

- Geotechnical Engineering
- Construction Materials Testing

PROJECT NAME: Anchorage Basin Sand Source Investigation

CLIENT: HDR Engineering, Inc.

BORING ID.: AA-03

DESCRIPTION: Anchorage Basin Borrow Source Area

PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)		
-30' to -31' NAVD	-33' to -34' NAVD	-36' to -37' NAVD
0.52	0.14	0.55

ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL		
	-30' to -31' NAVD	-33' to -34' NAVD	-36' to -37' NAVD
#10	100.00	100.00	100.00
#18	98.86	99.53	99.00
#35	98.13	99.25	98.56
#60	97.41	98.88	97.78
#70	96.85	98.39	96.67
#100	92.82	90.85	67.32
#120	81.78	72.05	43.12
#170	61.66	48.20	18.91
#200	55.17	43.91	14.09
STATISTICS (EXCLUDING SHELL)			
MEDIAN GRAIN SIZE (mm)	N/A	0.09	0.14
MEAN GRAIN SIZE (mm)	N/A	N/A	0.13
SORTING (σ)	N/A	N/A	N/A

*The -#10 material was utilized as the total sample for Grain Size Distribution Curve calculations.



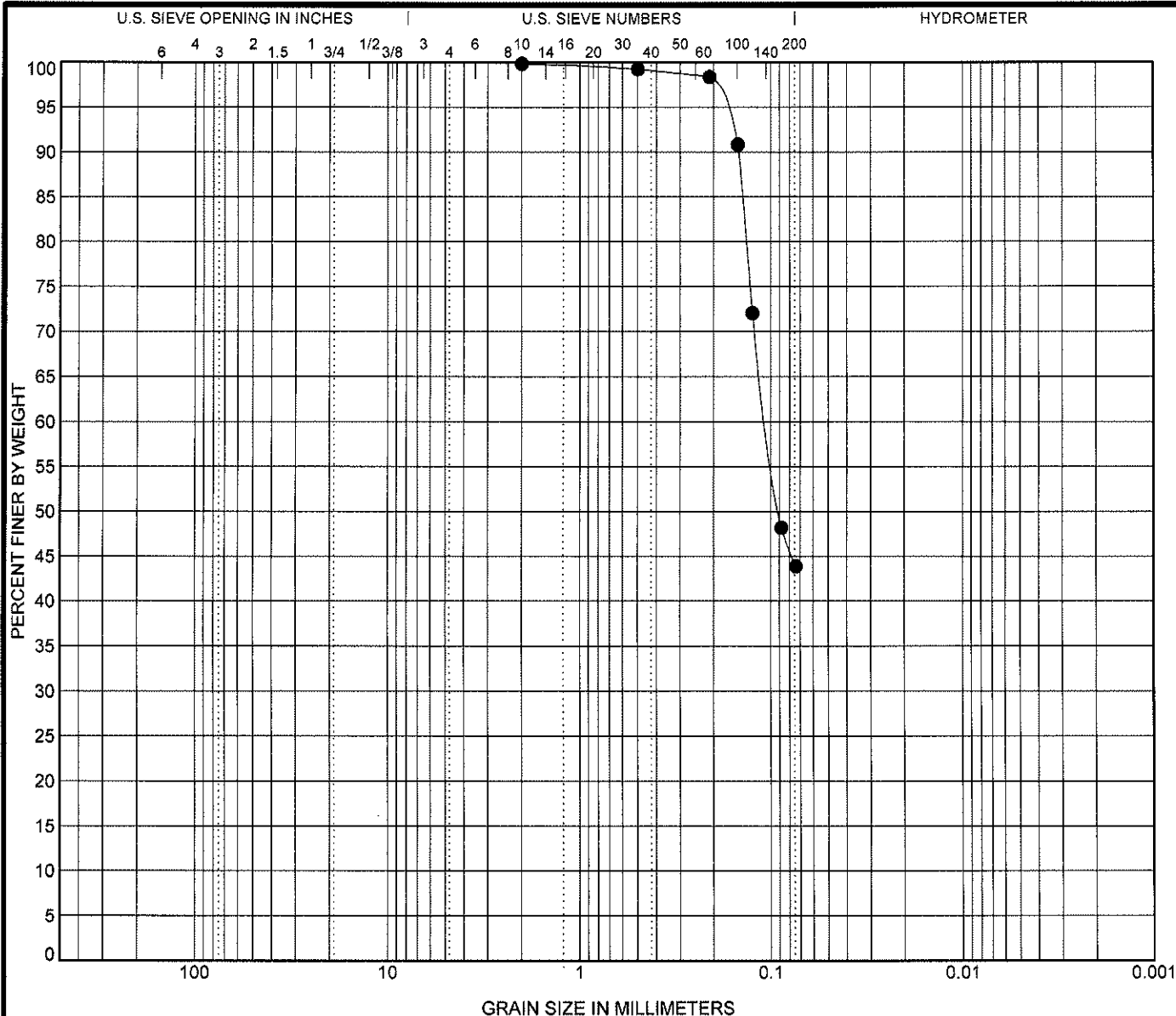
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CLIENT: HDR Engineering, Inc.
BORING ID.: AA-03
DESCRIPTION: Anchorage Basin Borrow Source Area

PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)		
-39' to -40' NAVD	-42' to -43' NAVD	-45' to -46' NAVD
5.29	0.07	0.16

ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL		
	-39' to -40' NAVD	-42' to -43' NAVD	-45' to -46' NAVD
#10	100.00	100.00	100.00
#18	91.52	99.78	99.59
#35	89.74	99.64	99.24
#60	88.36	99.25	98.46
#70	86.96	98.61	96.84
#100	73.12	89.69	29.99
#120	61.46	73.00	13.49
#170	50.59	54.20	4.43
#200	48.04	50.03	2.98
STATISTICS (EXCLUDING SHELL)			
MEDIAN GRAIN SIZE (mm)	0.08	0.07	0.17
MEAN GRAIN SIZE (mm)	N/A	N/A	0.17
SORTING (σ)	N/A	N/A	0.30

*The -#10 material was utilized as the total sample for Grain Size Distribution Curve calculations.



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● AA-03	(-33' to -34' NAVD)	Borrow Area (-33' to -34' NAVD)					

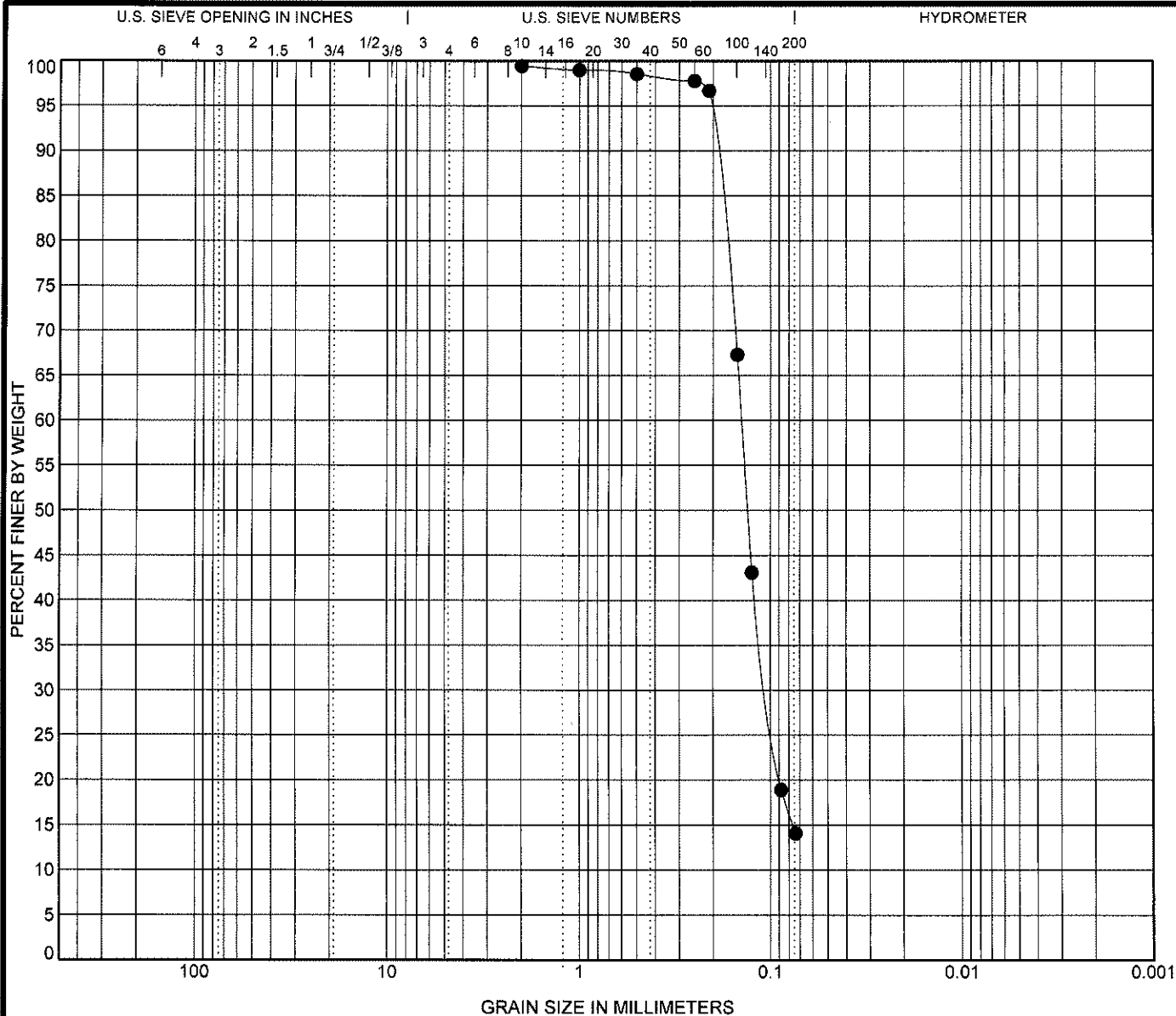
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-03	(-33' to -34' NAVD)	2	0.105			0.0			



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GRAIN SIZE DISTRIBUTION

Project: Anchorage Basin Sand Source Investigation
Location: Anchorage Basin; Galveston, Texas
Number: G109112



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● AA-03	(-36' to -37' NAVD)	Borrow Area (-36' to -37' NAVD)					

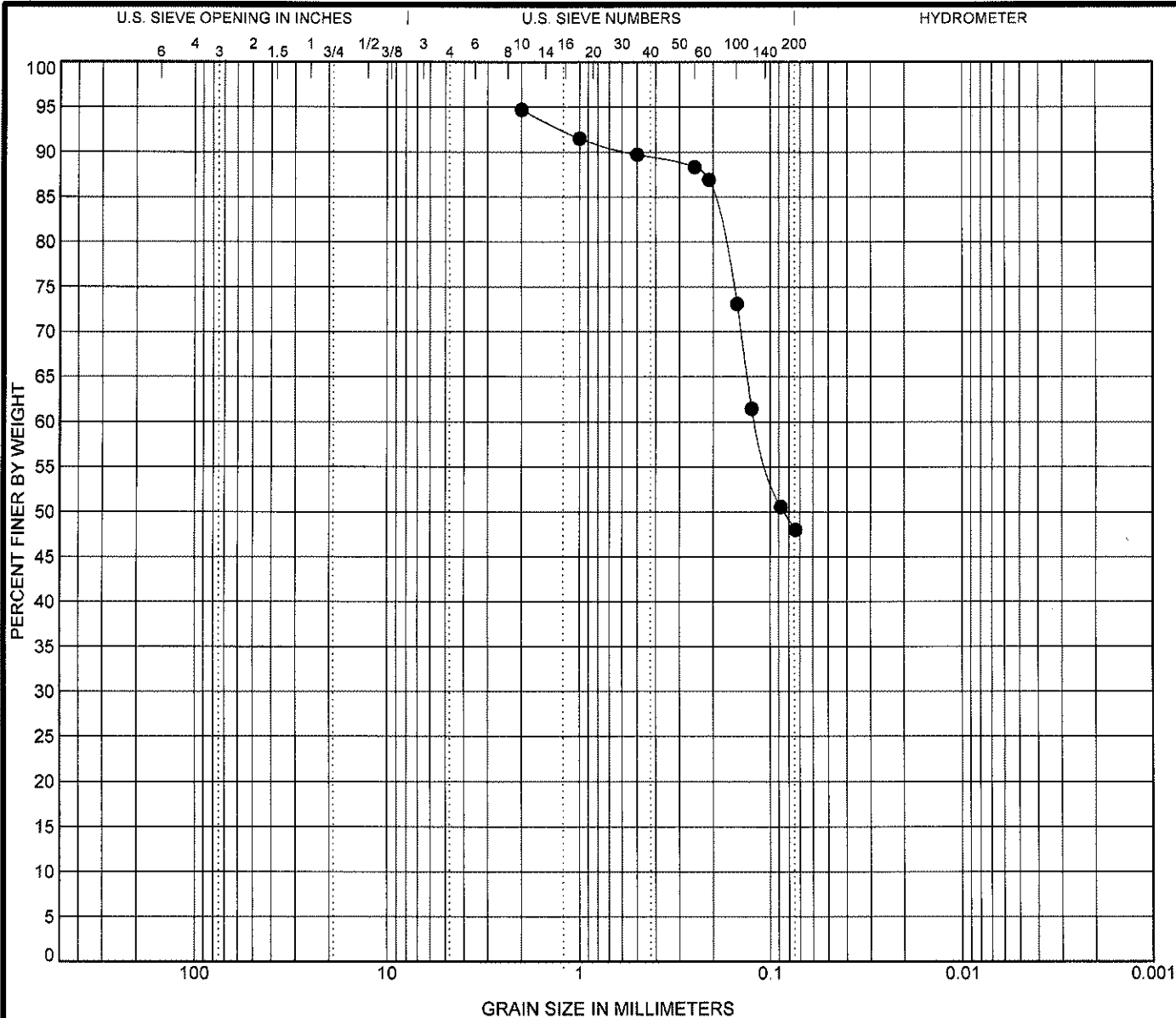
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-03	(-36' to -37' NAVD)	2	0.141	0.103		0.0			



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Project: Anchorage Basin Sand Source Investigation
Location: Anchorage Basin; Galveston, Texas
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● AA-03	(-39' to -40' NAVD)	Borrow Area (-39' to -40' NAVD)					

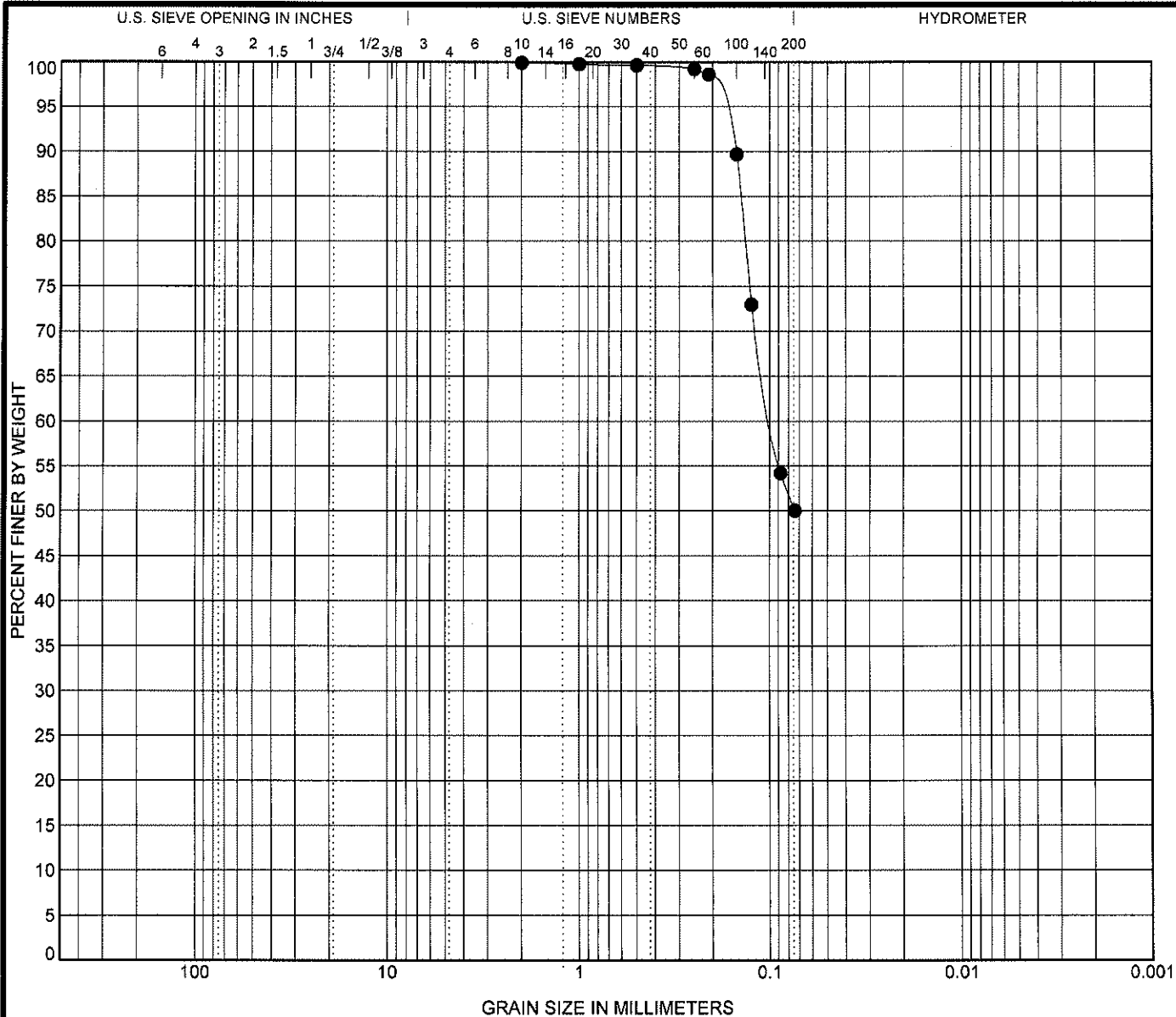
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-03	(-39' to -40' NAVD)	2	0.119			0.0			



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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen ID	Depth	Classification	LL	PL	PI	Cc	Cu
● AA-03	(-42' to -43' NAVD)	Borrow Area (-42' to -43' NAVD)					

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-03	(-42' to -43' NAVD)	2	0.098			0.0			



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LOG OF BORING AA-03

SHEET 2 OF 2



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PROJECT: Anchorage Basin Sand Source Investigation

LOCATION: Anchorage Basin; Galveston, Texas

NUMBER: G109112

DATE(S) DRILLED: 03/13/09 - 03/13/09

DRILLING METHOD(S):

Vibracore

GROUNDWATER INFORMATION:

SURFACE ELEVATION: -28' NAVD

DESCRIPTION OF STRATUM

SANDY CLAY, gray.

Same as above.

Same as above.

SANDY CLAY, gray.POORLY GRADED SAND, gray.

Same as above.

Boring was extended to an elevation of -46-feet NAVD during the drilling operations.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - POCKET TORVANE SHEAR STRENGTH

REMARKS:

Boring depth and location was determined by HDR Engineering, Inc. Boring operations were performed by Ocean Surveys, Inc.
GPS Coord. N. 13,698,824' E. 3,316,993'

LOG OF BORING G109112 PROP. ANCHORAGE BASIN SAND SOURCE GPJ ROCK_ETL_GDT 4/28/09