



- Geotechnical Engineering
- Construction Materials Testing

PROJECT NAME: Anchorage Basin Sand Source Investigation

CLIENT: HDR Engineering, Inc.

BORING ID.: AA-22

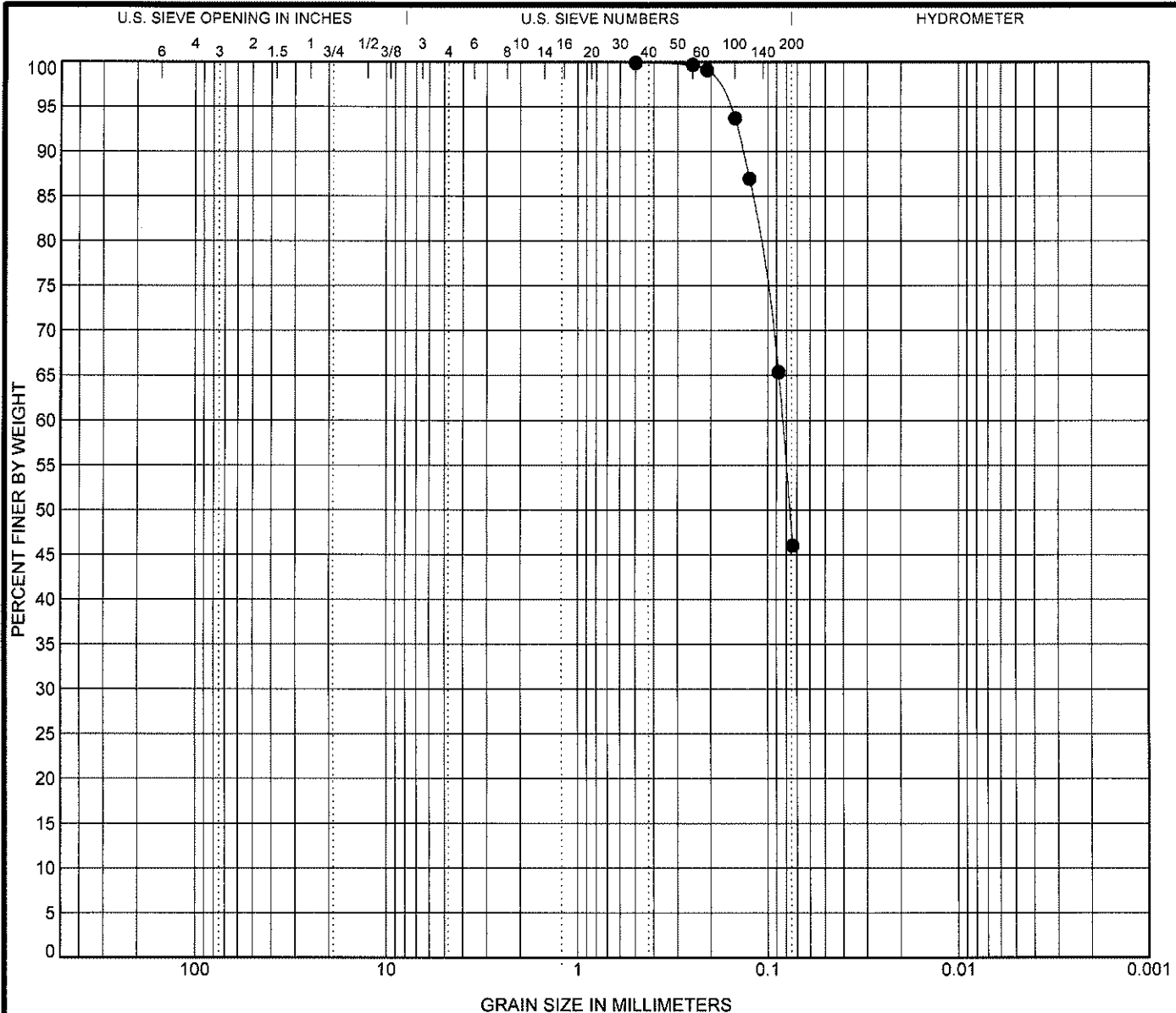
DESCRIPTION: Anchorage Basin Borrow Source Area

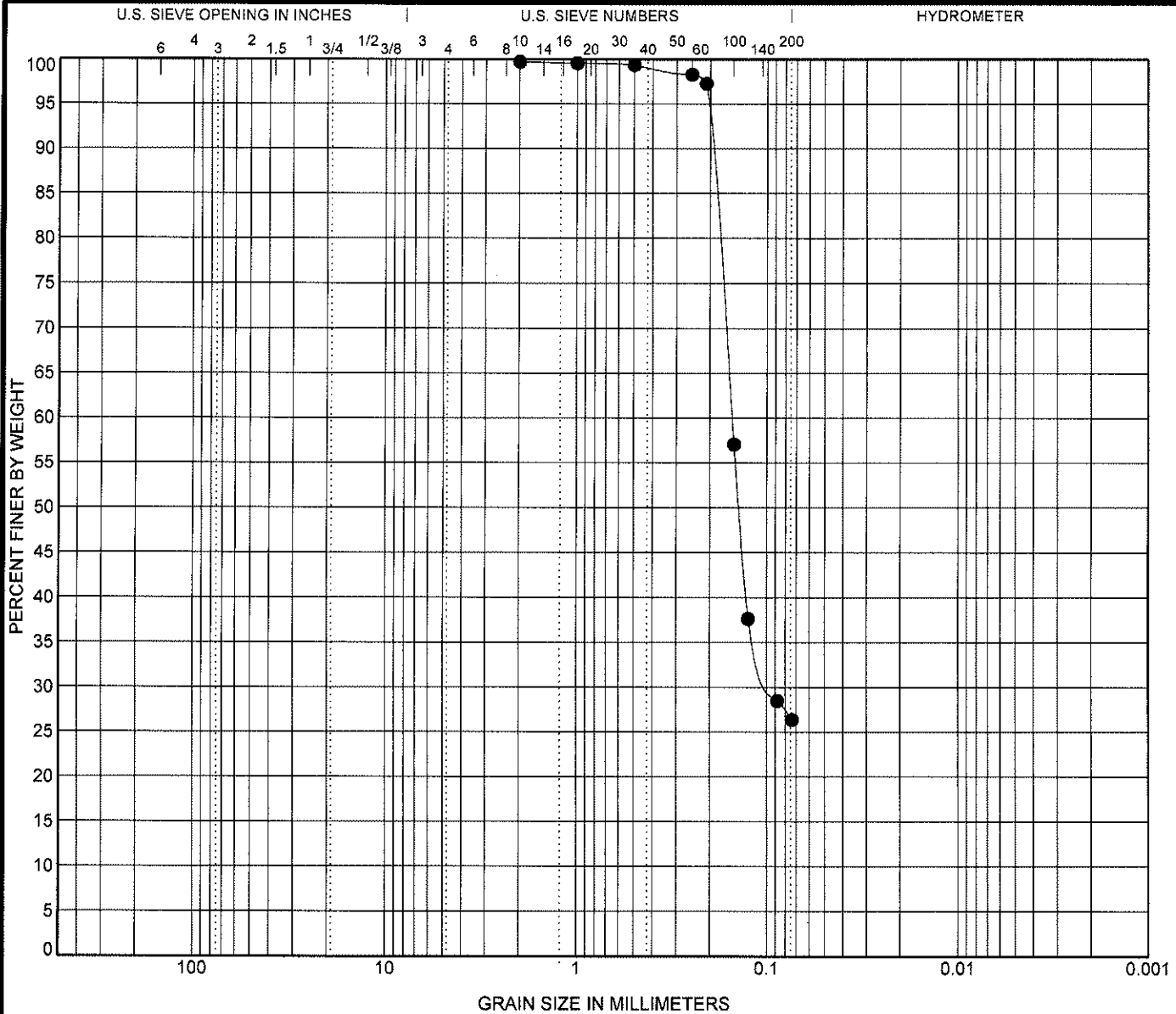
PERCENT SHELL BY WEIGHT (BASED ON #10 SIEVE)				
-31' to -32' NAVD	-32' to -33' NAVD	-33' to -34' NAVD	-35' to -36' NAVD	-38' to -39' NAVD
0.02	N/A	0.26	0.00	0.84

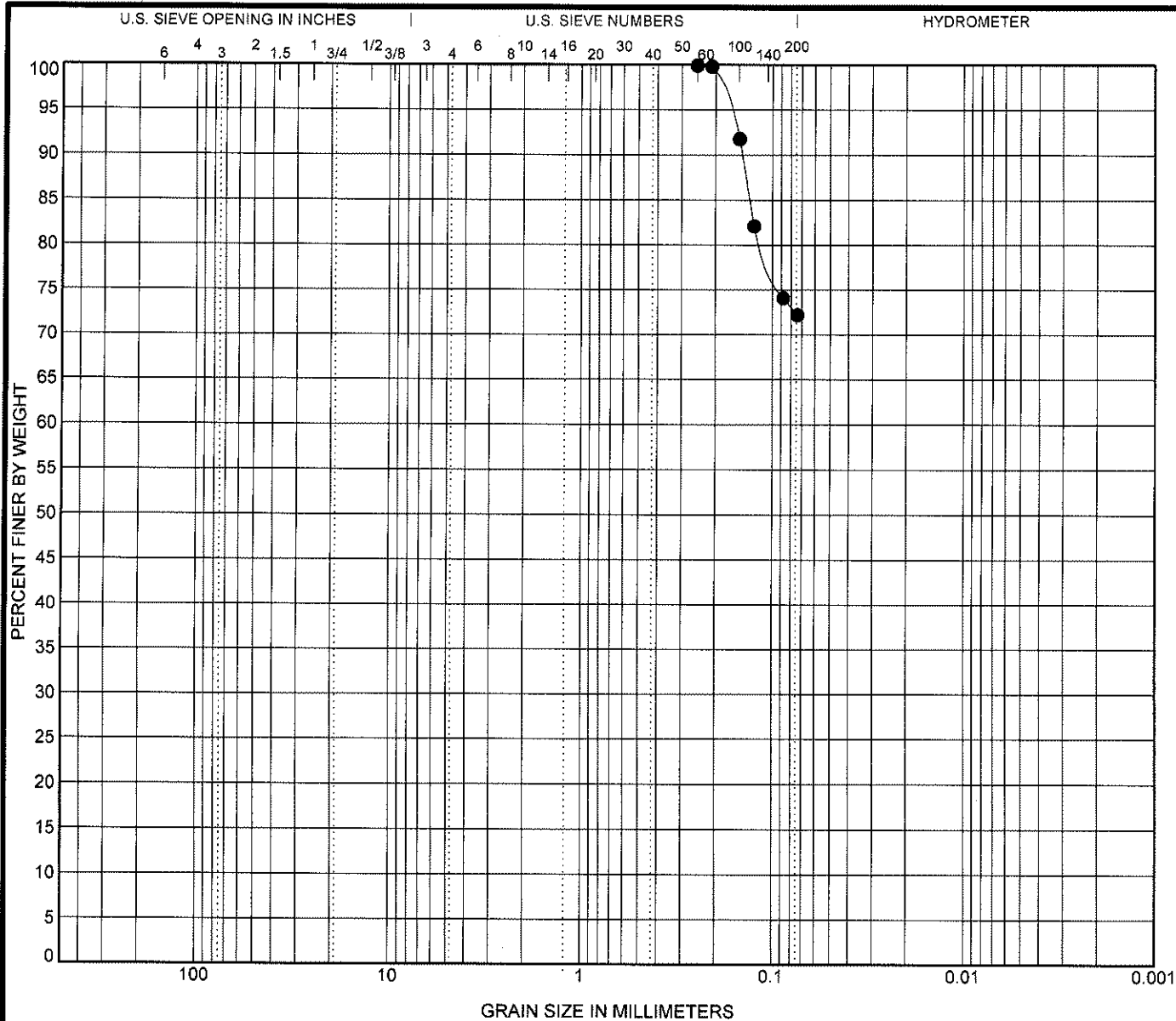
ASTM MESH	% FINER BY WEIGHT AFTER REMOVING SHELL				
	-31' to -32' NAVD	-32' to -33' NAVD	-33' to -34' NAVD	-35' to -36' NAVD	-38' to -39' NAVD
#10	100.00	N/A	100.00	100.00	100.00
#18	99.98	N/A	99.58	99.99	99.02
#35	99.94	N/A	99.38	99.98	98.88
#60	99.72	N/A	98.32	99.92	98.46
#70	99.12	N/A	97.30	99.80	97.79
#100	93.74	N/A	57.08	91.79	62.05
#120	86.98	N/A	37.65	82.10	46.44
#170	65.38	N/A	28.51	74.11	39.74
#200	46.05	93.30	26.39	72.22	38.56
STATISTICS (EXCLUDING SHELL)					
MEDIAN GRAIN SIZE (mm)	0.08	N/A	0.15	N/A	0.14
MEAN GRAIN SIZE (mm)	N/A	N/A	N/A	N/A	N/A
SORTING (σ)	N/A	N/A	N/A	N/A	N/A

*AA-22; -32' to -33' NAVD was only passed through the #10 sieve.

*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-22	(-35' to -36' NAVD)	Borrow Area (-35' to -36' NAVD)					

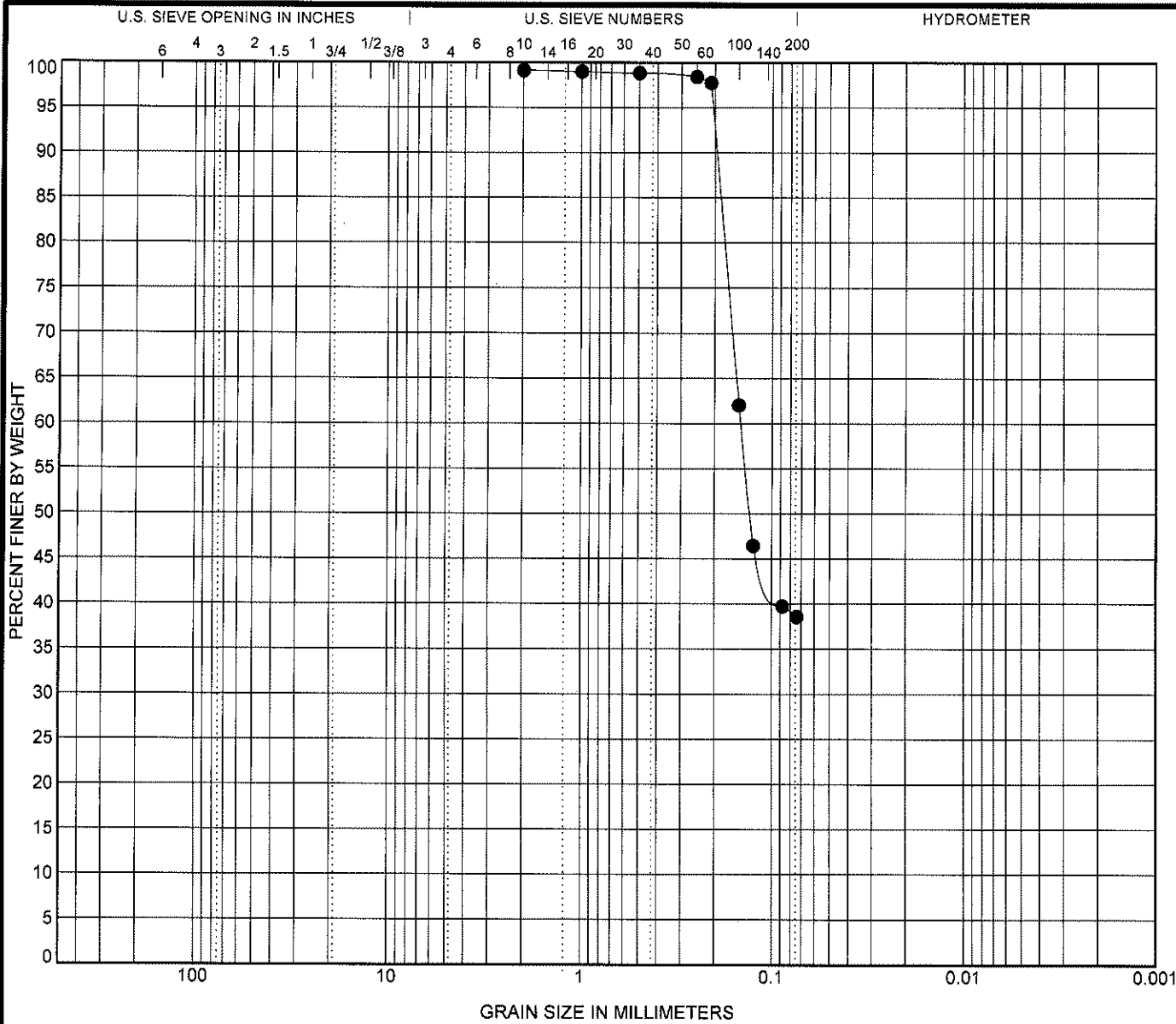
Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-22	(-35' to -36' NAVD)	0.25				0.0			



Rock Engineering & Testing Lab., Inc.
 6817 Leopard St.
 Corpus Christi, TX 78409
 Telephone: (361) 883-4555
 Fax: (361) 883-4711

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-22	(-38' to -39' NAVD)	Borrow Area (-38' to -39' NAVD)					

Specimen ID	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● AA-22	(-38' to -39' NAVD)	2	0.146			0.0			



Rock Engineering & Testing Lab., Inc.
 6817 Leopard St.
 Corpus Christi, TX 78409
 Telephone: (361) 883-4555
 Fax: (361) 883-4711

GRAIN SIZE DISTRIBUTION

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

U.S. GRAIN SIZE G109112 PROP. ANCHORAGE BASIN SAND SOURCE.GPJ US LAB.GDT. 4/13/09

LOG OF BORING AA-22

SHEET 1 OF 2



Rock Engineering & Testing Lab., Inc.
6817 Leopard St.
Corpus Christi, TX 78409
Telephone: (361) 883-4555
Fax: (361) 883-4711

CLIENT: HDR Engineering, Inc.
PROJECT: Anchorage Basin Sand Source Investigation
LOCATION: Anchorage Basin; Galveston, Texas
NUMBER: G109112

DATE(S) DRILLED: 03/10/09 - 03/10/09

FIELD DATA		LABORATORY DATA							DRILLING METHOD(S): Vibracore			
SOIL SYMBOL	Elevation, Ft. [NAVD]	SAMPLE NUMBER	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: TONS/SQ FT PERCENT RECOVERY/ ROCK QUALITY DESIGNATION	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION:
						LL	PL	PI				
SURFACE ELEVATION: -31' NAVD												
DESCRIPTION OF STRATUM												
	21											
	22											
	23											
	24											
	25											
	26											
	27											
	28											
	29											
	30											
	31											
	32	S-1									46	CLAYEY SAND, gray.
	33	S-2									93	SANDY CLAY, gray.
	34	S-3									26	SILTY CLAYEY SAND, gray.
	35	S-4										Same as above.
	36	S-5									72	SANDY CLAY, gray.
	37	S-6										Same as above.
	38	S-7										Same as above.
	39	S-8									39	CLAYEY SAND, gray.
	40	S-9										Same as above.

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. 13,700,020' E. 3,321,179'

LOG OF BORING G109112 PROP ANCHORAGE BASIN SAND SOURCE GPJ ROCK ETL GDT 42809

LOG OF BORING AA-22

SHEET 2 OF 2



Rock Engineering & Testing Lab., Inc.
 6817 Leopard St.
 Corpus Christi, TX 78409
 Telephone: (361) 883-4555
 Fax: (361) 883-4711

CLIENT: HDR Engineering, Inc.
 PROJECT: Anchorage Basin Sand Source Investigation
 LOCATION: Anchorage Basin; Galveston, Texas
 NUMBER: G109112

DATE(S) DRILLED: 03/10/09 - 03/10/09

DRILLING METHOD(S):

Vibracore

GROUNDWATER INFORMATION:

SURFACE ELEVATION: -31' NAVD

DESCRIPTION OF STRATUM

Same as above.

Boring was extended to an elevation of -41-feet NAVD during the drilling operations.

REMARKS:

Boring depth and location was determined by HDR Engineering, Inc. Boring operations were performed by Ocean Surveys, Inc.
 GPS Coord. N. 13,700,020' E. 3,321,179'

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