LOCATION: See Plate 1
COORDINATES: Not Available
SURFACE EL.: Not Available

DEPTH, FT	WATER LEVEL / SYMBOL / SAMPLES	BLOWS PER FOOT	STRATUM DESCRIPTION	STRATUM DEPTH, FT
			SILTY CLAY, brown, with organic material	
5			SAND and SHELL intermixed, brown	5.0
			SANDY CLAY, gray, with organic material and shell fragments	6.0
			CLAYEY SAND, gray	9.0
10			SANDY CLAY, dark gray, with shell fragments	10.0
			- with sand pockets, 12' to 13'	
			SILTY SAND, brown - with shell fragments to 20' - with clay pockets, 14.5' to 24'	13.0
15		WOH		
		WOH		
20		WOH		
		WOH		
		7	- with organic material below 22.5'	
25			CLAY, gray	24.0
			- with shell fragments below 28'	
30			SANDY CLAY, brown and gray	30.0
35			SILTY CLAY, brown and gray, with silt partings	34.0
			- brown and red, 37' to 40'	

CLASSIFICATION: UNIT DRY WT, PCF | PASSING NO. 200 SIEVE, % | WATER CONTENT, % | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX (PI)

SHEAR STRENGTH
□ Penetrometer ◇ Torvane △ Field Vane
Unconfined ▼ Triaxial ● Miniature Vane ▲
KIPS PER SQ FT
0.5 1.0 1.5 2.0 2.5

NOTES:
2. Terms and symbols defined on Plate ?.

DATE: January 15, 2003
TOTAL DEPTH: 56'
CAVED DEPTH: Not Applicable
DRY AUGER: Not Applicable
WET ROTARY: 0' to 56'
BACKFILL: Cement-Bentonite Grout
LOGGER: J. Phipps

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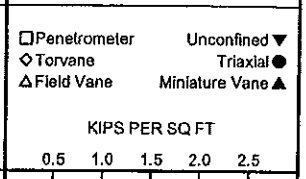
LOG OF BORING NO. B-42
LNG PROCESS AREA, MARINE AREA, AND PERIMETER DIKES
EXXONMOBIL DEVELOPMENT COMPANY
GOLDEN PASS, SABINE, TEXAS

LOCATION: See Plate 1
COORDINATES: Not Available
SURFACE EL.: Not Available

DEPTH, FT	WATER LEVEL	SYMBOL	SAMPLES	BLOWS PER FOOT	STRATUM DESCRIPTION	STRATUM DEPTH, FT	UNIT DRY WT, PCF	PASSING NO. 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)
					SILTY CLAY, red, with silt partings							
					- brown below 43'							
45					- with ferrous nodules, 46' to 56'							
50												
55						56.0						
60												
65												
70												
75												

CLASSIFICATION

SHEAR STRENGTH



NOTES:
2. Terms and symbols defined on Plate ?.

DATE: January 15, 2003
TOTAL DEPTH: 56'
CAVED DEPTH: Not Applicable
DRY AUGER: Not Applicable
WET ROTARY: 0' to 56'
BACKFILL: Cement-Bentonite Grout
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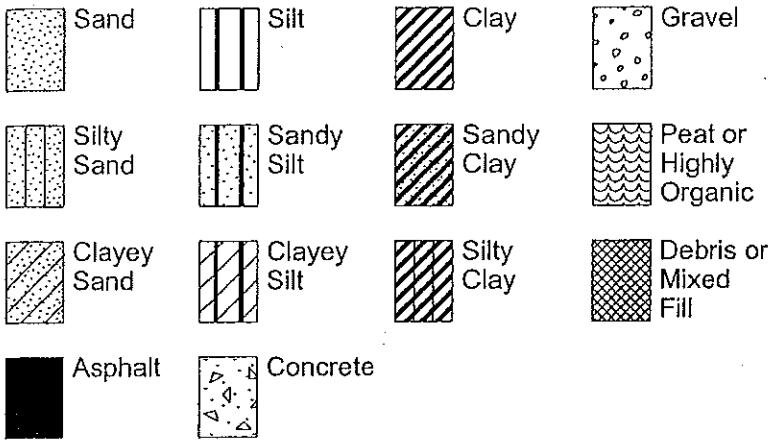
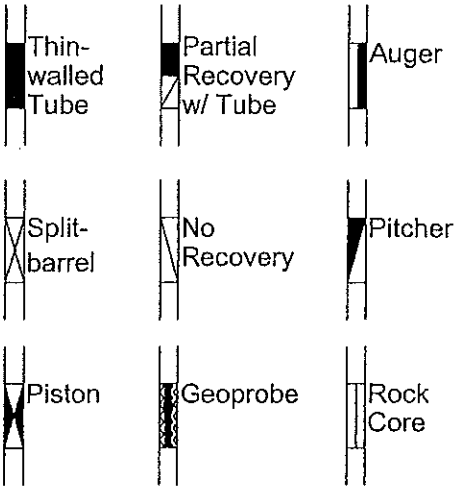
LOG OF BORING NO. B-42
LNG PROCESS AREA, MARINE AREA, AND PERIMETER DIKES
EXXONMOBIL DEVELOPMENT COMPANY
GOLDEN PASS, SABINE, TEXAS

FUGRO

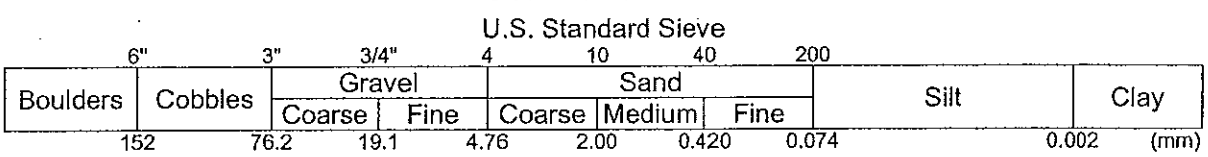
SOIL TYPES



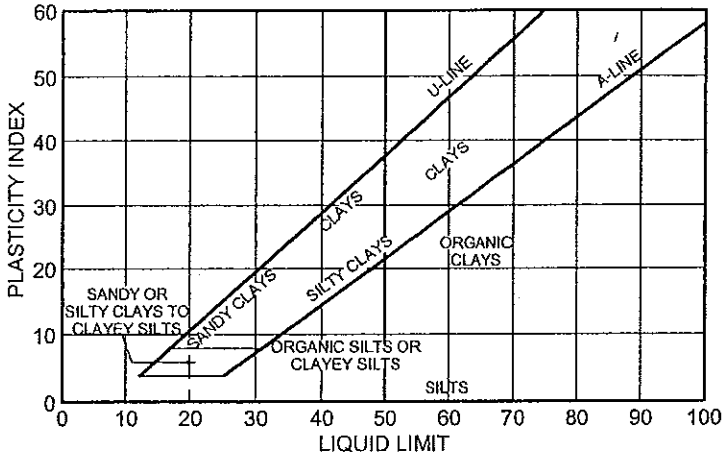
SAMPLER TYPES



SOIL GRAIN SIZE



PLASTICITY CHART



SOIL STRUCTURE

Slickensided	Having planes of weakness that appear slick and glossy.
Fissured	Containing shrinkage or relief cracks, often filled with fine sand or silt; usually more or less vertical.
Pocket	Inclusion of material of different texture that is smaller than the diameter of the sample.
Parting	Inclusion less than 1/8 inch thick extending through the sample.
Seam	Inclusion 1/8 inch to 3 inches thick extending through the sample.
Layer	Inclusion greater than 3 inches thick extending through the sample.
Laminated	Soil sample composed of alternating partings or seams of different soil type.
Interlayered	Soil sample composed of alternating layers of different soil type.
Intermixed	Soil sample composed of pockets of different soil type and layered or laminated structure is not evident.
Calcareous	Having appreciable quantities of carbonate.
Carbonate	Having more than 50% carbonate content.

TERMS AND SYMBOLS USED ON BORING LOGS

SOIL CLASSIFICATION (1 of 2)

FUGRO

STANDARD PENETRATION TEST (SPT)

A 2-in.-OD, 1-3/8-ID split spoon sampler is driven 1.5 ft into undisturbed soil with a 140-pound hammer free falling 30 in. After the sampler is seated 6 in. into undisturbed soil, the number of blows required to drive the sampler the last 12 in. is the Standard Penetration Resistance or "N" value, which is recorded as blows per foot as described below.

SPLIT-BARREL SAMPLER DRIVING RECORD

Blows Per Foot	Description
25	25 blows drove sampler 12 inches, after initial 6 inches of seating.
50/7"	50 blows drove sampler 7 inches, after initial 6 inches of seating.
Ref/3"	50 blows drove sampler 3 inches during initial 6-inch seating interval.
WOH	Weight of Hammer drove sampler 12 inches, without driving spoon.
WOR	Weight of Rod drove sampler 12 inches, without attaching hammer.

NOTE: To avoid damage to sampling tools, driving is limited to 50 blows during or after seating interval.

DENSITY OF GRANULAR SOILS

Descriptive Term	*Relative Density, %	**Blows Per Foot (SPT)
Very Loose	< 15	0 to 4
Loose	15 to 35	5 to 10
Medium Dense	35 to 65	11 to 30
Dense	65 to 85	31 to 50
Very Dense	> 85	> 50

*Estimated from sampler driving record.

**Requires correction for depth, groundwater level, and grain size.

STRENGTH OF COHESIVE SOILS

Term	Undrained Shear Strength, ksf	Blows Per Foot (SPT) (approximate)
Very Soft	< 0.25	0 to 2
Soft	0.25 to 0.50	2 to 4
Firm	0.50 to 1.00	4 to 8
Stiff	1.00 to 2.00	8 to 16
Very Stiff	2.00 to 4.00	16 to 32
Hard	> 4.00	> 32

SHEAR STRENGTH TEST METHOD

U - Unconfined Q = Unconsolidated - Undrained Triaxial

P = Pocket Penetrometer T = Torvane V = Miniature Vane F = Field Vane

HAND PENETROMETER CORRECTION

Our experience has shown that the hand penetrometer generally overestimates the in-situ undrained shear strength of over consolidated Pleistocene Gulf Coast clays. These strengths are partially controlled by the presence of macroscopic soil defects such as slickensides, which generally do not influence smaller scale tests like the hand penetrometer. Based on our experience, we have adjusted these field estimates of the undrained shear strength of natural, overconsolidated Pleistocene Gulf Coast soils by multiplying the measured penetrometer reading by a factor of 0.6. These adjusted strength estimates are recorded in the "Shear Strength" column on the boring logs. Except as described in the text, we have not adjusted estimates of the undrained shear strength for projects located outside of the Pleistocene Gulf Coast formations.

Information on each boring log is a compilation of subsurface conditions and soil or rock classifications obtained from the field as well as from laboratory testing of samples. Strata have been interpreted by commonly accepted procedures. The stratum lines on the logs may be transitional and approximate in nature. Water level measurements refer only to those observed at the time and places indicated, and can vary with time, geologic condition, or construction activity.

TERMS AND SYMBOLS USED ON BORING LOGS

SOIL CLASSIFICATION (2 of 2)