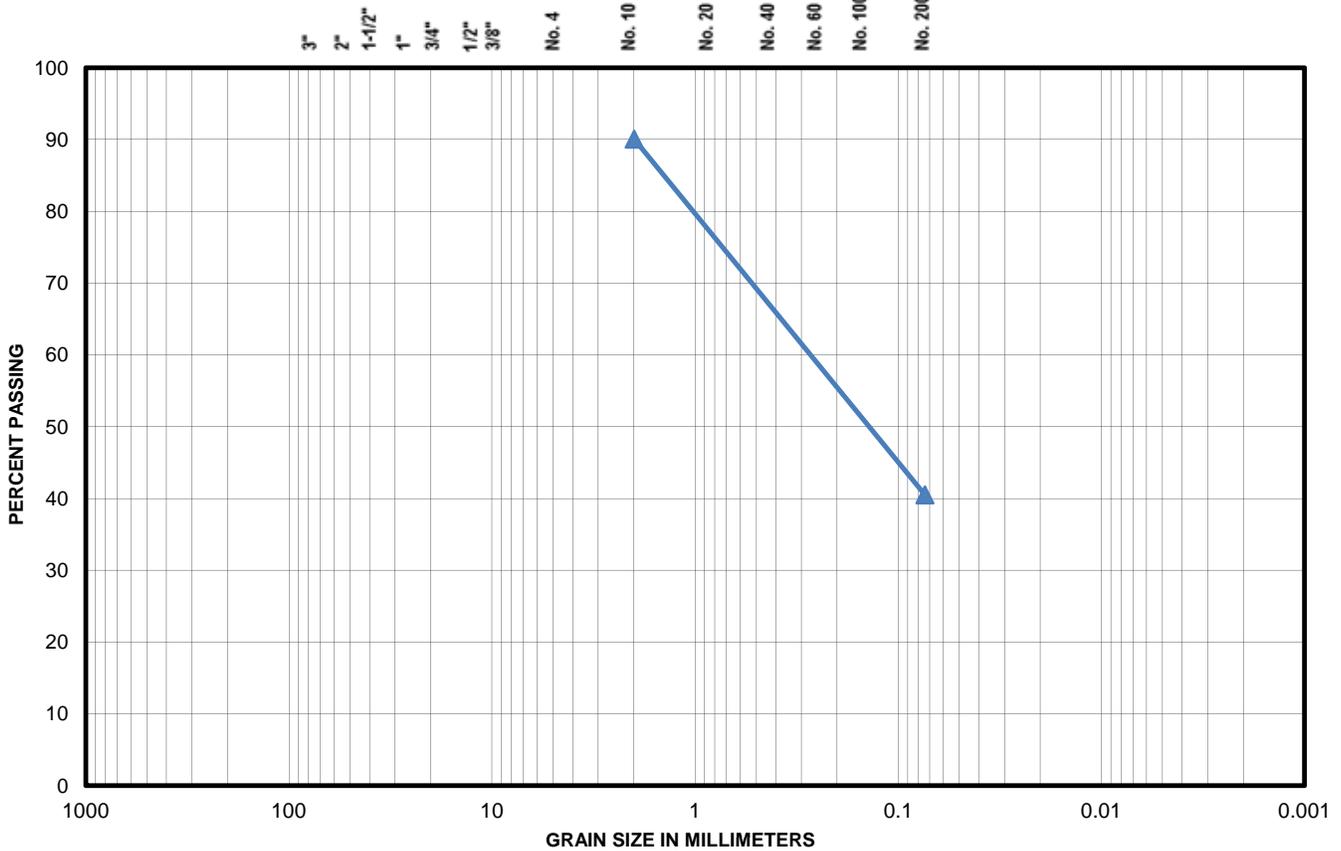
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-20. Sample No. 20 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	9.9	Sand %	49.6
USC Classification	SC-SM	Fines (Silt & Clay) %	40.5
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	90.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	40.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	21	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



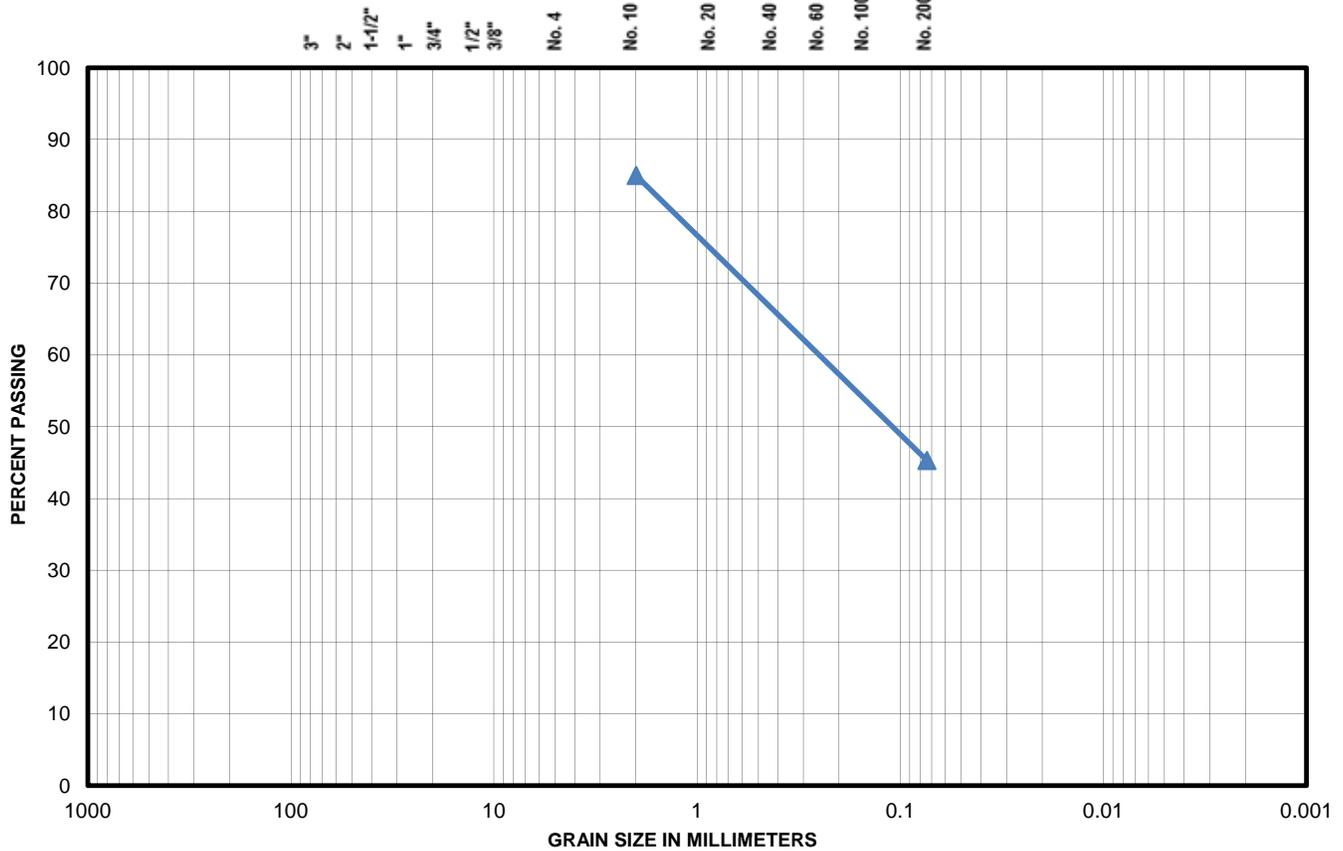
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-21. Sample No. 21 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	15.0	Sand %	39.7
USC Classification	SC-SM	Fines (Silt & Clay) %	45.3
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	85.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	45.3

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	22	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



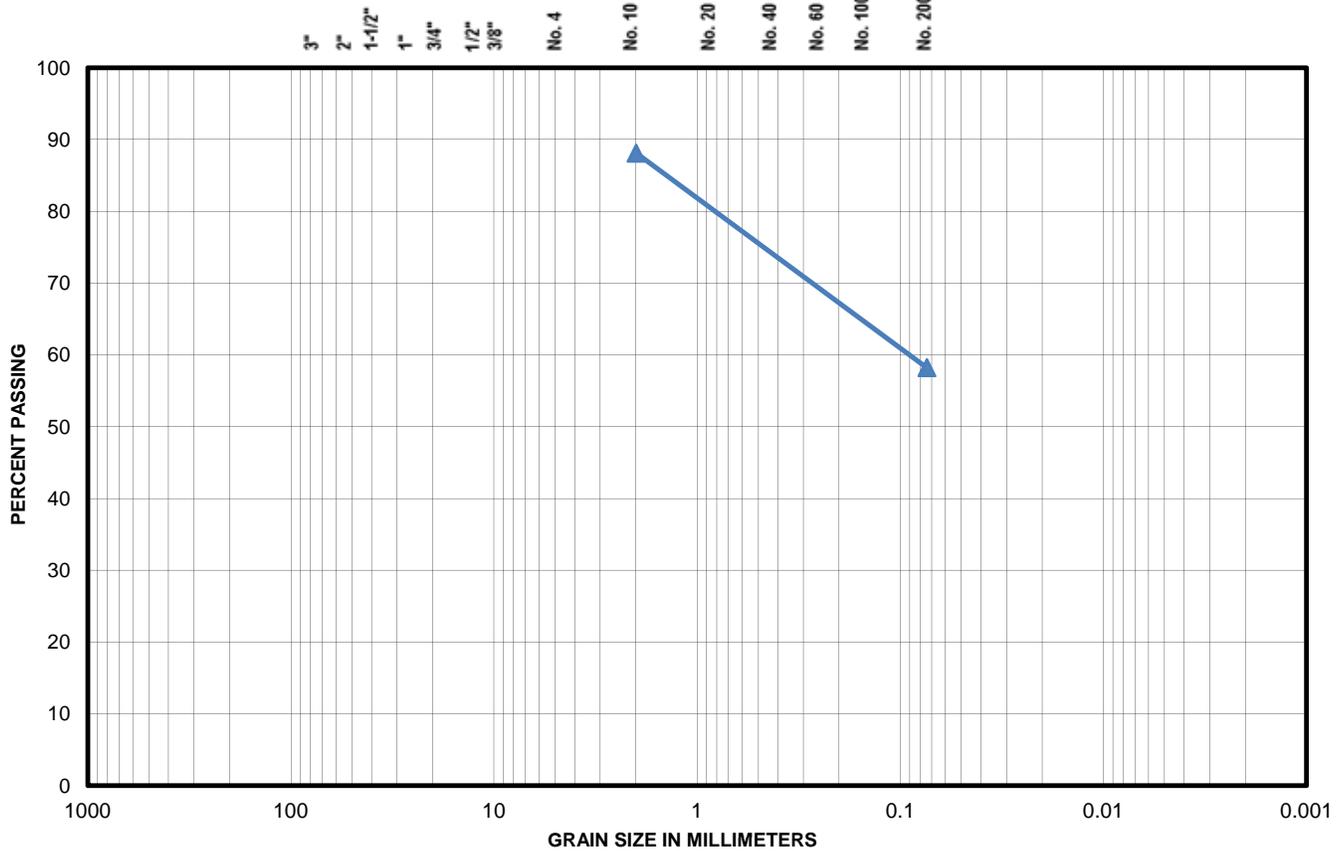
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-22. Sample No. 22 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	11.9	Sand %	29.9
USC Classification	CL	Fines (Silt & Clay) %	58.2
Description	Gray sandy clay with shells and 1" clay layer at bottom (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	88.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	58.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/24/2013
Project No.	16715-023-01	Tested By	ab
Boring No.	23	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

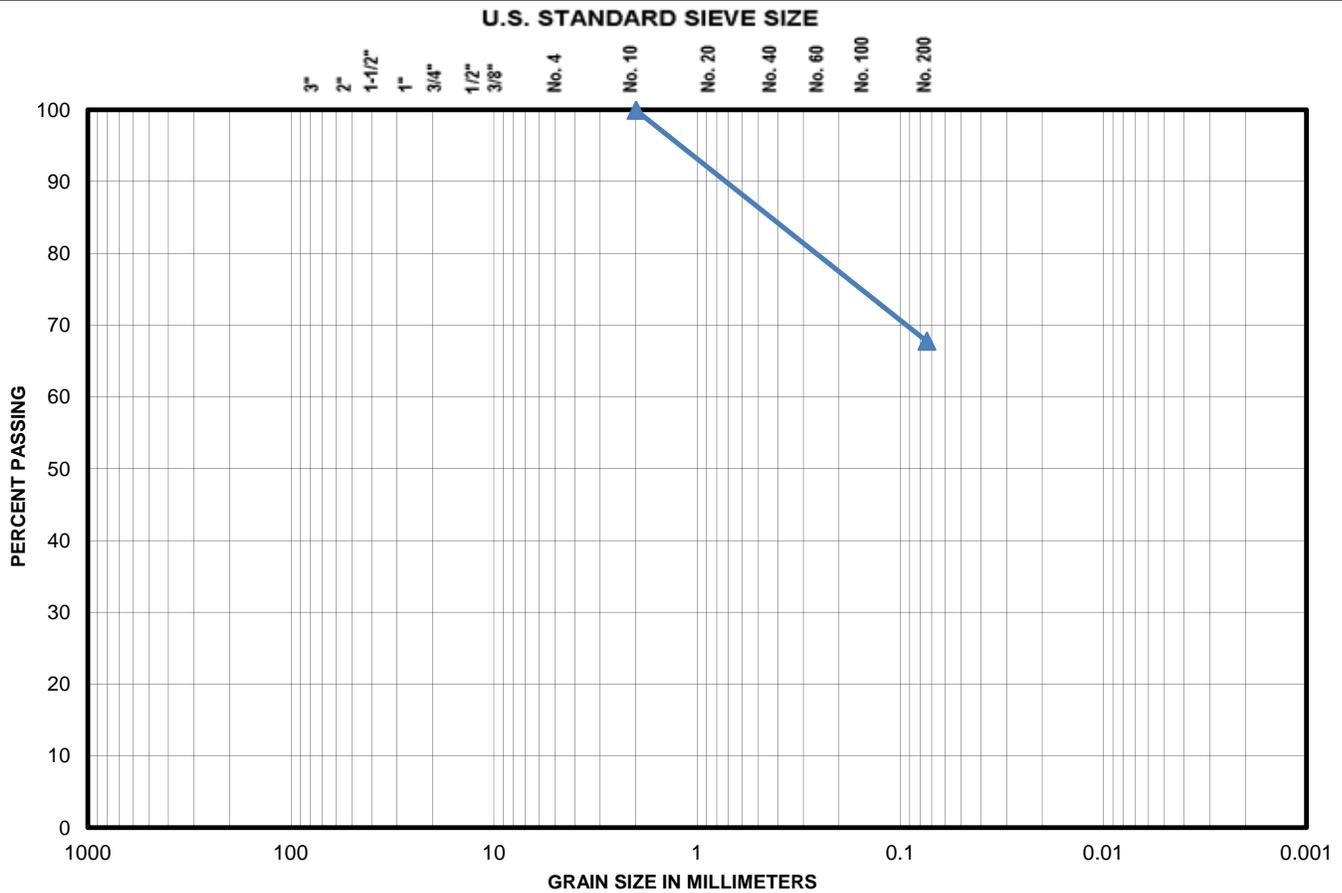


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-23. Sample No. 23 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.1	Sand %	32.1
USC Classification	CL	Fines (Silt & Clay) %	67.8
Description	Light gray sandy clay (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	67.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	24	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



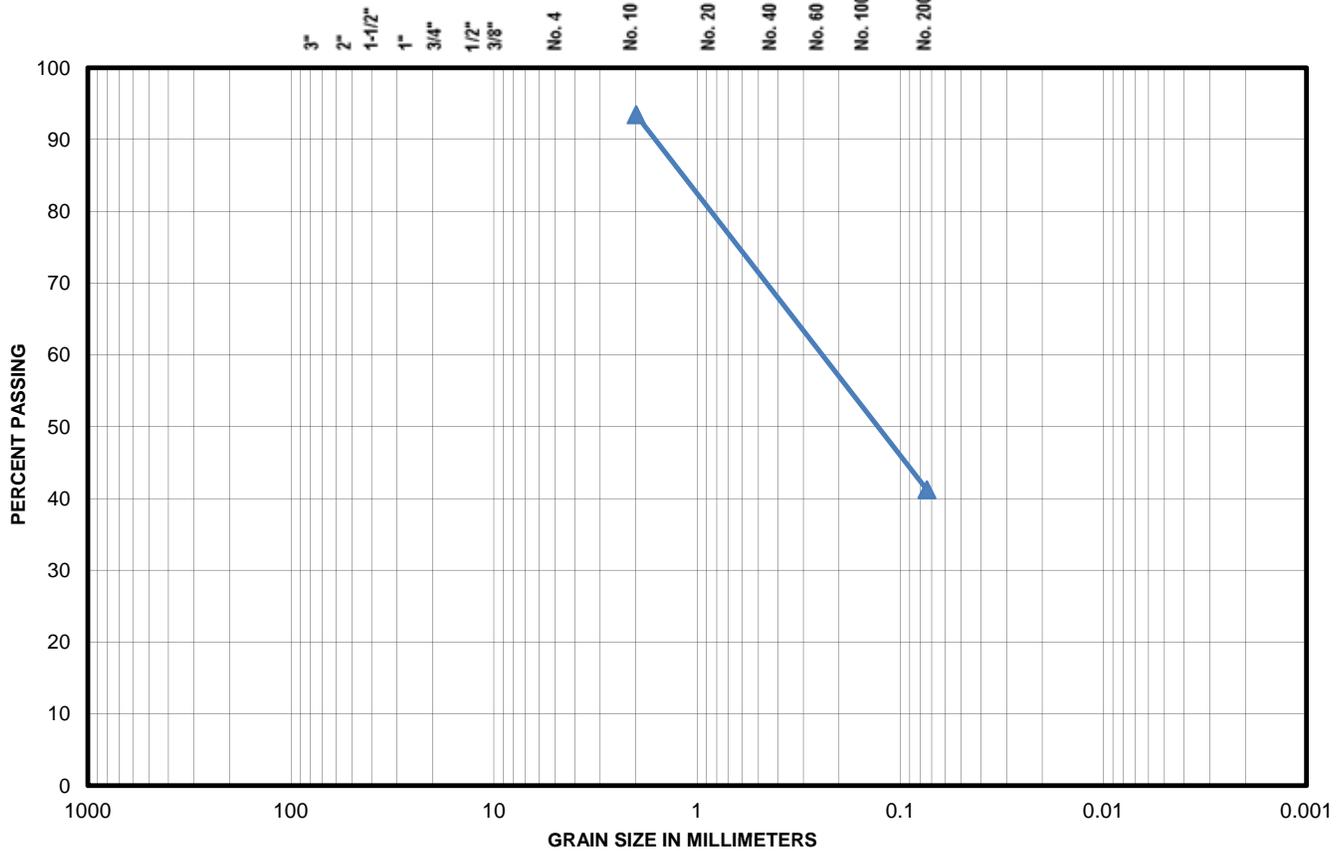
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-24. Sample No. 24 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	6.5	Sand %	52.3
USC Classification	SC-SM	Fines (Silt & Clay) %	41.2
Description	Light gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	93.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	41.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	25	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



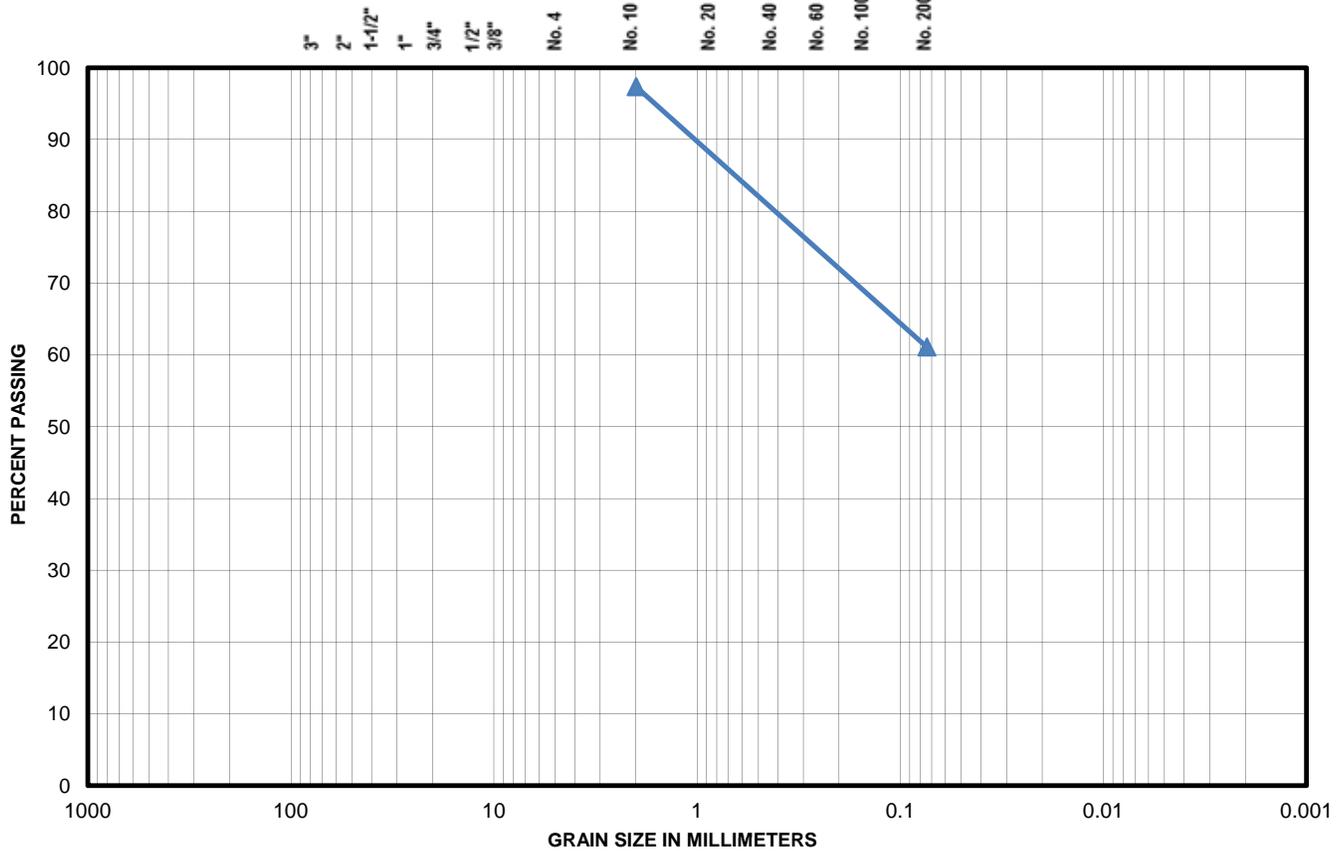
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-25. Sample No. 25 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	2.6	Sand %	36.3
USC Classification	CL	Fines (Silt & Clay) %	61.1
Description	Light gray sandy clay with shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	61.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	26	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

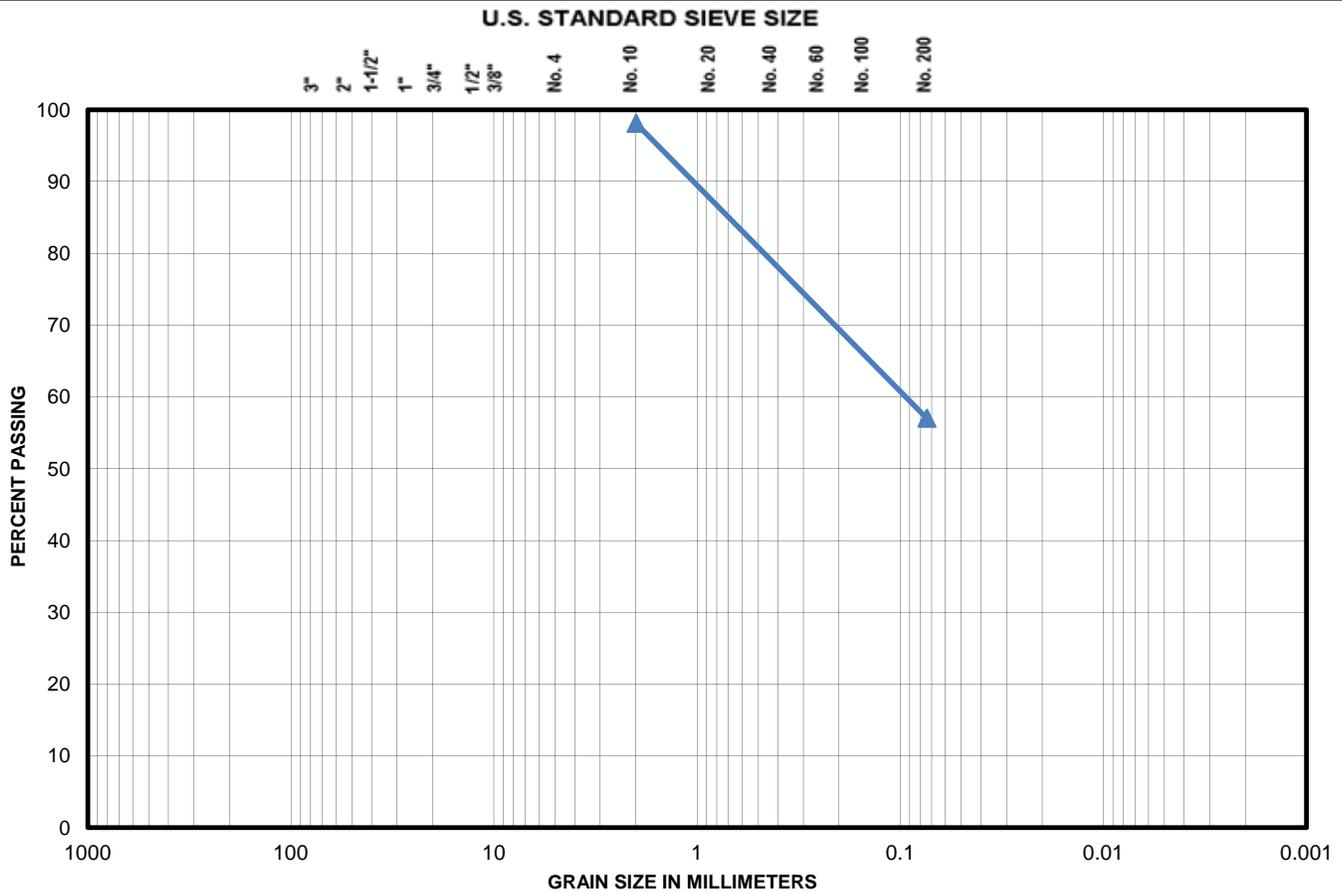


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-26. Sample No. 26 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.9	Sand %	41.1
USC Classification	CL	Fines (Silt & Clay) %	57.0
Description	Gray sandy clay with shell fragments (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	57.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/23/2013
Project No.	16715-023-01	Tested By	ab
Boring No.	27	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



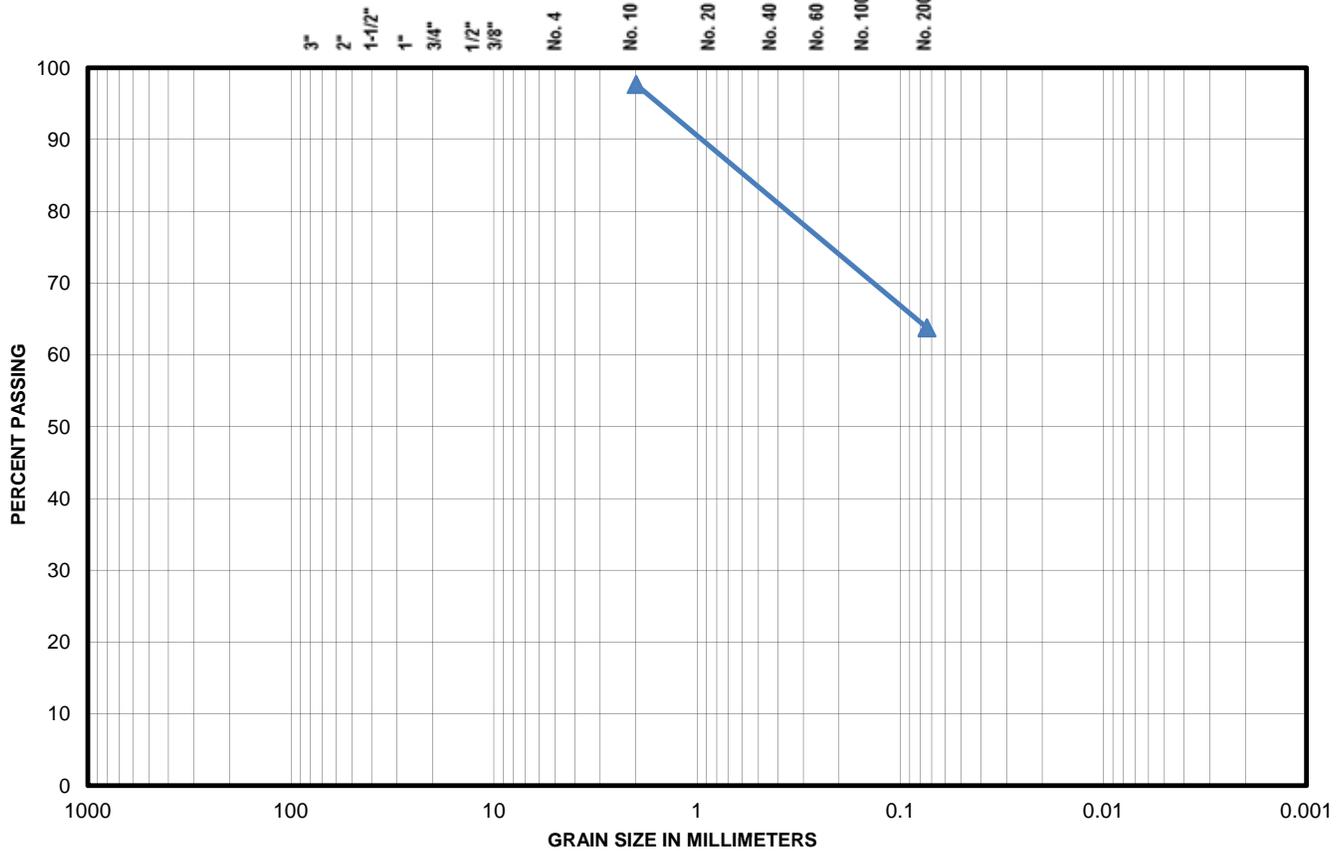
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-27. Sample No. 27 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	2.3	Sand %	33.9
USC Classification	CL	Fines (Silt & Clay) %	63.8
Description	Light gray sandy clay with 1 1/2" clayey silt layer at top (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	63.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	28	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



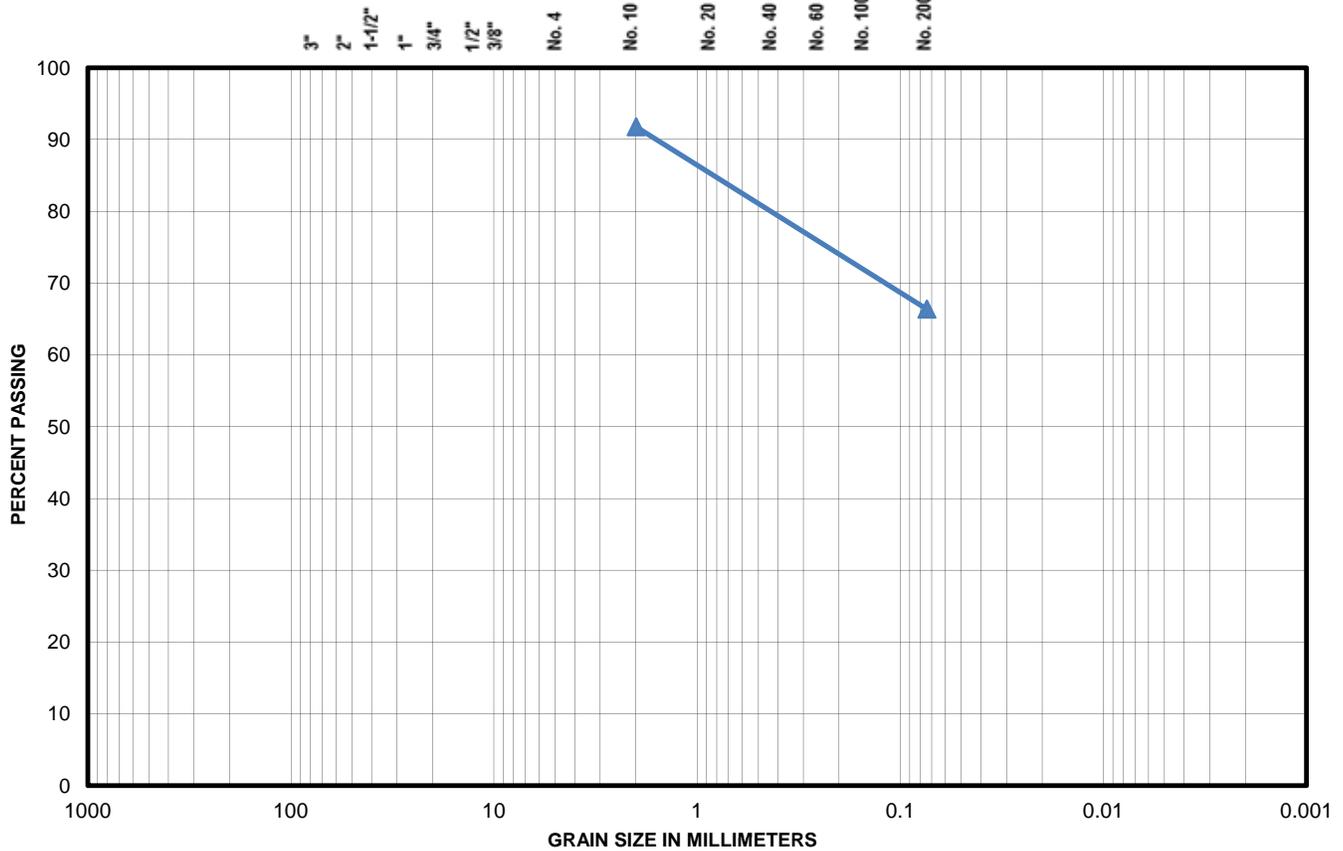
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-28. Sample No. 28 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.2	Sand %	25.4
USC Classification	CL	Fines (Silt & Clay) %	66.4
Description	Gray sandy clay with shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	91.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	66.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	29	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



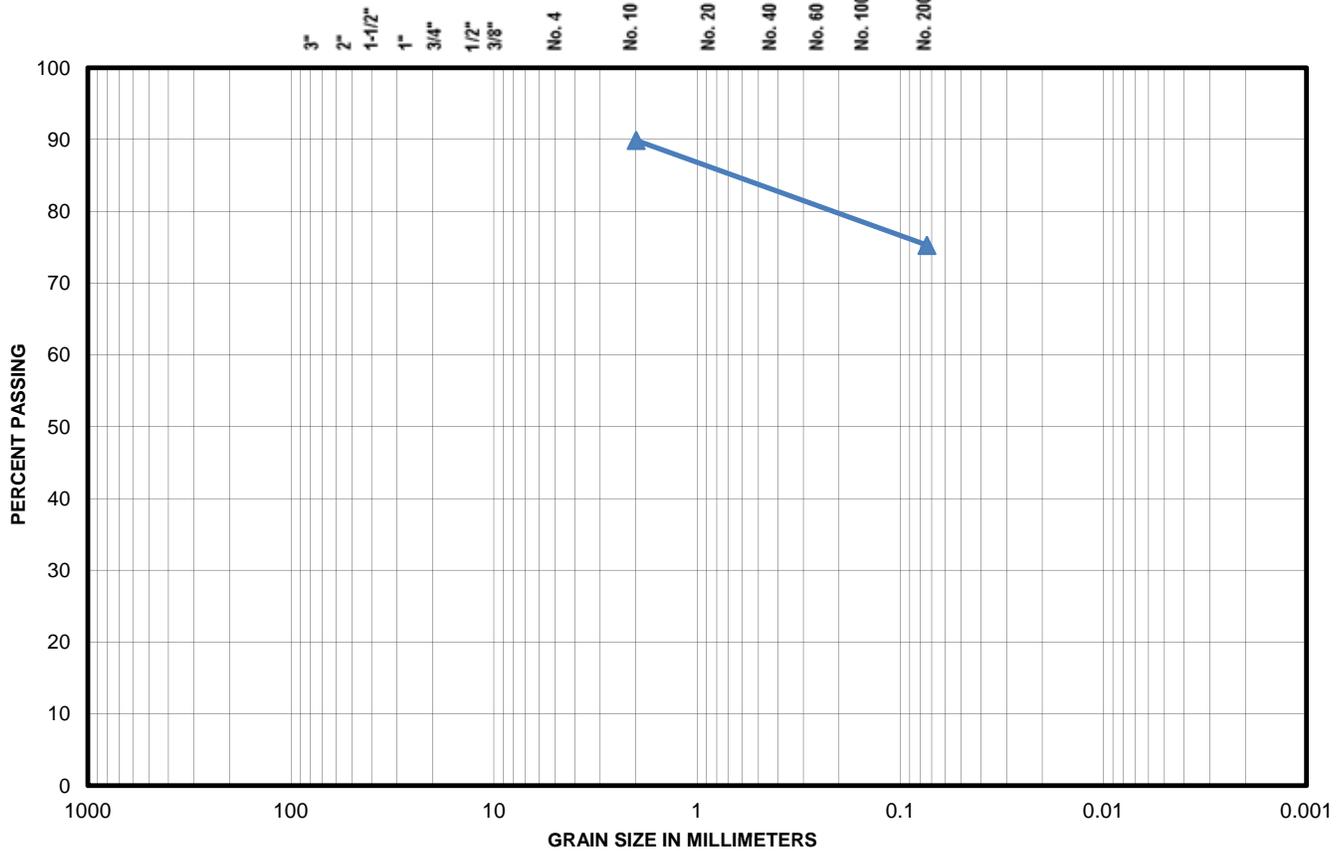
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-29. Sample No. 29 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	10.1	Sand %	14.6
USC Classification	CL	Fines (Silt & Clay) %	75.3
Description	Gray sandy clay with shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	89.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	75.3

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	30	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



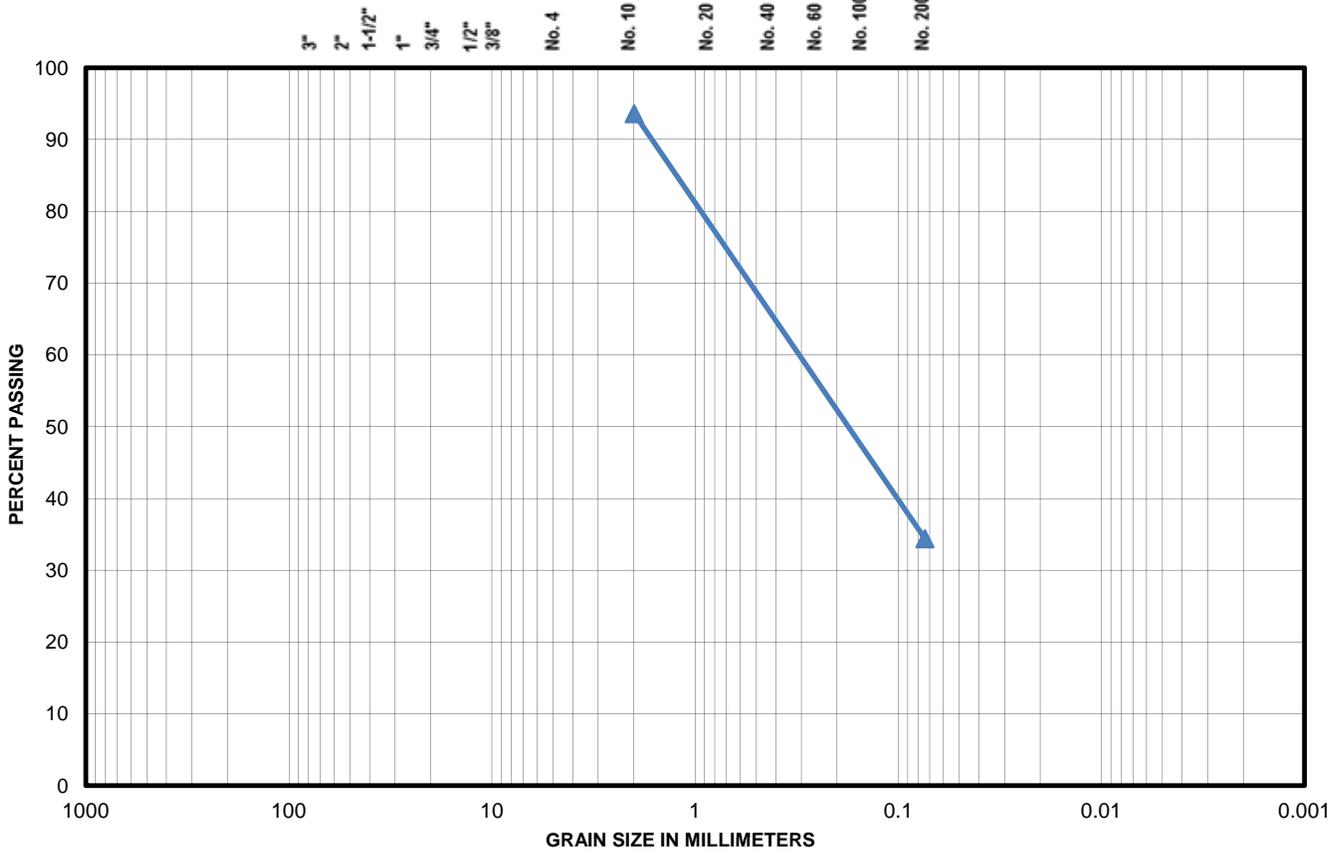
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-30. Sample No. 30 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	6.4	Sand %	59.2
USC Classification	SC-SM	Fines (Silt & Clay) %	34.4
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	93.6
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	34.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	31	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



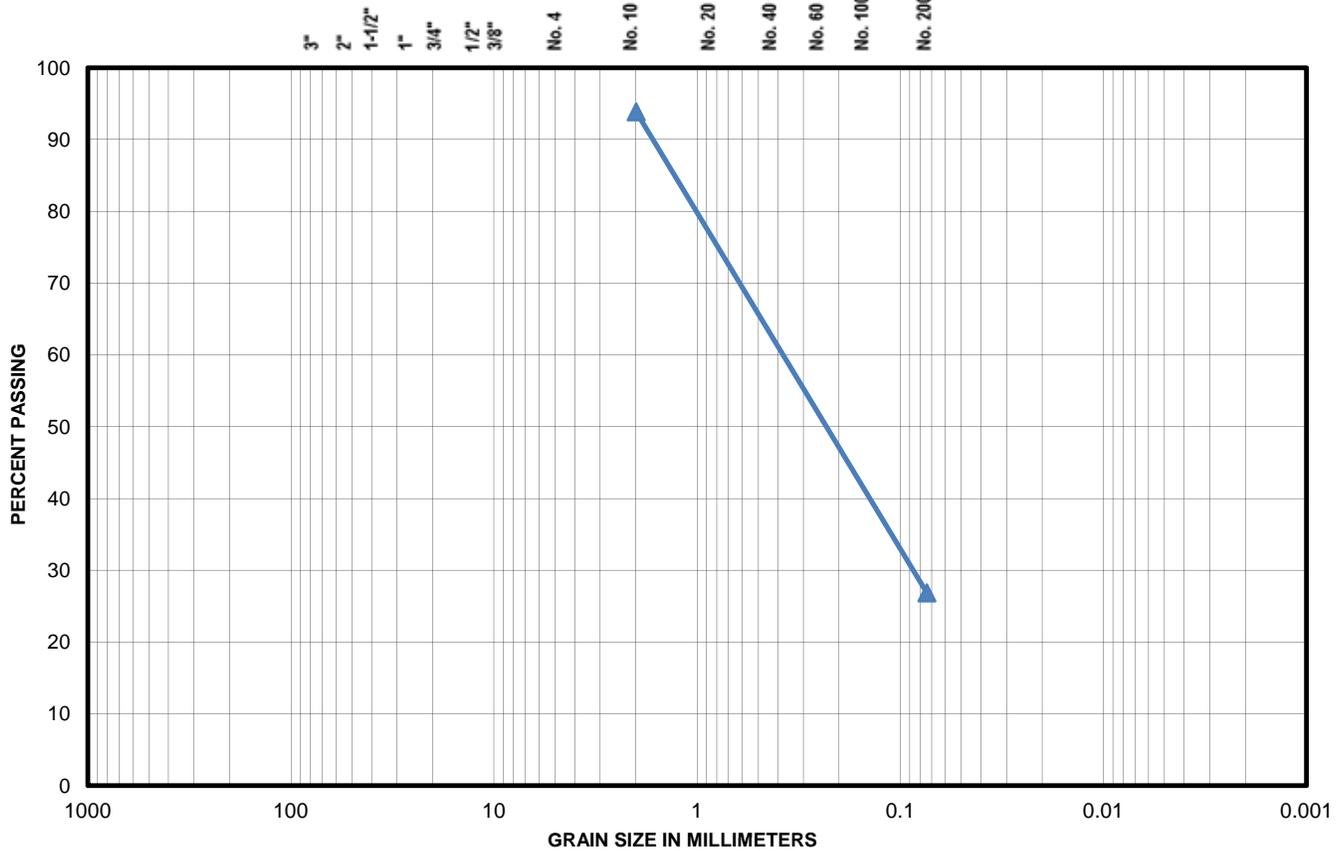
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-31. Sample No. 31 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	6.1	Sand %	67.0
USC Classification	SC-SM	Fines (Silt & Clay) %	26.9
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	93.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	26.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	32	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

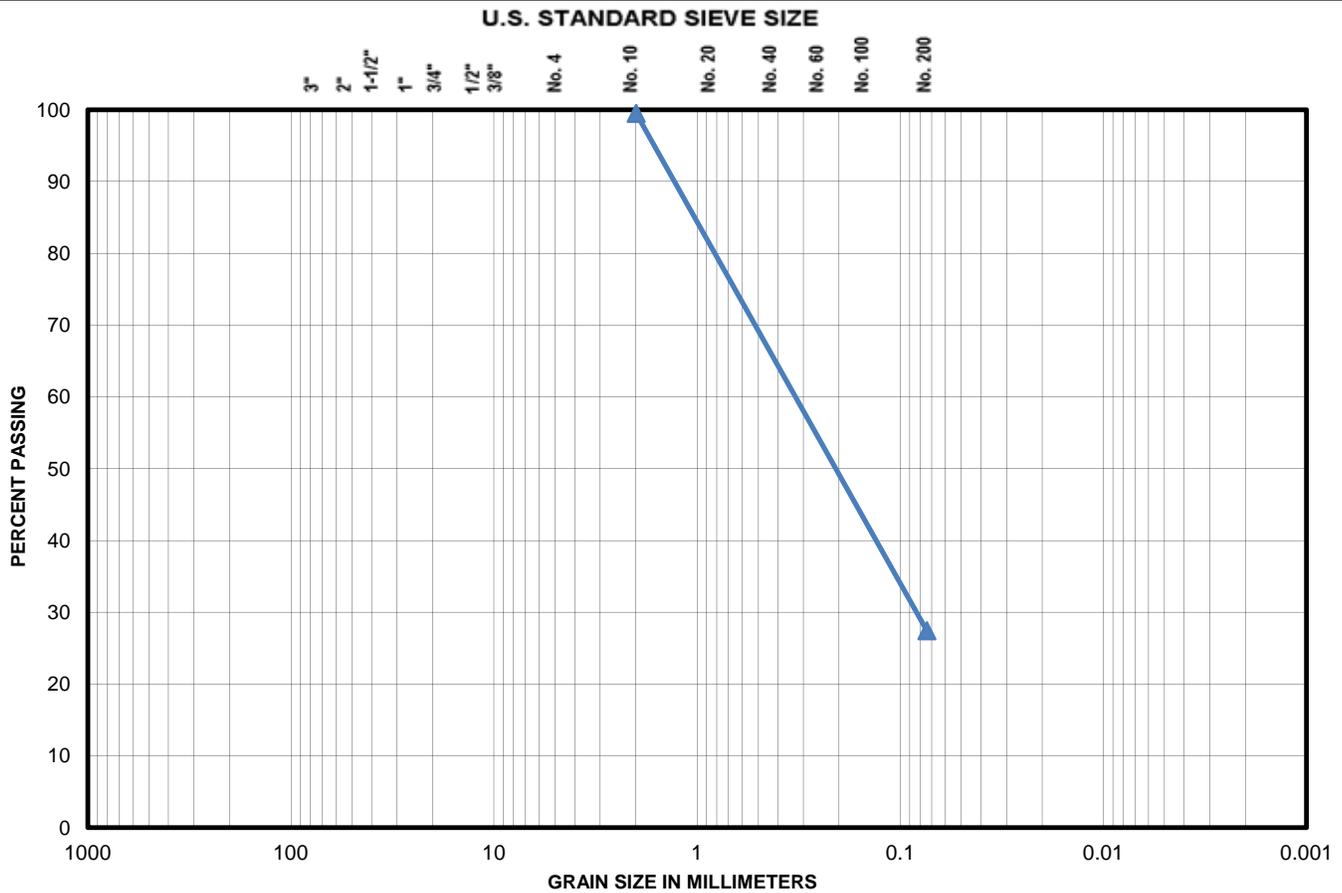


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-32. Sample No. 32 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.5	Sand %	72.0
USC Classification	SC-SM	Fines (Silt & Clay) %	27.5
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	27.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	33	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



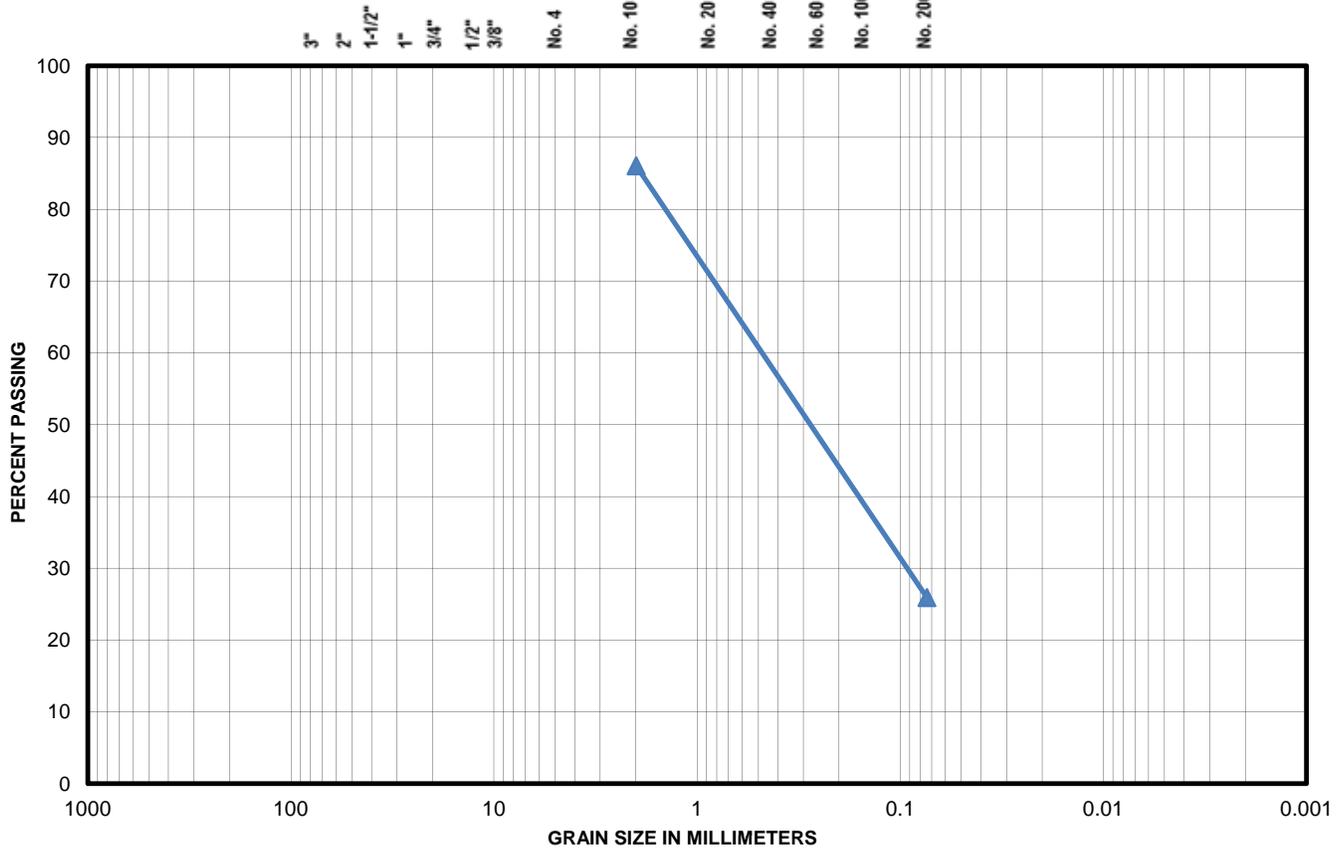
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-33. Sample No. 33 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	13.9	Sand %	60.2
USC Classification	SC-SM	Fines (Silt & Clay) %	25.9
Description	Gray clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	86.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	25.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	34	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



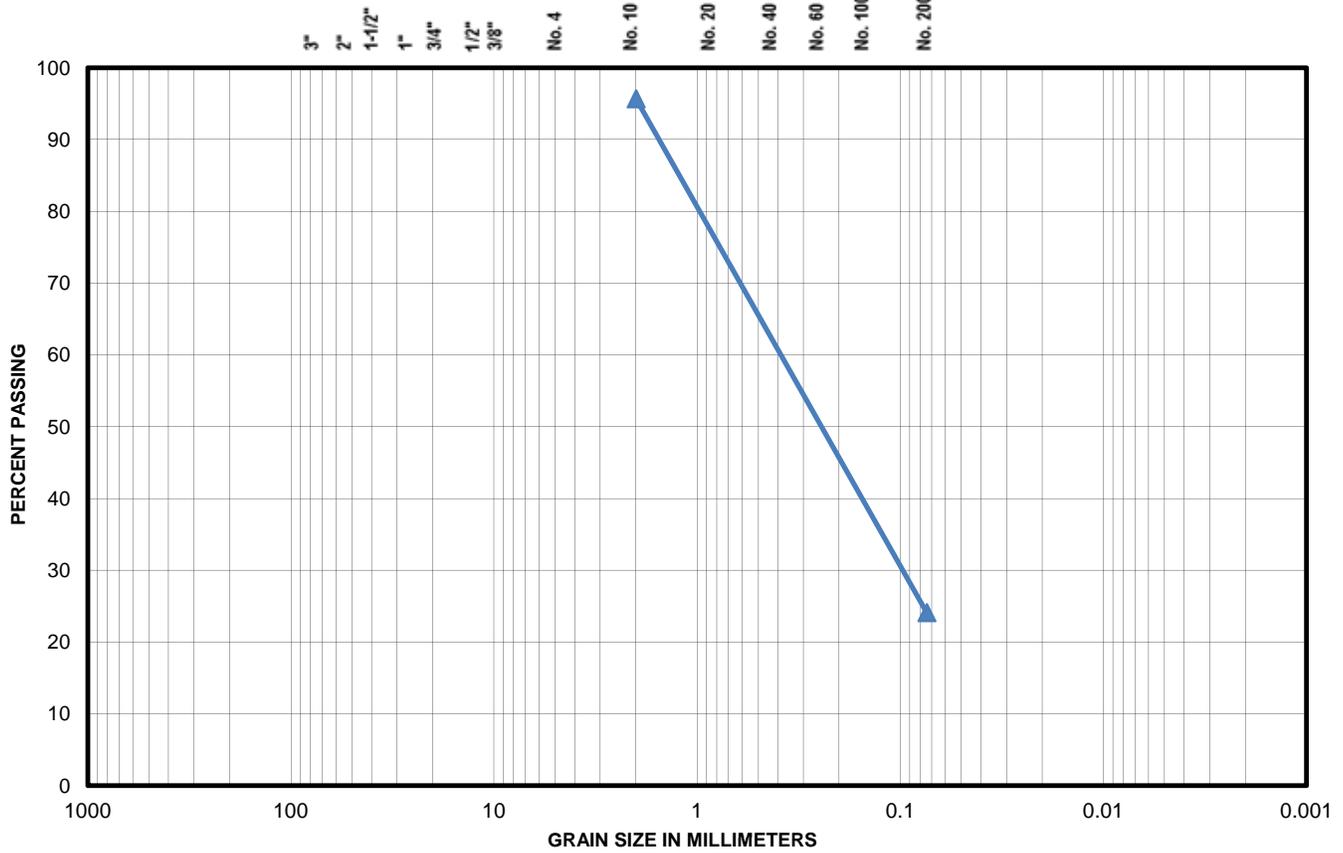
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-34. Sample No. 34 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	4.3	Sand %	71.6
USC Classification	SC-SM	Fines (Silt & Clay) %	24.1
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	95.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	24.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	35	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

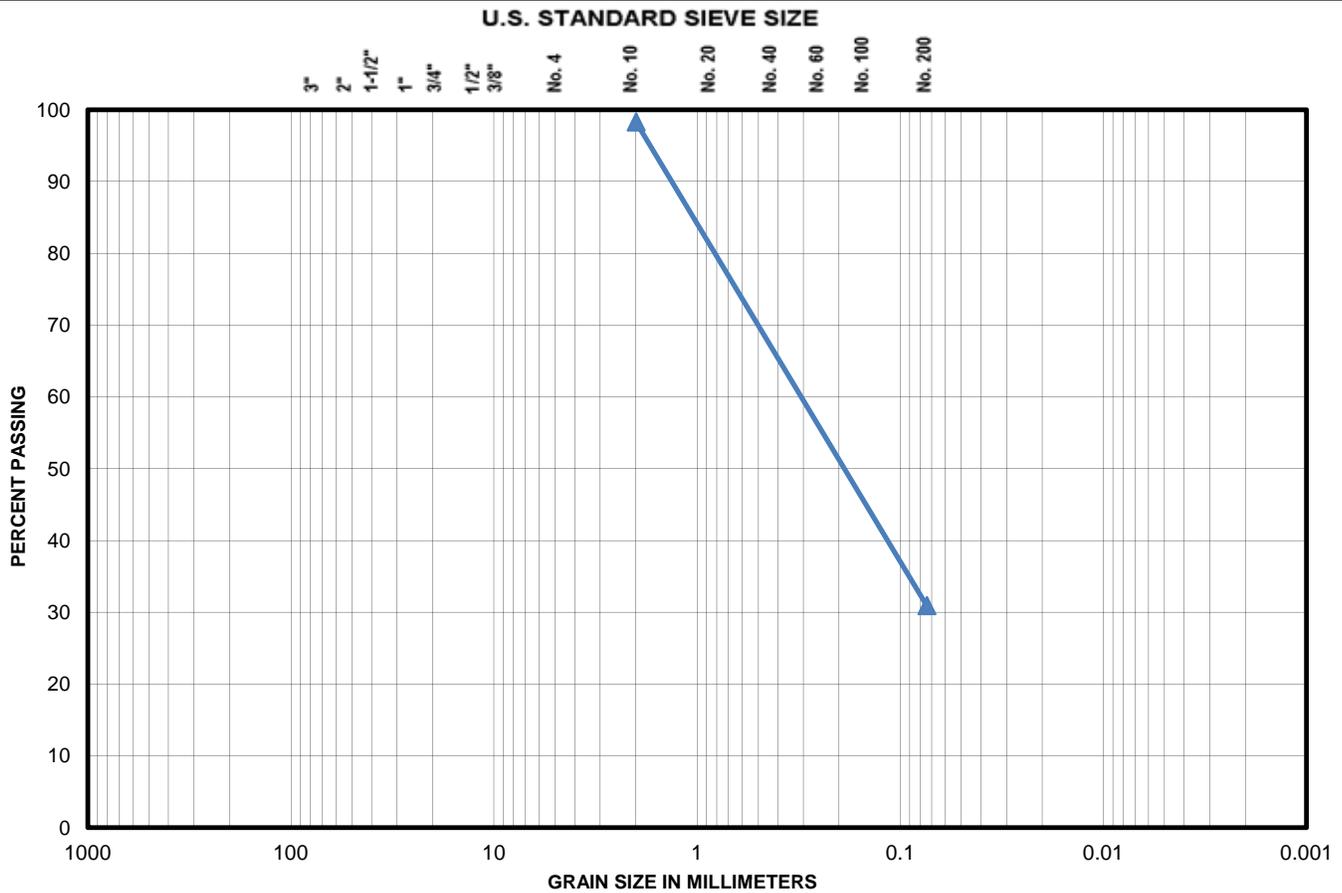


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-35. Sample No. 35 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.7	Sand %	67.4
USC Classification	SC-SM	Fines (Silt & Clay) %	30.9
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	30.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	36	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



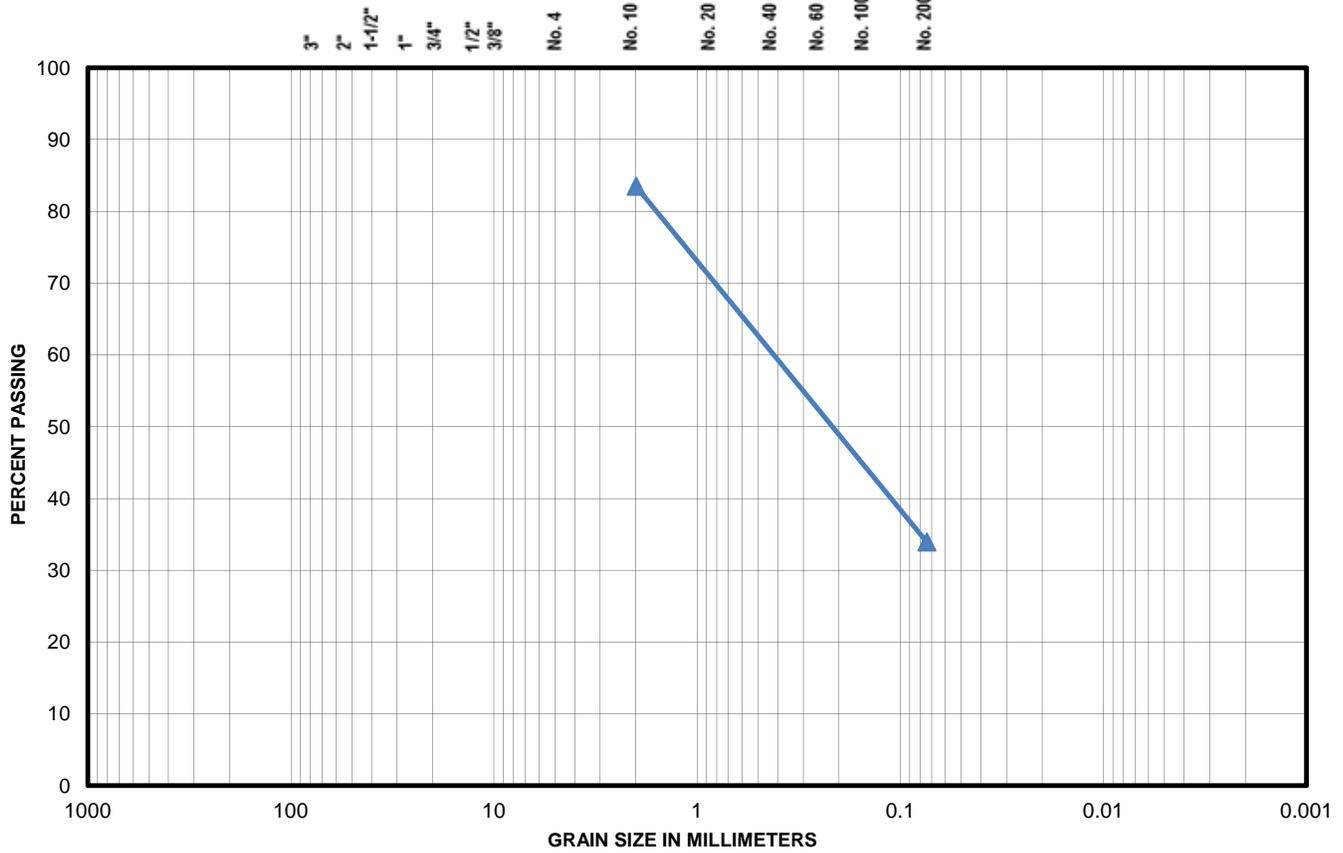
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-36. Sample No. 36 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	16.5	Sand %	49.6
USC Classification	SC-SM	Fines (Silt & Clay) %	33.9
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	83.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	33.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/19/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	37	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



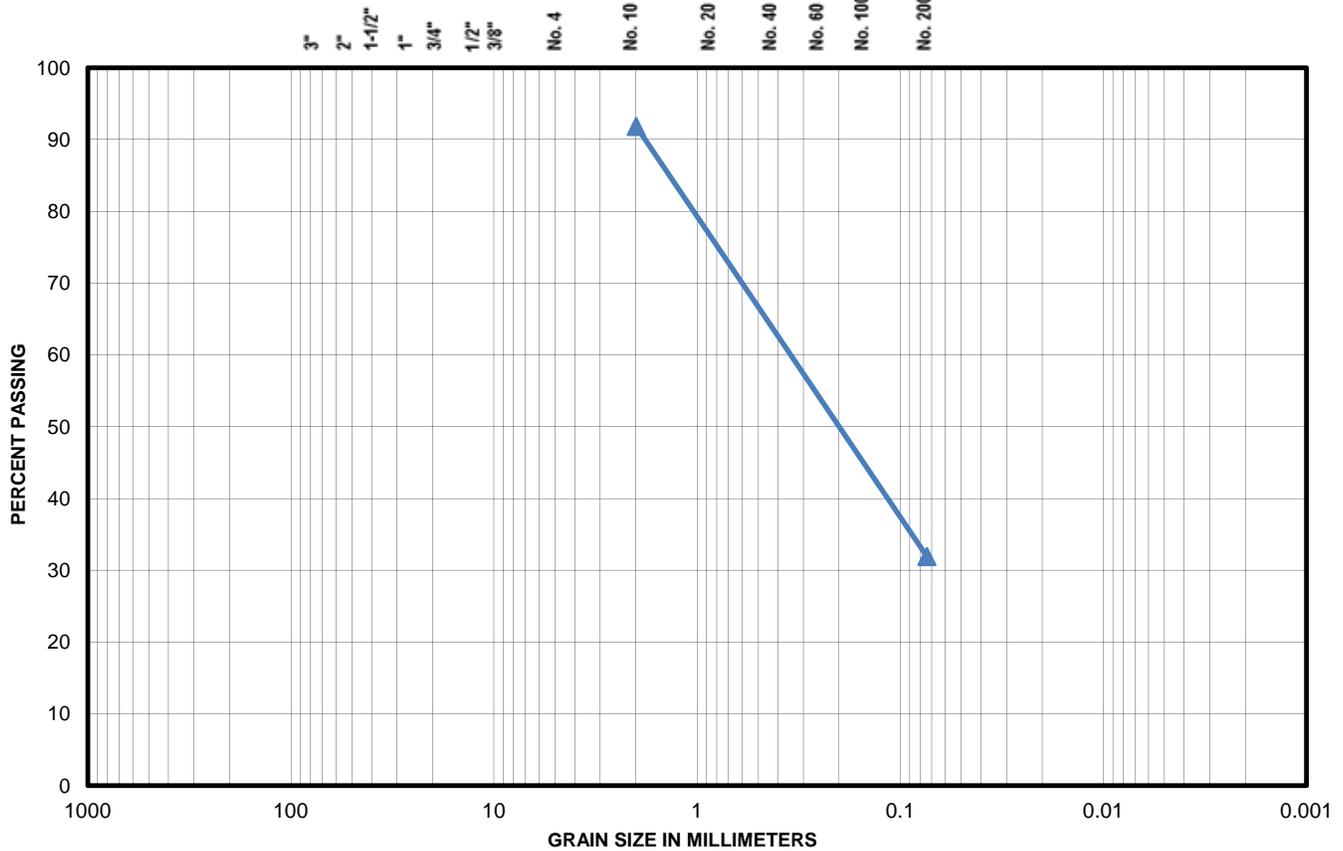
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-37. Sample No. 37 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.2	Sand %	59.9
USC Classification	SC-SM	Fines (Silt & Clay) %	31.9
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	91.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	31.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	38	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



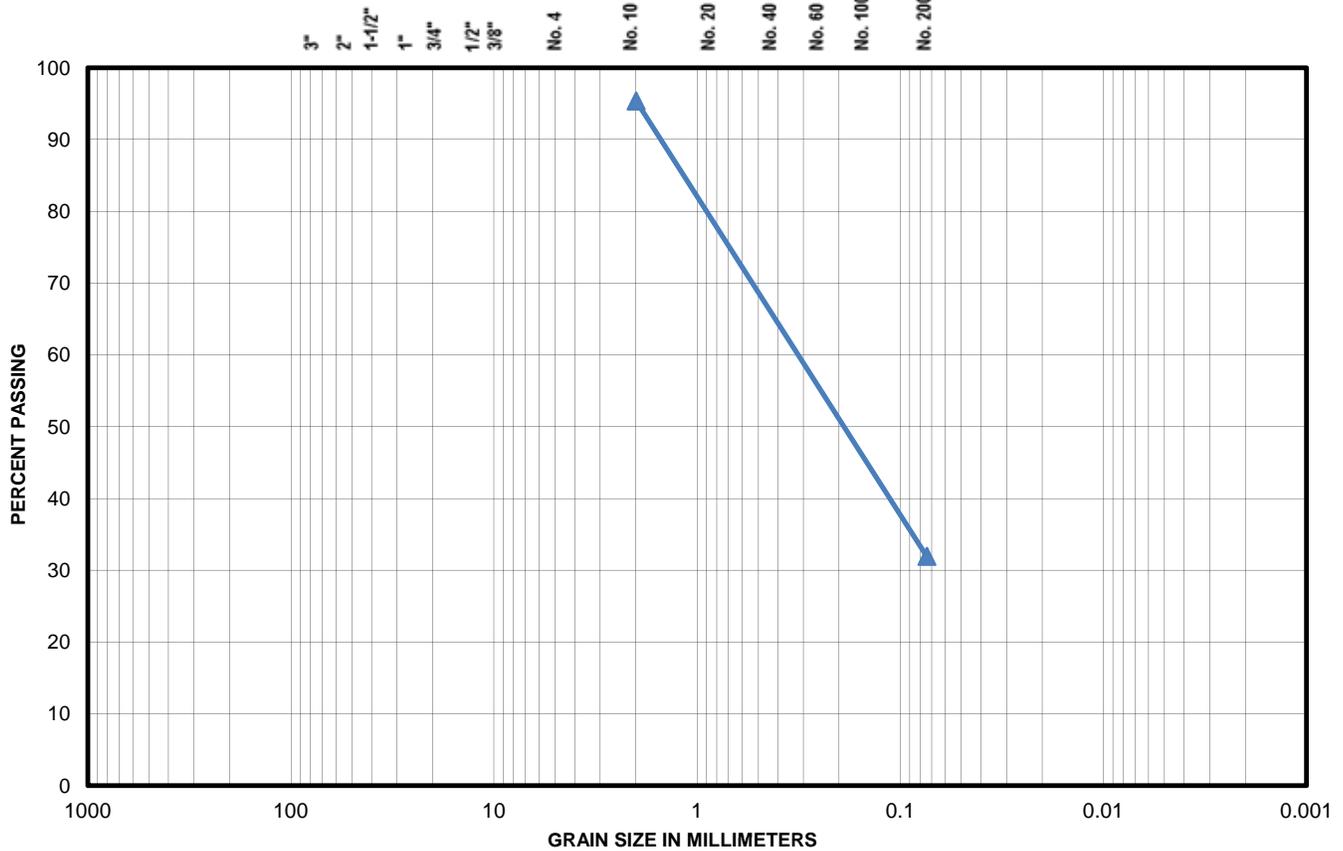
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-38. Sample No. 38 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	4.6	Sand %	63.4
USC Classification	SC-SM	Fines (Silt & Clay) %	32.0
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	95.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	32.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	39	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



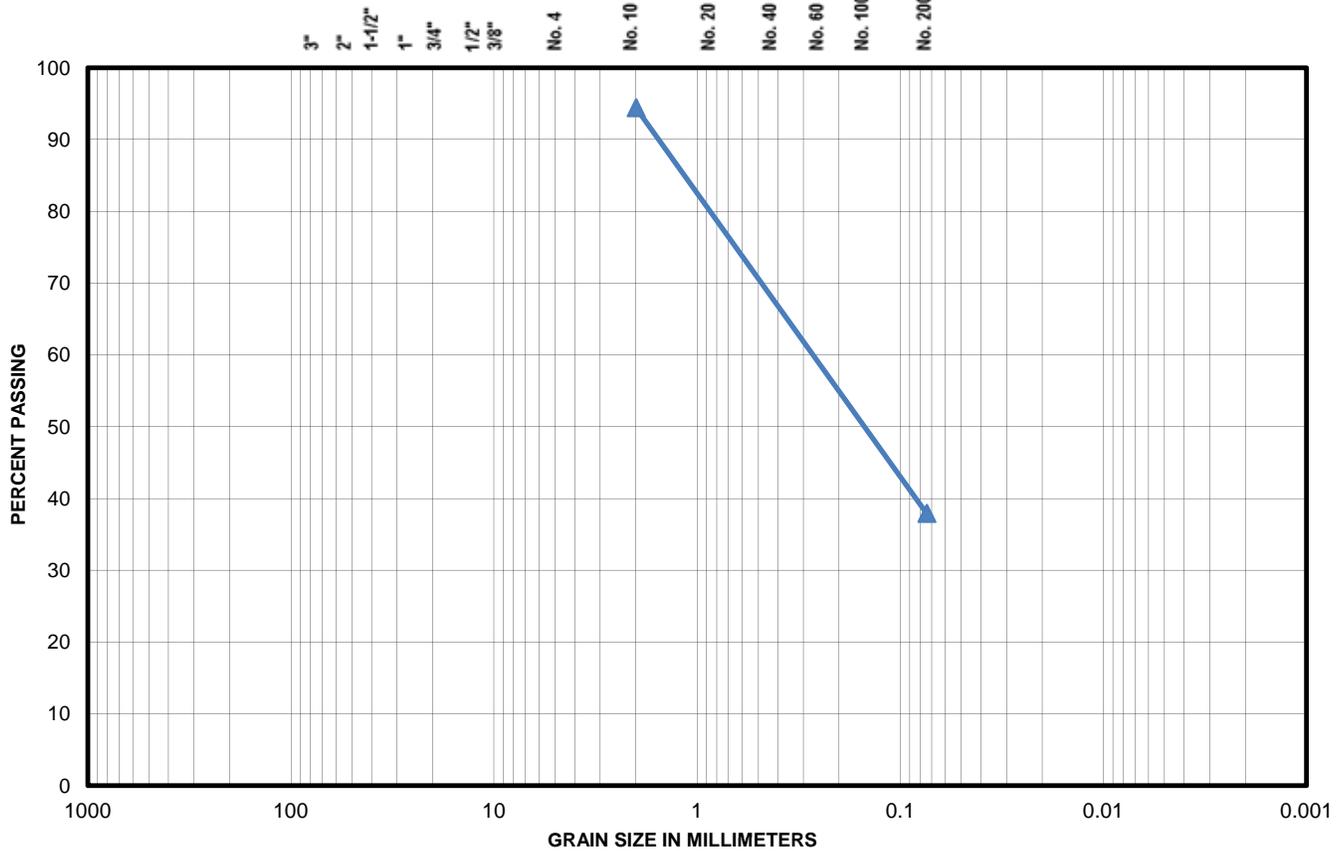
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-39. Sample No. 39 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.6	Sand %	56.5
USC Classification	SC-SM	Fines (Silt & Clay) %	37.9
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	94.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	37.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/24/2013
Project No.	16715-023-01	Tested By	ab
Boring No.	40	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



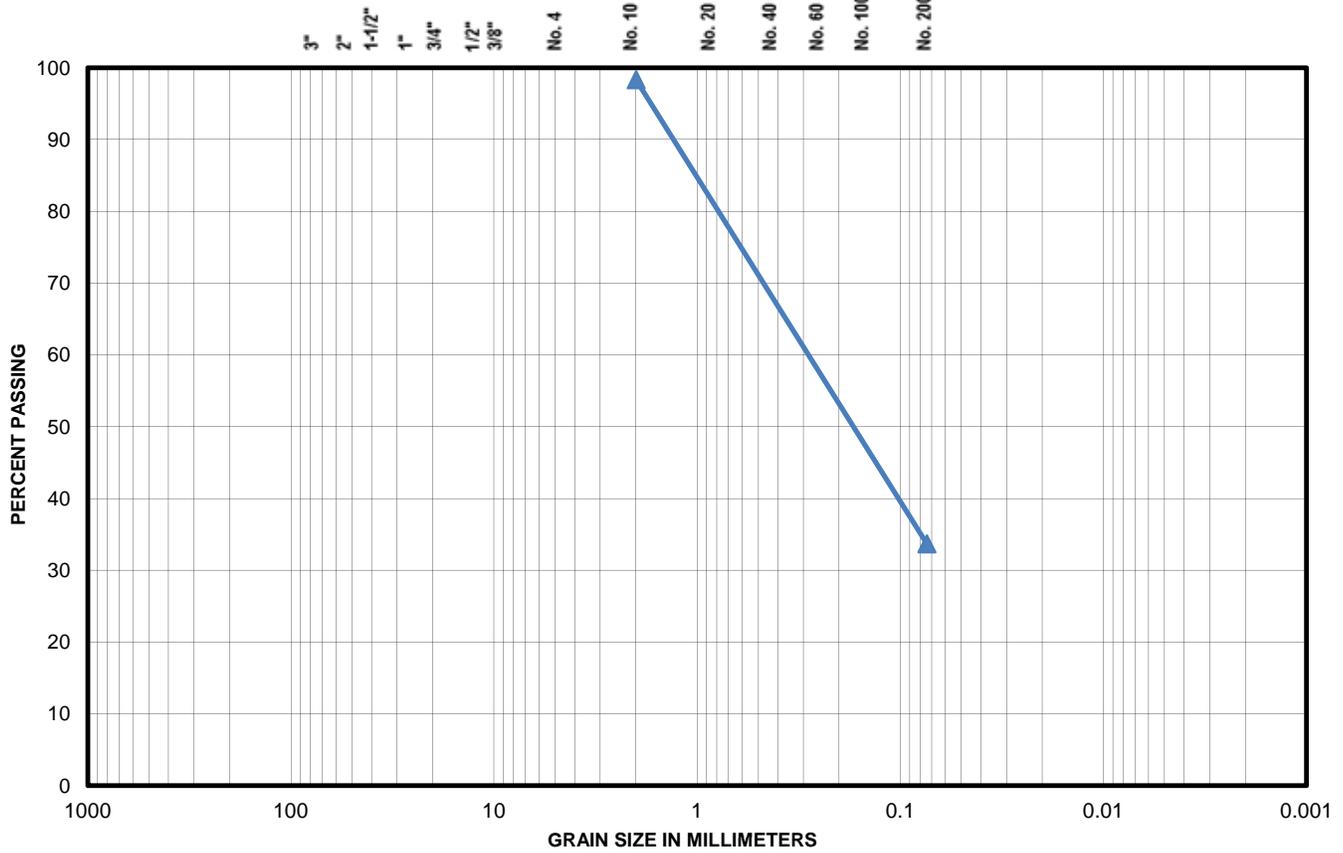
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-40. Sample No. 40 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.7	Sand %	64.6
USC Classification	SC-SM	Fines (Silt & Clay) %	33.7
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Sieve Size	% Passing	Sieve Size	% Passing
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	33.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	41	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



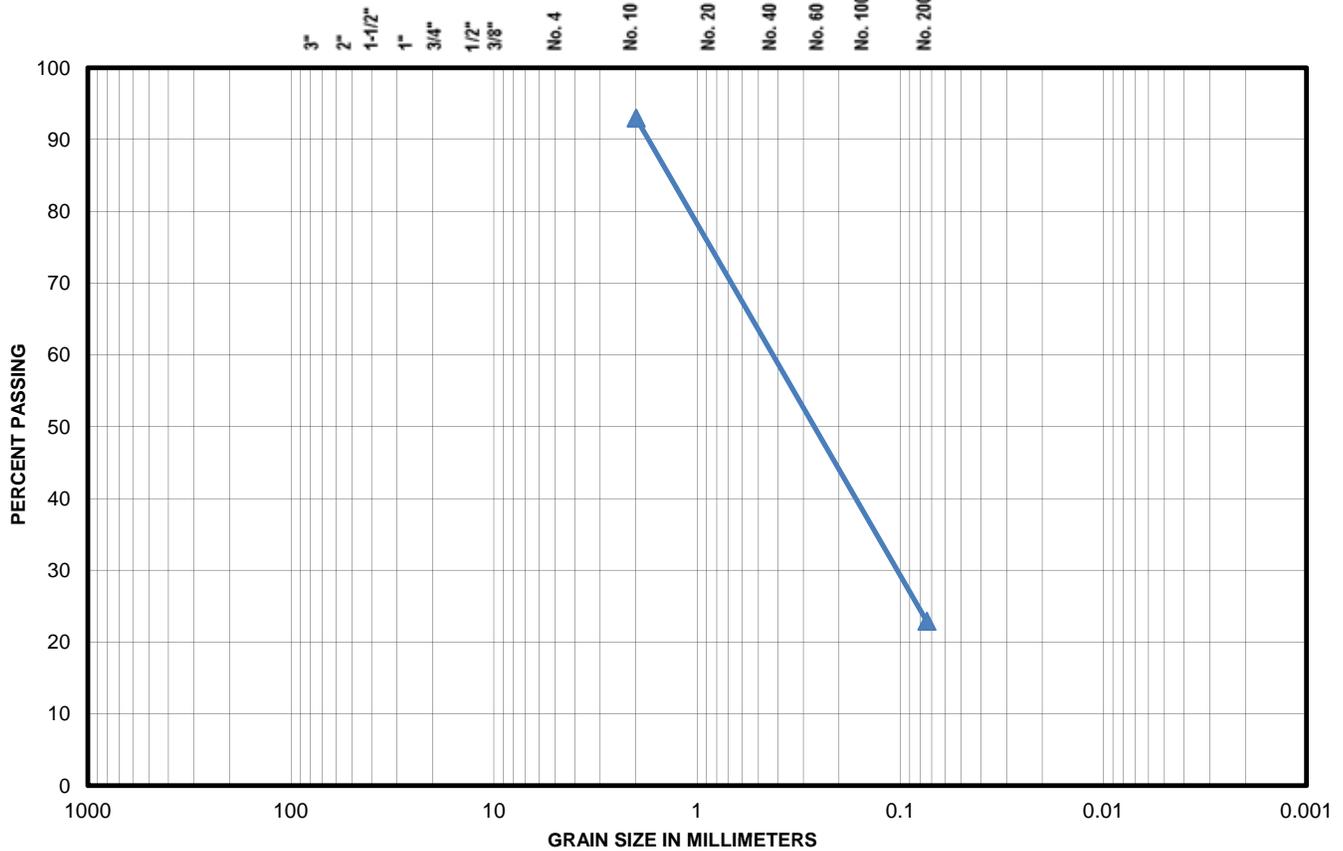
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-41. Sample No. 41 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	7.0	Sand %	70.1
USC Classification	SM	Fines (Silt & Clay) %	22.9
Description	Gray silty sand with shell fragments (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	93.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	22.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	42	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

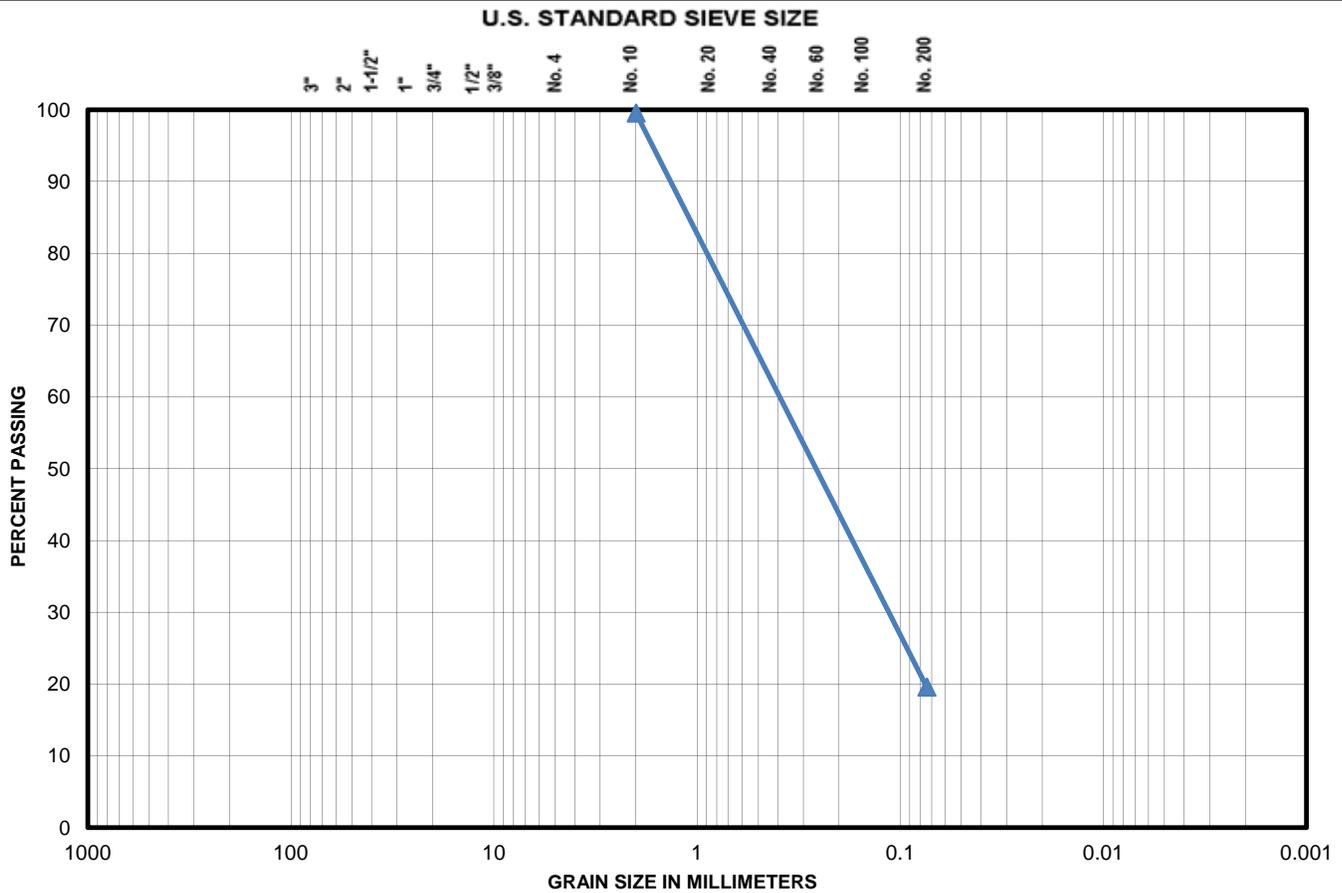


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-42. Sample No. 42 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.5	Sand %	79.9
USC Classification	SC-SM	Fines (Silt & Clay) %	19.6
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	19.6

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	43	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

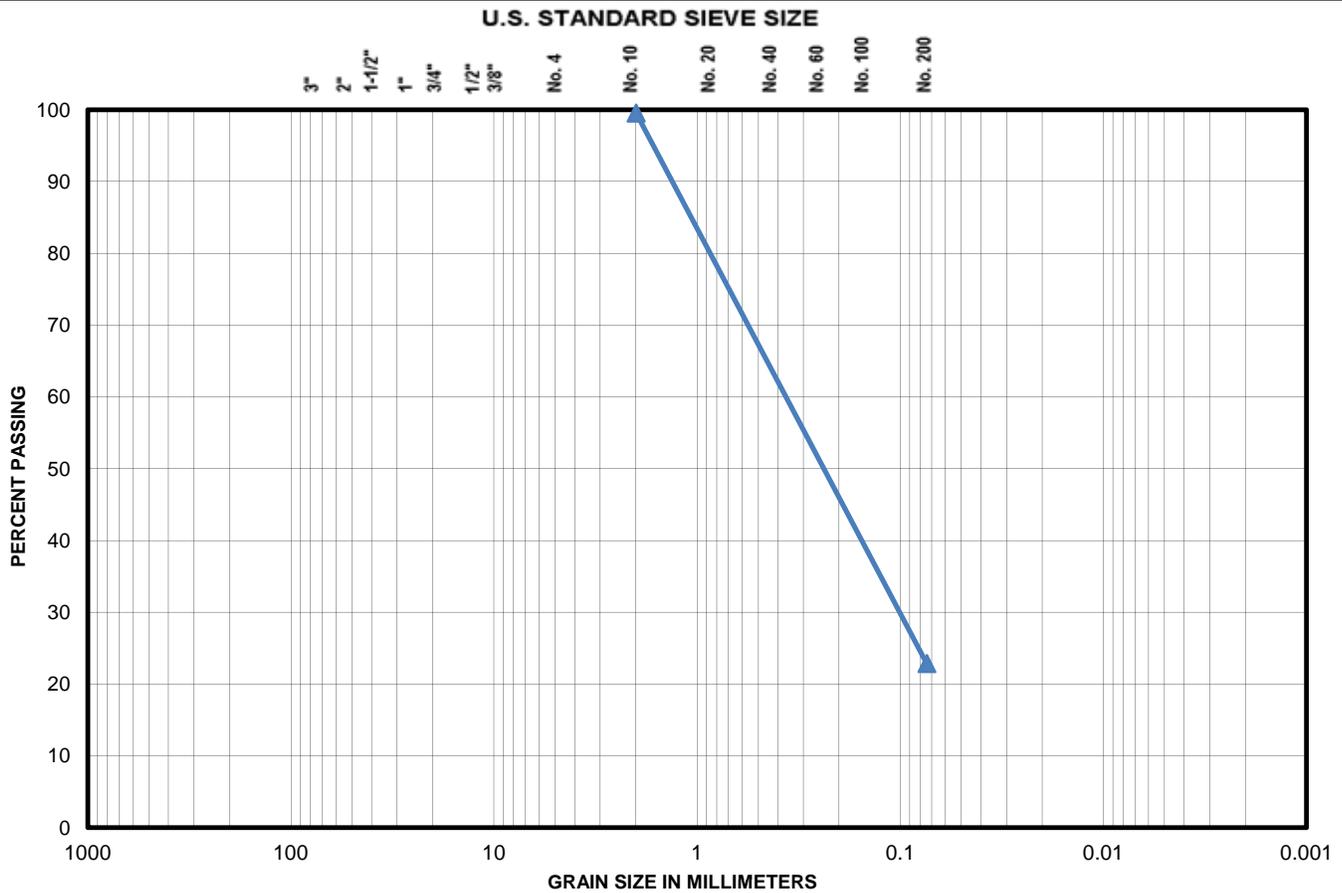


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-43. Sample No. 43 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.4	Sand %	76.7
USC Classification	SC-SM	Fines (Silt & Clay) %	22.9
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.6
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	22.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	44	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

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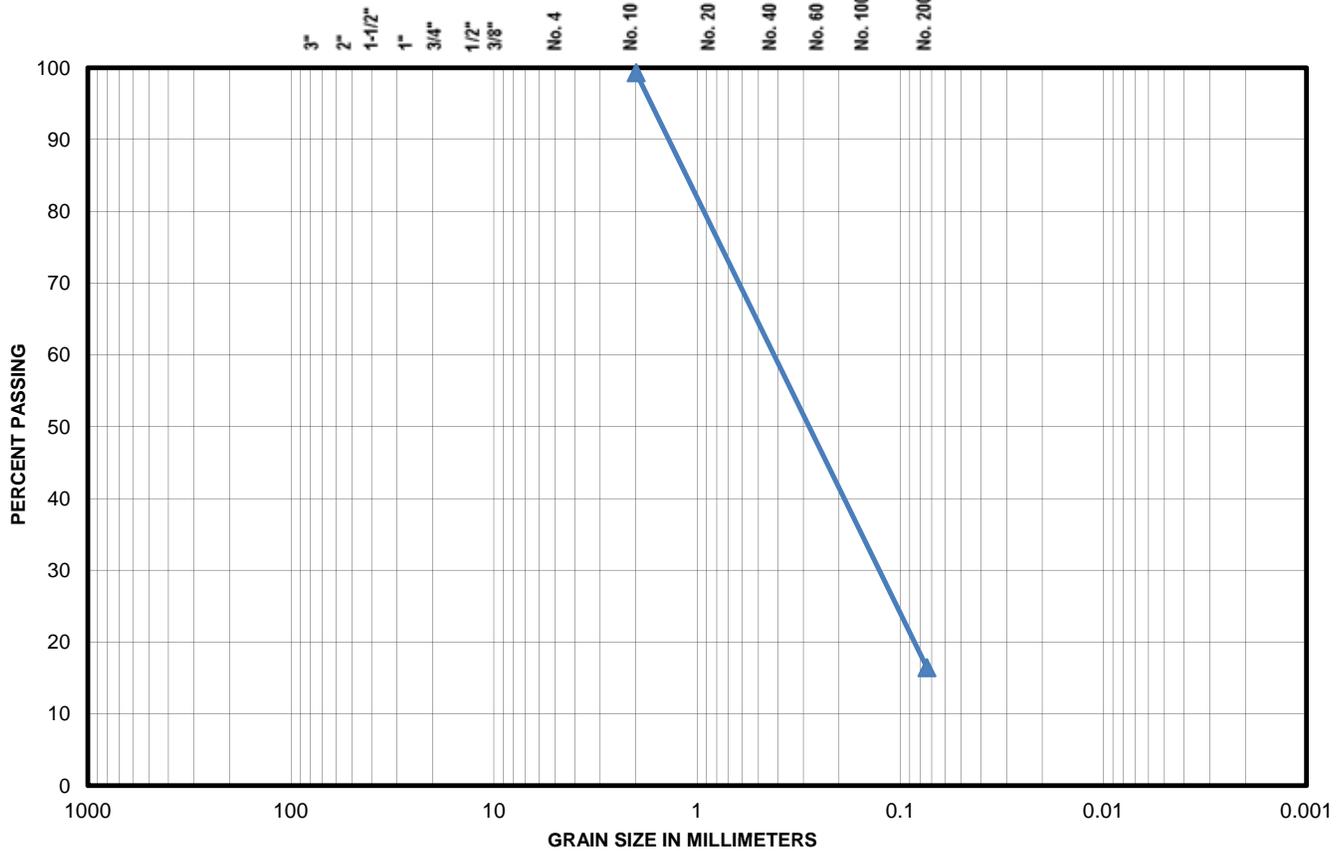
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-44. Sample No. 44 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.7	Sand %	82.9
USC Classification	SC-SM	Fines (Silt & Clay) %	16.4
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	16.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	45	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



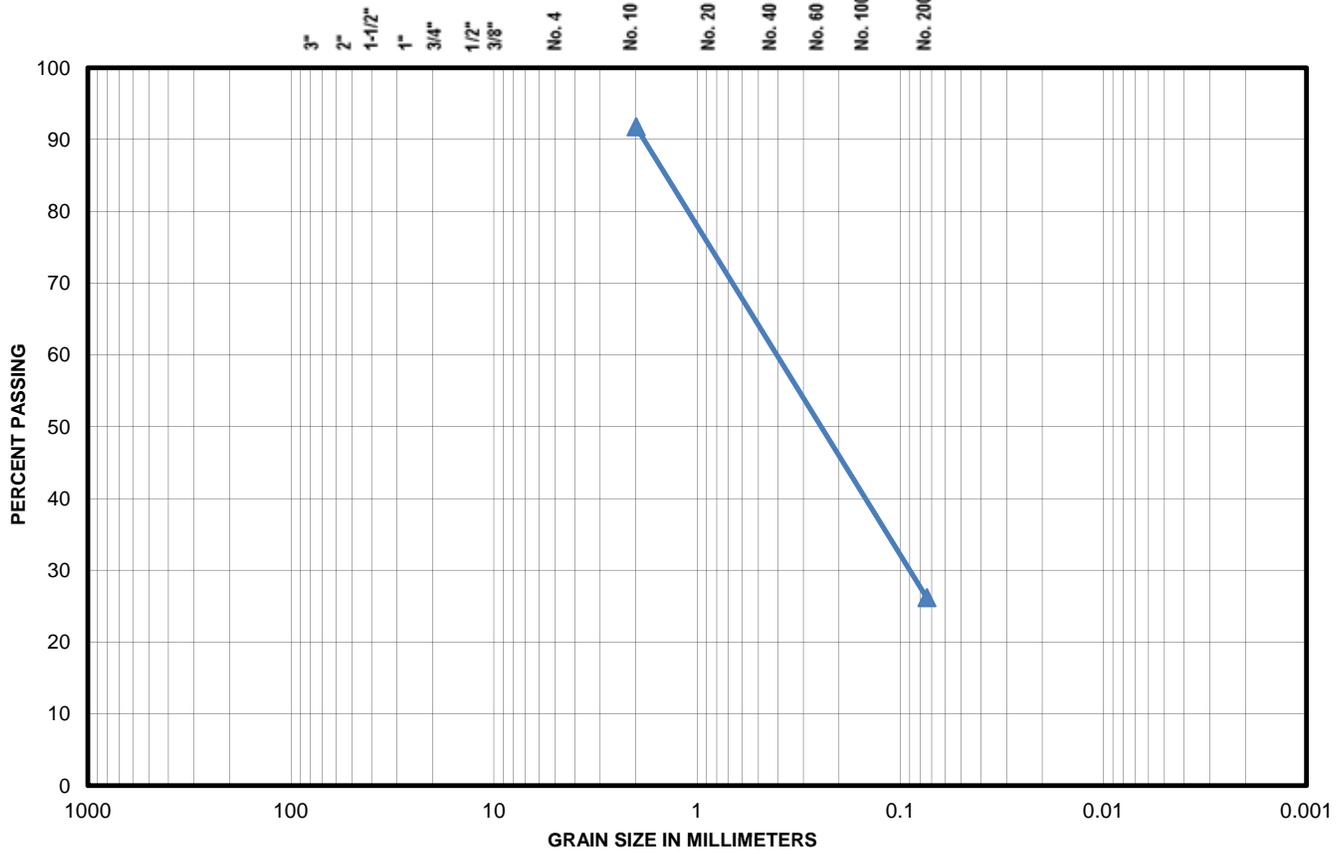
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-40. Sample No. 40 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.2	Sand %	65.6
USC Classification	SM	Fines (Silt & Clay) %	26.2
Description	Gray silty sand with shells (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	91.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	26.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	47	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



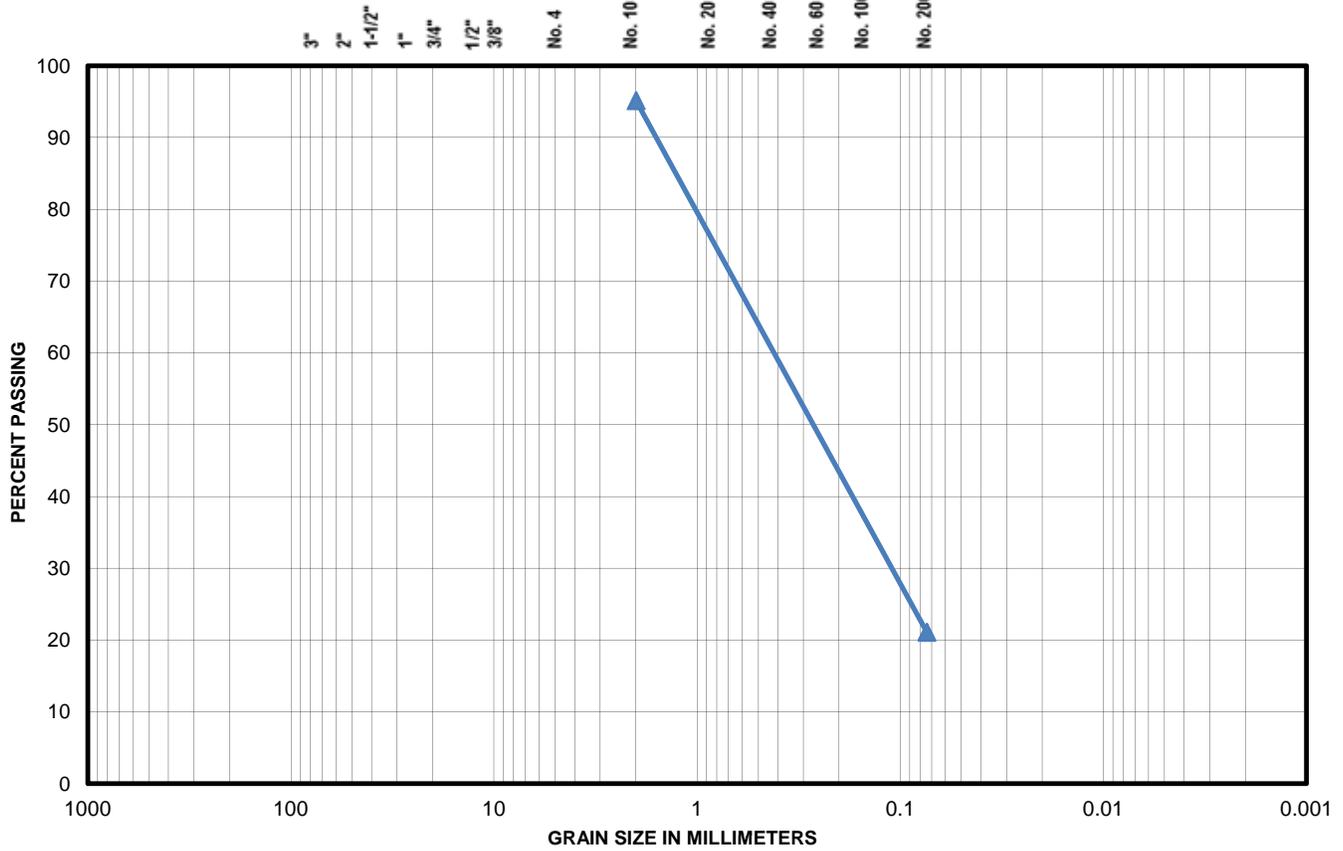
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-47. Sample No. 47 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	4.9	Sand %	74.0
USC Classification	SM	Fines (Silt & Clay) %	21.1
Description	Gray silty sand and trace clay (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	95.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	21.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	48	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



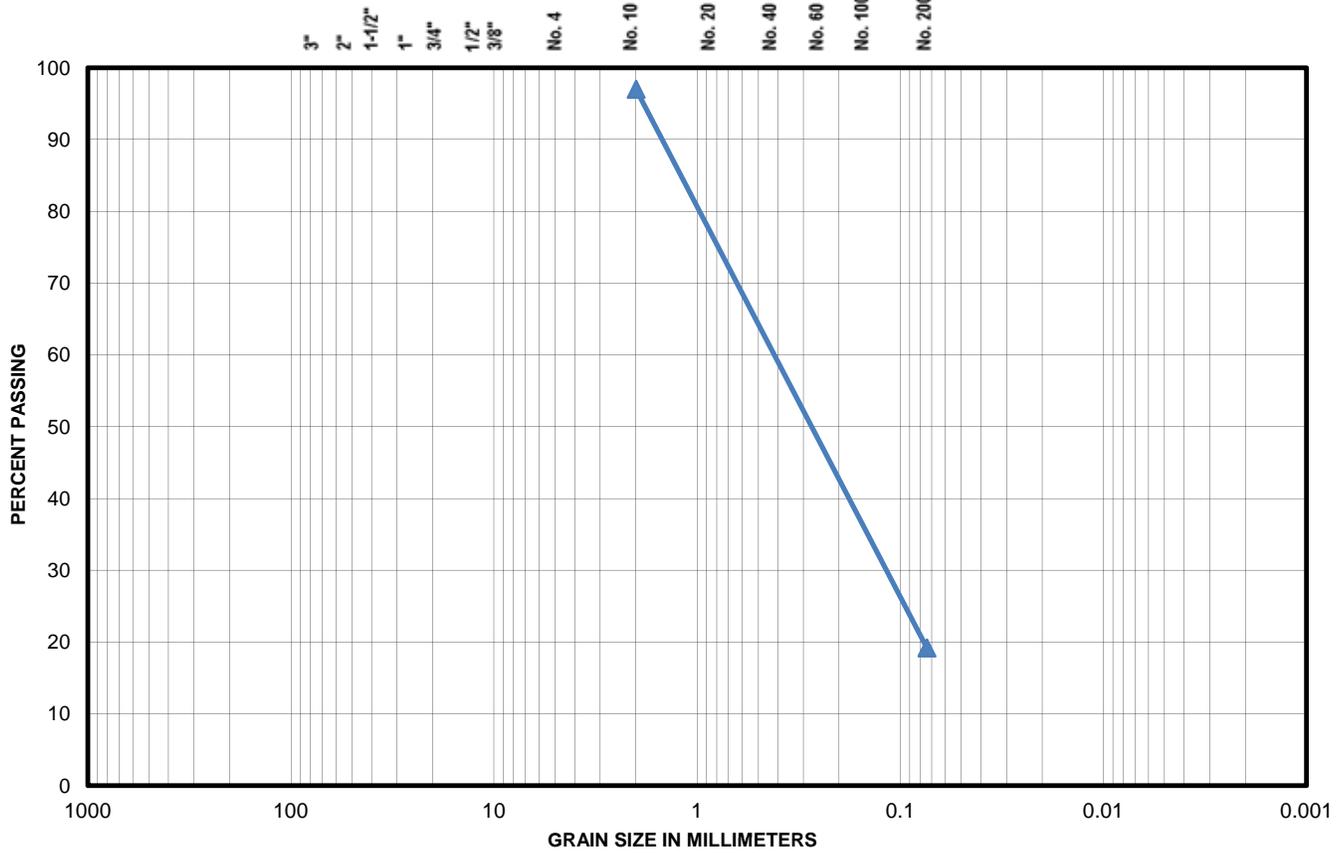
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-48. Sample No. 48 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.0	Sand %	77.8
USC Classification	SC-SM	Fines (Silt & Clay) %	19.2
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	19.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/17/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	49	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

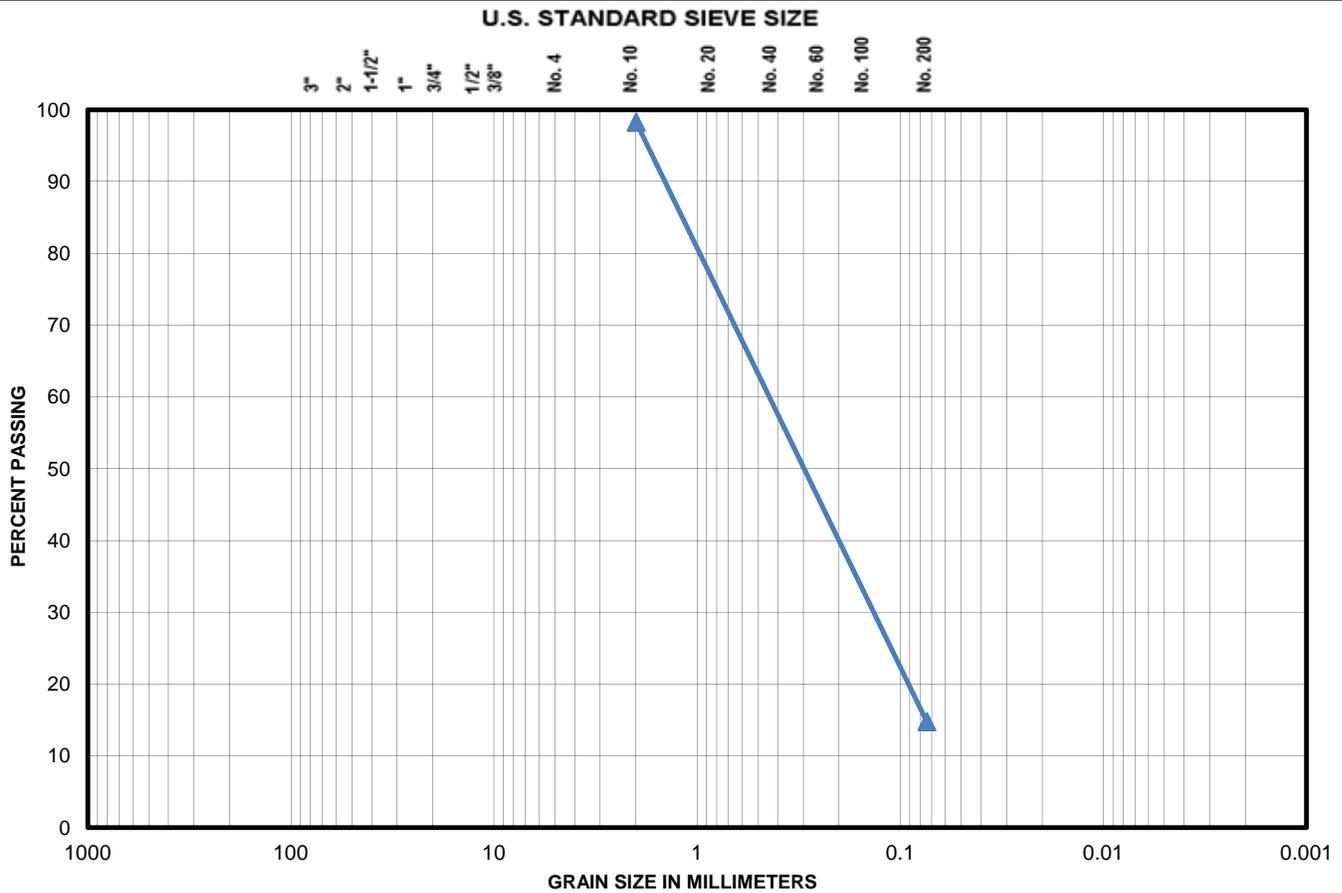


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-49. Sample No. 49 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.7	Sand %	83.5
USC Classification	SM	Fines (Silt & Clay) %	14.8
Description	Gray silty sand with trace clay and shell fragments (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	14.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/17/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	50	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

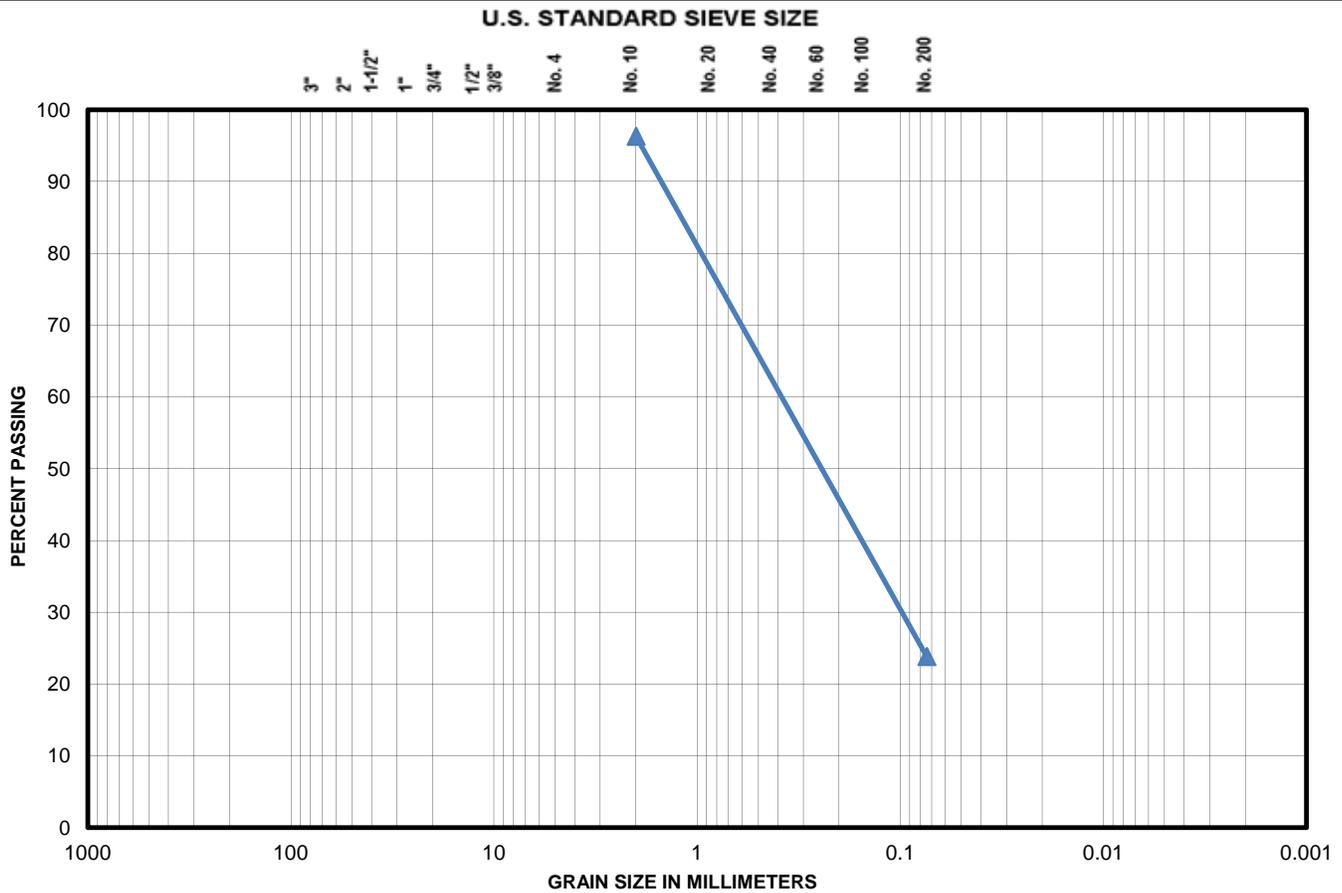


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-50. Sample No. 50 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.7	Sand %	72.5
USC Classification	SC-SM	Fines (Silt & Clay) %	23.8
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	96.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	23.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	51	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

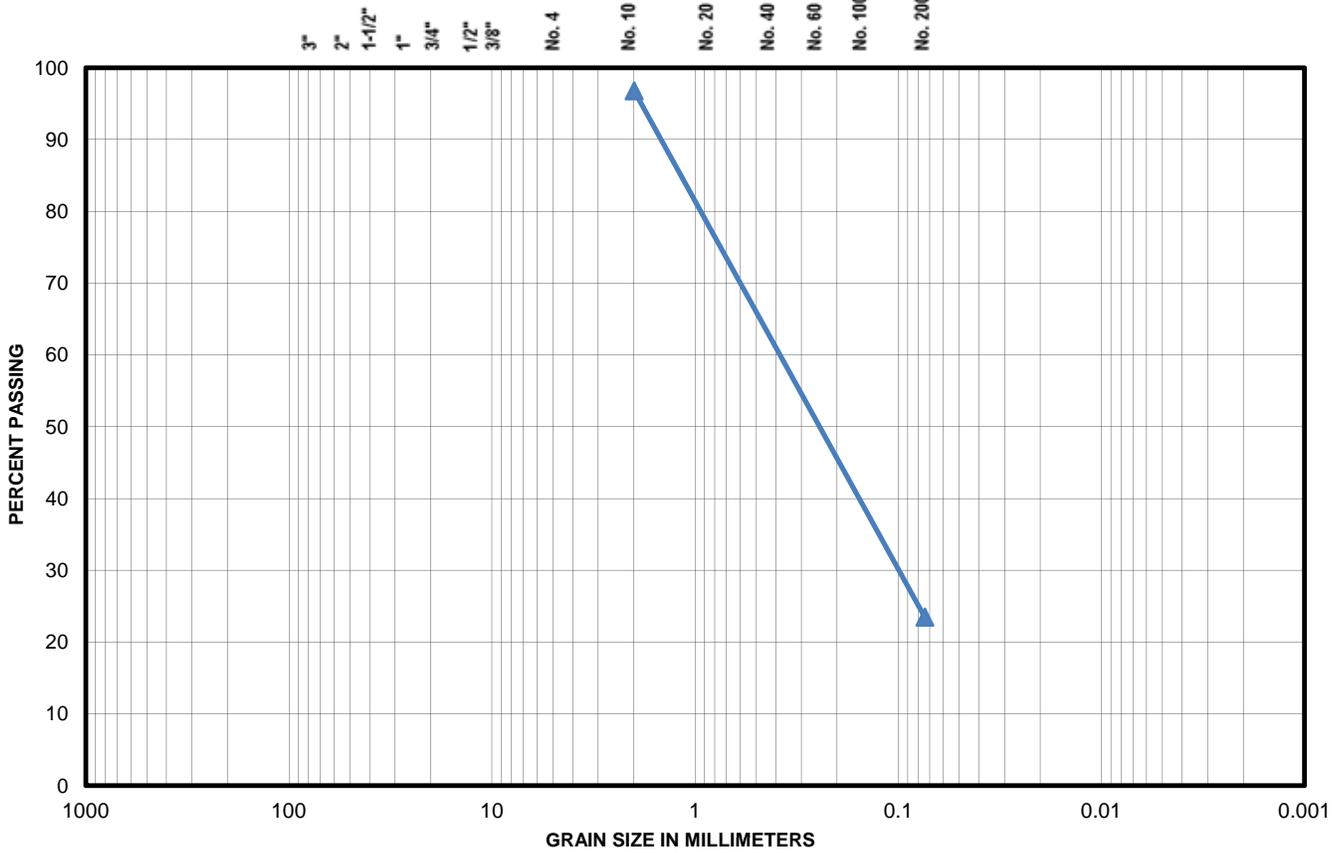
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Figure B-51. Sample No. 51 Test Results
LDNR - Bayou Bonfouca Sediment Sampling
AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.2	Sand %	73.3
USC Classification	SC	Fines (Silt & Clay) %	23.5
Description	Gray clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	96.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	23.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	52	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

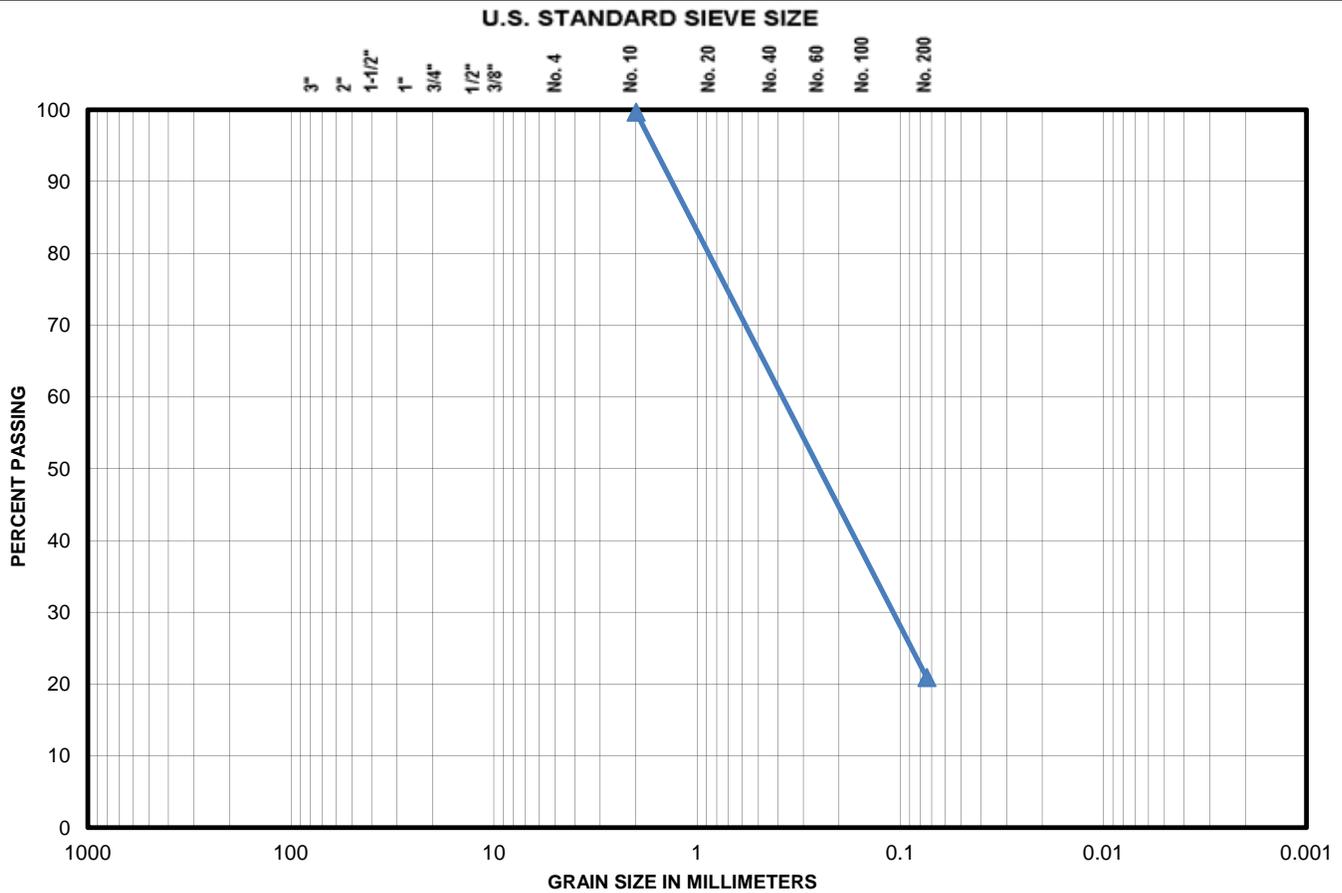


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-52. Sample No. 52 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.3	Sand %	78.8
USC Classification	SC-SM	Fines (Silt & Clay) %	20.9
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	20.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/12/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	53	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

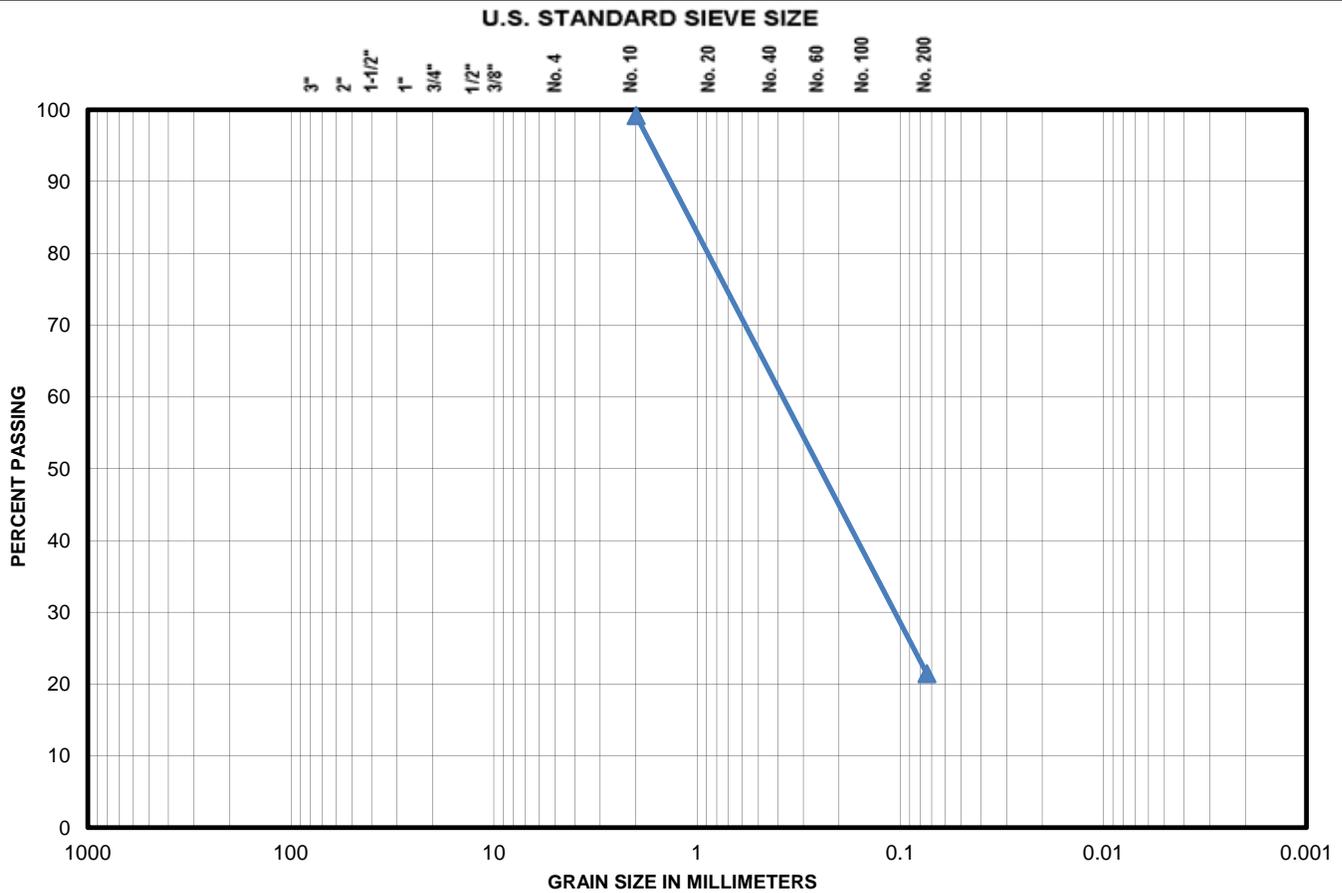


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-53. Sample No. 53 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.8	Sand %	77.7
USC Classification	SC-SM	Fines (Silt & Clay) %	21.5
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.2
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	21.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/17/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	54	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



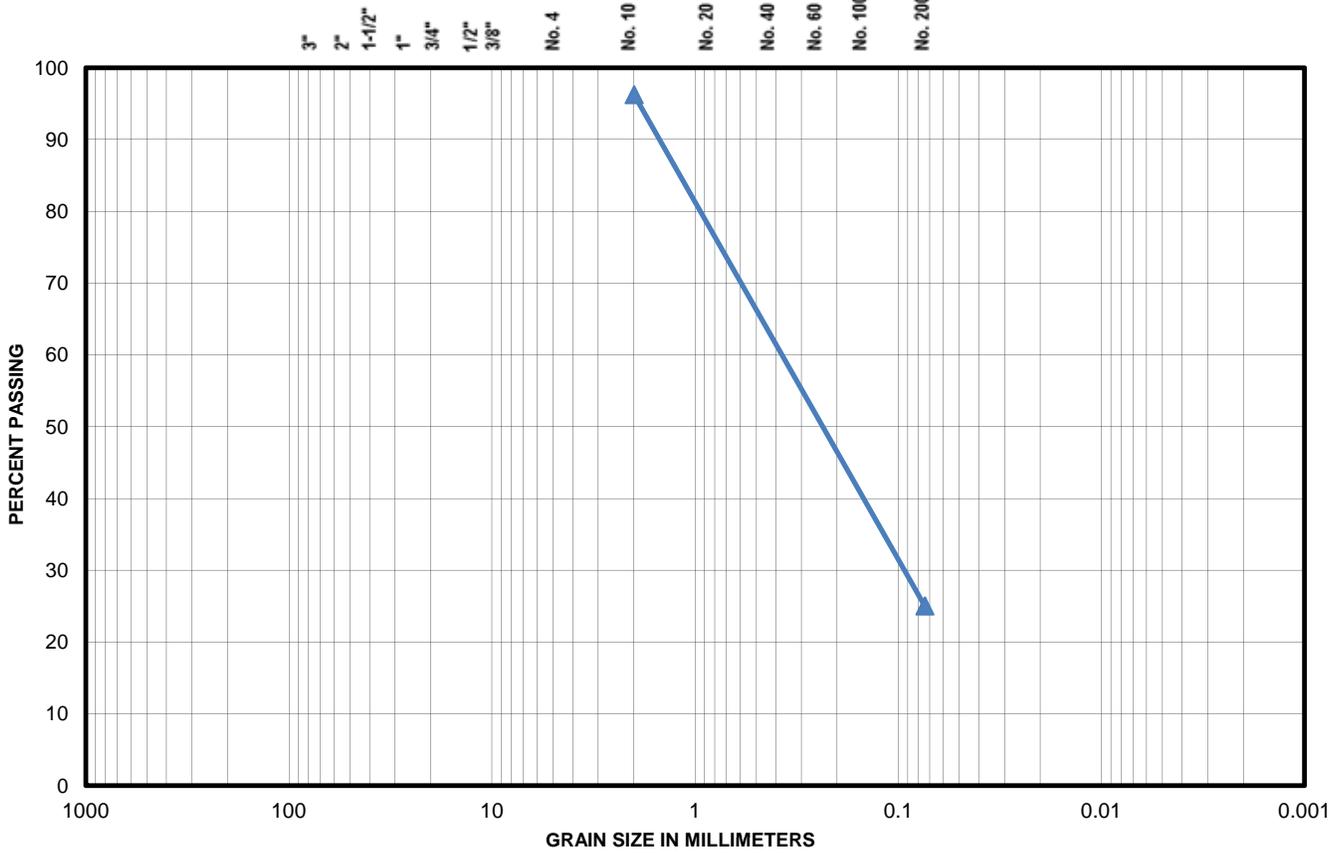
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-54. Sample No. 54 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.8	Sand %	71.2
USC Classification	SC-SM	Fines (Silt & Clay) %	25.0
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	96.2
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	25.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	55	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



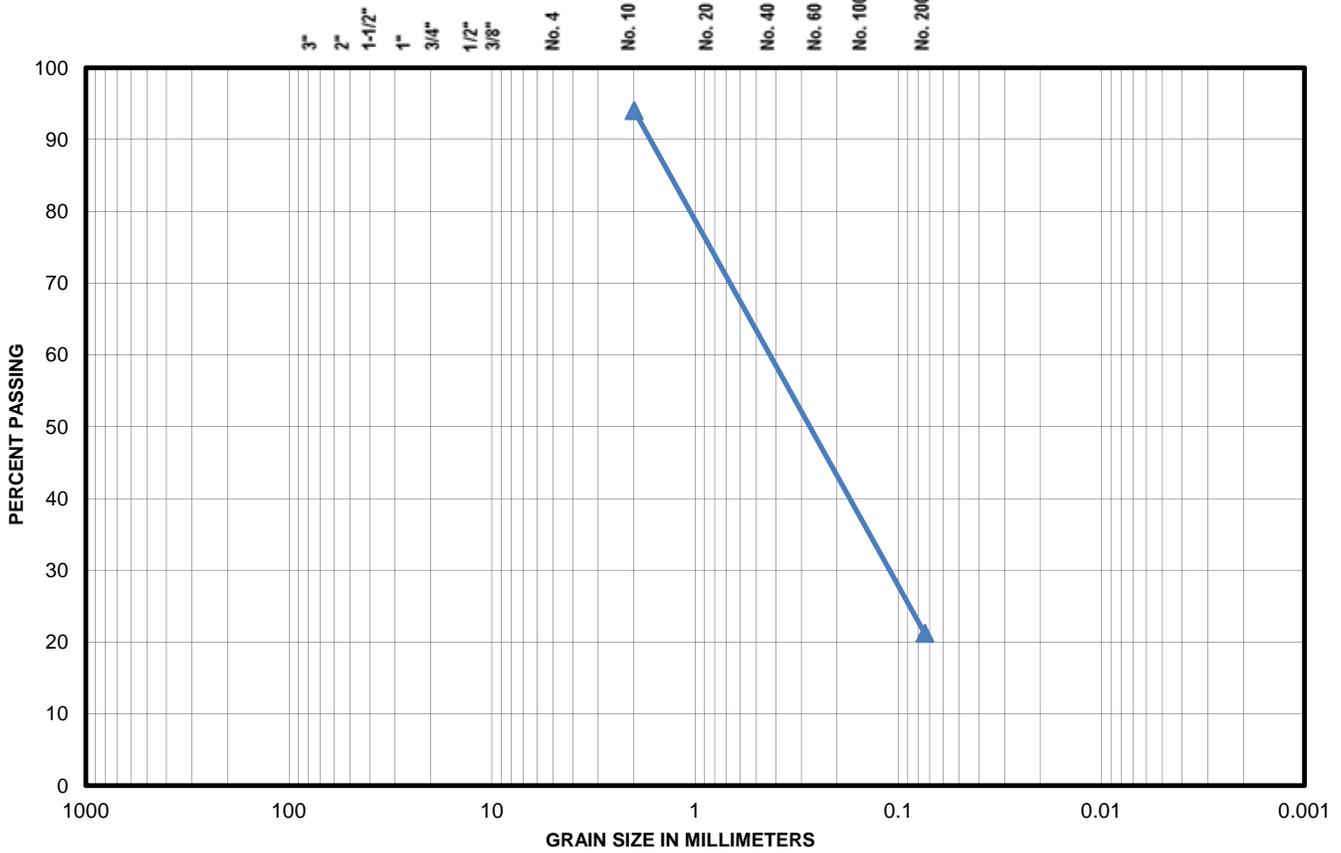
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-55. Sample No. 55 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.9	Sand %	72.9
USC Classification	SM	Fines (Silt & Clay) %	21.2
Description	Gray silty sand with trace clay and shell fragments (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	94.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	21.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	56	Checked By	clp
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



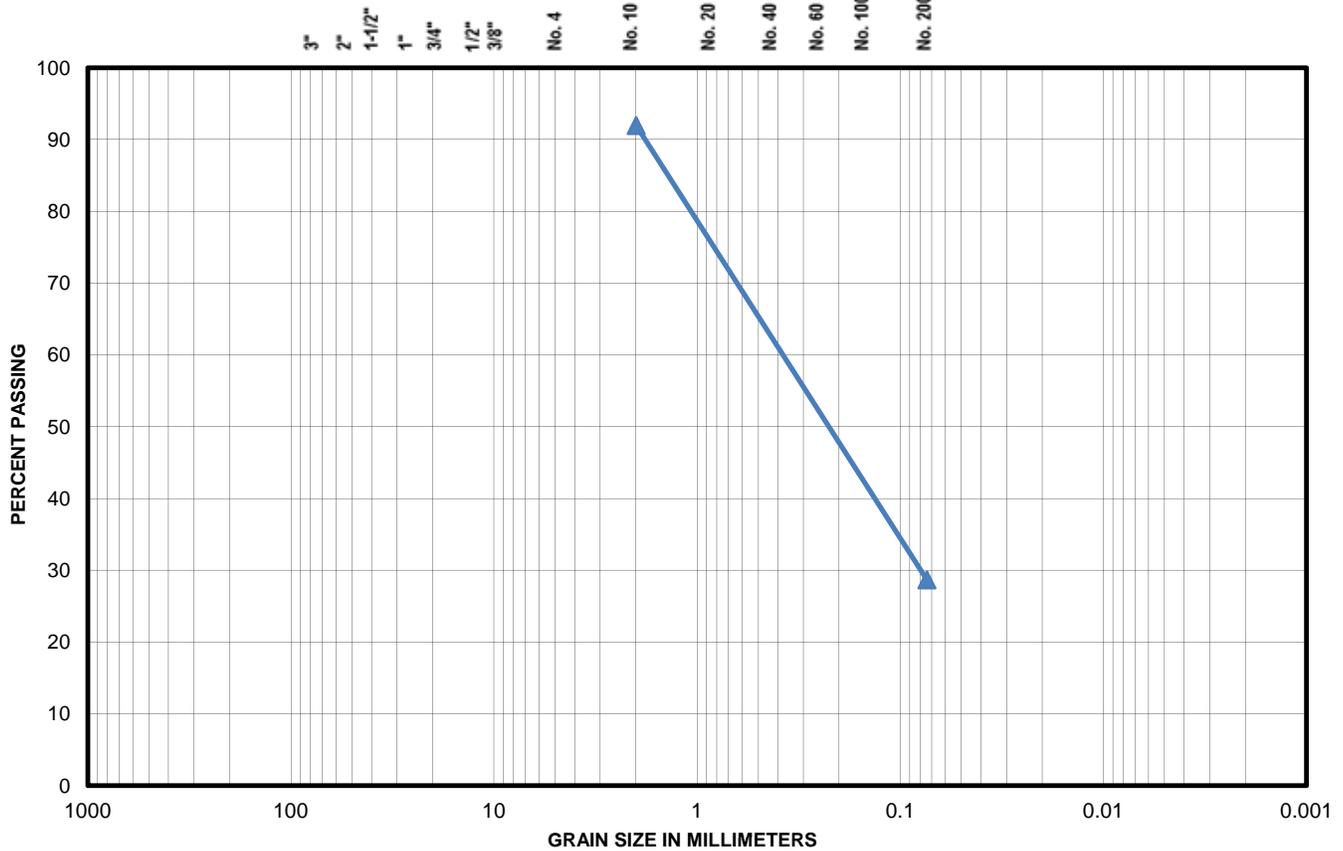
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-56. Sample No. 56 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.0	Sand %	63.3
USC Classification	SC-SM	Fines (Silt & Clay) %	28.7
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	92.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	28.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	57	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



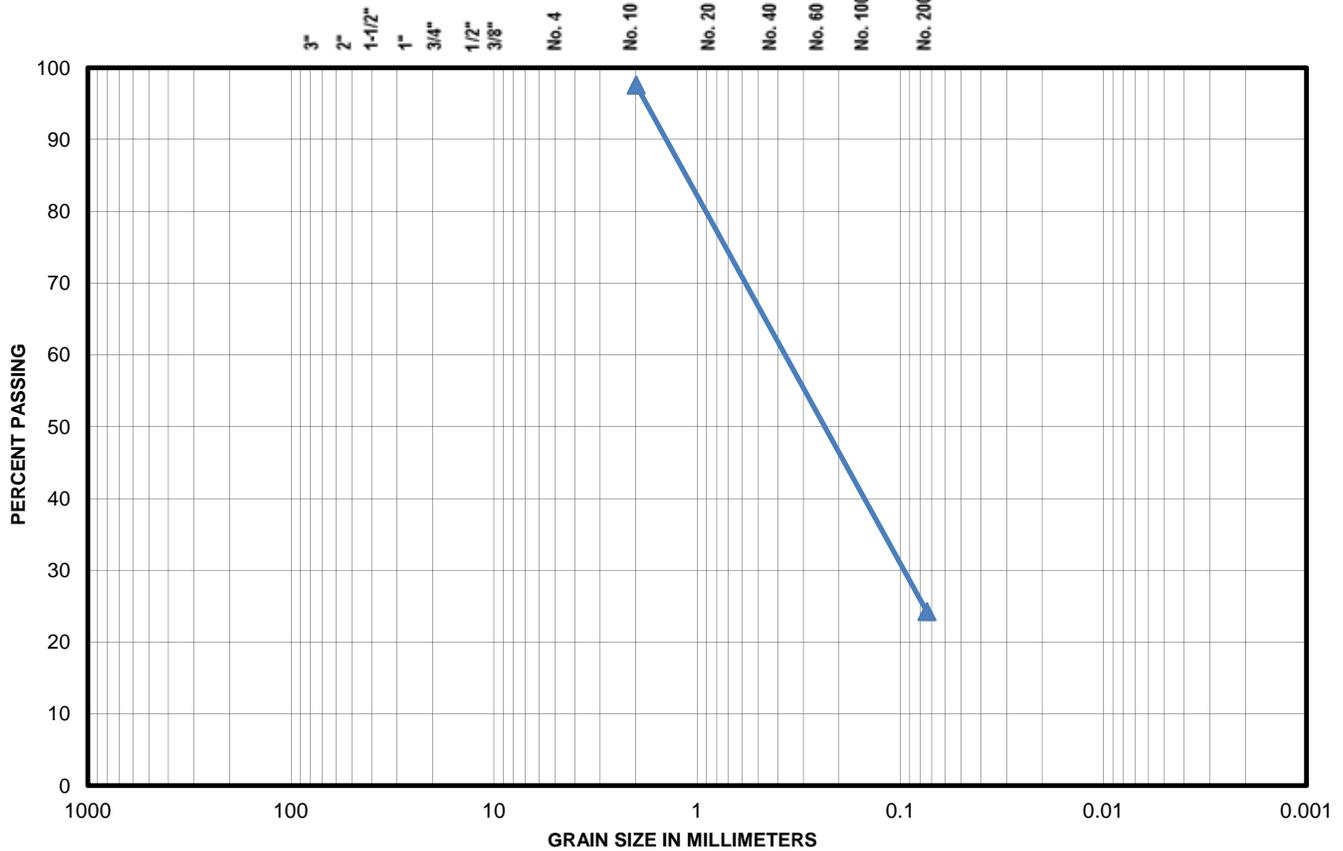
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-57. Sample No. 57 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	2.4	Sand %	73.3
USC Classification	SC-SM	Fines (Silt & Clay) %	24.3
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.6
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	24.3

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	58	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

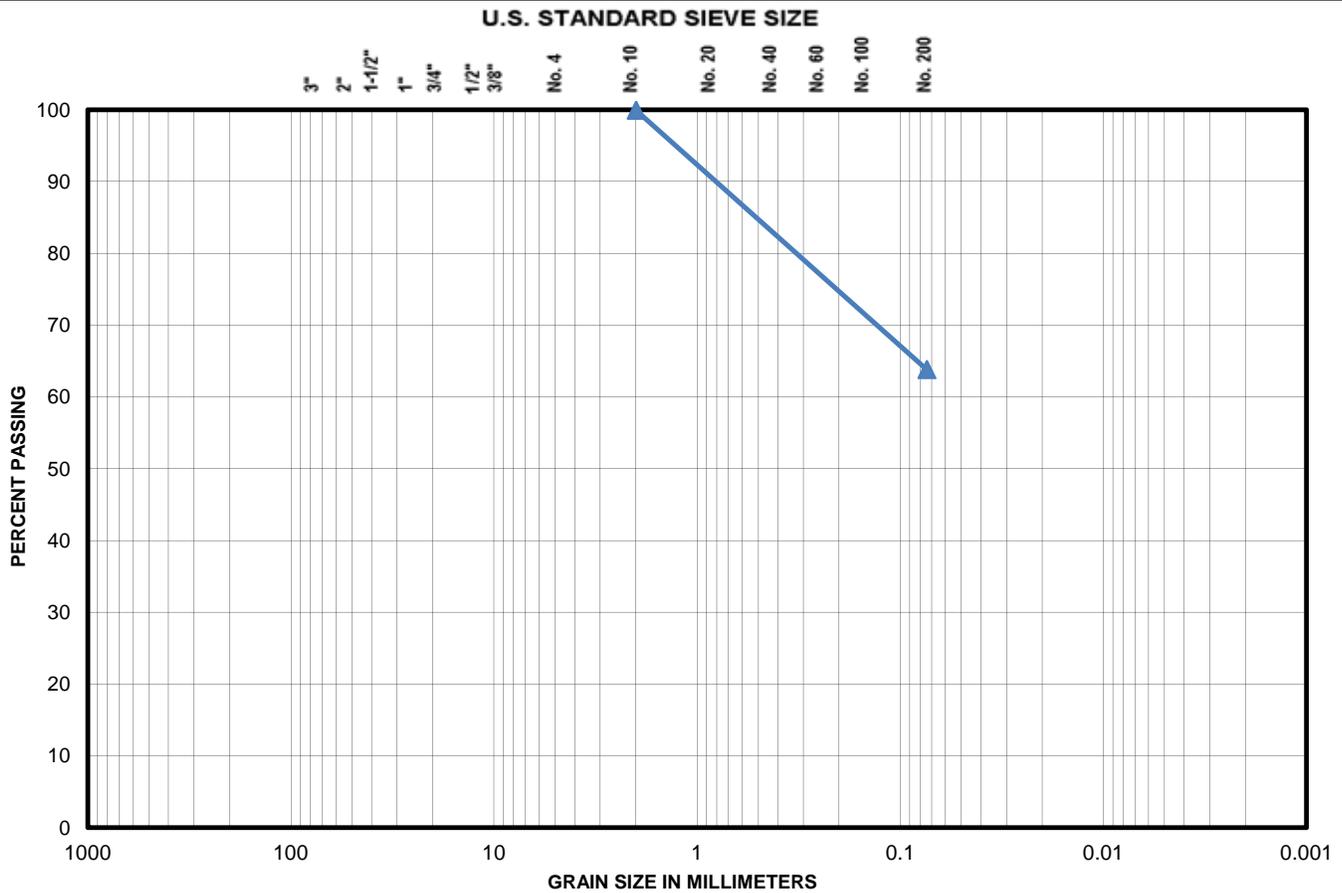


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-58. Sample No. 58 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.1	Sand %	36.1
USC Classification	CL	Fines (Silt & Clay) %	63.8
Description	Gray sandy clay with trace silt (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	63.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	59	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



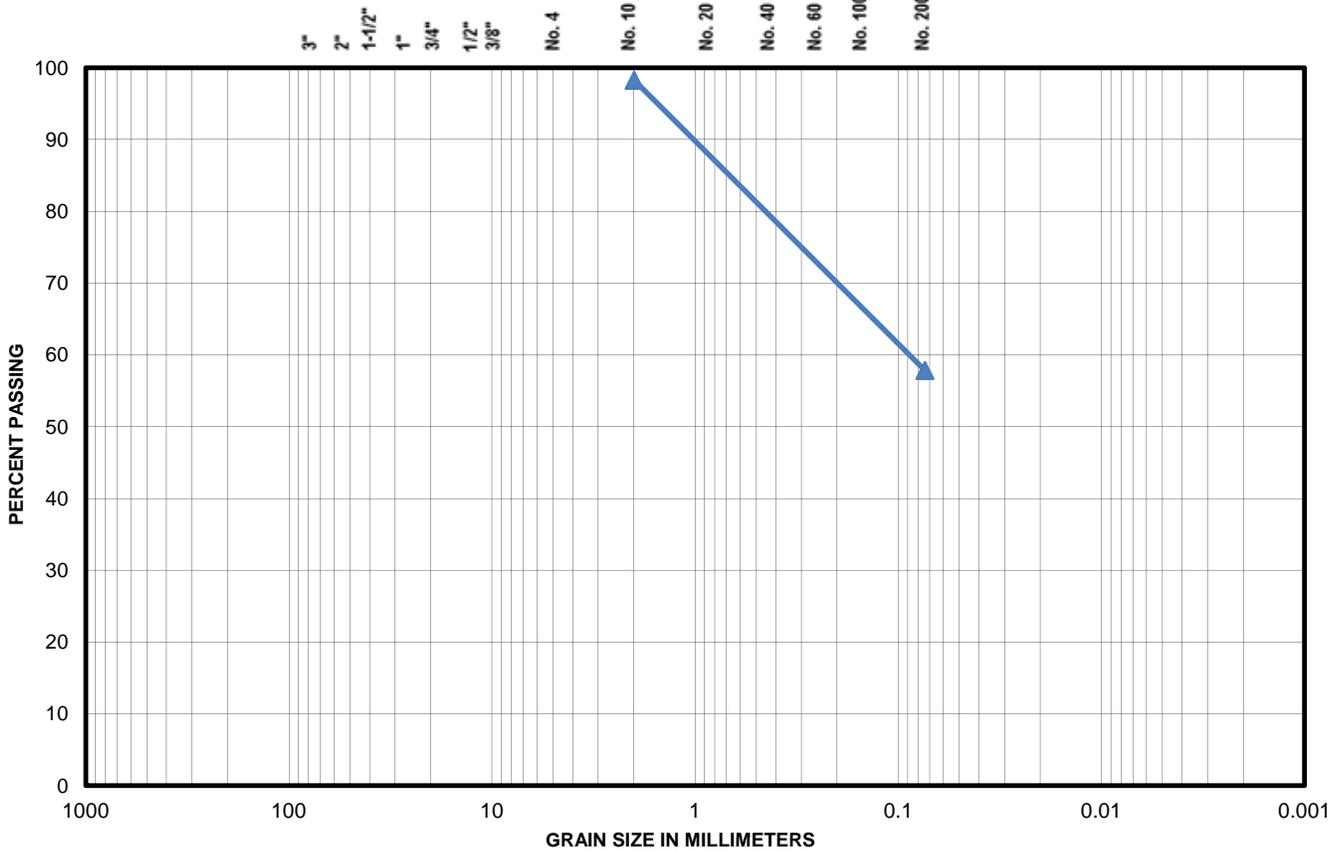
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-59. Sample No. 59 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.7	Sand %	40.4
USC Classification	CL	Fines (Silt & Clay) %	57.9
Description	Gray sandy clay with shell fragments (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	57.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	60	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



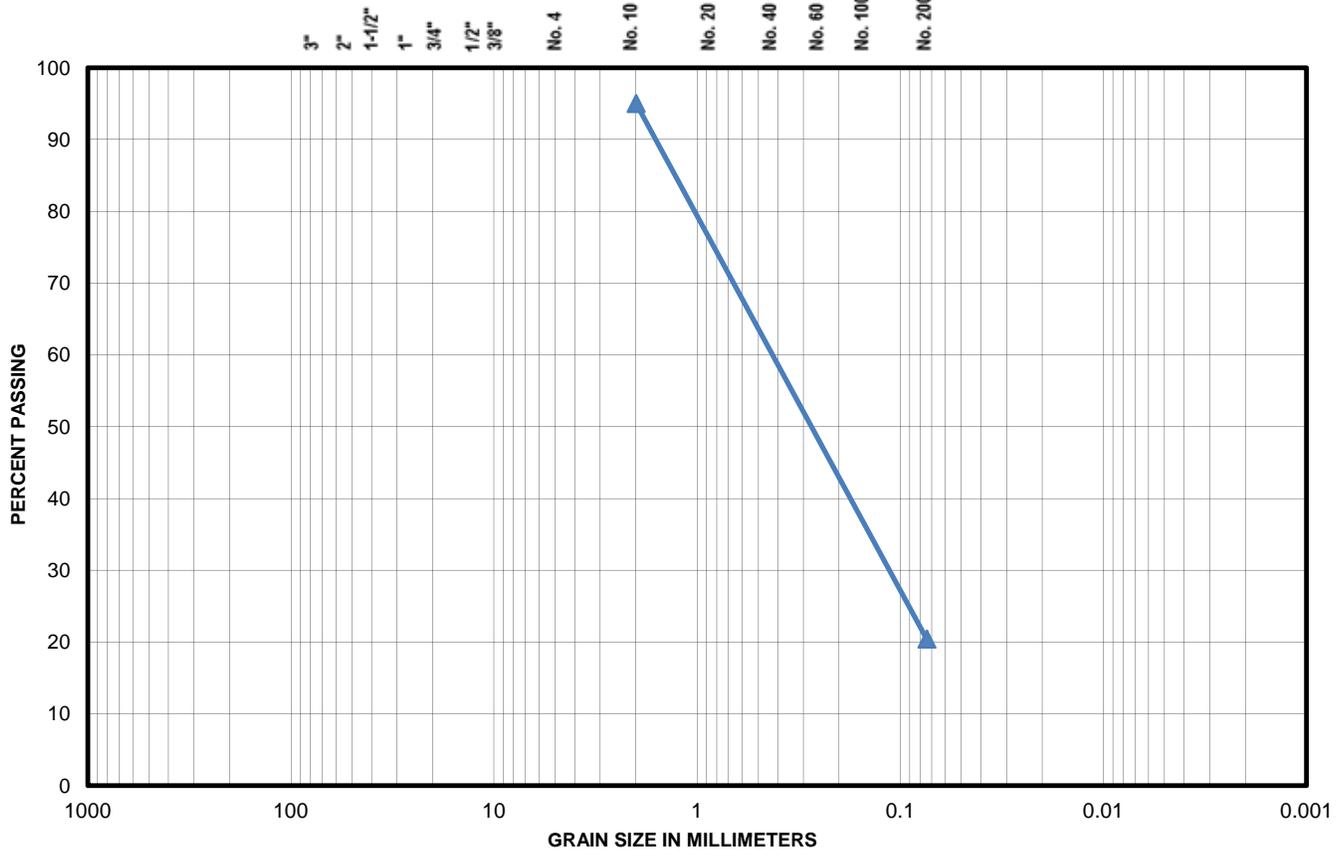
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-60. Sample No. 60 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.0	Sand %	74.6
USC Classification	SM	Fines (Silt & Clay) %	20.4
Description	Gray silty sand with shell fragments (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	95.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	20.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	61	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



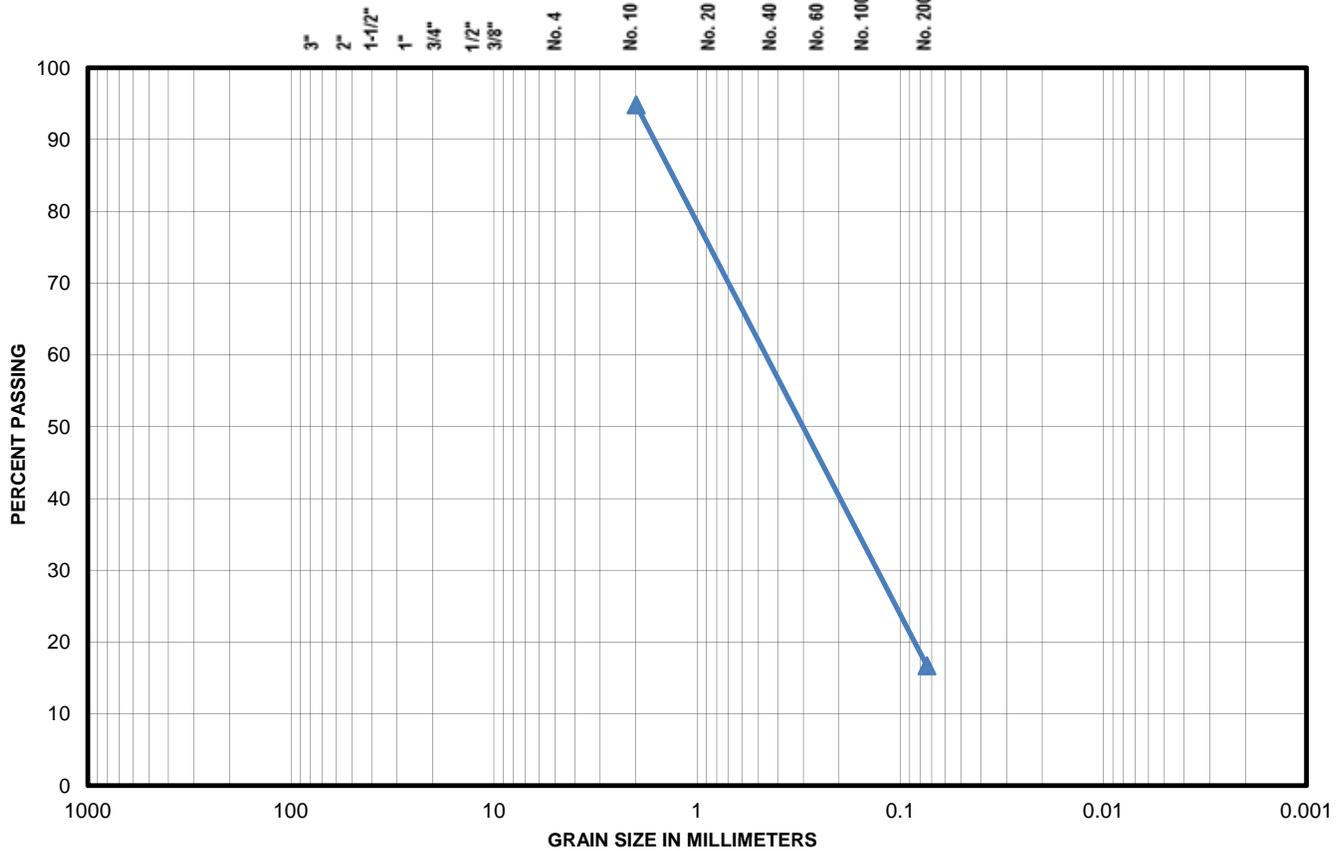
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-61. Sample No. 61 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.1	Sand %	78.2
USC Classification	SM	Fines (Silt & Clay) %	16.7
Description	Gray silty sand with shell fragments (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	94.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	16.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	62	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



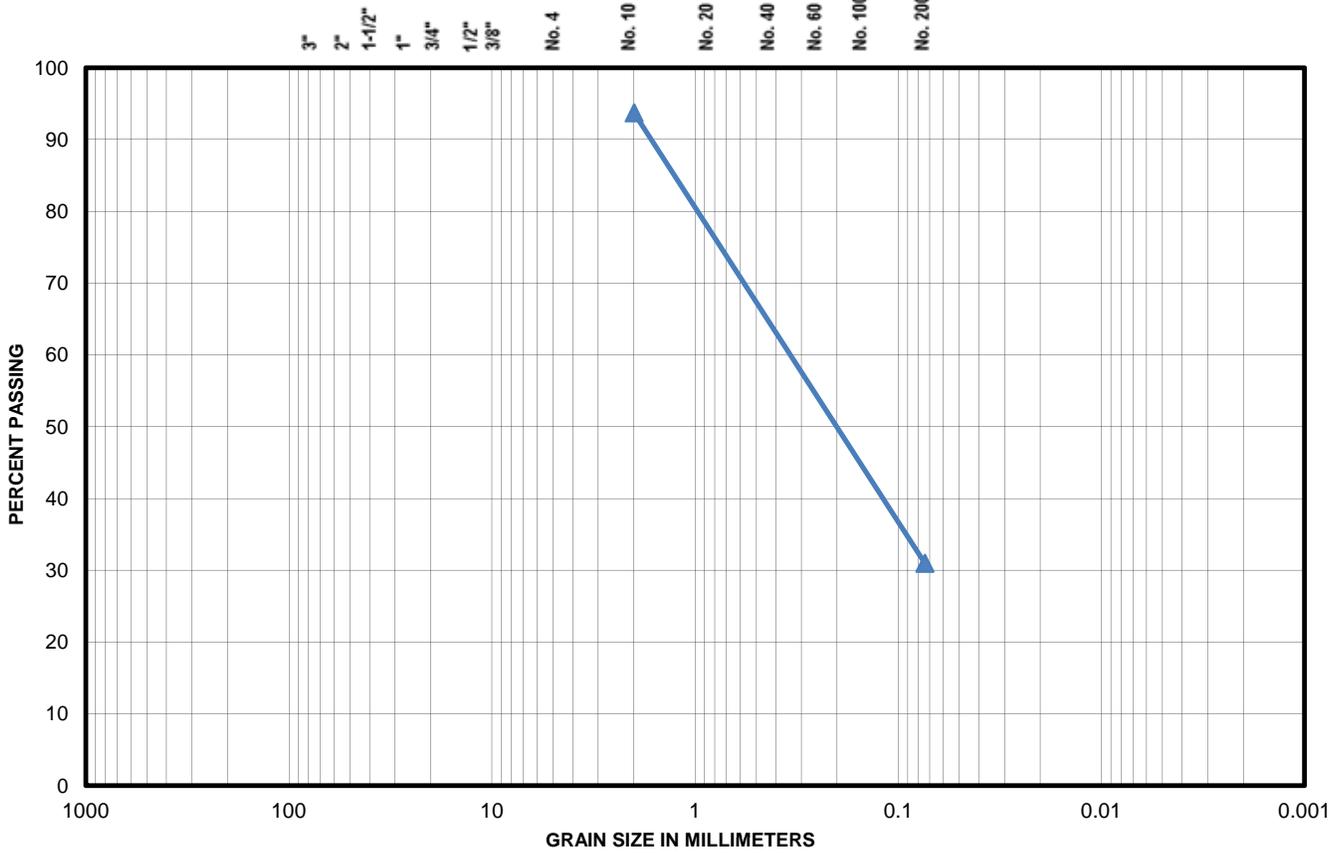
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-62. Sample No. 62 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	6.3	Sand %	62.7
USC Classification	SC-SM	Fines (Silt & Clay) %	31.0
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	93.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	31.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/17/2013
Project No.	16715-023-01	Tested By	SLC
Boring No.	63	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

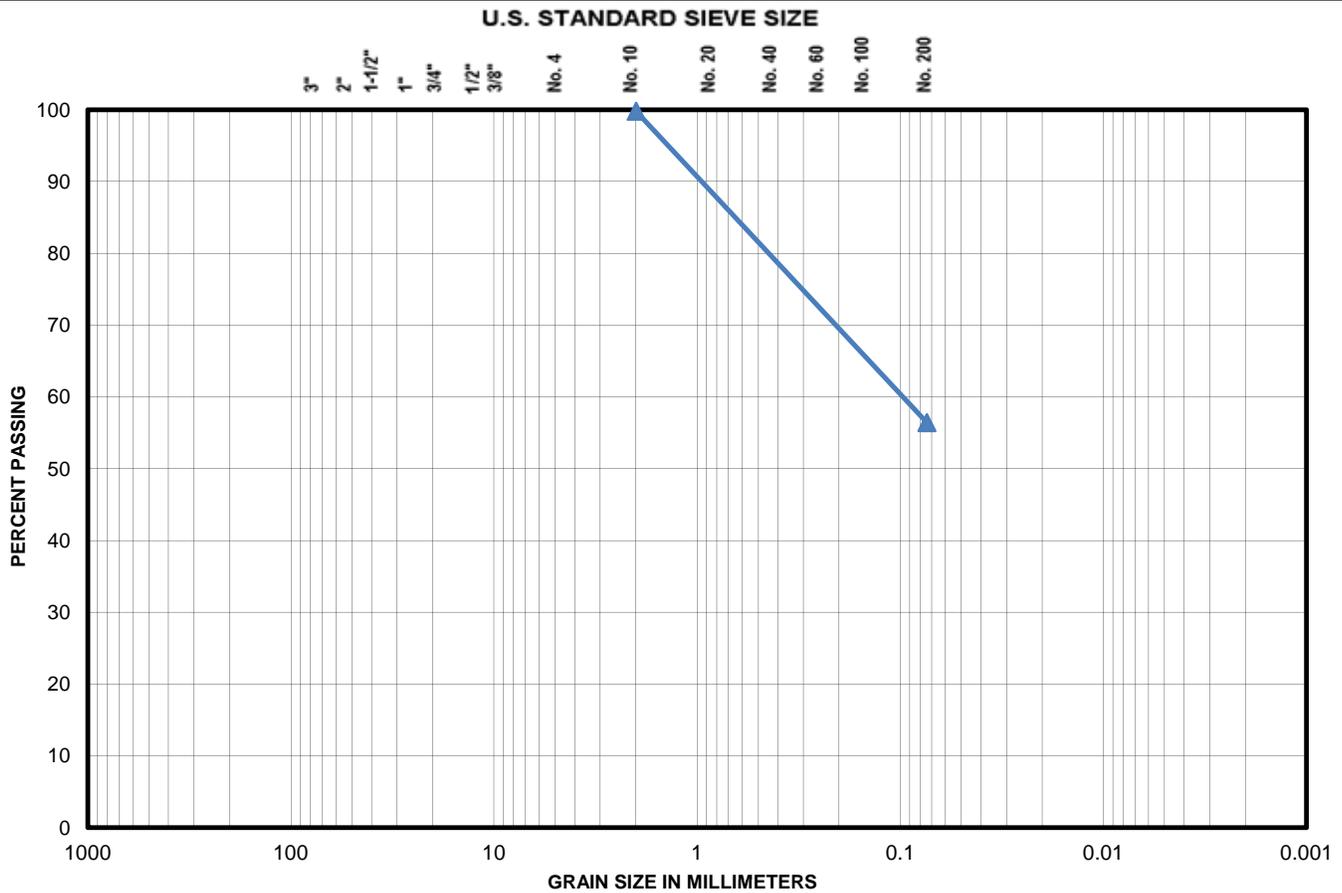


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-63. Sample No. 63 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.2	Sand %	43.4
USC Classification	ML	Fines (Silt & Clay) %	56.4
Description	Gray sandy silt (ML)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	56.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	64	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

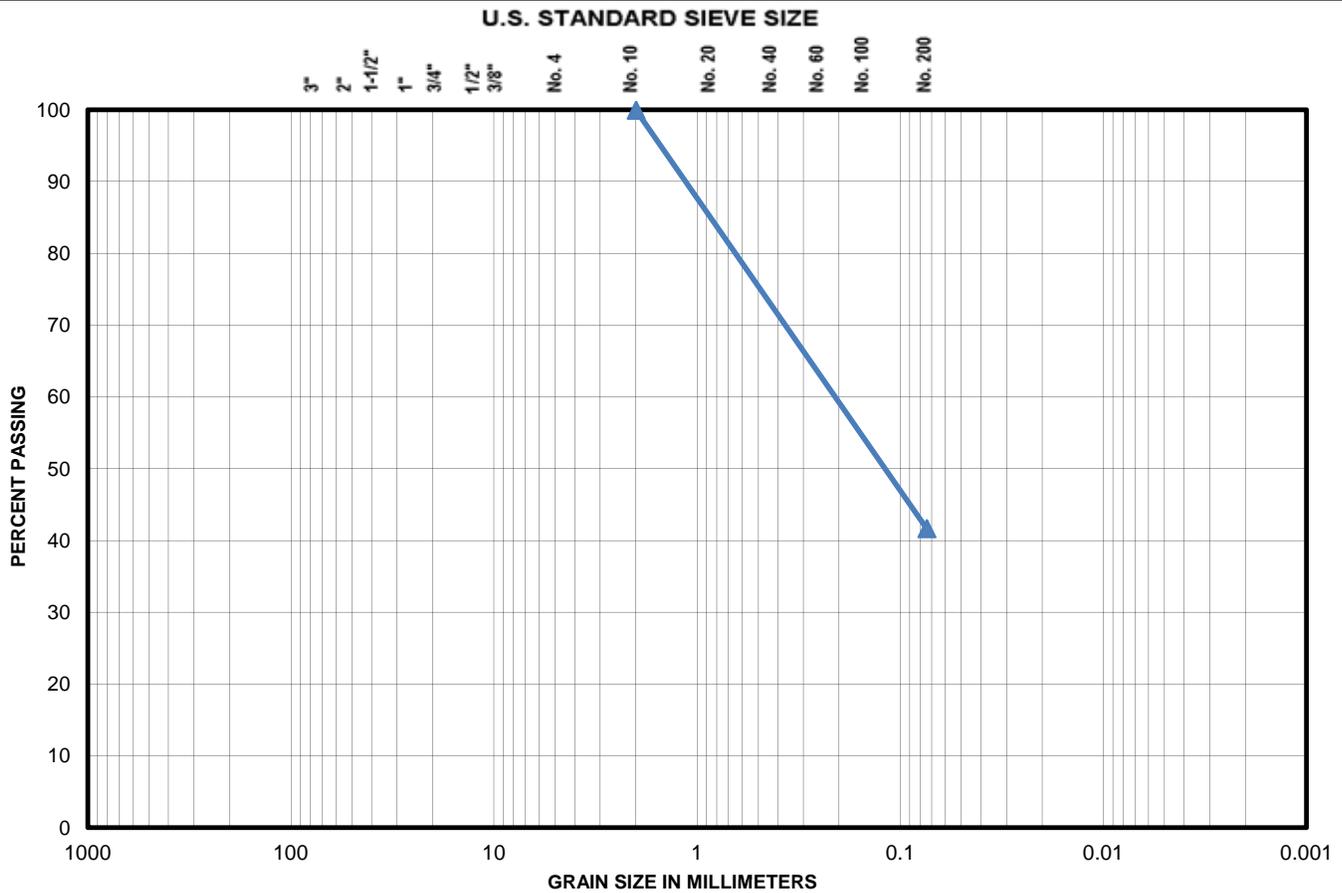


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-64. Sample No. 64 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.1	Sand %	58.2
USC Classification	SC-SM	Fines (Silt & Clay) %	41.7
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	41.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	65	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

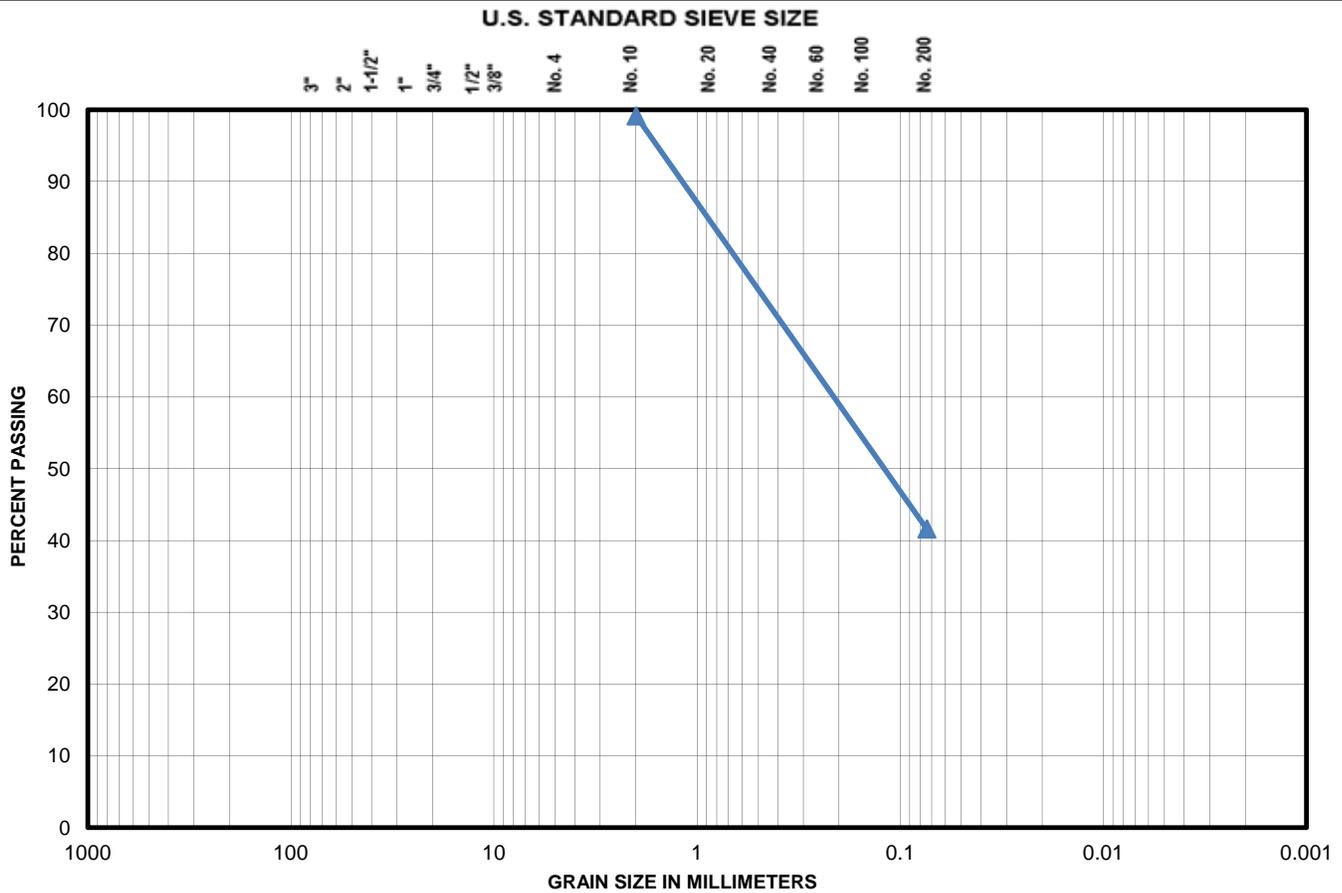


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-65. Sample No. 65 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.8	Sand %	57.6
USC Classification	SC-SM	Fines (Silt & Clay) %	41.6
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.2
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	41.6

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/17/2013
Project No.	16715-023-01	Tested By	SLC
Boring No.	66	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

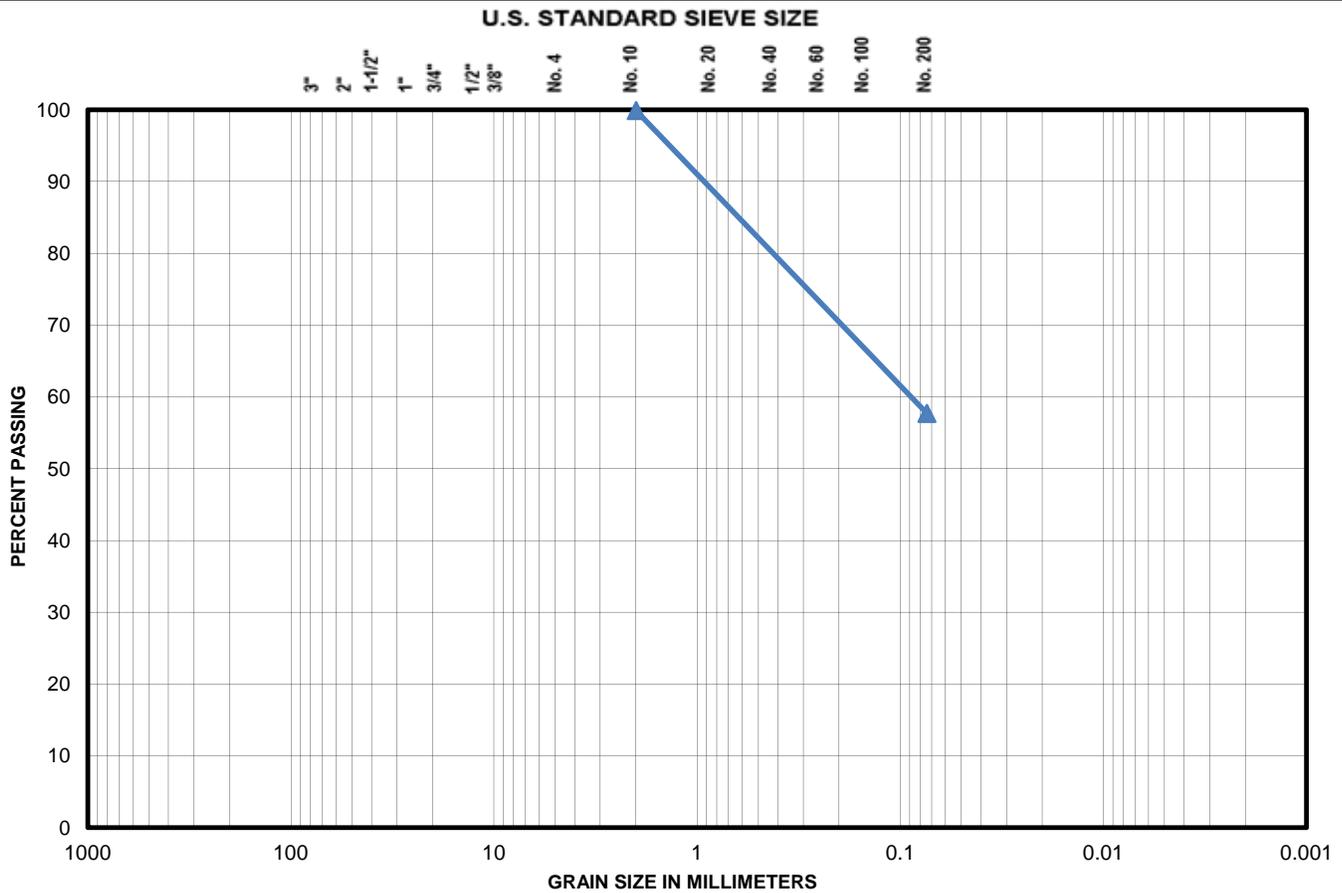


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-66. Sample No. 66 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.1	Sand %	42.2
USC Classification	ML	Fines (Silt & Clay) %	57.7
Description	Gray sandy silt (ML)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	57.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/17/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	67	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

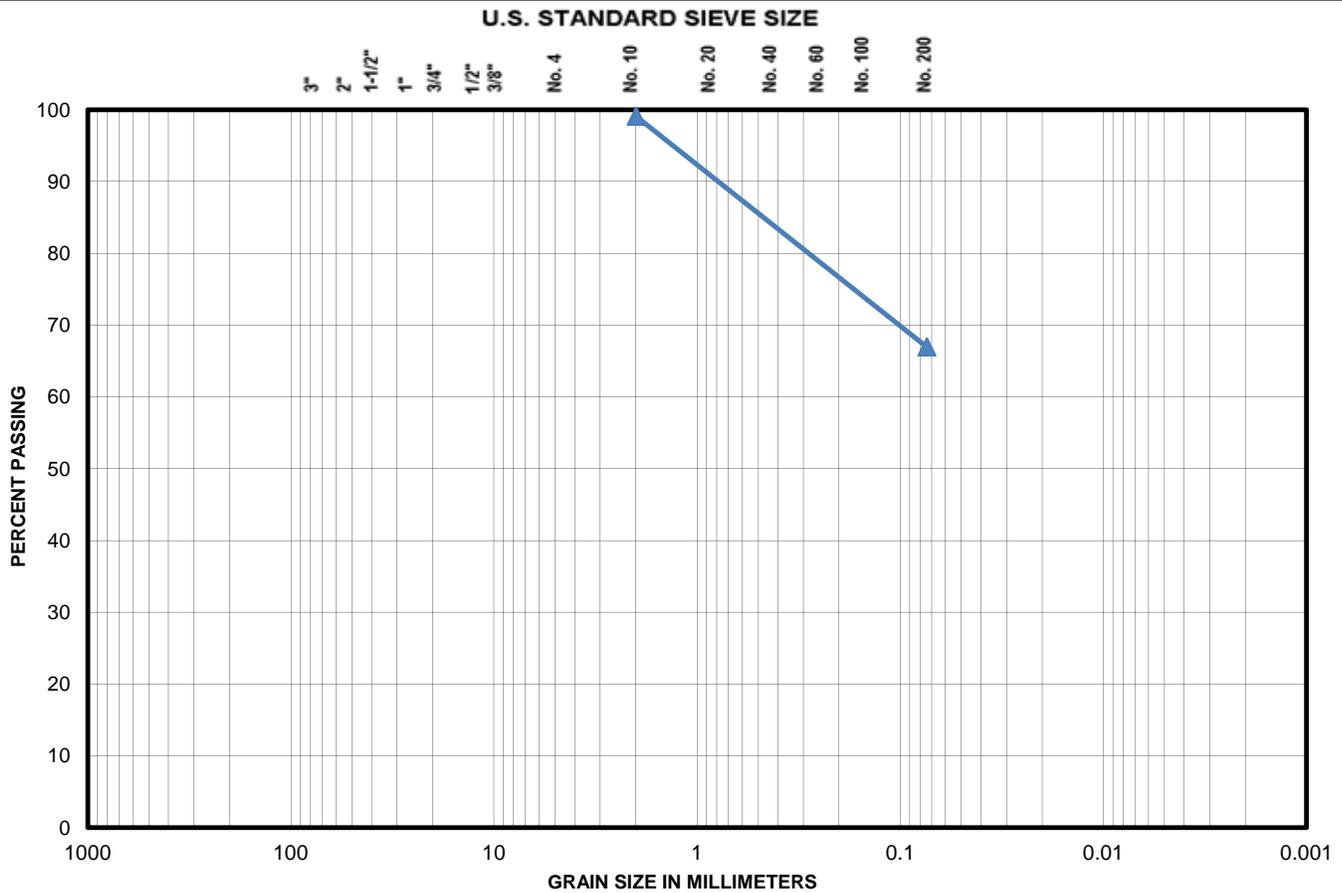


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-67. Sample No. 67 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.9	Sand %	32.1
USC Classification	ML	Fines (Silt & Clay) %	67.0
Description	Gray sandy silt (ML)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	67.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	68	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

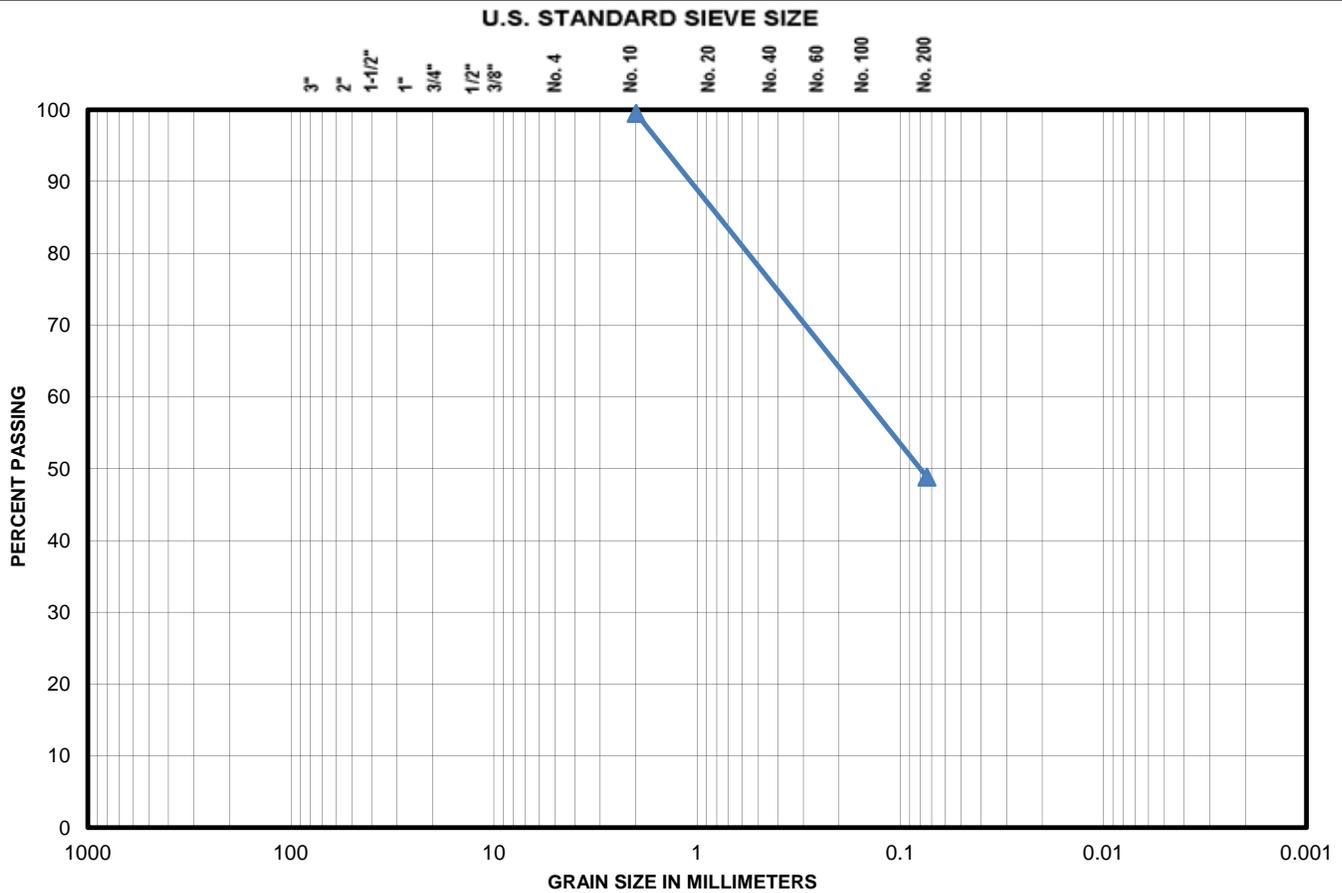


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-68. Sample No. 68 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.5	Sand %	50.7
USC Classification	SC-SM	Fines (Silt & Clay) %	48.8
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	48.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/17/2013
Project No.	16715-023-01	Tested By	SLC
Boring No.	69	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

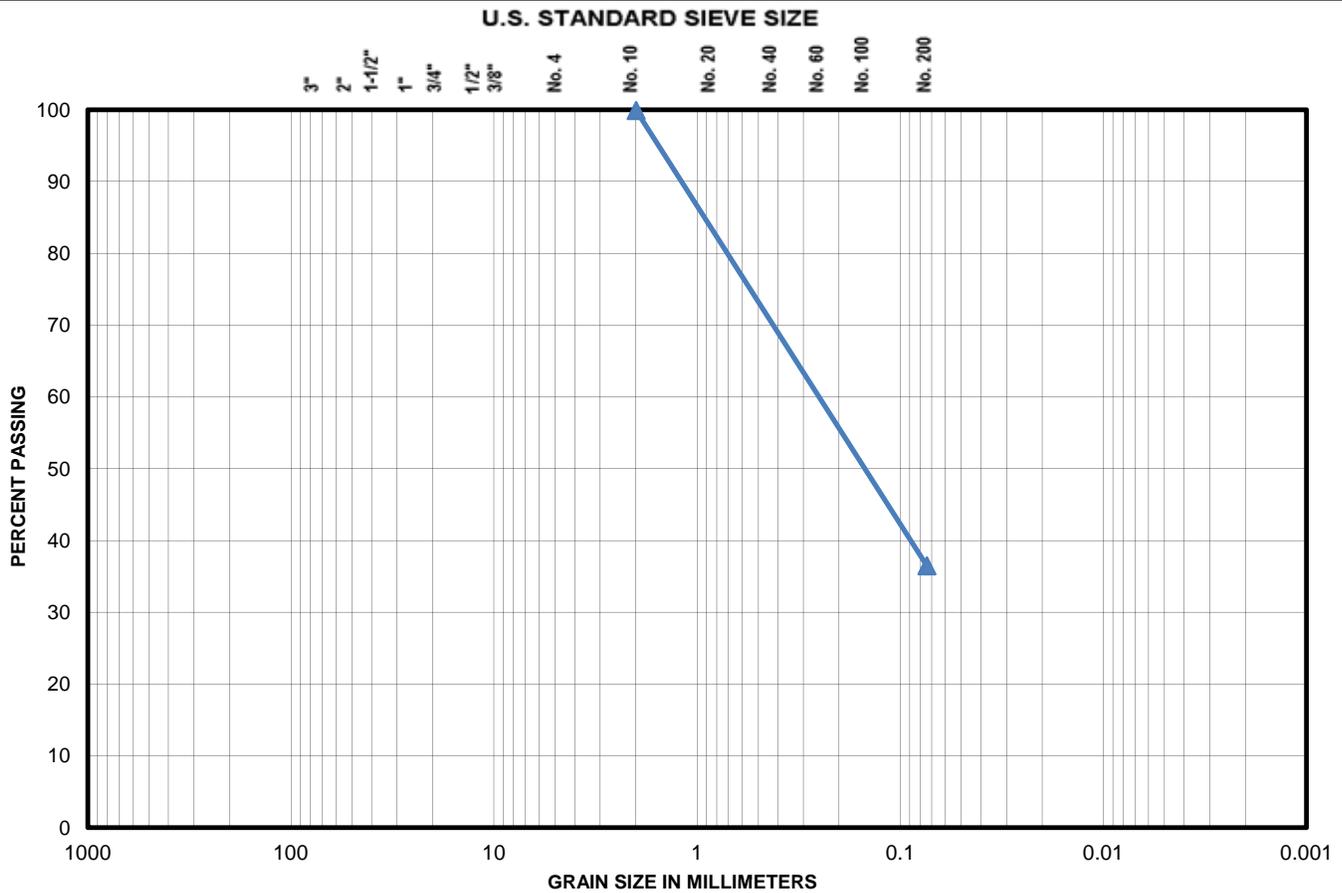


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-69. Sample No. 69 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.1	Sand %	63.4
USC Classification	SC-SM	Fines (Silt & Clay) %	36.5
Description	Gray silty clayey sand (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	36.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	70	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



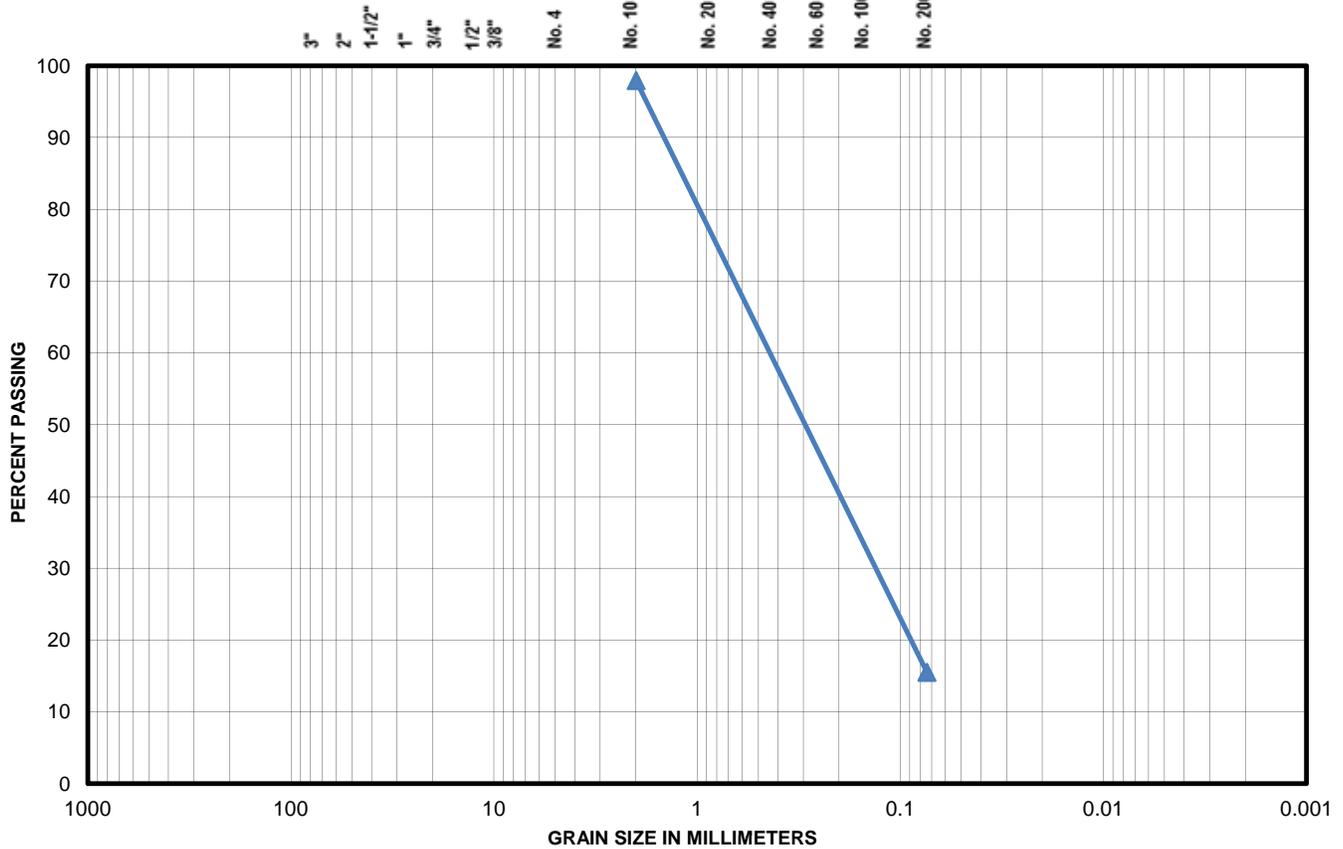
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-70. Sample No. 70 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	2.1	Sand %	82.4
USC Classification	SM	Fines (Silt & Clay) %	15.5
Description	Gray silty sand with shell fragments (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	15.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	71	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



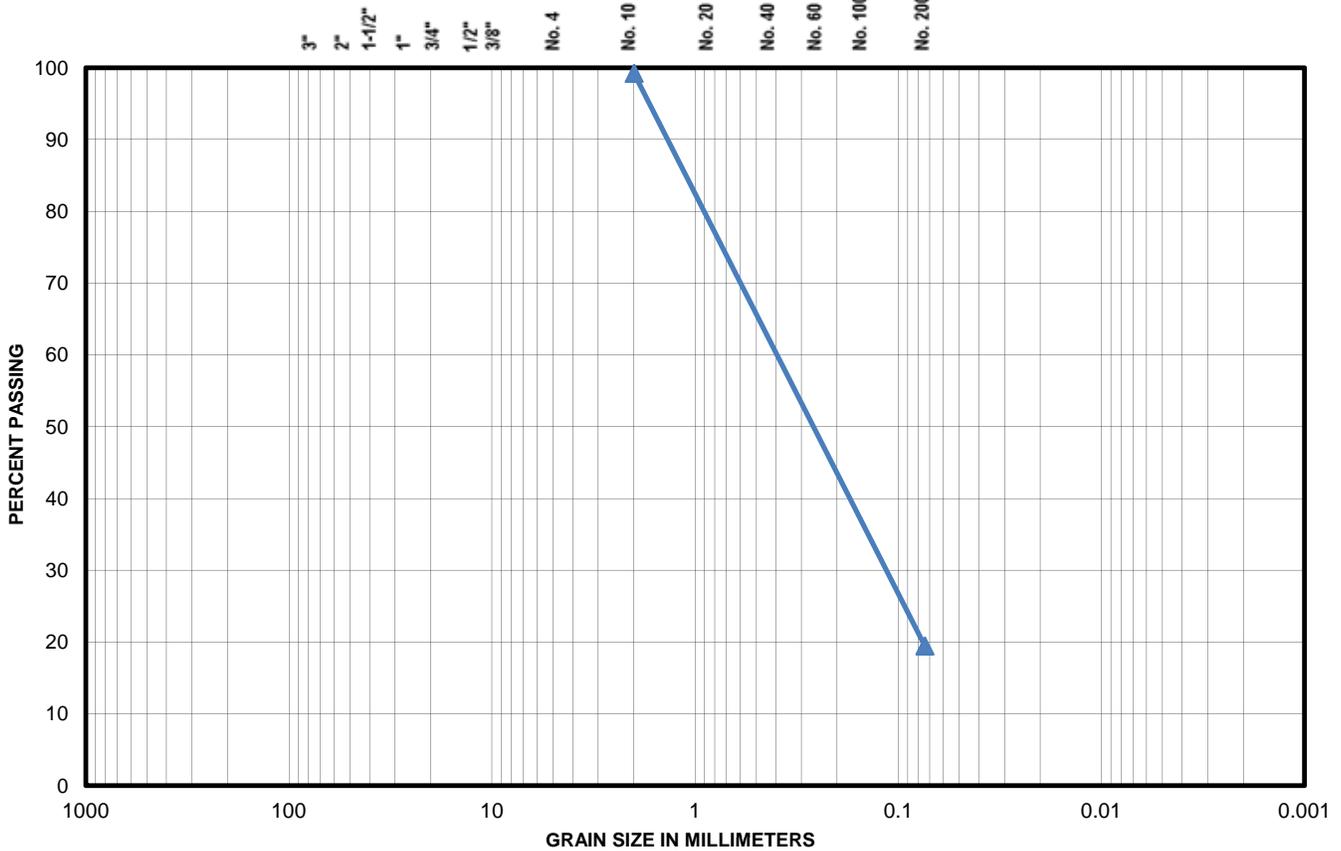
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-71. Sample No. 71 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.8	Sand %	79.7
USC Classification	SC-SM	Fines (Silt & Clay) %	19.5
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.2
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	19.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	72	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



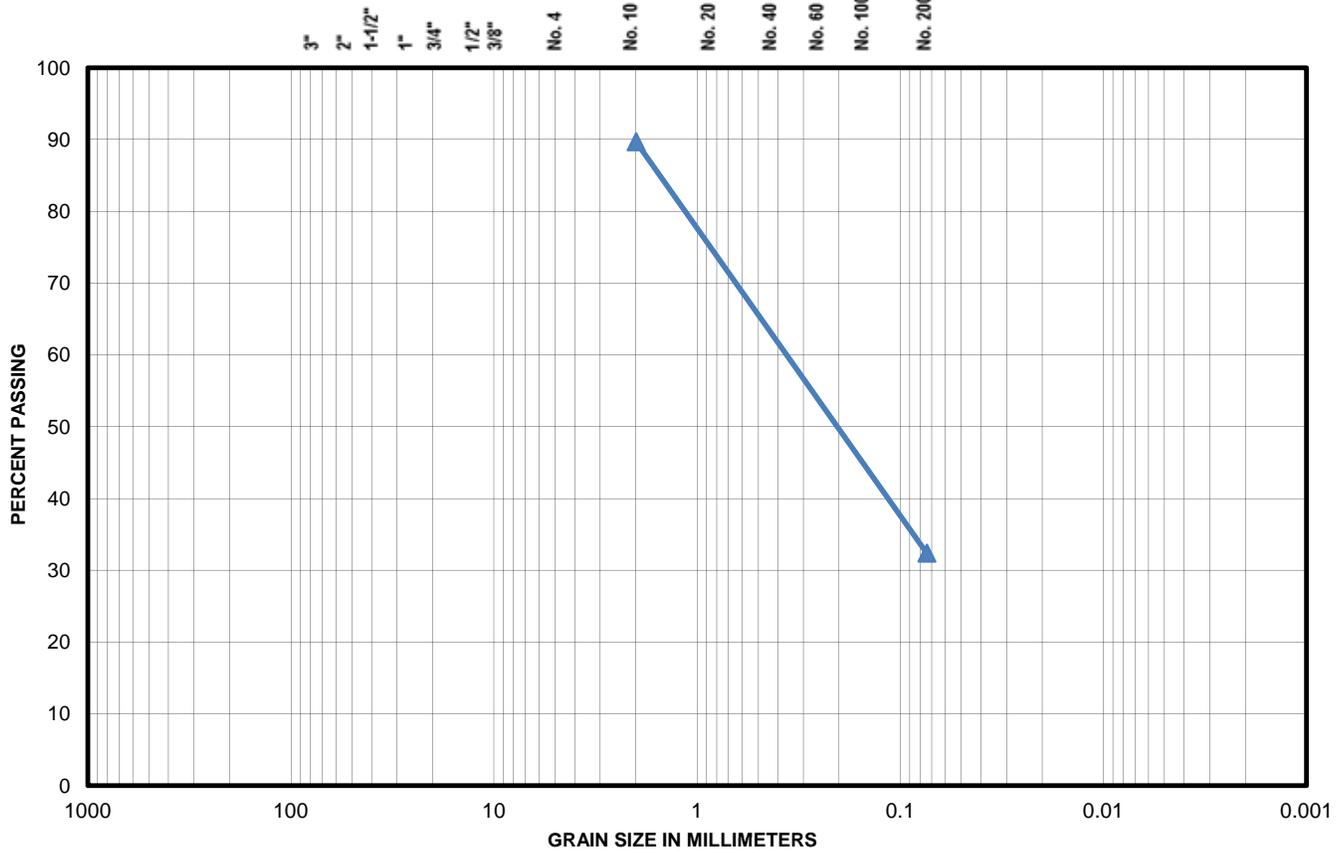
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-72. Sample No. 72 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	10.3	Sand %	57.3
USC Classification	SM	Fines (Silt & Clay) %	32.4
Description	Gray silty sand with trace clay and shells (SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	89.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	32.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/18/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	73	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

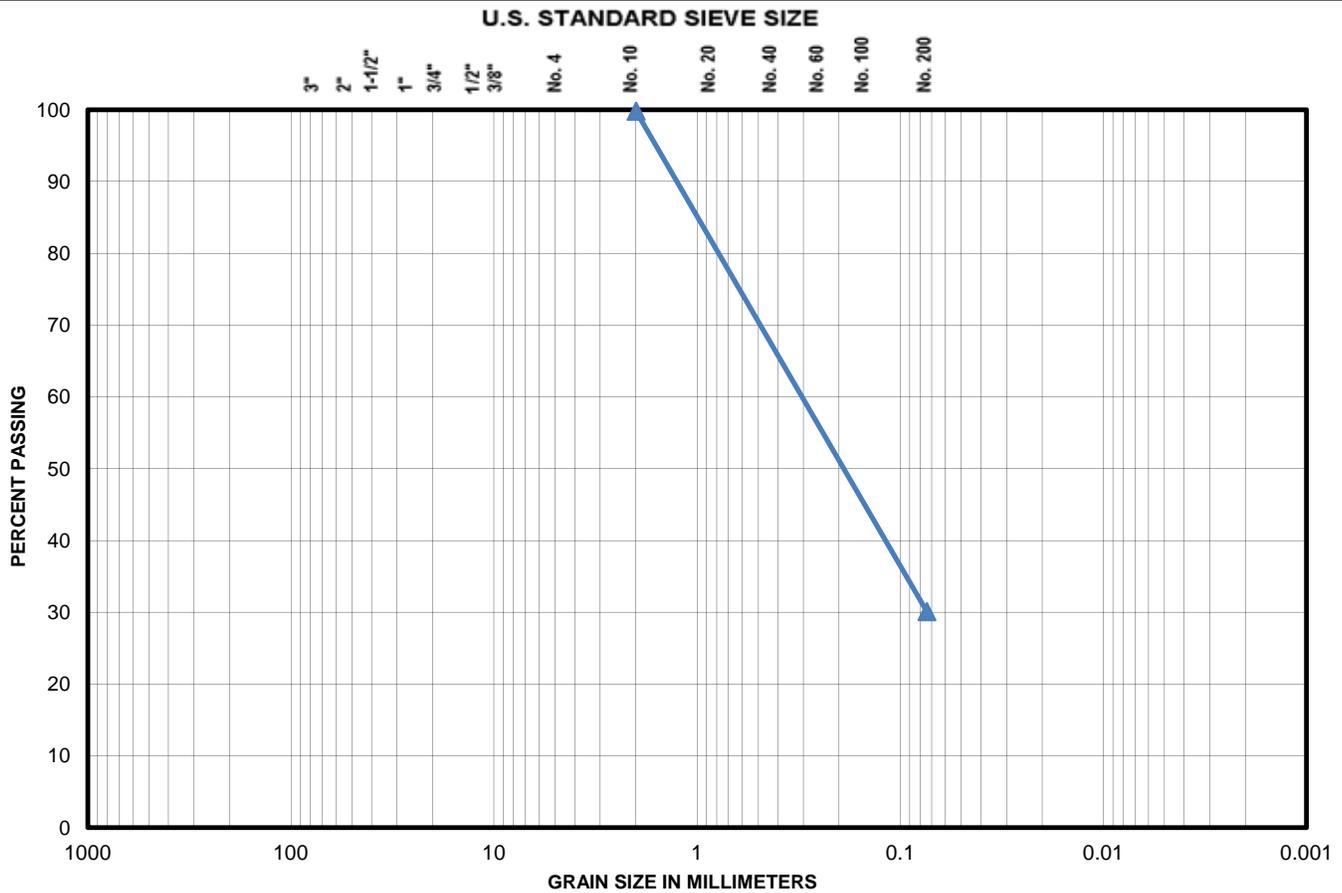


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-73. Sample No. 73 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.2	Sand %	69.7
USC Classification	SC-SM	Fines (Silt & Clay) %	30.1
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	30.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	74	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

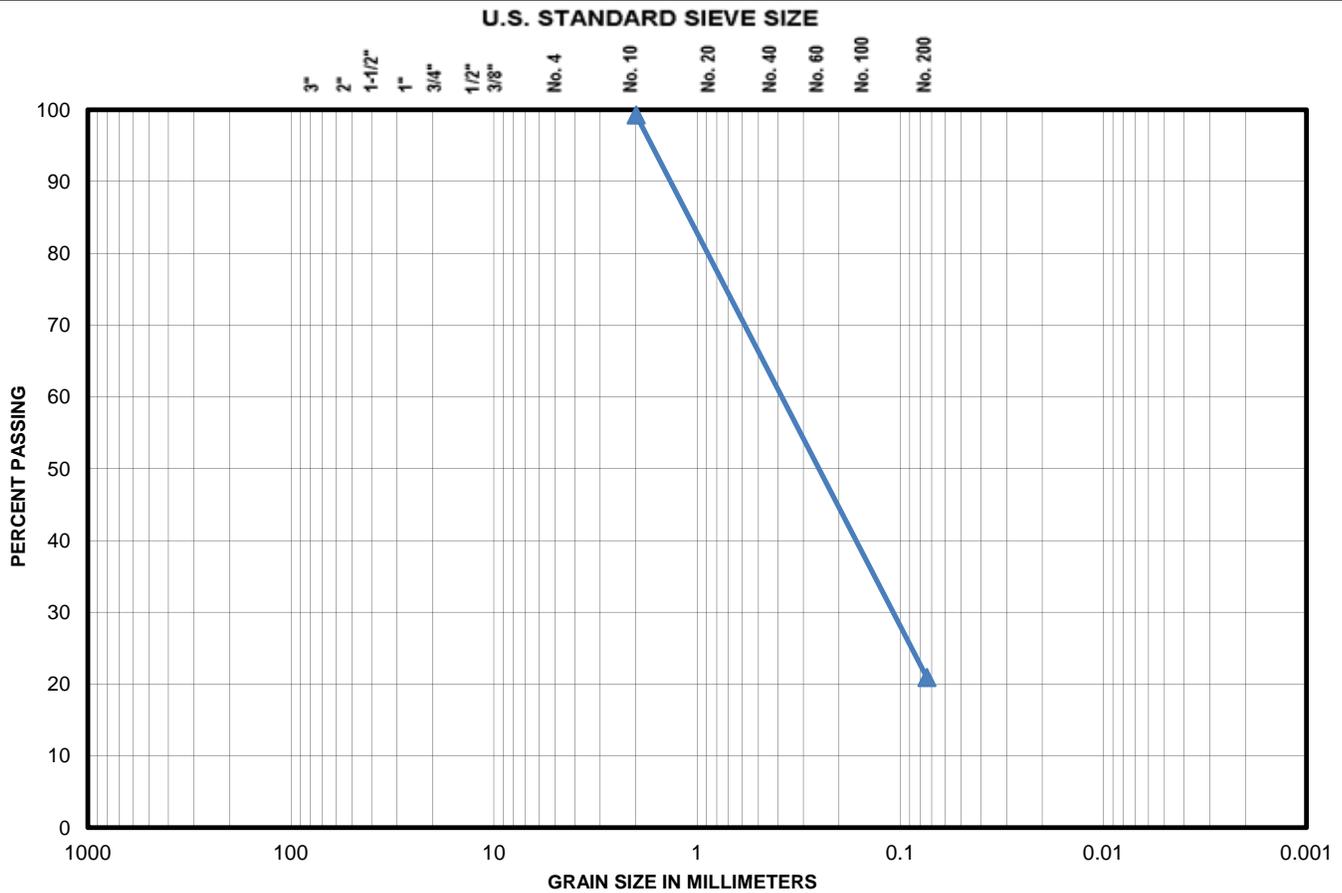


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-74. Sample No. 74 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.7	Sand %	78.4
USC Classification	SC-SM	Fines (Silt & Clay) %	20.9
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	20.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	75	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



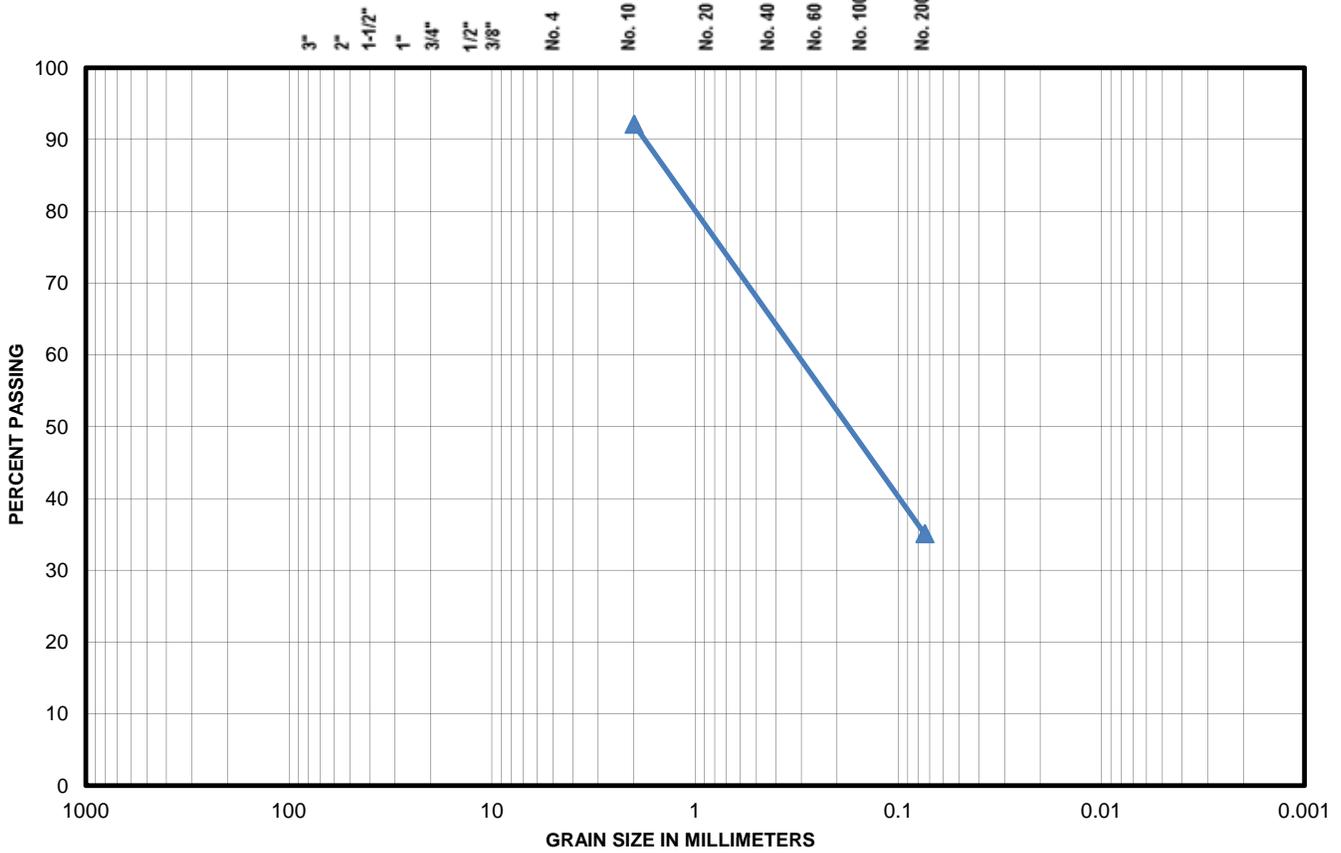
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-75. Sample No. 75 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	7.9	Sand %	57.0
USC Classification	SC-SM	Fines (Silt & Clay) %	35.1
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	92.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	35.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	76	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

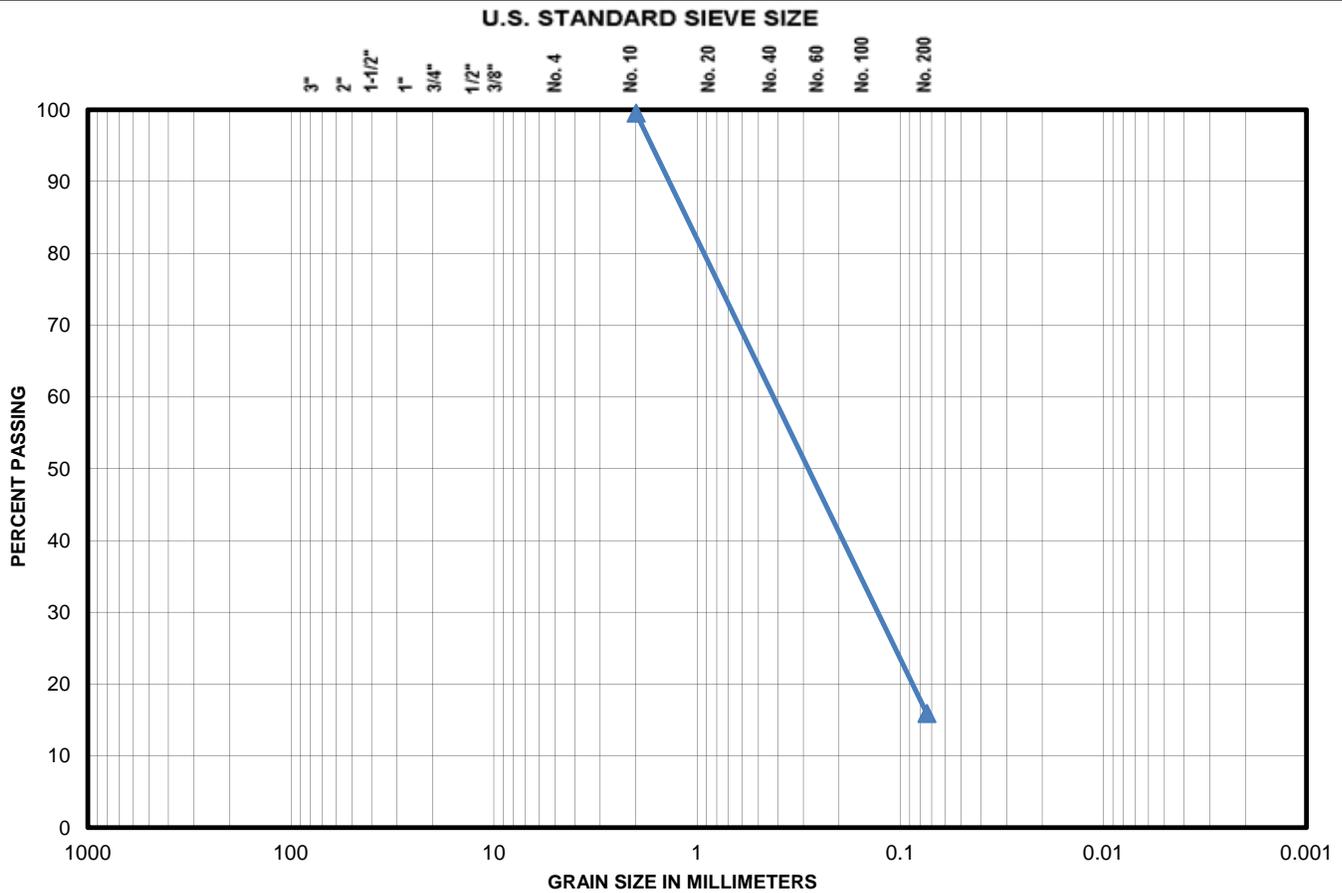


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-76. Sample No. 76 Test Results



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	0.5	Sand %	83.6
USC Classification	SC-SM	Fines (Silt & Clay) %	15.9
Description	Gray silty clayey sand with trace of organic matter and shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	99.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	15.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	77	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



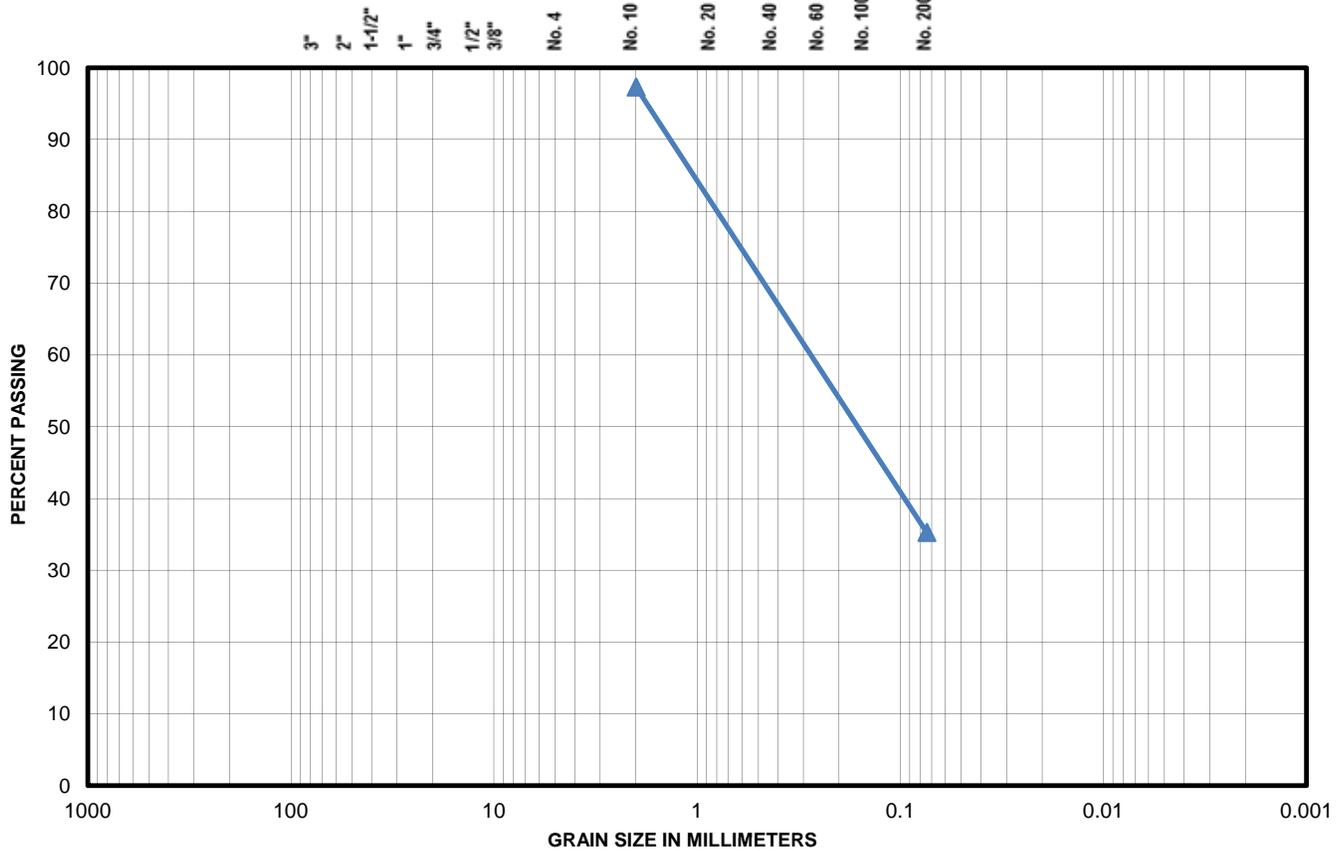
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-77. Sample No. 77 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	2.7	Sand %	62.0
USC Classification	SC-SM	Fines (Silt & Clay) %	35.3
Description	Gray silty clayey sand with trace of organic matter and shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	35.3

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	78	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



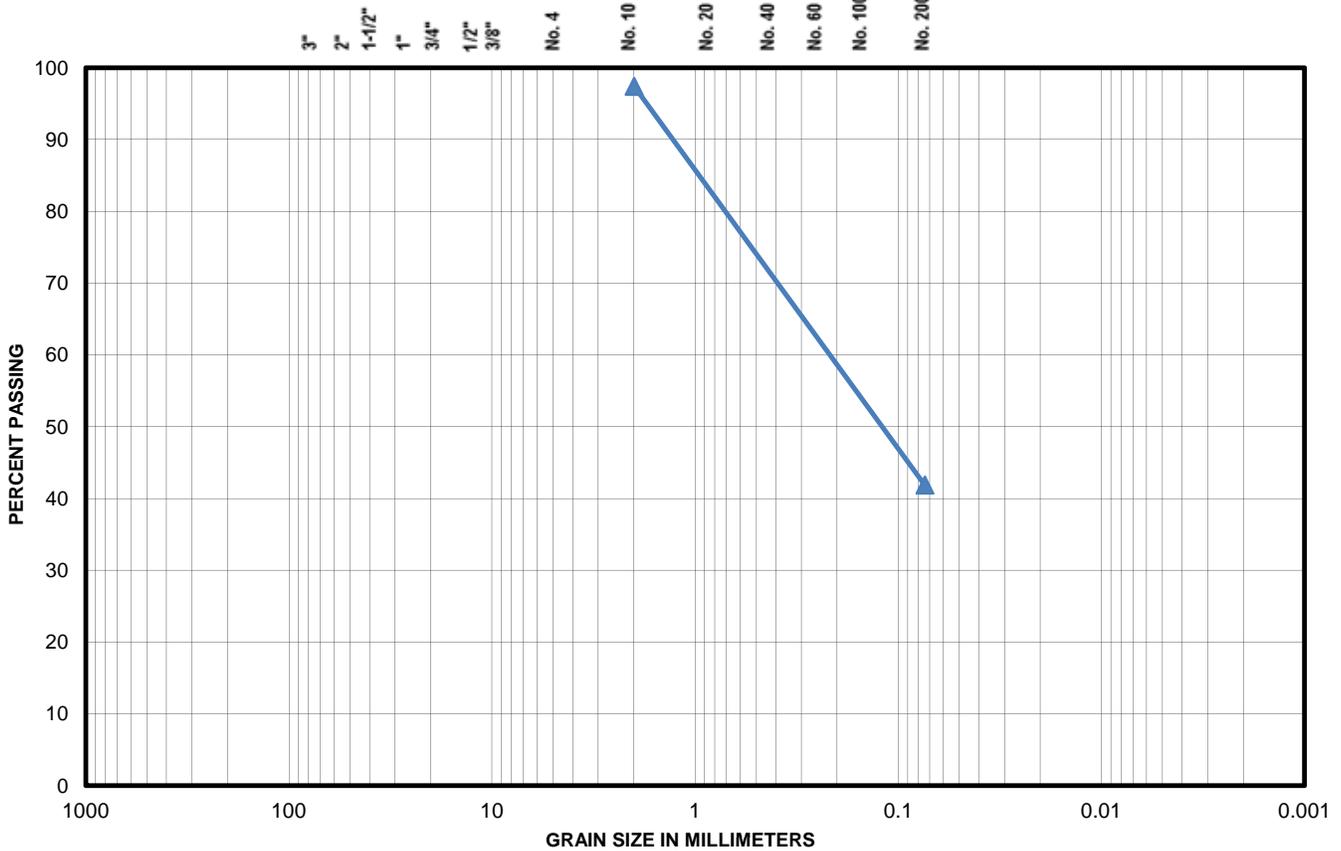
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-78. Sample No. 78 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	2.6	Sand %	55.5
USC Classification	SC-SM	Fines (Silt & Clay) %	41.9
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	41.9

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	79	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



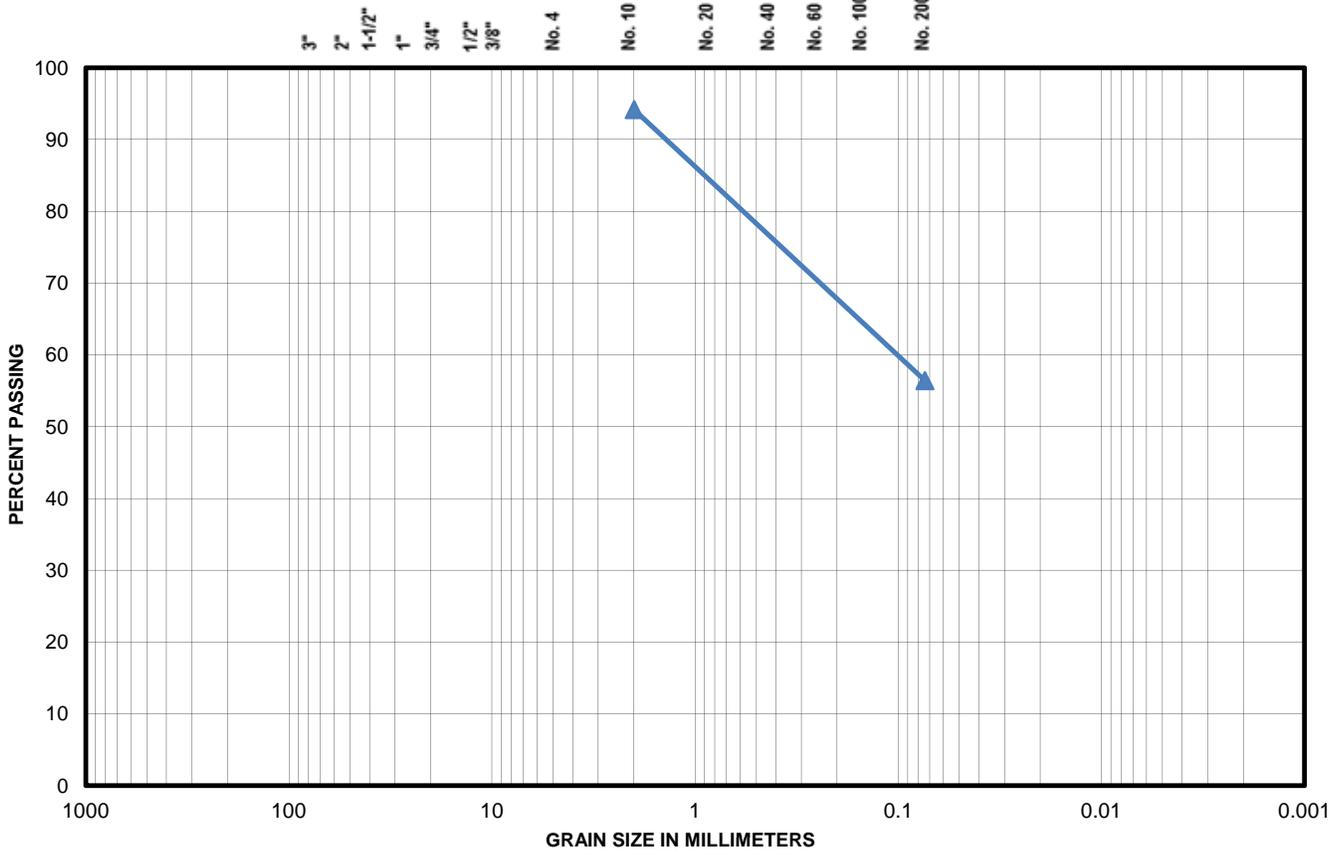
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-79. Sample No. 79 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.8	Sand %	37.8
USC Classification	CL	Fines (Silt & Clay) %	56.4
Description	Gray sandy clay with silt and shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	94.2
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	56.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	80	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



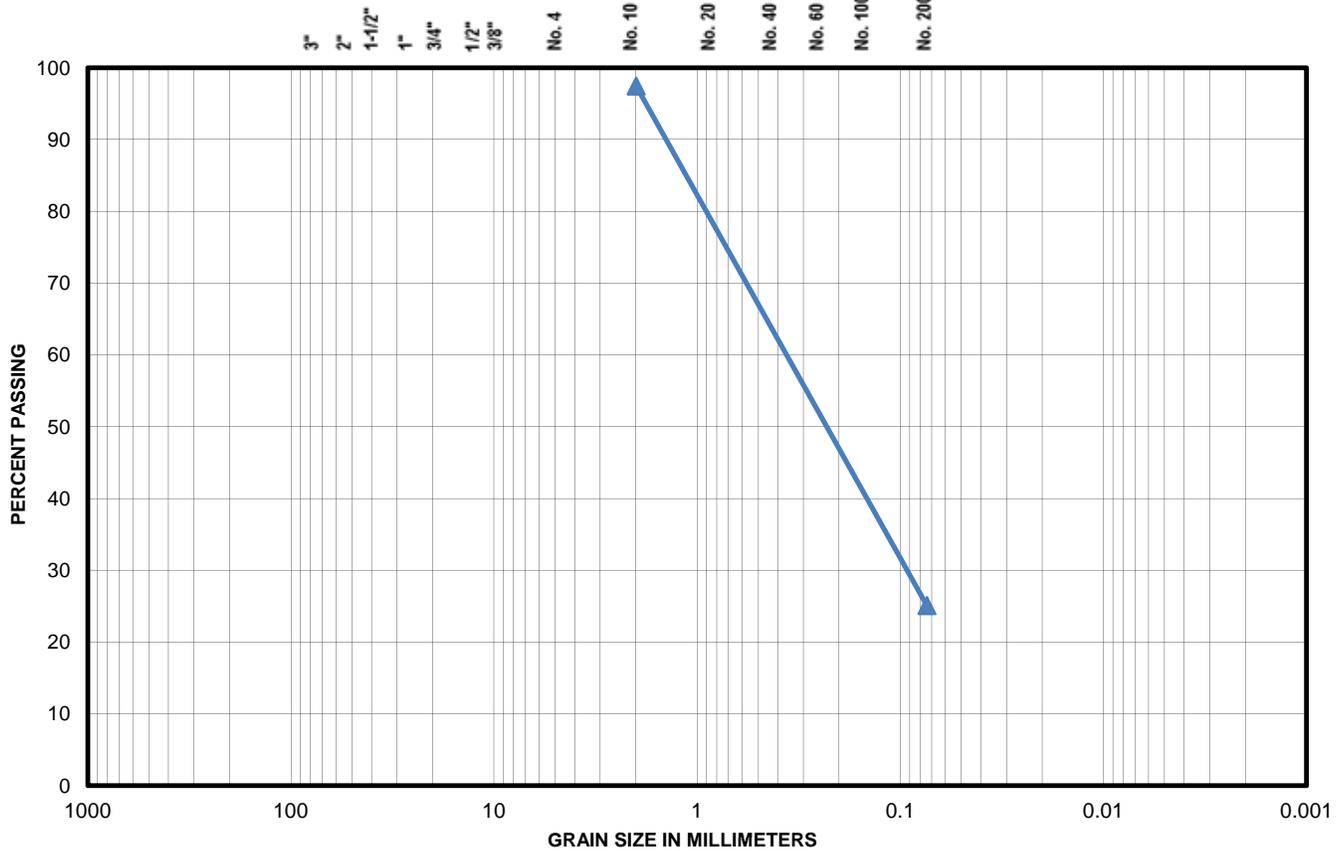
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-80. Sample No. 80 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	2.5	Sand %	72.4
USC Classification	SC-SM	Fines (Silt & Clay) %	25.1
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	97.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	25.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	81	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



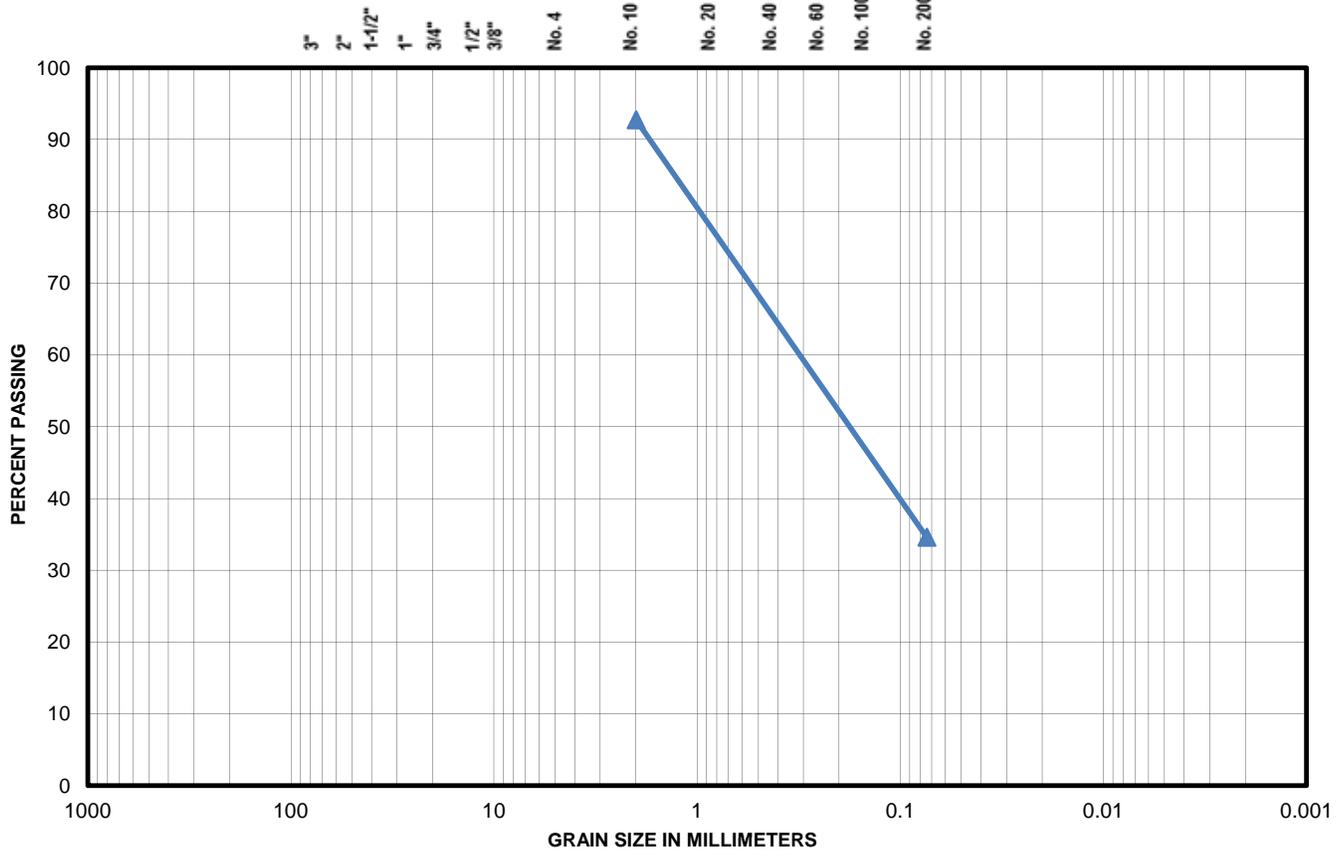
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-81. Sample No. 81 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	7.2	Sand %	58.2
USC Classification	SC-SM	Fines (Silt & Clay) %	34.6
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	92.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	34.6

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	82	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



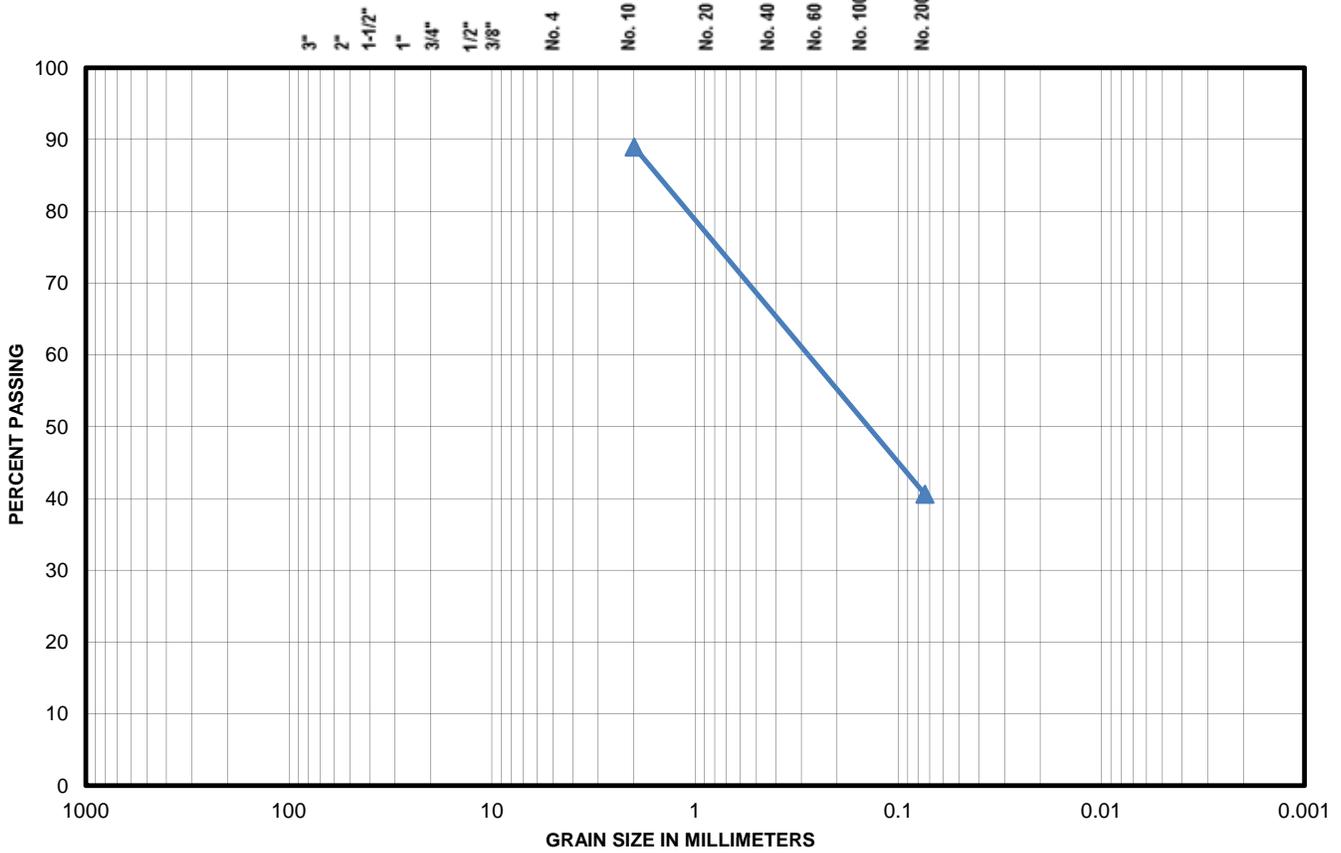
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-82. Sample No. 82 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	11.0	Sand %	48.4
USC Classification	SC-SM	Fines (Silt & Clay) %	40.6
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	89.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	40.6

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	83	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



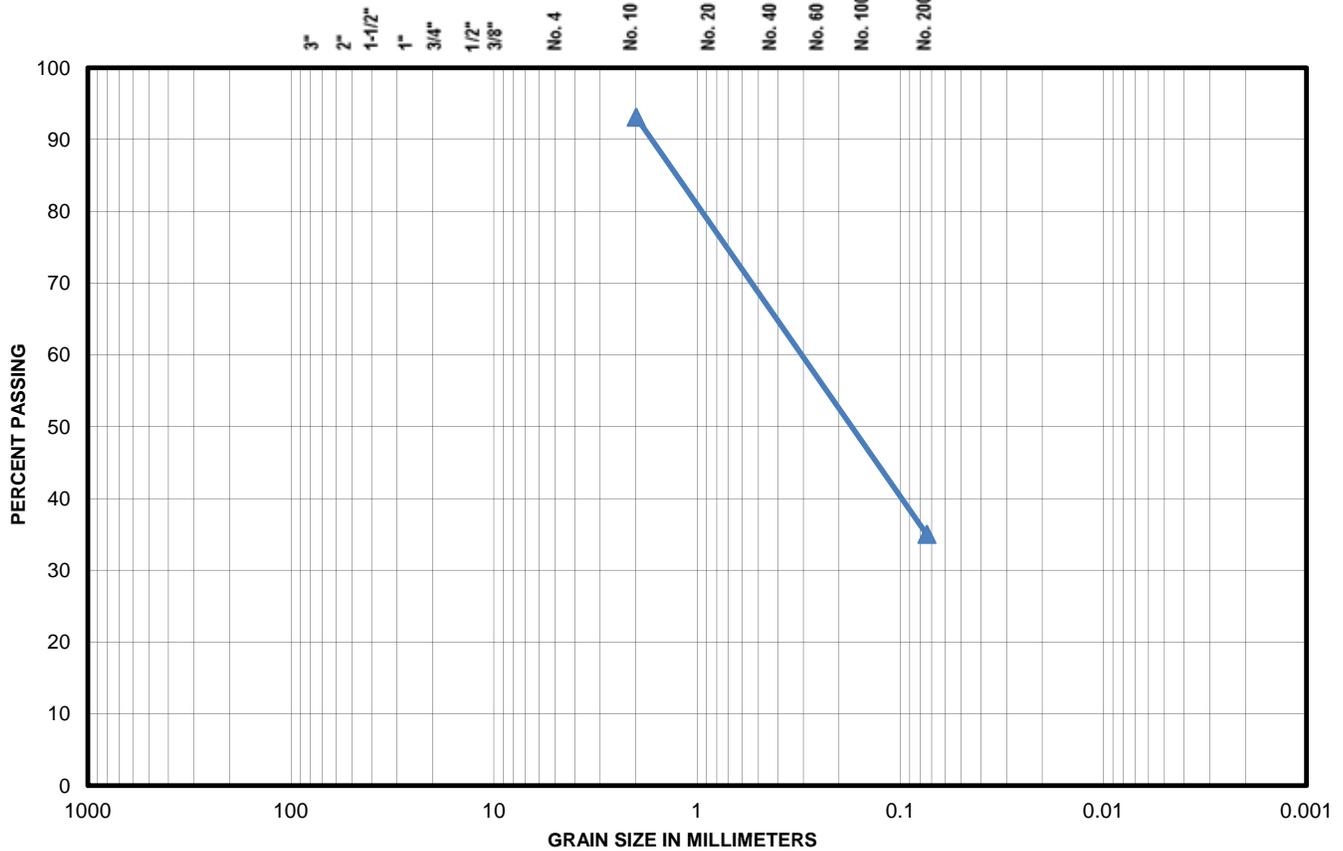
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-83. Sample No. 83 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	6.9	Sand %	58.1
USC Classification	SC-SM	Fines (Silt & Clay) %	35.0
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	93.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	35.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	84	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



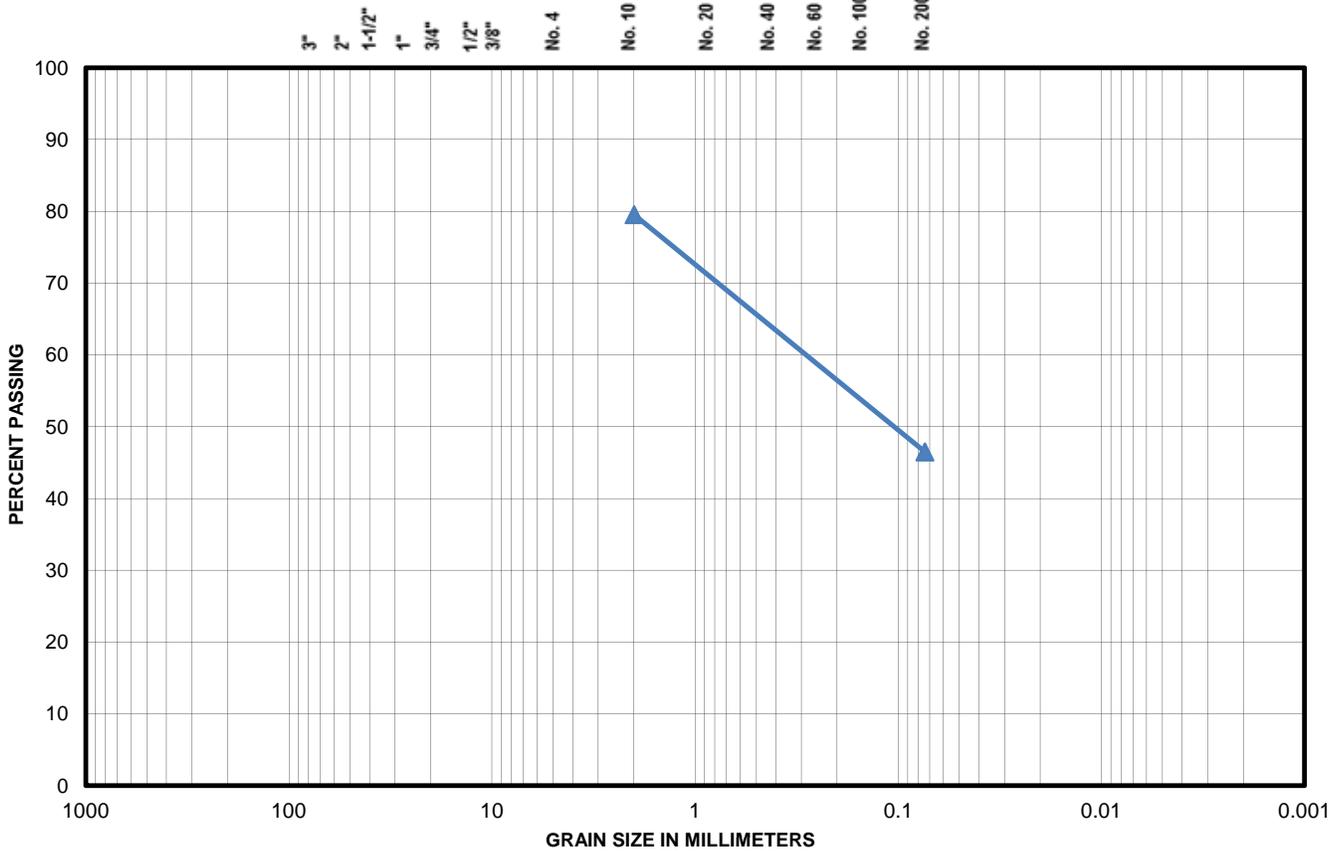
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-84. Sample No. 84 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	20.5	Sand %	33.0
USC Classification	CL	Fines (Silt & Clay) %	46.5
Description	Gray sandy clay with silt and shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	79.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	46.5

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	85	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



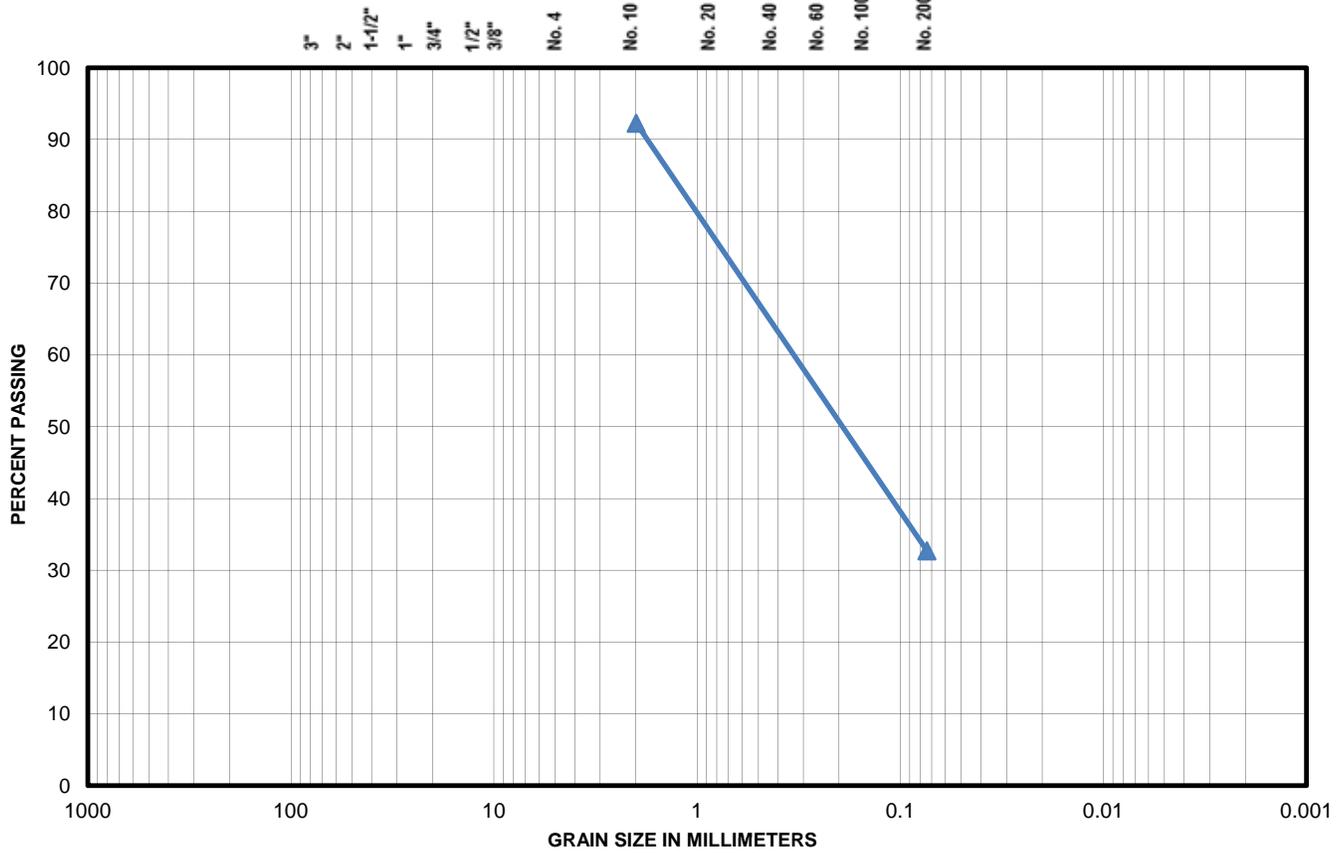
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-85. Sample No. 85 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	7.7	Sand %	59.6
USC Classification	SC-SM	Fines (Silt & Clay) %	32.7
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	92.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	32.7

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	86	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



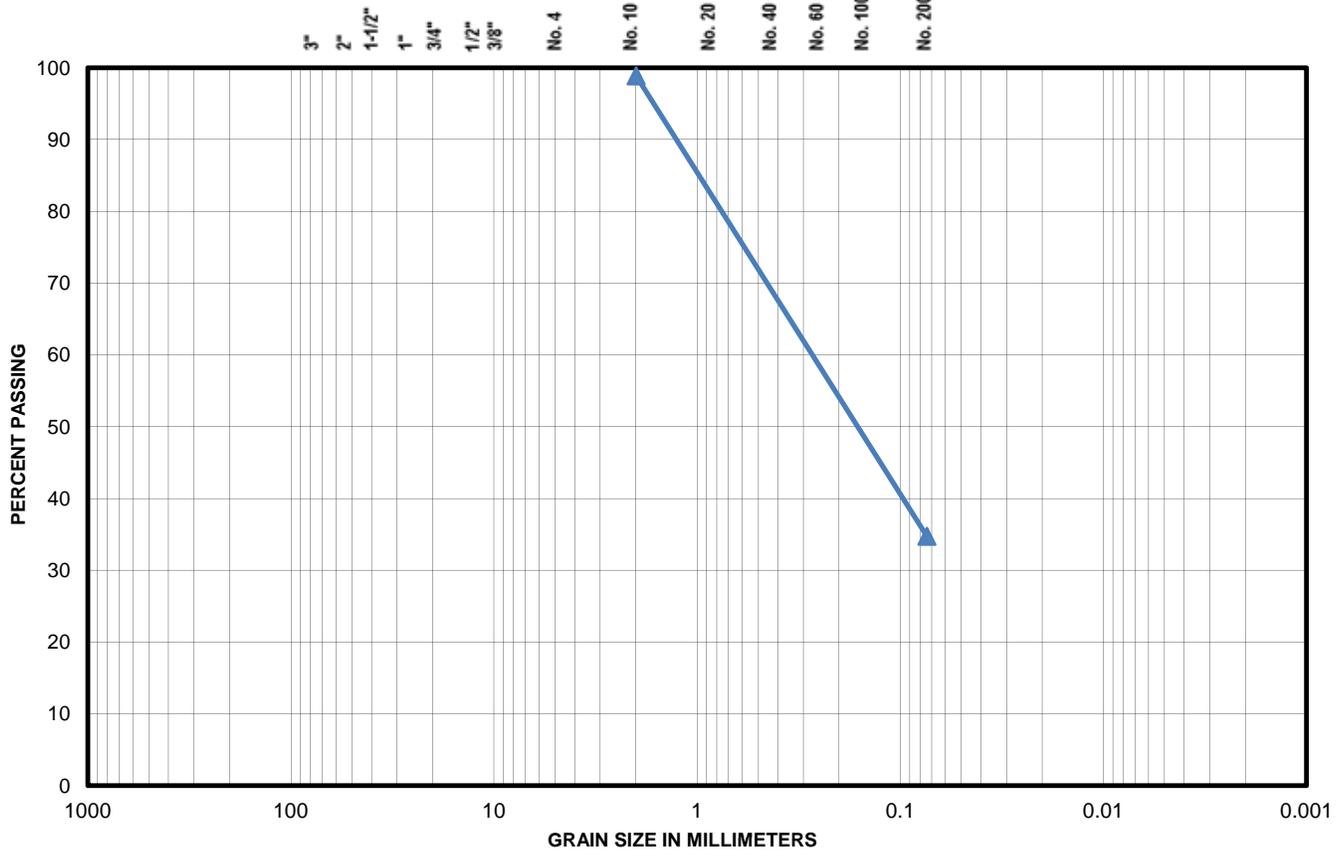
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-86. Sample No. 86 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	1.1	Sand %	64.1
USC Classification	SC-SM	Fines (Silt & Clay) %	34.8
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	98.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	34.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	87	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



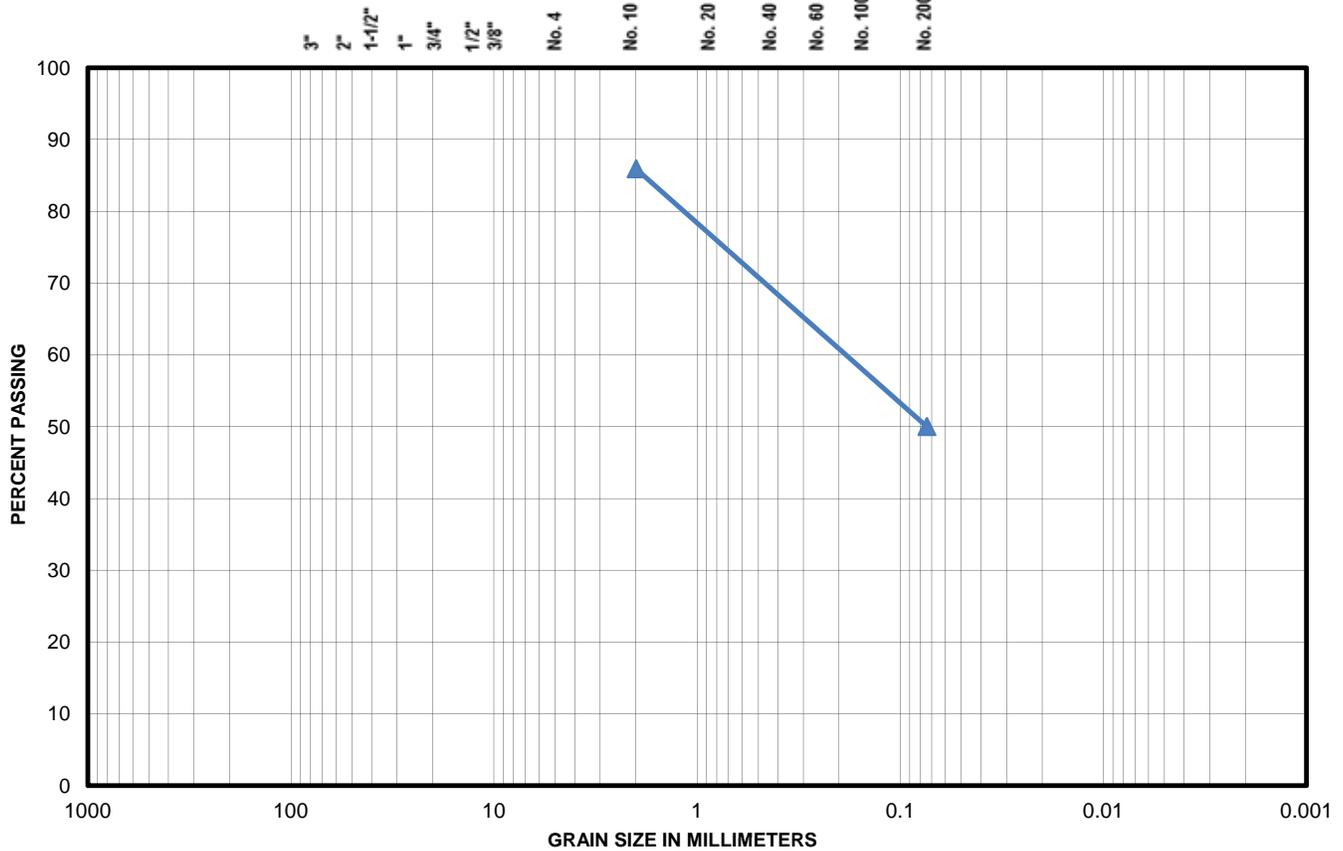
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-87. Sample No. 87 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	14.1	Sand %	35.9
USC Classification	CL	Fines (Silt & Clay) %	50.0
Description	Gray sandy clay with shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	85.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	50.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	88	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



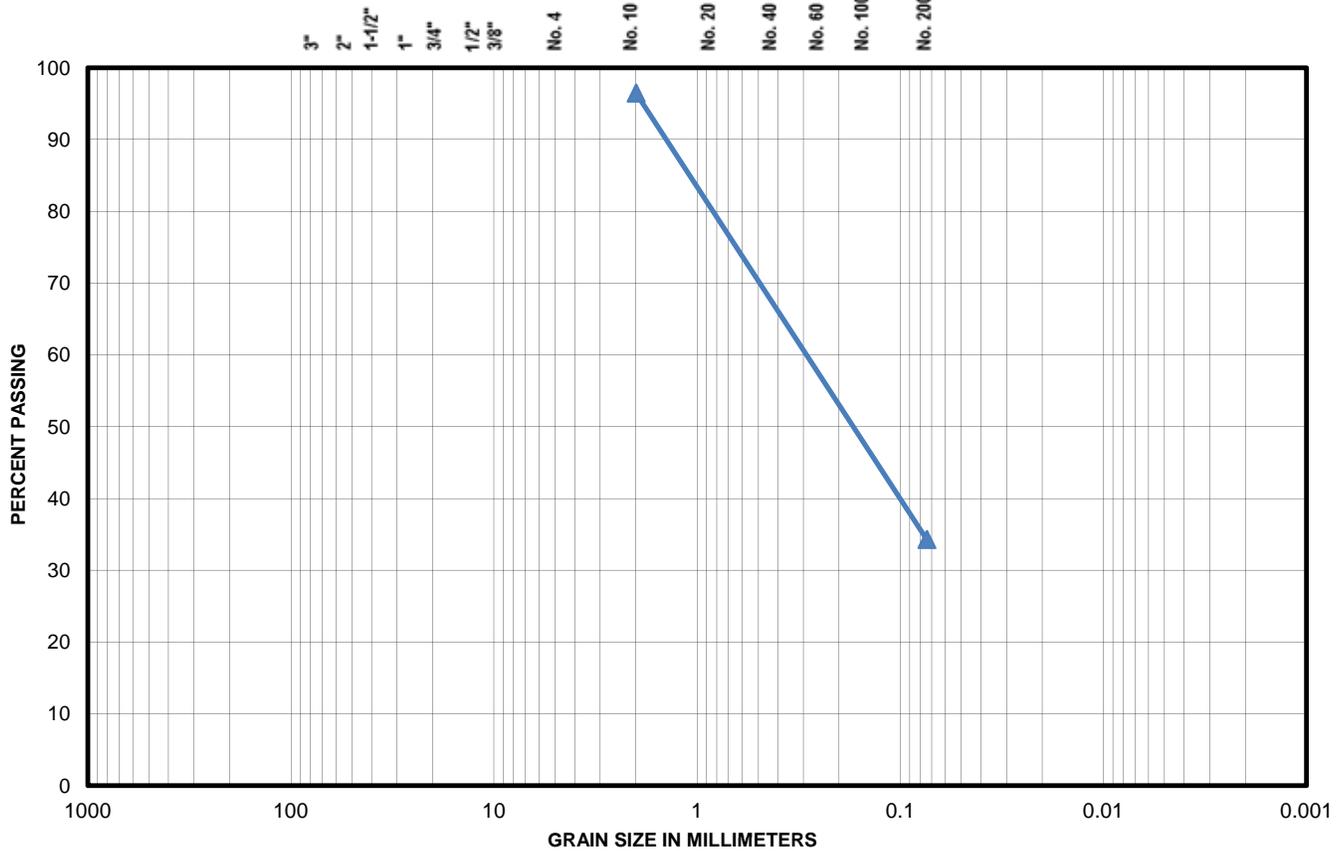
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-88. Sample No. 88 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.5	Sand %	62.2
USC Classification	SC-SM	Fines (Silt & Clay) %	34.3
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	96.5
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	34.3

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	89	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



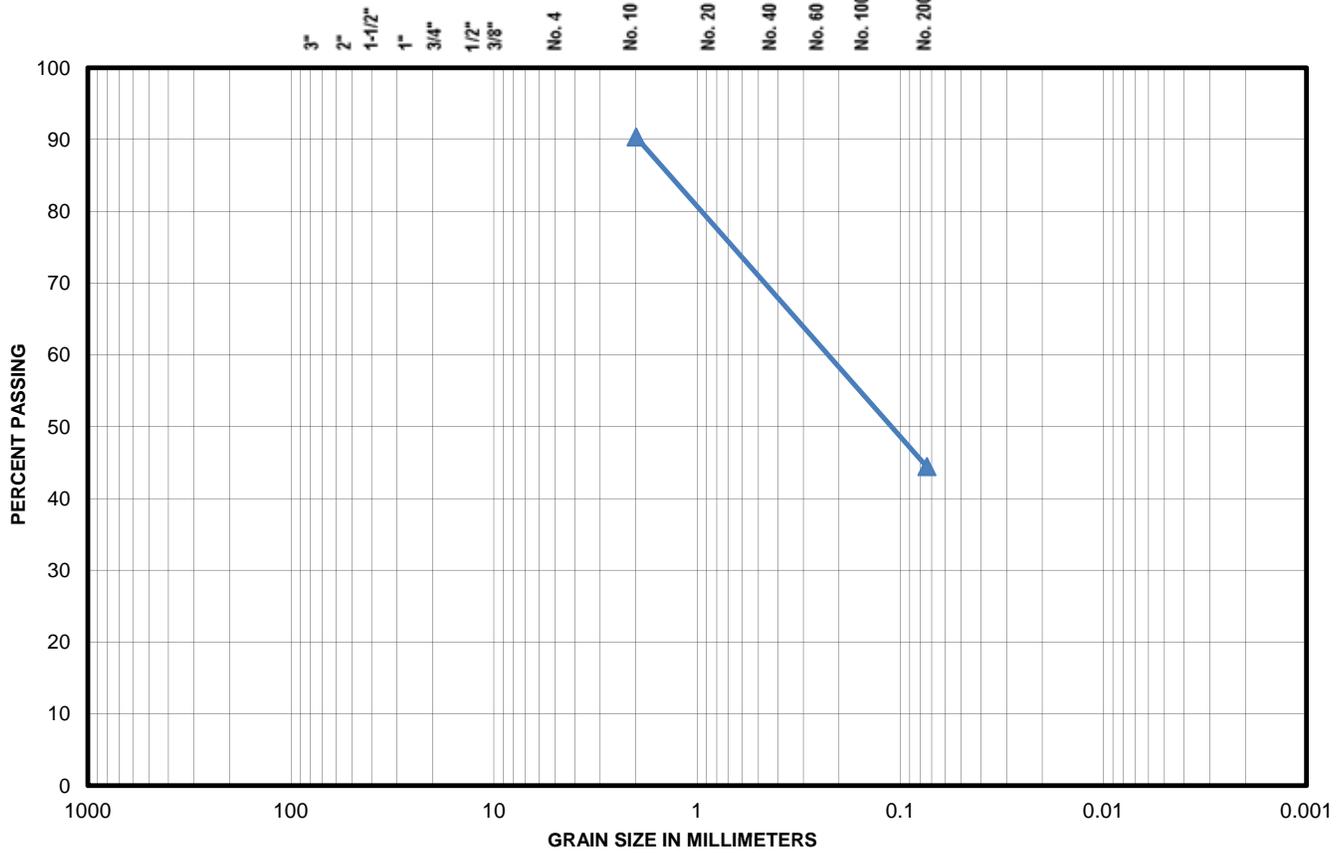
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-89. Sample No. 89 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	9.6	Sand %	46.0
USC Classification	SC-SM	Fines (Silt & Clay) %	44.4
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	90.4
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	44.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	90	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



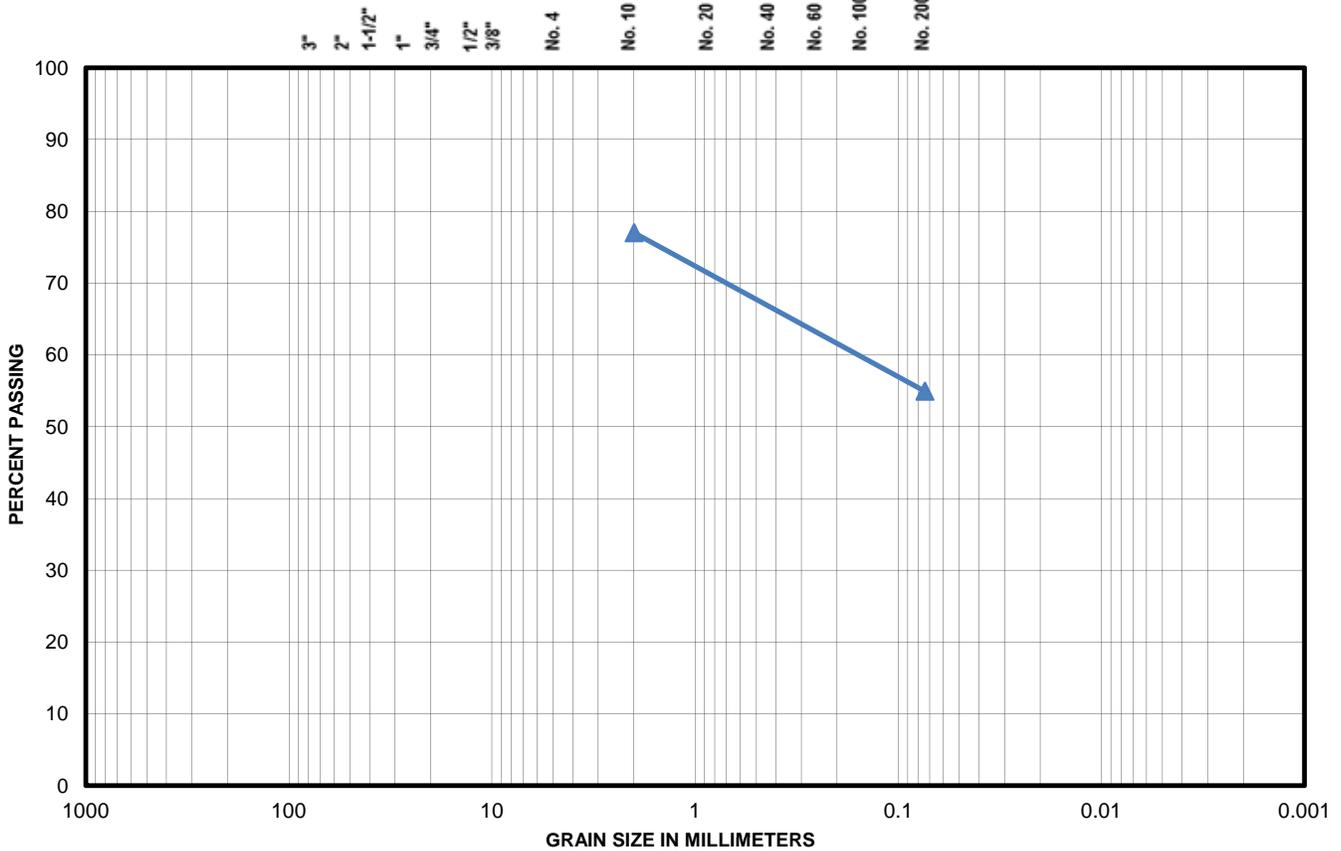
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-90. Sample No. 90 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	23.0	Sand %	22.0
USC Classification	CL	Fines (Silt & Clay) %	55.0
Description	Gray sandy clay with shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	77.0
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	55.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	91	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



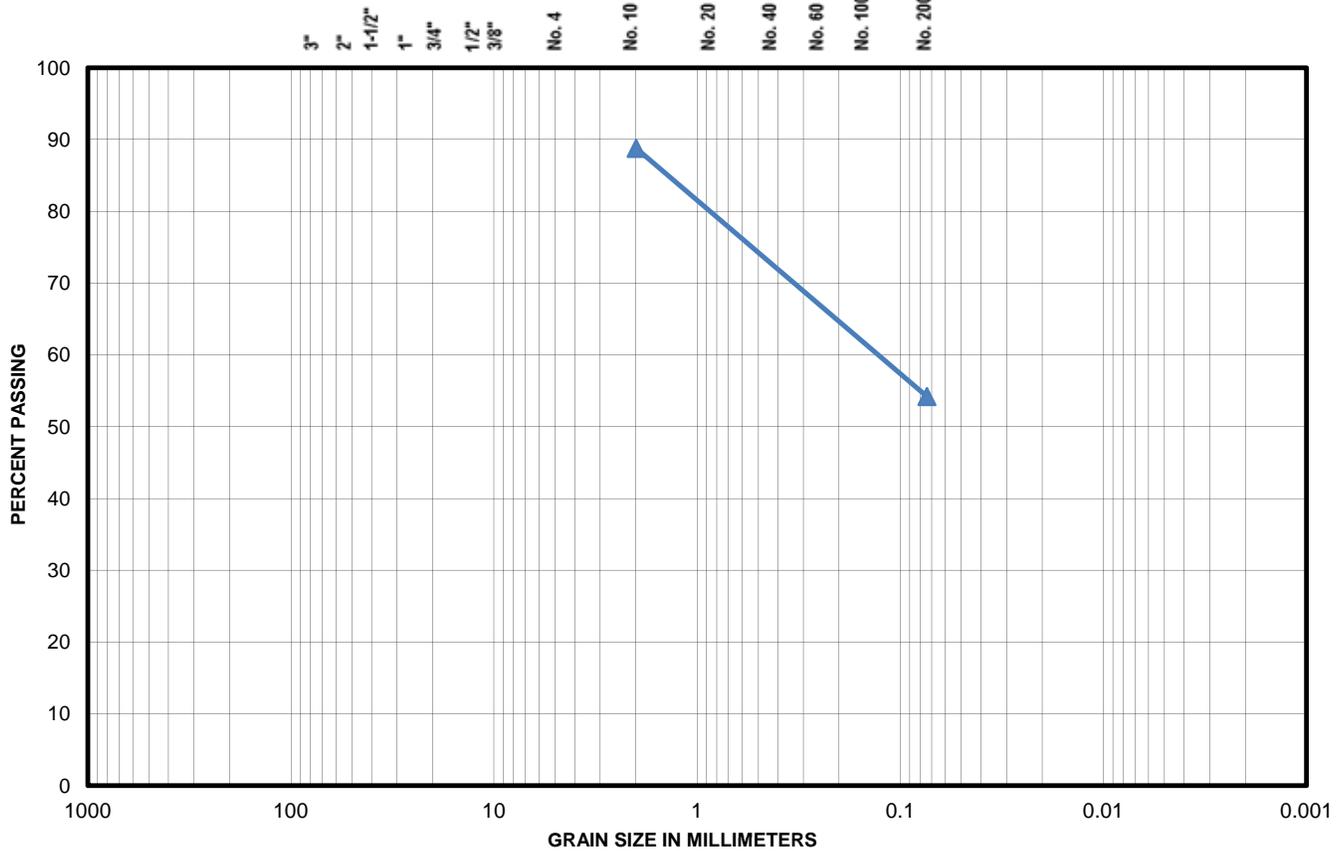
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-91. Sample No. 91 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	11.2	Sand %	34.6
USC Classification	CL	Fines (Silt & Clay) %	54.2
Description	Gray sandy clay with shells (CL)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	88.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	54.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	92	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



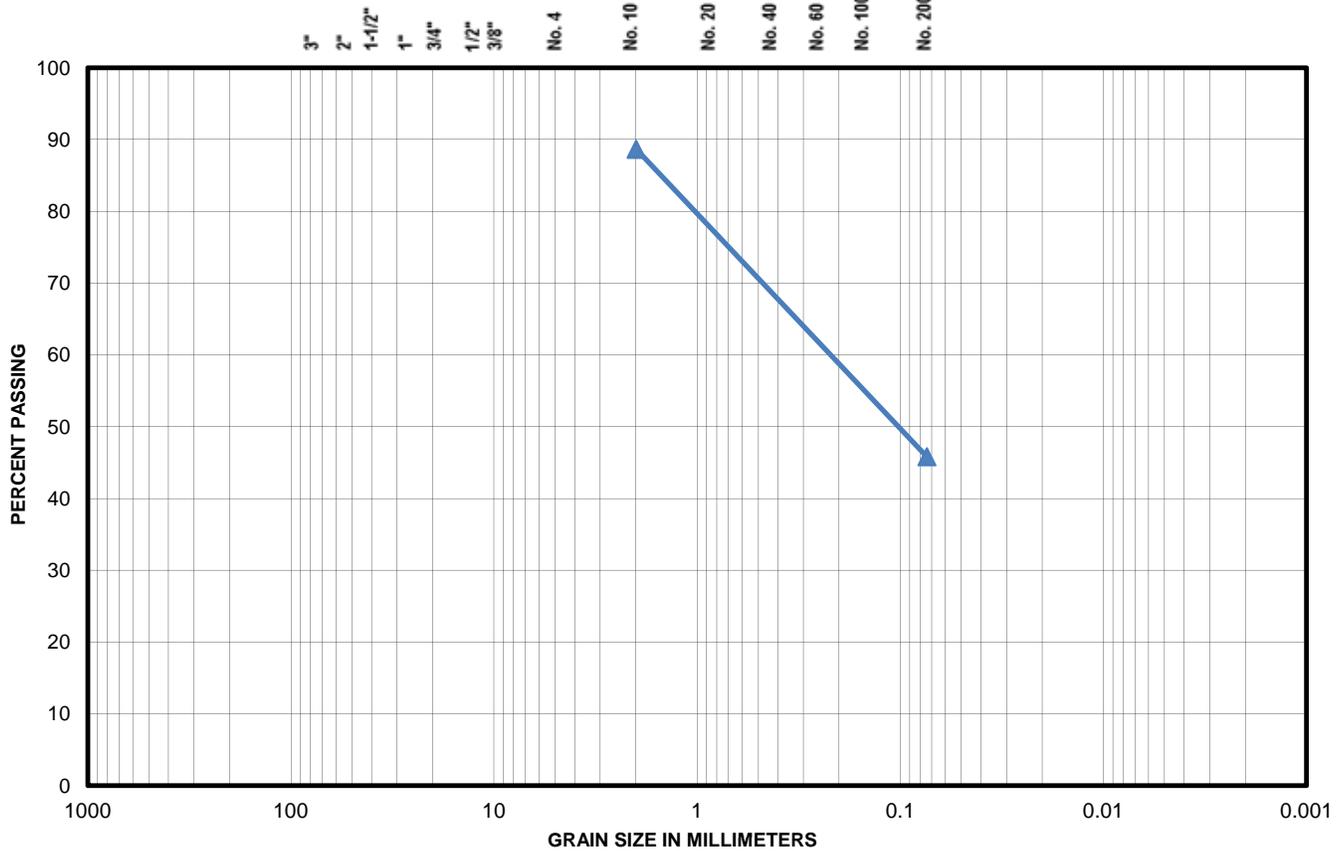
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-92. Sample No. 92 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	11.3	Sand %	42.9
USC Classification	SC-SM	Fines (Silt & Clay) %	45.8
Description	Gray silty clayey sand with shells (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	88.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	45.8

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	93	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



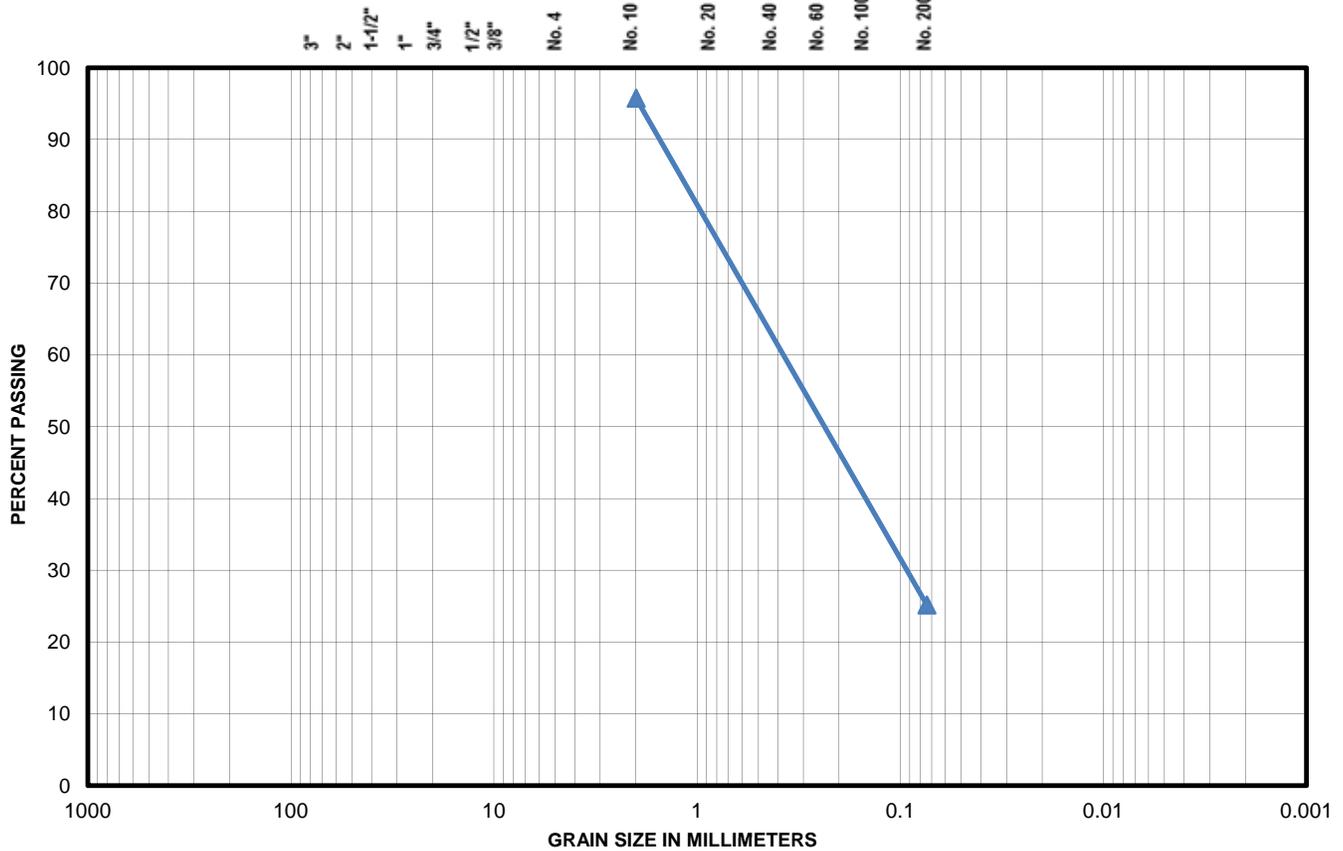
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-93. Sample No. 93 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	4.2	Sand %	70.6
USC Classification	SC-SM	Fines (Silt & Clay) %	25.2
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	95.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	25.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	94	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



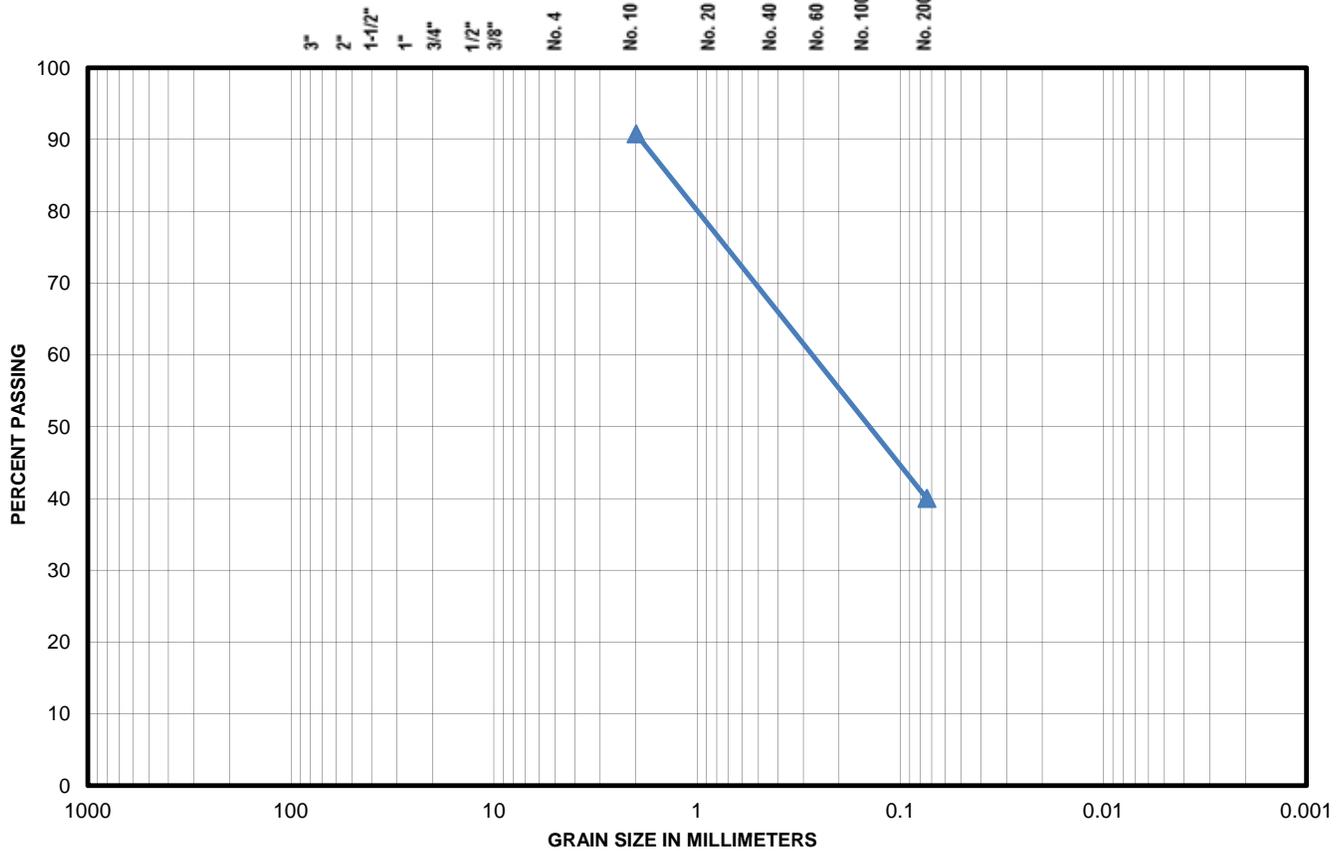
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-94. Sample No. 94 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	9.2	Sand %	50.8
USC Classification	SC-SM	Fines (Silt & Clay) %	40.0
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	90.8
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	40.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	95	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



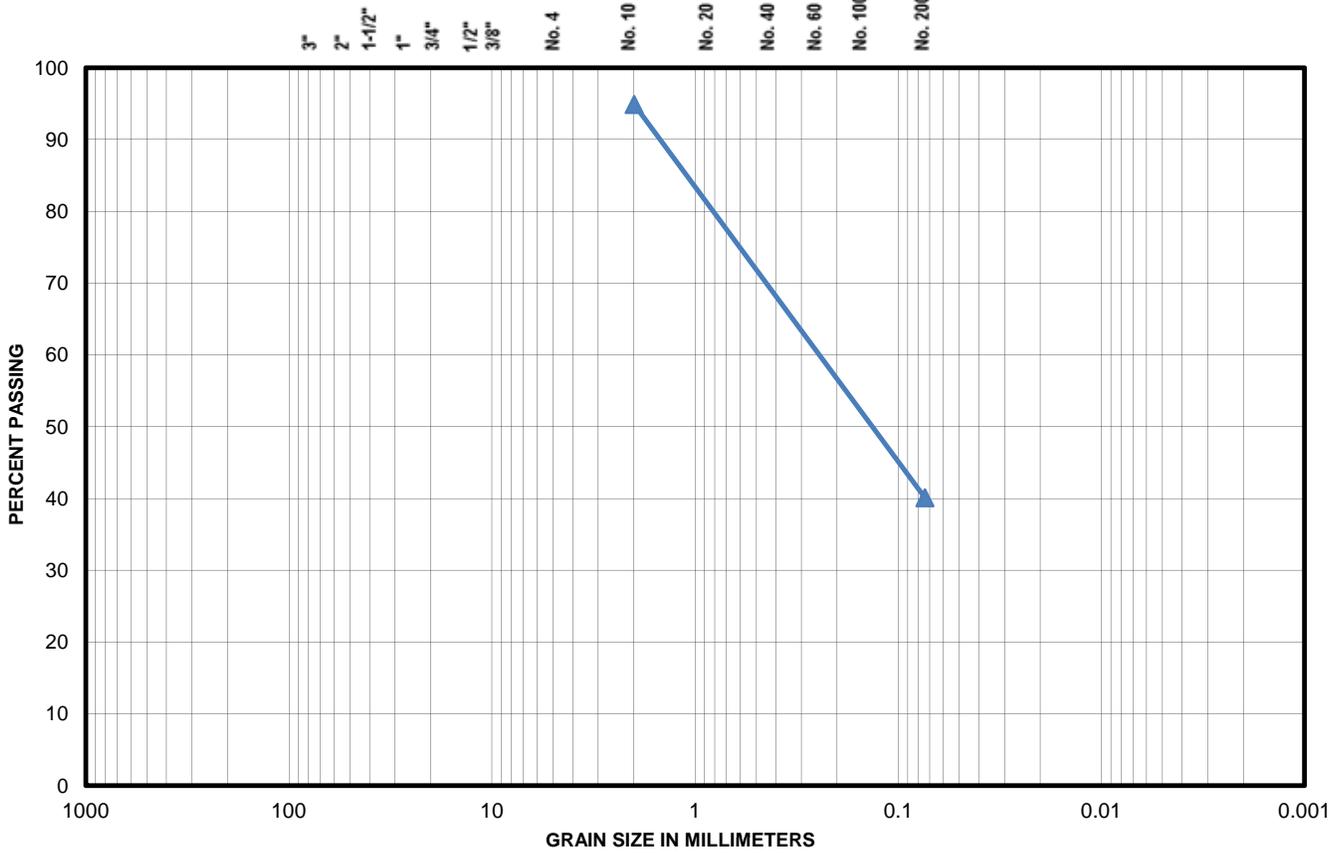
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-95. Sample No. 95 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	5.1	Sand %	54.8
USC Classification	SC-SM	Fines (Silt & Clay) %	40.1
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	94.9
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	40.1

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	96	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



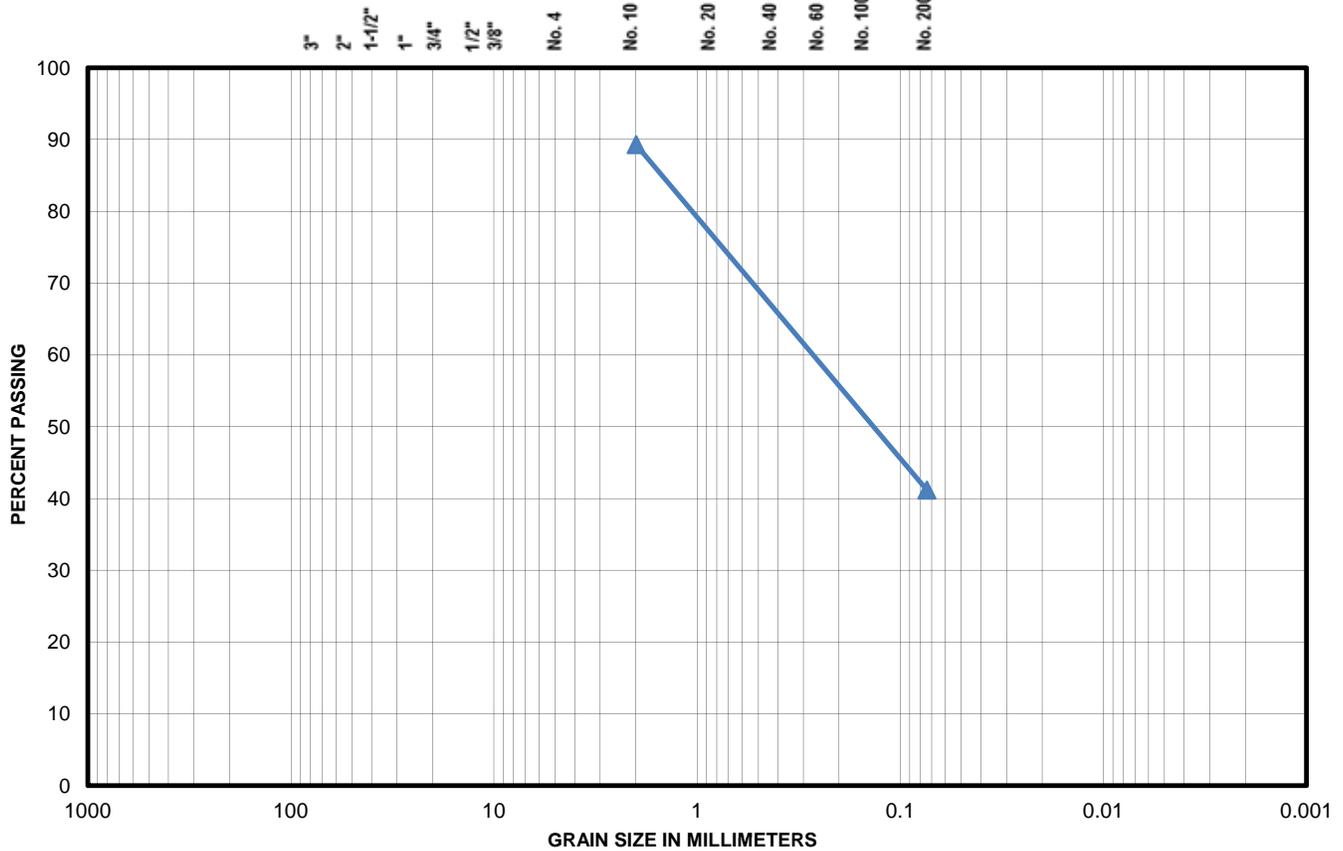
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-96. Sample No. 96 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	10.7	Sand %	48.1
USC Classification	SC-SM	Fines (Silt & Clay) %	41.2
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	89.3
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	41.2

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	97	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



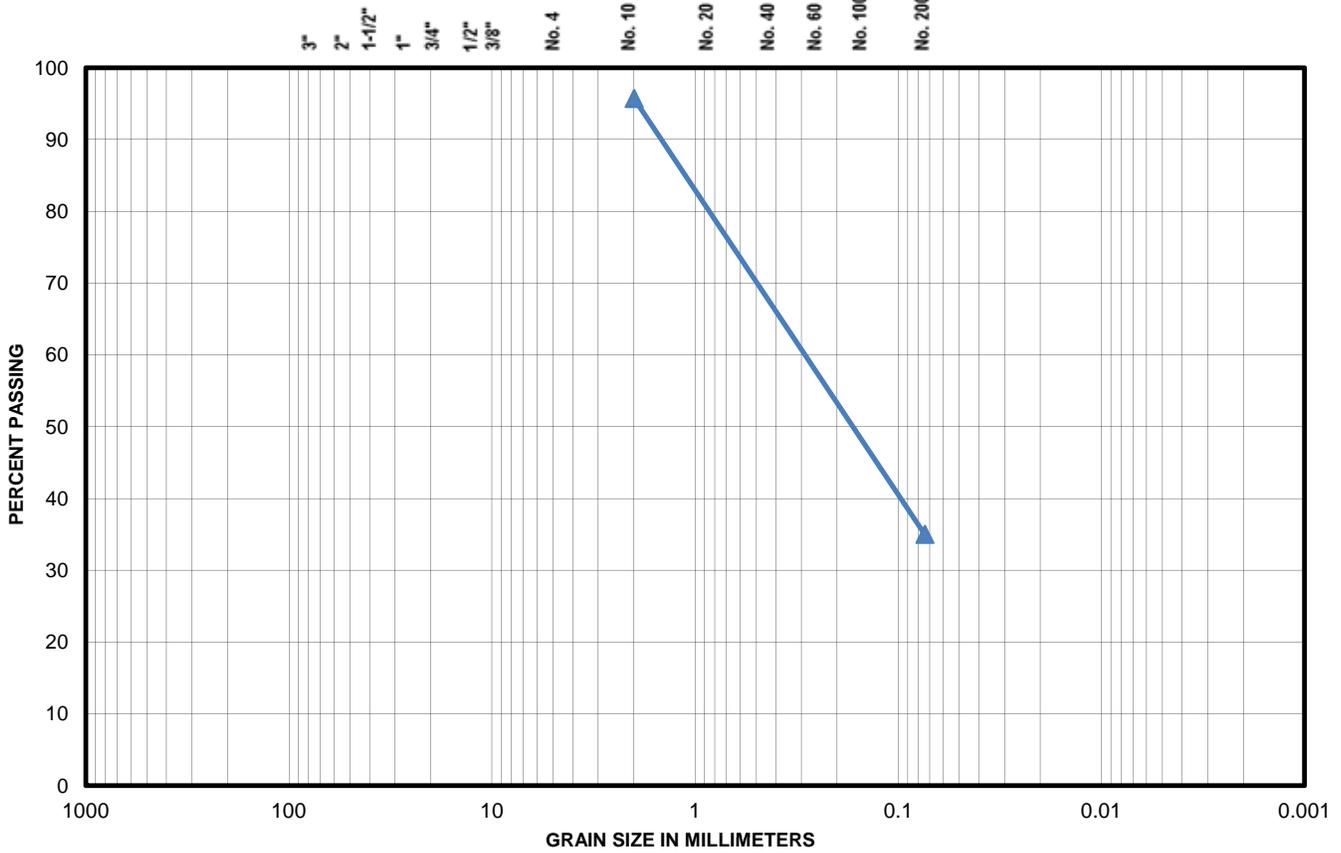
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-97. Sample No. 97 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	4.3	Sand %	60.7
USC Classification	SC-SM	Fines (Silt & Clay) %	35.0
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	95.7
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	35.0

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/21/2013
Project No.	16715-023-01	Tested By	sc
Boring No.	98	Checked By	sc
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



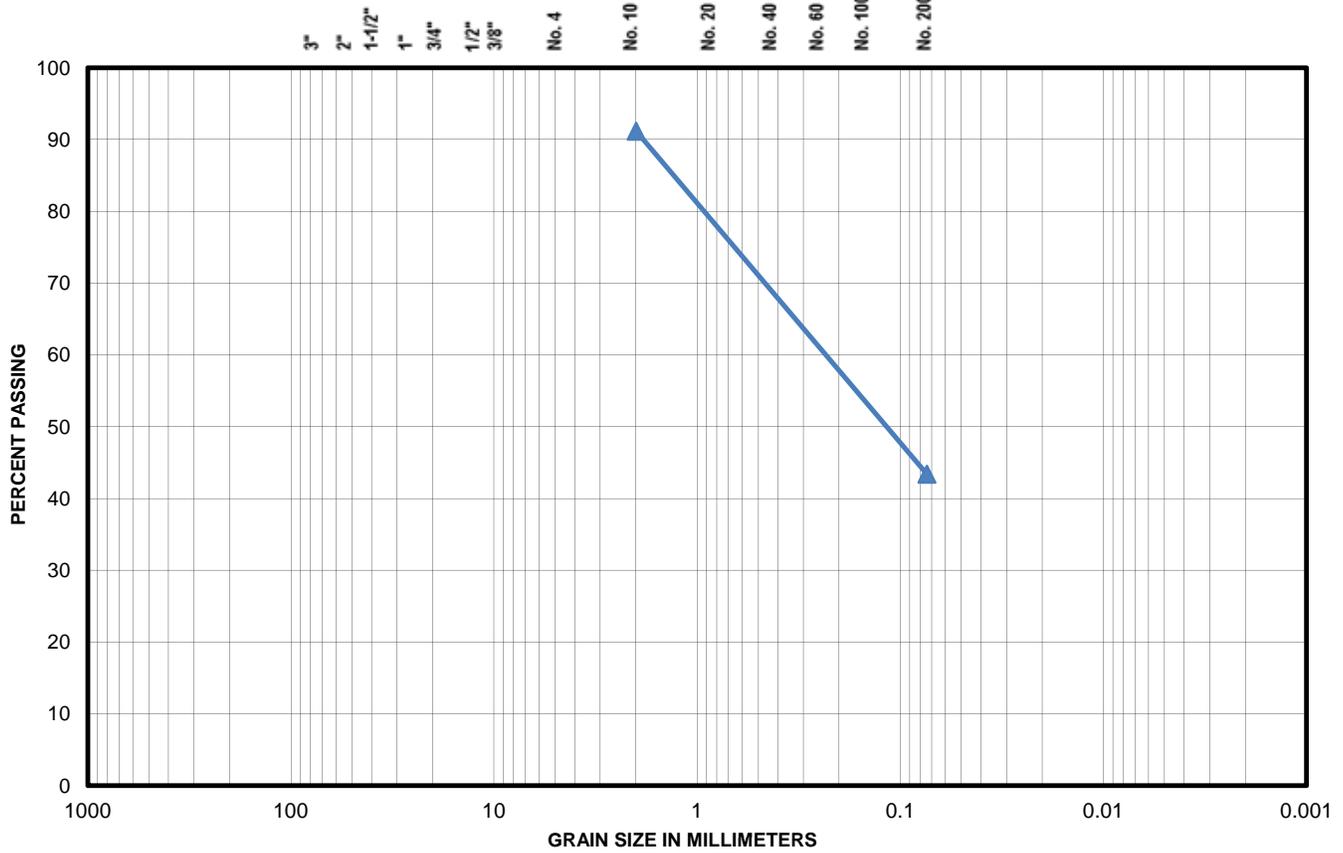
11955 Lakeland Park Blvd. Suite 100 Baton Rouge, La 70809

AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-98. Sample No. 98 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	8.8	Sand %	47.8
USC Classification	SC-SM	Fines (Silt & Clay) %	43.4
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	91.2
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	43.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	99	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.



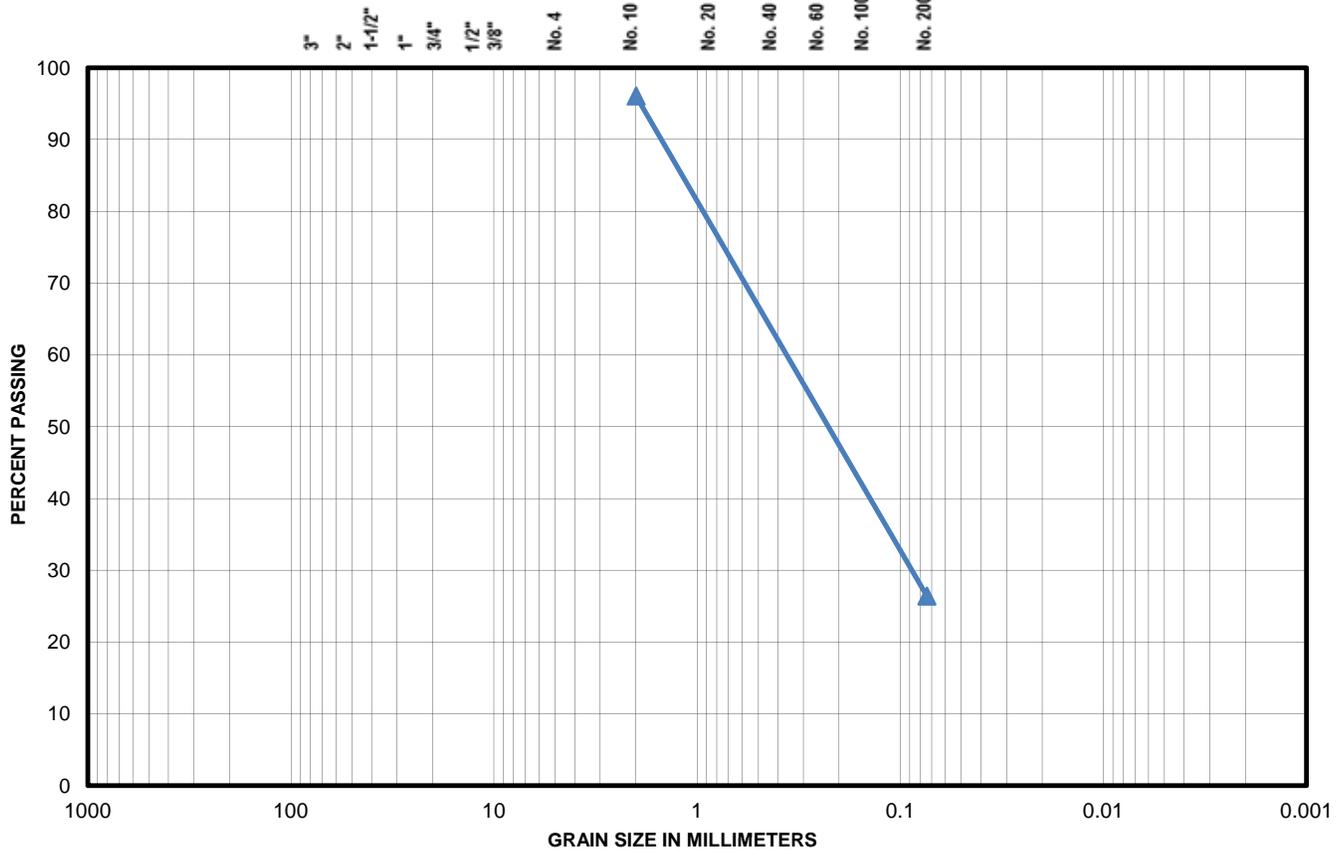
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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-99. Sample No. 99 Test Results

U.S. STANDARD SIEVE SIZE



COBBLES	GRAVEL	SAND		SILT	CLAY
		COARSE	FINE		

Shell %	3.9	Sand %	69.7
USC Classification	SC-SM	Fines (Silt & Clay) %	26.4
Description	Gray silty clayey sand with shell fragments (SC-SM)		

Individual Sieve Data - % Passing			
3"	#N/A	No. 4	#N/A
2"	#N/A	No. 10	96.1
1 1/2"	#N/A	No. 20	#N/A
1"	#N/A	No. 40	#N/A
3/4"	#N/A	No. 60	#N/A
1/2"	#N/A	No. 100	#N/A
3/8"	#N/A	No. 200	26.4

Project	LDNR - Bayou Bonfouca Sediment Samp	Date Tested	6/20/2013
Project No.	16715-023-01	Tested By	SC
Boring No.	100	Checked By	SC
Source/Depth (feet)	0 - 0.5	Sieve Type	Wet Sieve

NOTE: Test was performed in general accordance with the referenced test method. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations or generated by separate operations or processes. This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc.

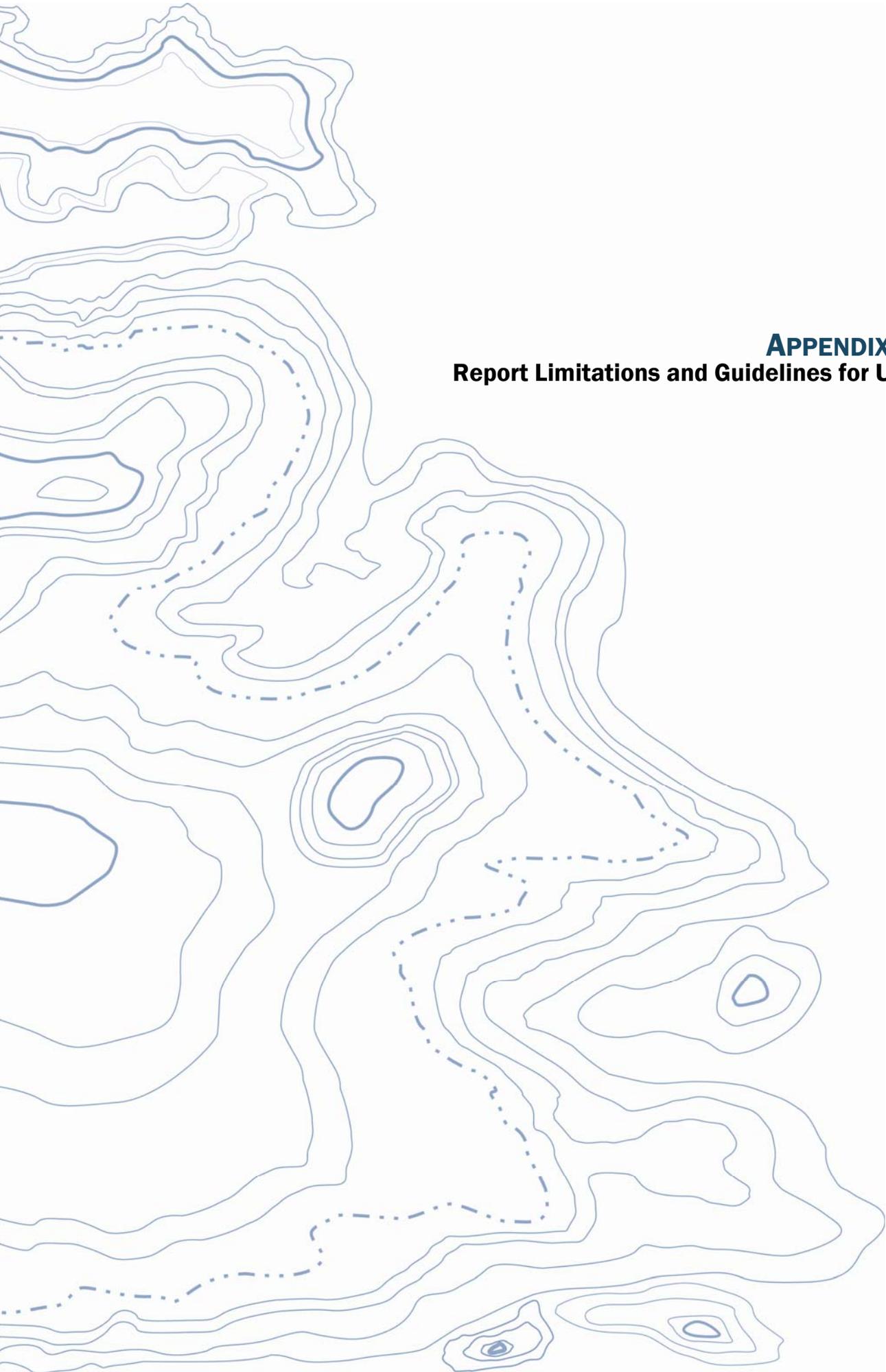


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AASHTO T 27 SOIL PARTICLE SIZE ANALYSIS

LDNR - Bayou Bonfouca Sediment Sampling

Figure B-100. Sample No. 100 Test Results



APPENDIX C
Report Limitations and Guidelines for Use

APPENDIX C REPORT LIMITATIONS AND GUIDELINES FOR USE

This appendix provides information to help you manage your risks with respect to the use of this report.

Geotechnical Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for Coast & Harbor Engineering and the State of Louisiana –Coastal Protection and Restoration Authority and their authorized agents and regulatory agencies. The information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. No party other than Coast & Harbor Engineering and the State of Louisiana –Coastal Protection and Restoration Authority may rely on the product of our services unless we agree to such reliance in advance and in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted geotechnical practices in this area at the time this report was prepared. Use of this report is not recommended for any purpose or project except the one originally contemplated.

A Geotechnical Engineering or Geologic Report Is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the Bayou Bonfouca Sediment Sampling project, an extension of the Bayou Bonfouca Marsh Creation Project (PO-104), in St. Tammy Parish, Louisiana. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

For example, changes that can affect the applicability of this report include those that affect:

- the function of the proposed structure;
- elevation, configuration, location, orientation or weight of the proposed structure;
- composition of the design team; or
- project ownership.

If important changes are made after the date of this report, we recommend that GeoEngineers be given the opportunity to review our interpretations and recommendations. Based on that review, we can provide written modifications or confirmation, as appropriate.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Most Geotechnical and Geologic Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies the specific subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an informed opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ, sometimes significantly, from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Geotechnical Engineering Report Recommendations Are Not Final

The construction recommendations included in this report are preliminary and should not be considered final. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers is unable to assume responsibility for the recommendations in this report without performing construction observation.

We recommend that you allow sufficient monitoring, testing and consultation during construction by GeoEngineers to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

A Geotechnical Engineering or Geologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by members of the design team or by contractors can result in costly problems. GeoEngineers can help reduce the risks of misinterpretation by conferring with appropriate members of the design team after submitting the report, reviewing pertinent elements of the design team's plans and specifications, participating in pre-bid and preconstruction conferences, and providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. The logs included in a geotechnical engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Photographic or electronic reproduction is acceptable, but separating logs from the report can create a risk of misinterpretation.

Give Contractors a Complete Report and Guidance

To help prevent costly problems associated with unanticipated subsurface conditions, we recommend giving contractors the complete geotechnical engineering or geologic report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report's accuracy is limited. In addition, encourage them to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer.

Contractors Are Responsible for Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.

Read These Provisions Closely

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. Without this understanding, there may be expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you need to know more how these "Report Limitations and Guidelines for Use" apply to your project or site.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

Have we delivered World Class Client Service?
Please let us know by visiting [www. geoengineers.com/feedback](http://www.geoengineers.com/feedback).

