

Job No. 0401-2906 Completion Date 5/20/90 Time _____ Field Log of Boring 90-76

Elevation _____ Location Disposal Area No. 4 Driller R. AGUILAR

Lab. Tests	Soil Sample			Depth (ft)	Sample	Blows	Torvane Penet.	Logger <u>W. CUTSHALL</u>	
	No.	Depth	Type					Comments	Description of Material
									Silty clay, firm, light gray
	1	3-5	Q				0.75		
	2	5-7	Q	5			2.0		- very stiff sandy clay layer 5.0' to 6.5'
	3	7-9	Q				1.25		- with clay seams 6.5' to 7.0'
	4	9-11	Q	10			1.75		- stiff below 6'
	5	11-13	J						(11.0')
	6	13.5-15	J	15	X	3-5-5			Silty sand, loose, light brown
	7	15-17	J						- with silty clay layer 13.5' to 15'
	8	19-20.5	J	20	X	3-4-4			- gray below 19'
	9	24-25	J	25	X	6-8-10			(24.0')
	10	26-28	Q				2.5		clay, very stiff, gray
	11	28-30	Q						- with clayey silt layer 24' to 24.5'
				30					(28.0')
	12	33.5-35	J	35	X	2-4-5			Silty sand, loose, gray
	13	36-38	Q				1.5		- with clay seams 31.0' to 32.0'
									- with silty clay seams below 33.5'
									(36.0')
	14	38-40	Q	40			1.5		clay, stiff, gray
									(40.0')

Remarks: Casing Set to 5' depth

Boring Sealed? w/cuttings

Dry Auger _____ to _____ ft

Wet Rotary 0 to 40 ft

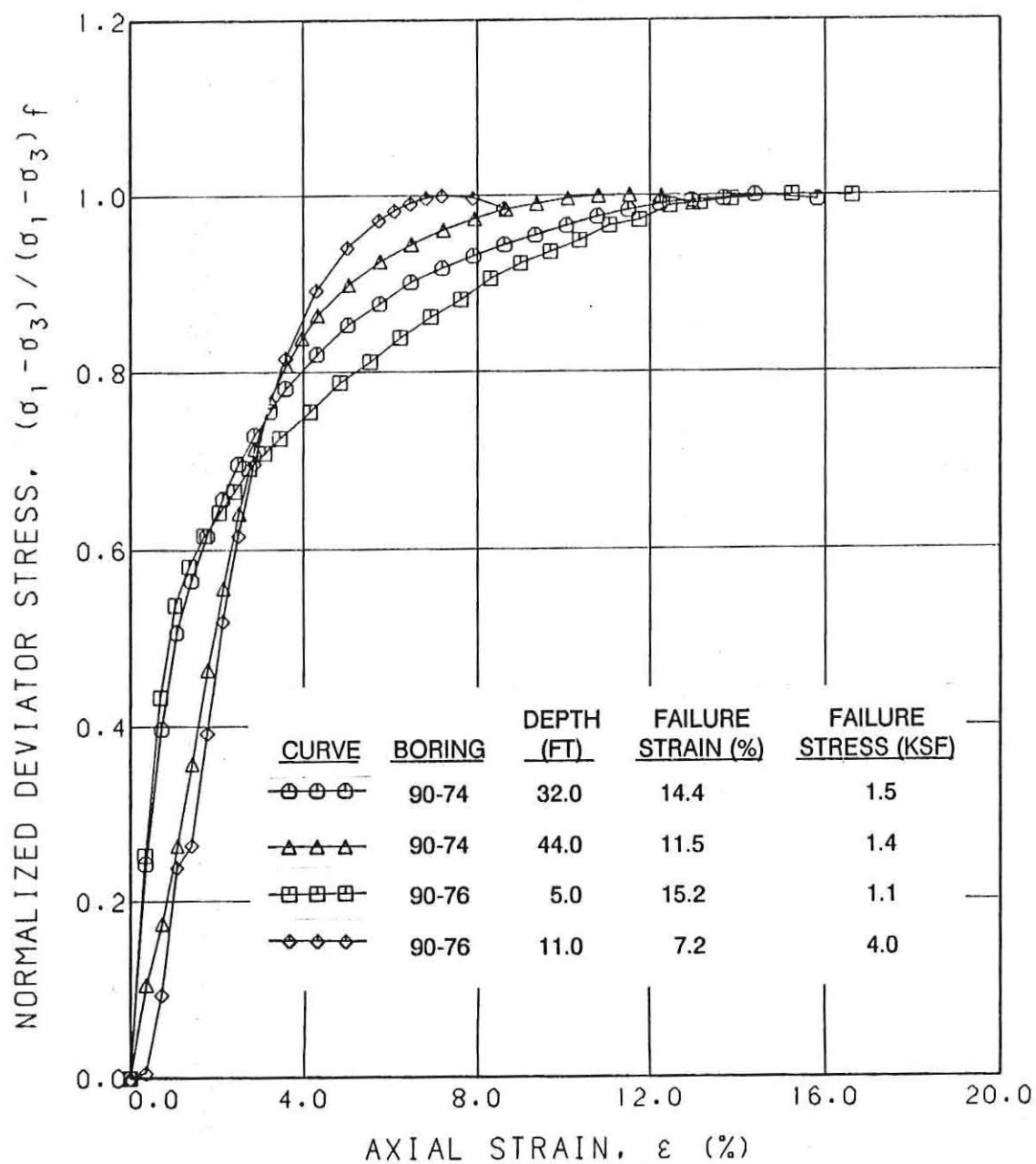
Water First Noticed _____ ft

Depth to Water +0.5' Caved at _____ Date _____ Time _____ ; _____

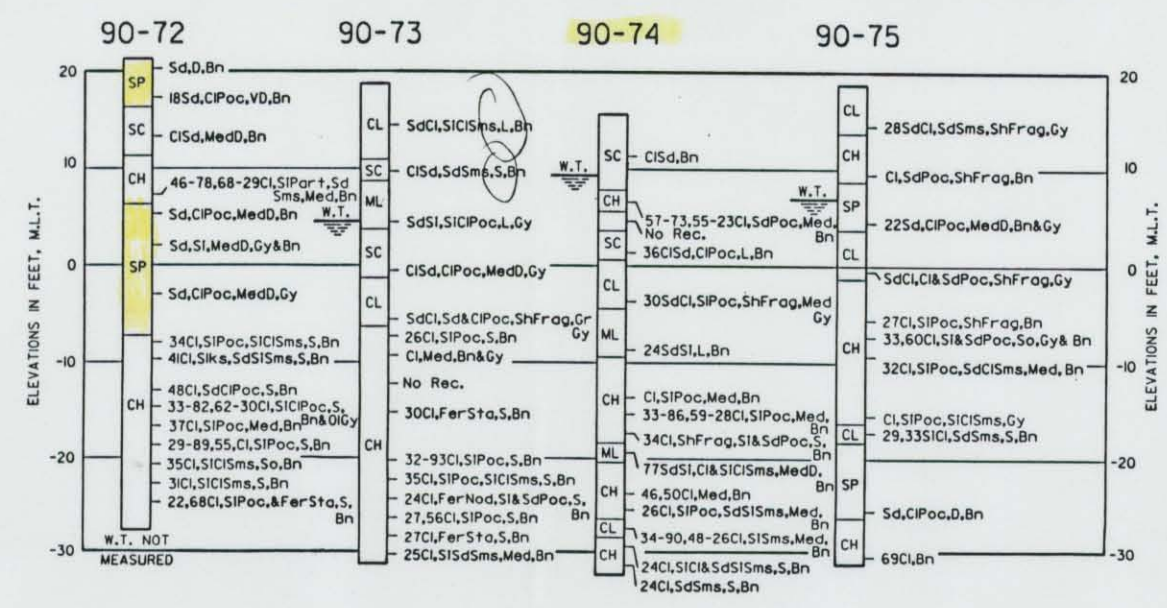
SUMMARY OF TEST RESULTS
Galveston District, Corps of Engineers
Delivery Order No. 0016
Brazos Island Harbor
Brownsville Ship Channel

Boring Number	Sample Number	Sample Depth (ft)	Visual Classification	USCS	MC (%)	UDW (pcf)	LL	PL	PI	Gradation, % Passing Sieve No. 4 10 40 200	UNC Su (ksf)	TV Su (ksf)
El 18.7												
90-75	1J	3.5-5	Gray SANDY CLAY w/ sand seams & shell fragments	CL	28	?	Sand - coarse					
90-75	2J	8.5-10	Brown CLAY w/ sand pockets & shell fragments	CH		?						
90-75	3J	13.5-15	Brown and gray fine SAND w/ clay pockets Med. P.	SP	22					100 88 34		
90-75	4J	18.5-20	Gray SANDY CLAY w/ cl and sa pckts & shell frags	CL						66		
90-75	5J	23.5-25	Brown CLAY w/ si pockets & shell fragments	CH	27							
90-75	6Q	25-27	Soft gray and brown CLAY w/fe stns and si & sa pckts	CH	33		60			100 98 93		0.3
90-75	7Q	27-29	Firm brown CLAY w/si pckts, sacl sms & fe stns	CH	32							
90-75	8J	3.5-35	Gray CLAY w/ silt pockets & silty clay seams	CH								
90-75	9Q	35-37	Stiff brown SILTY CLAY w/sa sms & fe stns	CL	29		33			100 99 88		
90-75	10J	43.5-45	Brown fine SAND w/ clay pockets Dense.	SP								
90-75	11J	48.5-50	Brown CLAY	CH	69							
90-76	1Q	3-5	Firm brown CLAY w/ silt pockets	CL	24		48	23		100 99 99	0.6	0.5
90-76	2Q	5-7	Brown SILTY CLAY w/ si pckts, cl sms & fe stns	CL	22							
90-76	3Q	7-9	Stiff brown CLAY w/ fe stns & si pckts	CH	33							
90-76	4Q	9-11	Very stiff brown CLAY w/ ferrous nodules	CH	38		64	32		100	2.0	
90-76	5J	11-13	Stiff brown CLAY w/silty sand pckts & shell frags	CH								
90-76	6J	13.5-15	Brown CLAY w/ ferrous deposits	CH								
90-76	7J	15-17	Brown fine SANDY SILT w/ clay pockets	ML	27					100 80		
90-76	8J	19-20.5	Brown CLAYEY SILT w/ clay pockets	ML								
90-76	9J	24-25	Brown CLAY	CH	28							
90-76	10Q	26-28	Stiff brown CLAY w/ ferrous stns & silt pckts	CL	31		49	27				
90-76	11	28-30	Olive gray fine SILT w/ free water	ML	27							
90-76	12J	33.5-35	Olive gray CLAY w/ silt pockets	CH						100 99 99		
90-76	13Q	36-38	Firm brown CLAY w/ si parts & pckts and shell frags	CH	30		56	31				0.6
90-76	14Q	38-40	Very stiff brown CLAY w/ silt parts & ferrous stns	CH	31							

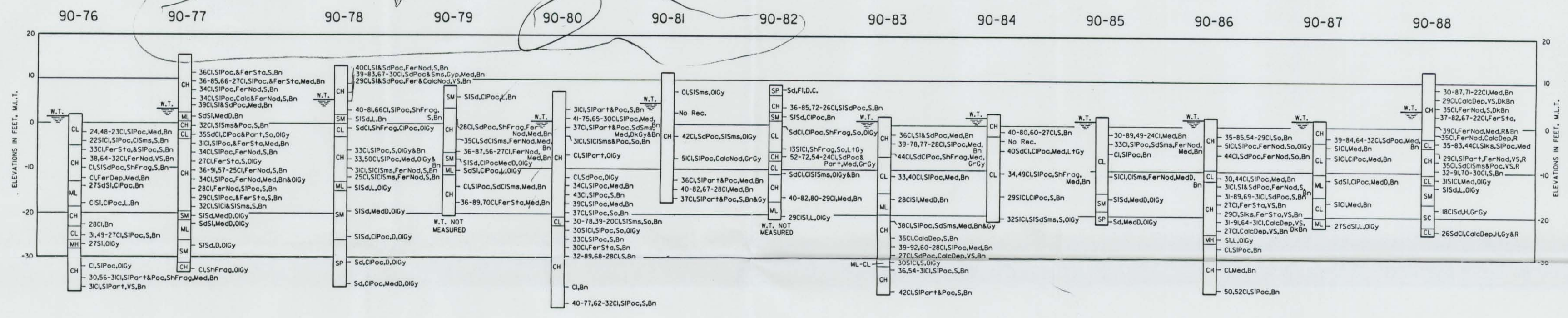
Field log, 10/15/72



STRESS-STRAIN CURVES
UNCONFINED COMPRESSION TEST



DISPOSAL AREA No. 2



DISPOSAL AREA No. 4

NOTES:

1. SOILS HAVE BEEN CLASSIFIED IN ACCORDANCE WITH MILITARY STANDARD 698B "UNIFIED SOIL CLASSIFICATION SYSTEM FOR ROADS, AIRFIELDS, EMBANKMENTS AND FOUNDATIONS." CONSISTENCY OF SOILS SUCH AS SOFT, MEDIUM, HARD, LOOSE, DENSE, ETC., ARE RELATIVE TERMS BASED ON ESTIMATED UNDISTURBED SHEAR STRENGTH OF THE MATERIAL AS DETERMINED BY VISUAL CLASSIFICATION, POCKET PENETROMETER TESTS AND PENETRATION RESISTANCE DURING SAMPLING.
2. FIGURES TO THE RIGHT OF BORING LOGS ARE WATER CONTENTS IN PERCENT OF THE DRY WEIGHT, DRY DENSITY, LIQUID LIMIT, PLASTIC LIMIT, AND BAR LINEAR SHRINKAGE. (MC-UOW), (LL-PL), (B.L.S.)
3. BORINGS WERE DRILLED USING WET ROTARY DRILLING TECHNIQUES AND UNDISTURBED SAMPLES WERE RECOVERED WITH A 3-INCH DIAMETER THIN WALL SAMPLER WHERE COHESIVE MATERIALS WERE ENCOUNTERED. WHERE COHESIONLESS MATERIALS WERE ENCOUNTERED, DISTURBED SAMPLES WERE TAKEN WITH A SPLIT SPOON SAMPLER DURING PERFORMANCE OF STANDARD PENETRATION TESTING.
4. WATER TABLE LEVELS SHOWN ON BORING LOGS WERE DETERMINED AFTER DRILLING BORINGS BY MEASURING THE TOP OF FLUID LEVELS IN THE BORINGS. INASMUCH AS WET ROTARY DRILLING TECHNIQUES AND DRILLING MUD WERE USED TO DRILL THE HOLES, THE LEVEL OF DRILLING FLUIDS IN THE BORE HOLES MAY NOT HAVE STABILIZED TO THE LEVEL OF THE ACTUAL WATER TABLE. ADDITIONALLY, WATER TABLES IN THE FIELD ARE LIKELY TO FLUCTUATE DEPENDING ON WEATHER CONDITIONS. THEREFORE, SOME VARIATION SHOULD BE ANTICIPATED BETWEEN WATER TABLES INDICATED AND WATER TABLES ENCOUNTERED IN THE FIELD.

VISUAL CLASSIFICATIONS

Bn Brownish	Gr Green(ish)	R Reddish	Sta Stains)
Cdc Colorous	Gy Gray(ish)	Rec Recovery	Y Very
Cl Clayey)	Gyp Gypsum	S Stiff	W.T. Water Table
D Dense	H Hard	Sd Sandy)	
D.C. Driller's	L Loose	Sh Shale	
Classification	Lt Light	Sh Shelly)	
Dep Deposit(s)	Med Medium	Sl Silty	
Dk Dark	Nod Nodules	Sls Silty	
Fer Ferrous	Ol Olive	Sks Sickenalides	
Fl Fine(s)	Port Partic(s)	Sms Seams	
Frag Fragment(s)	Poc Pocket(s)	So Soft	

LABORATORY CLASSIFICATION

SP POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
 SM SILTY SANDS, SAND-SILT MIXTURES.
 SC CLAYEY SANDS, SAND-CLAY MIXTURES.
 ML INORGANIC SILTS AND VERY FINE SANDS, WITH SLIGHT PLASTICITY.
 CL INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, LEAN CLAYS.
 MH INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS.
 CH INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.

REVISION	DATE	DESCRIPTION	BY
OFFICE OF THE DISTRICT ENGINEER U.S. ARMY ENGINEER DISTRICT, GALVESTON CORPS OF ENGINEERS GALVESTON, TEXAS			
DRAWN BY P.B.S.		BRAZOS ISLAND HARBOR, TEXAS BROWNSVILLE CHANNEL DREDGING INSHORE REACH NO. 1 DISPOSAL AREAS Nos. 2 & 4 BORING LOGS	
CHECKED BY J.T.F.		SUBMITTED BY David Campbell DIST. ENGINEER	
APPROVED BY David Campbell DIST. ENGINEER		DATE MAY 1992	
Prepared under the direction of Brink P. Miller, Col., C.E. District Engineer			
SCALE AS SHOWN		SPEC. DATE	
DRAWING NUMBER F-6		SHEET 13 OF 17 FILE NO. RIO 901-204	