TEST DATA SUMMARY

SWDGL Report No. 9211 — FEATURE FOUNDATION MATERIAL — WALLISVILLE RESERVOIR

BORING NO.	SAM. NO.	DEPTH OR ELEV. OF SAMPLE	LABORATORY CLASSIFICATION	MECHANICAL ANALYSIS: GRAVEL %	SAND %	FINES %	D_{10}	ATTERBERG LIMITS: LL	PL	SPECIFIC GRAVITY G	NAT. WATER CONT. %	NATURAL DRY DENSITY LBS/CU FT	COMPACTION DATA: OPT. WATER %	MAXIMUM DRY DENSITY LBS/CU FT	SHEAR DATA: INITIAL e	DRY DENSITY LBS/CU FT	W_1 %	W_F %	S_1 %	TYPE TEST	SPECIMEN SIZE INCHES	TEST	σ_m T/SQ FT	σ_1 T/SQ FT	C T/SQ FT	ϕ DEGREES	PERMEABILITY: e	K FT/MIN.	CONSOLIDATION DATA: P_O T/SQ FT	P_C T/SQ FT	C_C	t_{50} *	REMARKS
35T-113 (Cont'd)																																	
M-8017	63.0-63.5	CL						50	14		21.7	108				104	21.5			TC-Q	1.3 x 3.0		3.0	6.97									
			Bluish-gray CLAY, very stiff.																														
M-8017A	63.5-65.0	CL									15.2	114																					
			Lt. gray sandy CLAY, hard.																														
M-8018	68.0-70.0	SC		0	62	38					20.6																						
			Lt. gray clayey SAND.																														
35T-114																																	
M-8019	4.0-5.0	SP-SM		0	92	8					22.5																						
			Gray SAND.																														
M-8020	12.0-13.0	CL						32	11		33.8	86				86	35.0			UC	2.5 x 4.8		0.0	0.1									
			Gray CLAY; 3/8" sandy seams throughout.																														
M-8021	16.0-17.0	SC		0	78	22					20.9	108																					
			Gray clayey SAND, firm; few shells and shell fragments.																														
M-8022	20.0-21.0	CL						31	11	2.71	21.7	101			811	94	28.9	23.0	96	TC-R	1.4X3.0		1.00	2.10									
			Gray sandy CLAY, soft, shell fragments.																														
M-8023	28.0-29.0	CH						81	22		42.1	80				80	41.8			UC	2.5 x 4.8		0.0	0.5									
			Gray CLAY, medium consistency.																														
M-8024	30.0-31.0	CH						71	20	2.72	34.0	89			.865	91	31.6	31.6	99	TC-R	1.4 x 3.0		1.55	2.97									
			Gray and olive CLAY, stiff.																														
M-8025	35.0-36.0	CL						47	14		25.4	99																					
			Gray and olive CLAY, stiff.																														
M-8026	40.0-41.0	CL						48	17	2.68	23.6	100																			0.08		
			Olive and gray sandy CLAY, stiff; ½" layer of gray clay (CH).																														

ENG FORM 2086 1 MAR 58 (PREVIOUS EDITIONS MAY BE USED) (EM 1110-2-1803) (TRANSLUCENT)

TC – Triaxial Compression; UC – Unconfined Compression; DS – Direct Shear; Q ~~UU~~ – Unconsolidate Undrained; S ~~CD~~ – Consolidated Drained; R ~~CU~~ – Consolidated Undrained; * Values at Pressure; T/SQ FT

TEST DATA SUMMARY

SWDGL Report No. 9211

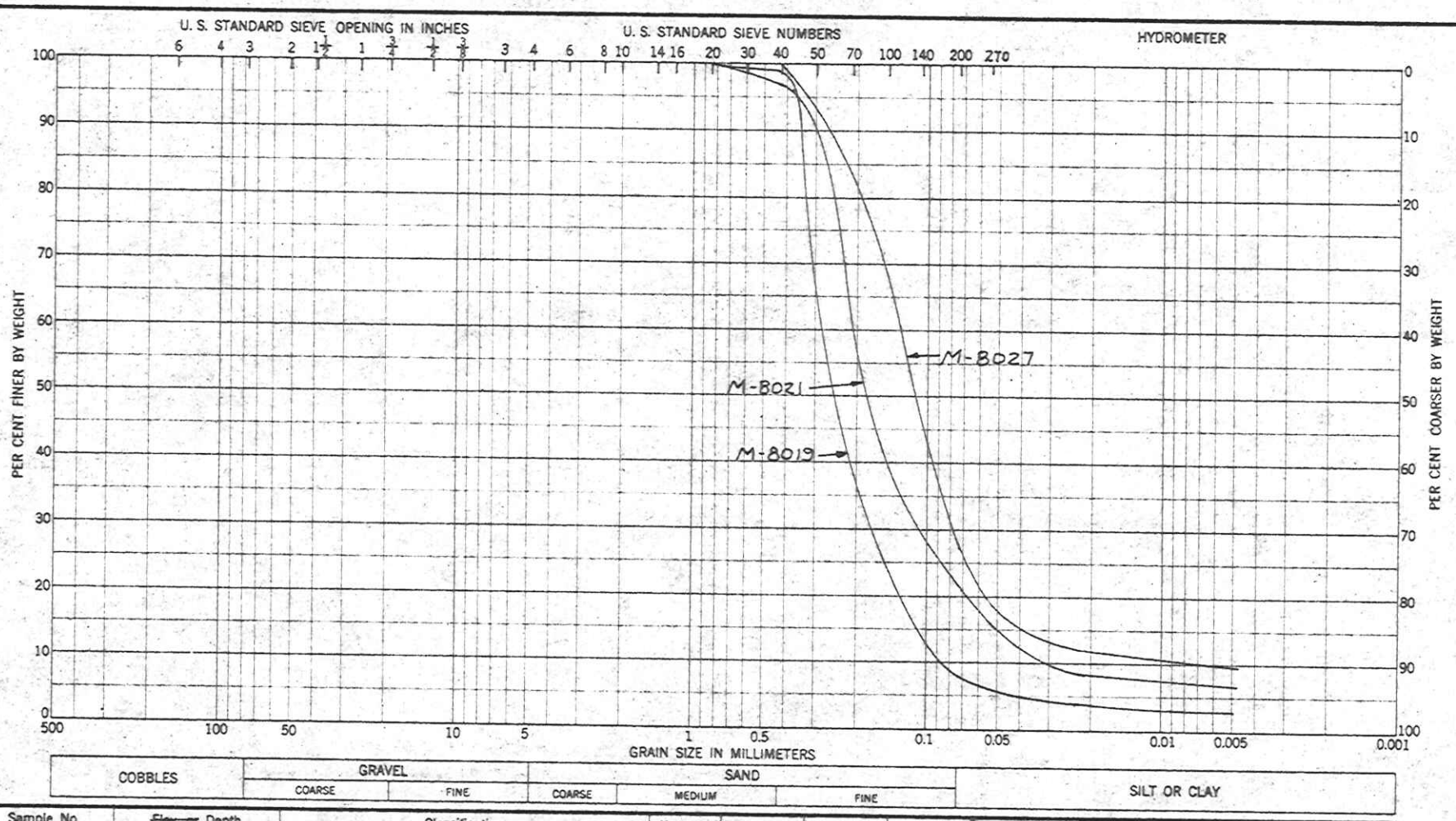
FEATURE FOUNDATION MATERIAL

WALLISVILLE RESERVOIR

BORING NO.	SAM. NO.	DEPTH OR ELEV. OF SAMPLE	LABORATORY CLASSIFICATION	MECHANICAL ANALYSIS: GRAVEL %	SAND %	FINES %	D_{10}	ATTERBERG LIMITS: LL	PL	SPECIFIC GRAVITY G	NAT. WATER CONT. %	NATURAL DRY DENSITY LBS/CU FT	COMPACTION DATA: OPT. WATER %	MAXIMUM DRY DENSITY LBS/CU FT	SHEAR DATA: INITIAL P	DRY DENSITY LBS/CU FT	W_1 %	W_F %	S_1 %	TYPE TEST	SPECIMEN SIZE INCHES	TEST	σ_m T/SQ FT	σ_1 T/SQ FT	C T/SQ FT	ϕ DEGREES	PERMEABILITY: γ_s Lbs/Ft³	$K \times 10^{-6}$ FT/MIN.	CONSOLIDATION DATA: P_o T/SQ FT	P_c T/SQ FT	C_c	t_{50} *	REMARKS
35T-114 (Cont'd)																																	
M-8027	42.0-42.8		SC	0	73	27					27.3																						
Grayish-brown clayey SAND; free water.																																	
M-8028	47.0-49.0		SM	0	78	22				2.68	22.0	105																					
Olive and gray silty SAND.																																	
M-8029	53.0-54.5		SP	2	96	2					16.8																105	43.7	$D_{10}=0.21$				
Brown SAND.																																	
M-8030	58.0-59.0		CL					27	13		17.5	111				112	17.2			UC	2.6 x 5.3		0.0	1.1									
Bluish-gray and gray sandy CLAY, very stiff.																																	
35T-115																																	
M-8031	4.0-6.0		SM-SP	0	89	11					26.1																98	5.11	$D_{10}=0.07$				
Gray silty SAND; free water.																																	
M-8032	8.0-10.0		SC	0	76	24					24.6																						
Gray clayey SAND.																																	
M-8033	16.0-18.0		CL					27	10		29.6	92				96	27.5			TC-Q	1.3 x 3.0		0.8	1.43									
Gray CLAY, very soft; $\frac{1}{8}$"-$\frac{3}{8}$" sandy seams throughout.																																	
M-8034	24.0-28.0		CL	0	43	57		38	13		44.6																						
Gray sandy CLAY; few shell fragments.																																	
M-8035	28.0-30.0		CH					78	21		38.5	82																					
Dk gray CLAY, medium consistency.																																	
M-8036	31.0-32.0		CH					67	17	2.73	29.4	92			.840	93	30.6	29.9	99	TC-R	1.4 x 3.0		1.55	3.21									
Gray and olive CLAY, stiff.																																	
M-8037	36.0-37.0		CL					42	13		25.1	99																					
Gray and olive CLAY, stiff.																																	

ENG FORM 1 MAR 58 2086 (PREVIOUS EDITIONS MAY BE USED) (EM 1110-2-1803) (TRANSLUCENT)

TC – Triaxial Compression DS – Direct Shear S ~~CD~~ – Consolidated Drained • Values at Pressure T/SQ FT.
UC – Unconfined Compression Q ~~UU~~ – Unconsolidated Undrained R ~~CU~~ – Consolidated Undrained



Sample No.	~~Elev~~ or Depth	Classification	Nat w %	LL	PL	PI
M-8019	4.0 - 5.0	SAND (SP-SM)	22.5			
M-8021	16.0 - 17.0	clayey SAND (SC)	20.9			
M-8027	42.0 - 42.8	clayey SAND (SC)	27.3			

PLATE NO. 10

GRADATION CURVES

Project: Wallisville Reservoir

Area: FOUNDATION MATERIAL

Boring No.: 35T-114

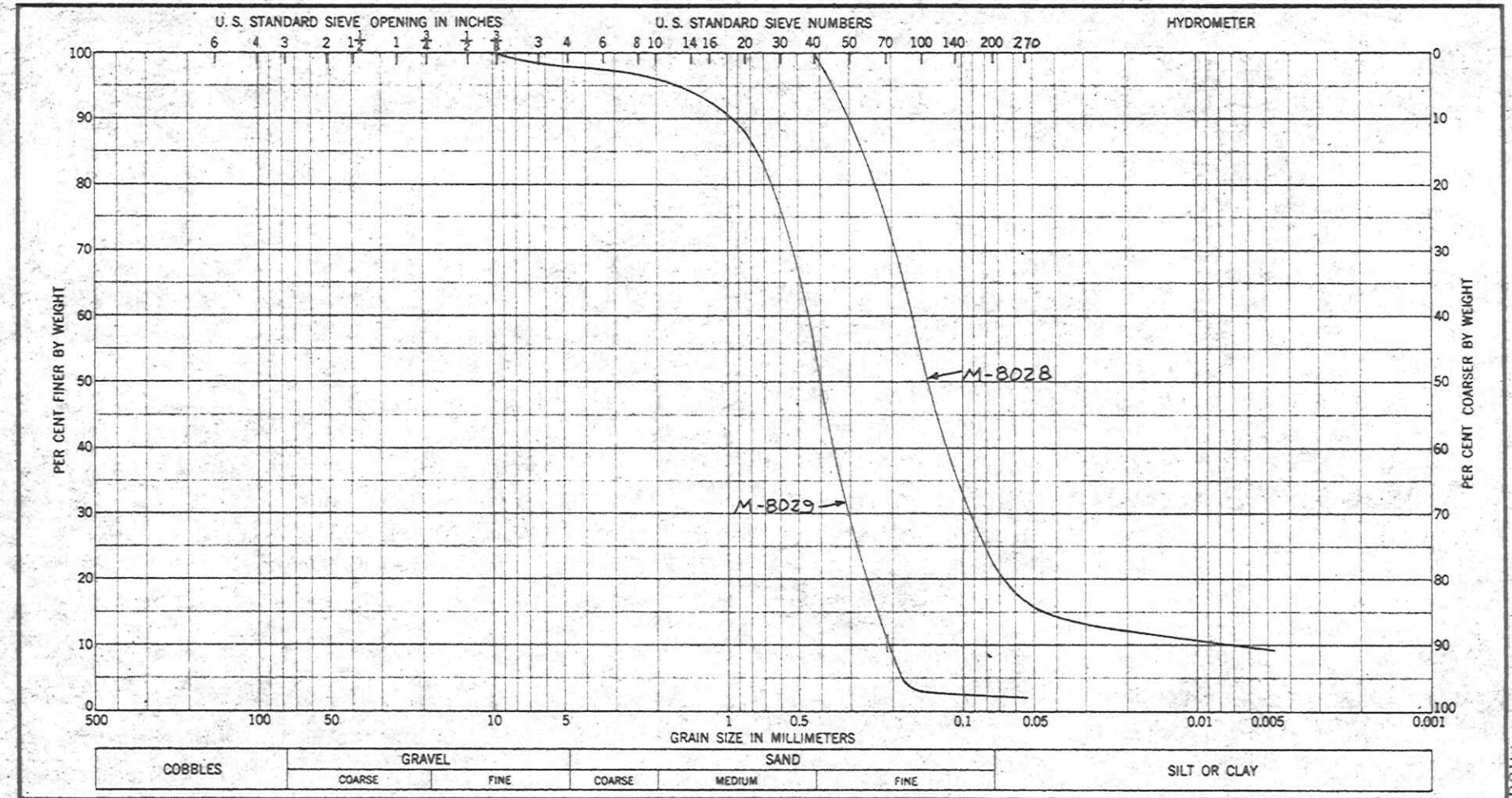
Date: DEC 64

Soil Report No. 9211

ENG FORM 2087
1 MAY 63

REPLACES WES FORM NO. 1241, SEP 1962, WHICH IS OBSOLETE. (TRANSLUCENT)

C 3436



Sample No.	~~Elev or~~ Depth	Classification	Nat w %	LL	PL	PI
M-8028	47.0-49.0	silty SAND (SM)	22.0			
M-8029	53.0-54.5	SAND (SP)	16.8			

GRADATION CURVES

Project: Wallisville Reservoir

Area: FOUNDATION MATERIAL

Boring No.: 35T-114

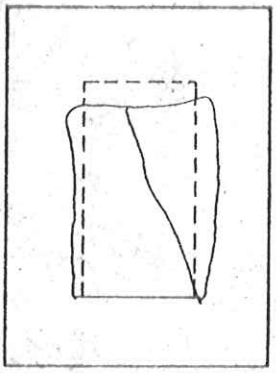
Date: DEC 64

PLATE NO. 11

SWD 51 Report No. 9211

ENG FORM 2087 1 MAY 63 REPLACES WES FORM NO. 1241, SEP 1962, WHICH IS OBSOLETE. (TRANSLUCENT)

C 0438

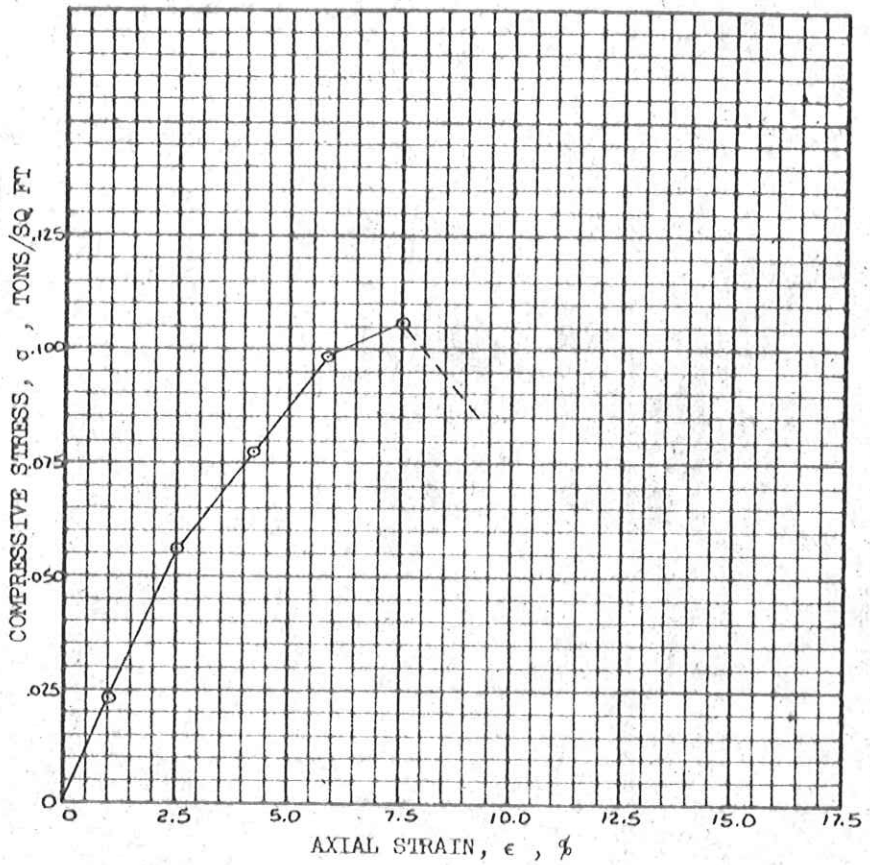


Sketch of specimen after failure

TEST TYPE
(Check one)

☐ Controlled-stress

☑ Controlled-strain
0.02 in/min.



Type of specimen ☑ Undisturbed ☐ Remolded			Test No.	Test No.	Test No.	Test No.
Initial	Water content	w_o	35.0 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	86			
Time to failure, min		t_f	18			
Unconfined compressive strength, tons/sq ft		q_u	0.1			
Undrained shear strength, tons/sq ft		s_u	0.1			
Sensitivity ratio		S_t				

Classification CLAY (CL)

LL 32 PL 11 PI 21 G_s

Specimen Diam 2.5 ~~cm~~ in. Specimen Height 4.8 ~~cm~~ in.

Remarks

Project Wallisville Reservoir

Area FOUNDATION MATERIAL

Boring No. 35T-114 Sample No. M-8020

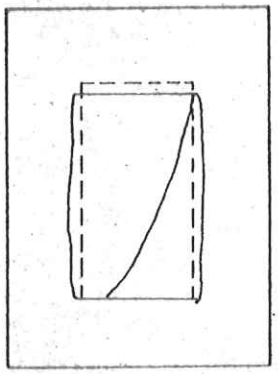
Depth, ~~ft~~ 12.0-13.0 Date DEC 84

UNCONFINED COMPRESSION TEST REPORT

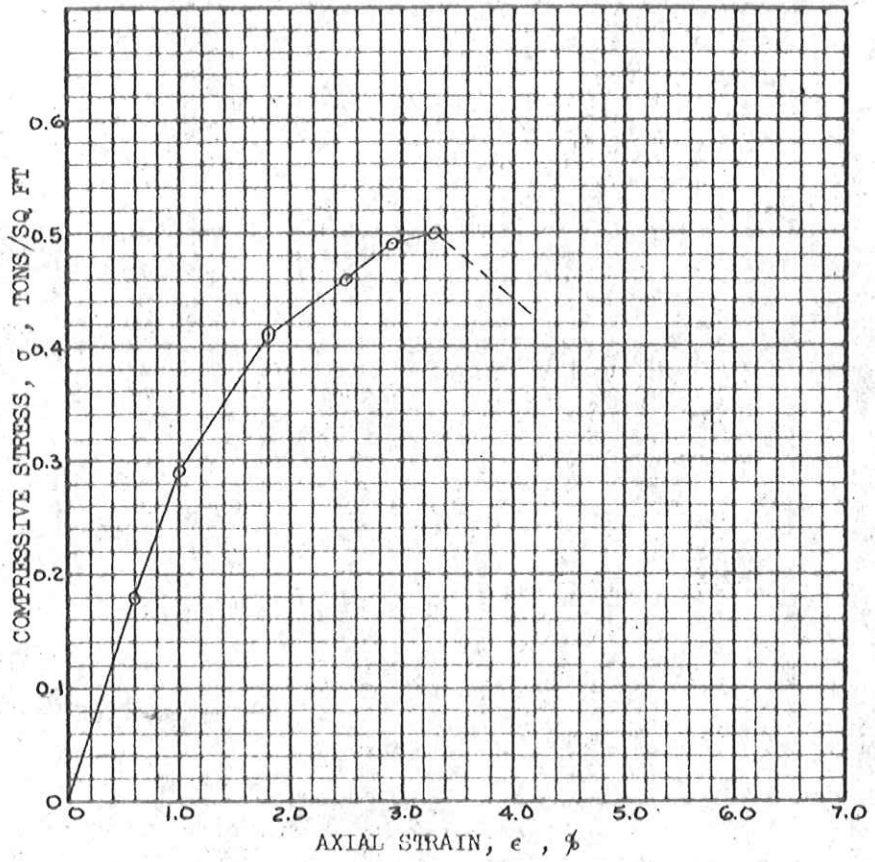
ENG FORM 3659 1 MAY 63 (TRANSLUCENT)

C 8927 PLATE NO. 23

PLATE XI-2



Sketch of specimen after failure



TEST TYPE
(Check one)

☐ Controlled-stress

☑ Controlled-strain
0.01 in/min.

Type of specimen ☑ Undisturbed ☐ Remolded			Test No.	Test No.	Test No.	Test No.
Initial	Water content	w_o	41.8 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	80			
Time to failure, min		t_f	16			
Unconfined compressive strength, tons/sq ft		q_u	0.5			
Undrained shear strength, tons/sq ft		s_u	0.3			
Sensitivity ratio		S_t				

Classification CLAY (CH)

LL 81	PL 22	PI 59	G_s

Specimen Diam 2.5 ~~cm~~ in. | Specimen Height 4.8 ~~cm~~ in.

Remarks

Project Wallisville Reservoir

Area FOUNDATION MATERIAL

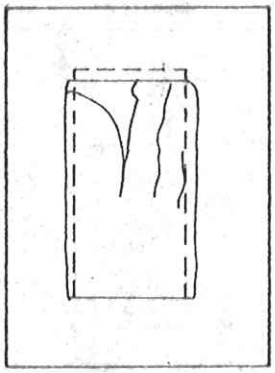
Boring No. 35T-114 Sample No. M-8023

Depth, El 28.0-29.0 Date DEC 64

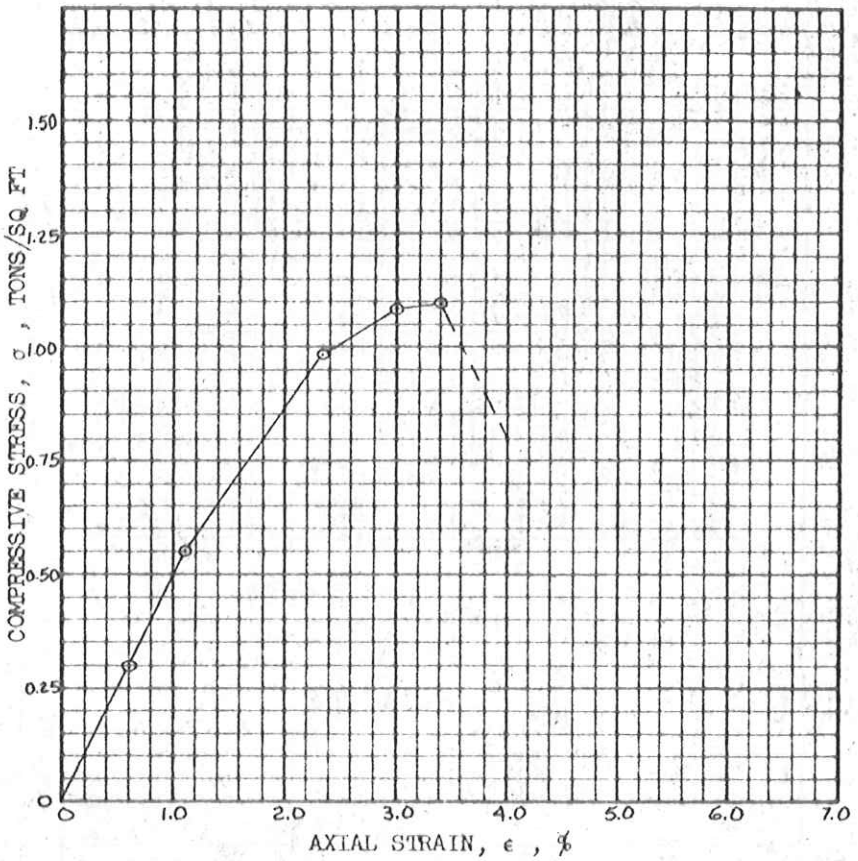
UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659 1 MAY 63 (TRANSLUCENT)

C 8927 PLATE NO. 24 PLATE XI-2



Sketch of specimen after failure



TEST TYPE
(Check one)

☐ Controlled-stress

☑ Controlled-strain
0.03 in/min.

Type of specimen ☑ Undisturbed ☐ Remolded			Test No.	Test No.	Test No.	Test No.
Initial	Water content	w_o	17.2 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	112			
Time to failure, min		t_f	6			
Unconfined compressive strength, tons/sq ft		q_u	1.1			
Undrained shear strength, tons/sq ft		s_u	0.5			
Sensitivity ratio		S_t				

Classification sandy CLAY (CL)

LL	PL	PI	G_s
27	13	14	

Specimen Diam	Specimen Height
2.6 in.	5.3 in.

Remarks

Project Wallisville Reservoir

Area FOUNDATION MATERIAL

Boring No. 35T-114 Sample No. M-8030

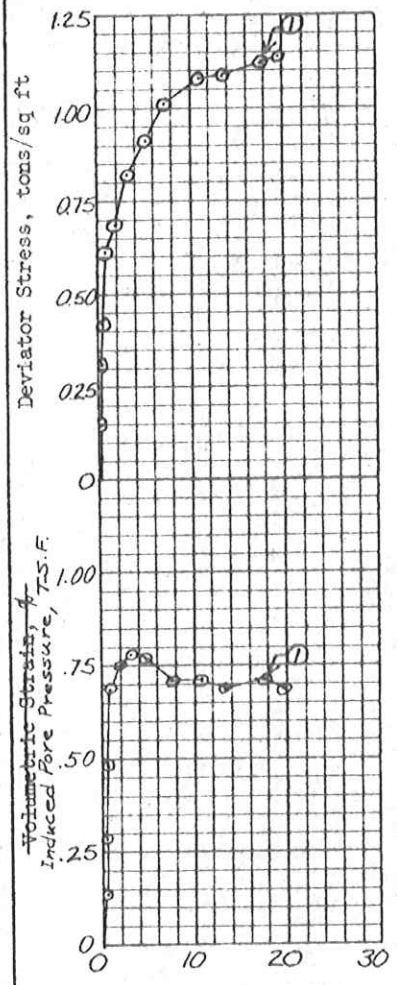
Depth, El 58.0-59.0 Date DEC 84

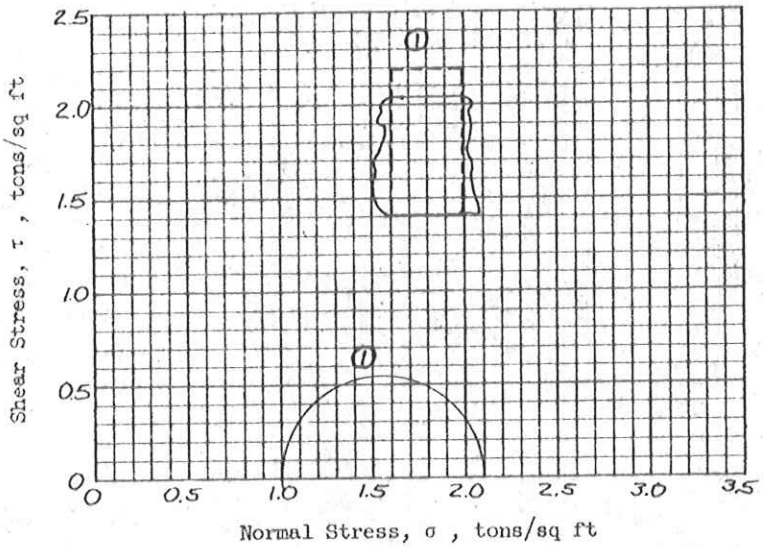
UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659 1 MAY 63 (TRANSLUCENT)

C 8927 PLATE NO. 25

PLATE XI-2





Shear Values

ϕ = _____ °

tan ϕ = _____

c = _____ tons/sq ft

Test No.			①			
Initial	Water content	w_o	28.9 %	%	%	%
	Void ratio	e_o	.811			
	Saturation	S_o	96 %	%	%	%
	Dry density lb/cu ft	γ_d	94			
Before Test	Water content	w_c	23.0 %	%	%	%
	Saturation	S_c	100 %	%	%	%
	Consolidation press., tons/sq ft	σ_c	1.00			
	Void ratio	e_c	.623			
Final	Water content	w_f	23.0 %	%	%	%
	Void ratio At Failure	e_f	.623			
Major principal stress, tons/sq ft		σ_1	2.10*			
Minor principal stress, tons/sq ft		σ_3	1.00			
Time to failure, min			230*			
Initial diameter, ~~cm~~ in			1.4			
Initial height, H_o, ~~cm~~ in			3.0			

Type Test R

Method of Saturation Back Pressure ☐ Controlled Stress ☑ Controlled Strain

Type of specimen UNDISTURBED Rate of strain 0.002 (nominal) in./min

Classification sandy CLAY (CL)

LL 31 PL 11 PI 20 ~~D_{10}~~ G 2.71

Remarks * At 15% strain.

Project Wallaceville Reservoir

Area FOUNDATION MATERIAL

Boring No. 3ST-114 Sample No. M-8022

Depth ~~El.~~ 20.1-21.0 Date DEC 84

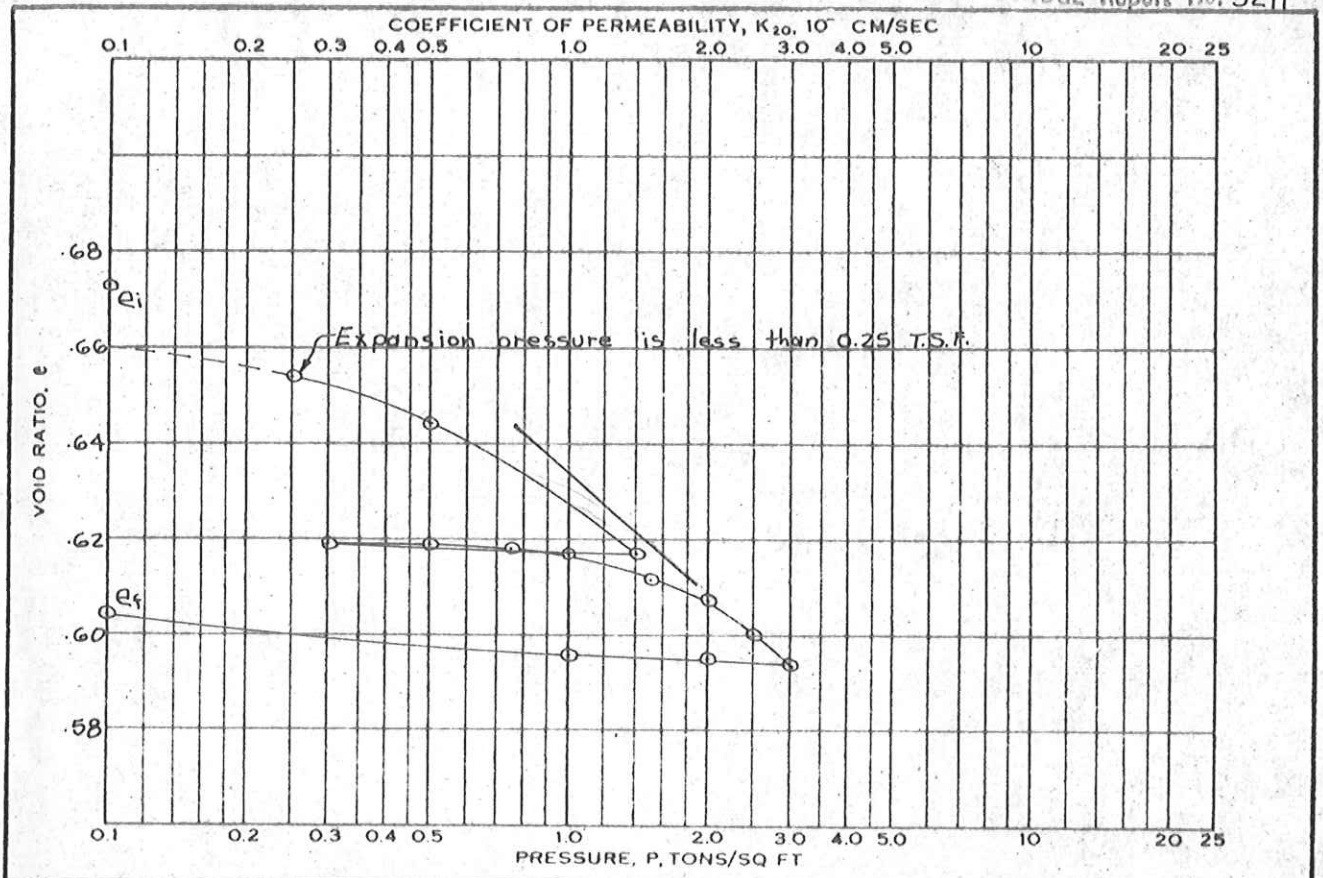
TRIAXIAL COMPRESSION TEST REPORT

SHEAR Report No. 9211

PLATE NO. 38

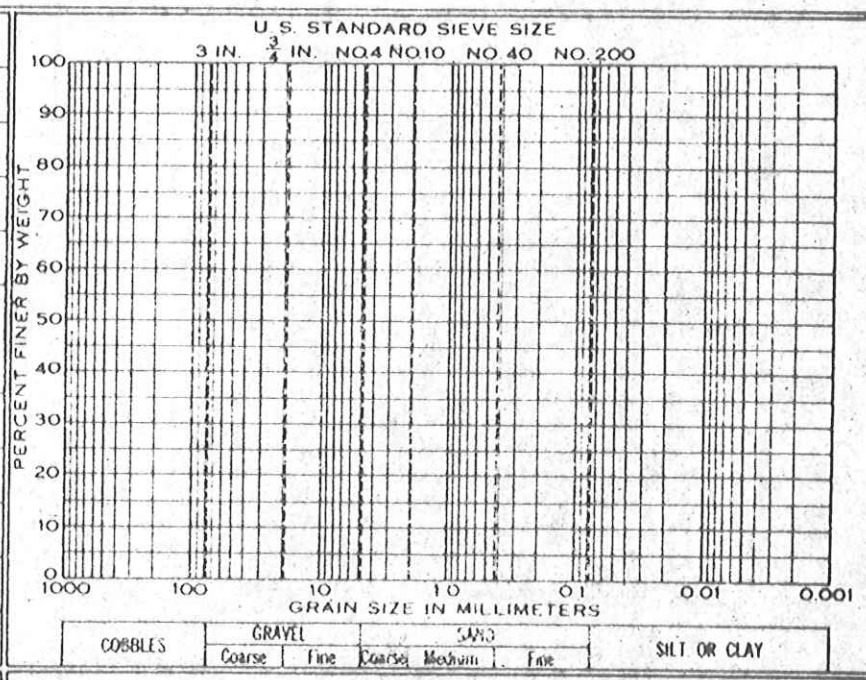
PLATE NO. 40

SOILS Report No. 6211



TEST DATA

Type of Specimen	UNDISTURBED
Overburden Pressure, P_o	1.19 Tons/Sq Ft
Preconsol Pressure, P_c	0.66 Tons/Sq Ft
Compression Index, C_c	0.08
Permeability at Initial e	K_{20} _____ x 10^{-} Cm/Sec _____ Ft/Min
Initial Ht. 2H=0.75 in.	Diam. 2.22 in.
Initial Saturation, S_o %	94
Final Saturation, S_f %	97
Initial Dry Density Lbs/Cu Ft	100
Initial Water Content, W_o %	23.6



Remarks:

Project Wallisville Reservoir

Area FOUNDATION MATERIAL

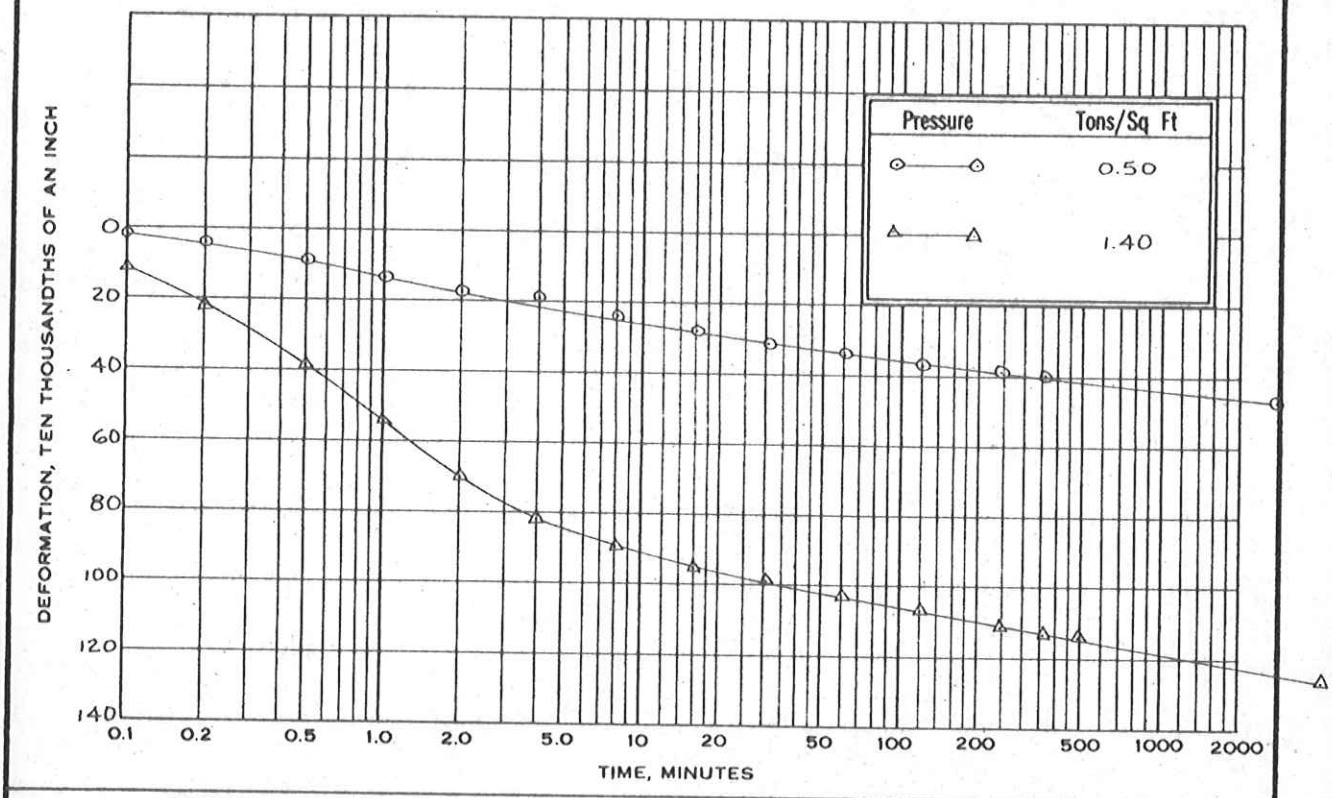
Boring No. 35T-114	Sample No. M-8026
Elev or Depth 40.0-41.0	Date DEC 84

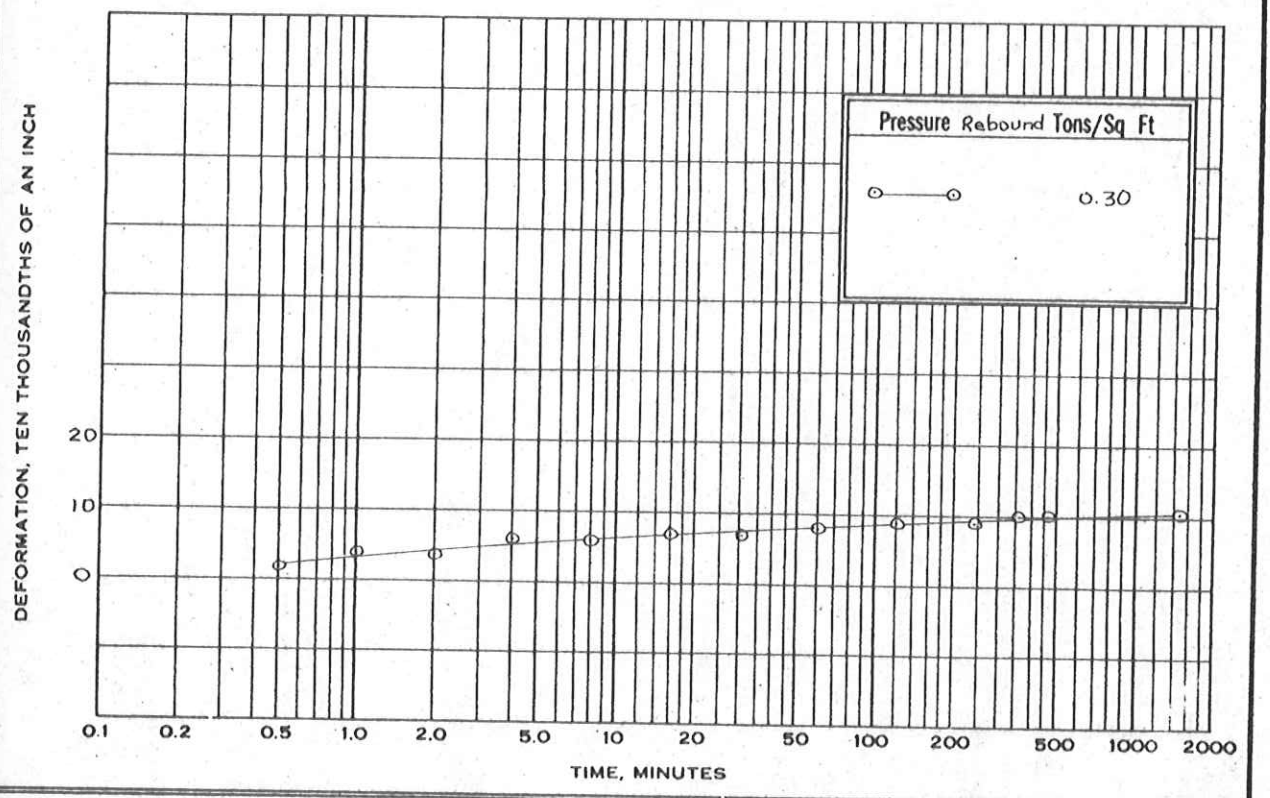
Classification sandy CLAY (CL)

LL 48	G_s 2.68
PL 17	D_{10}

CONSOLIDATION TEST REPORT

SWDGL Report No. 9211





Project Wallisville Reservoir

Area FOUNDATION MATERIAL

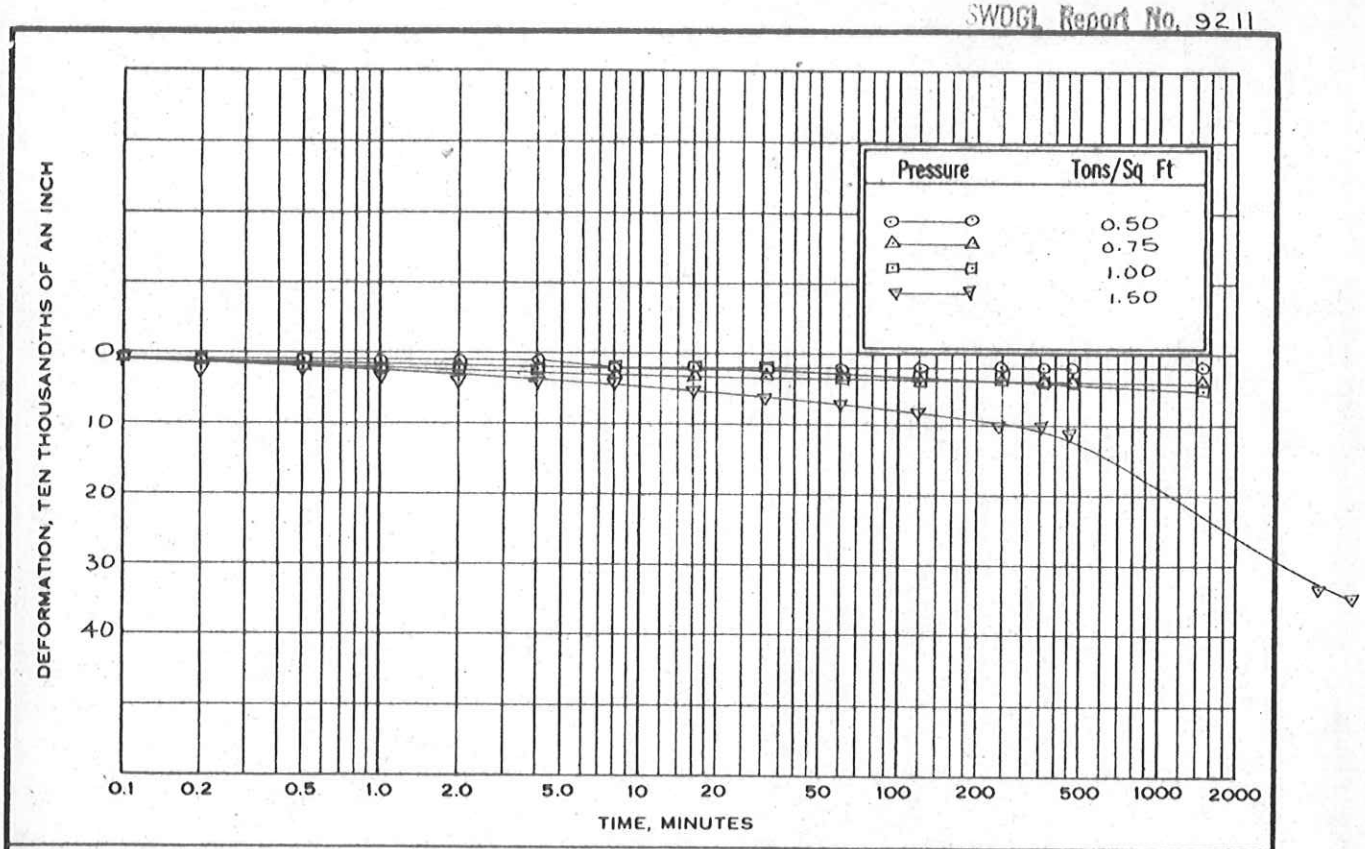
Boring No. 35T-114	Sample No. M-8026	~~Elev or~~ Depth 40.0-41.0	Date DEC 64

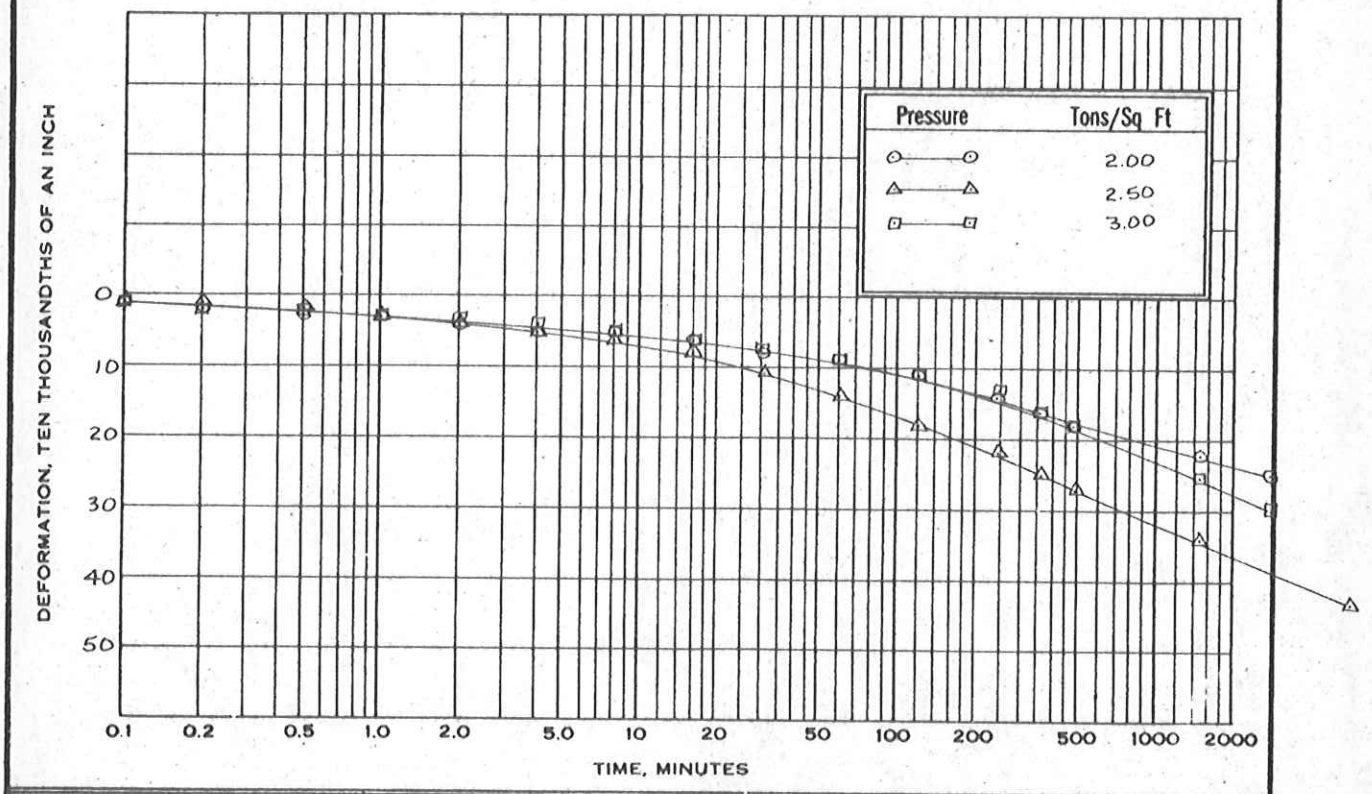
CONSOLIDATION TEST-TIME CURVES

ENG FORM 1 DEC 51 2088 (Translucent) (EM 1110-2-1803)

PLATE NO. 54

SWOCL Report No. 9211





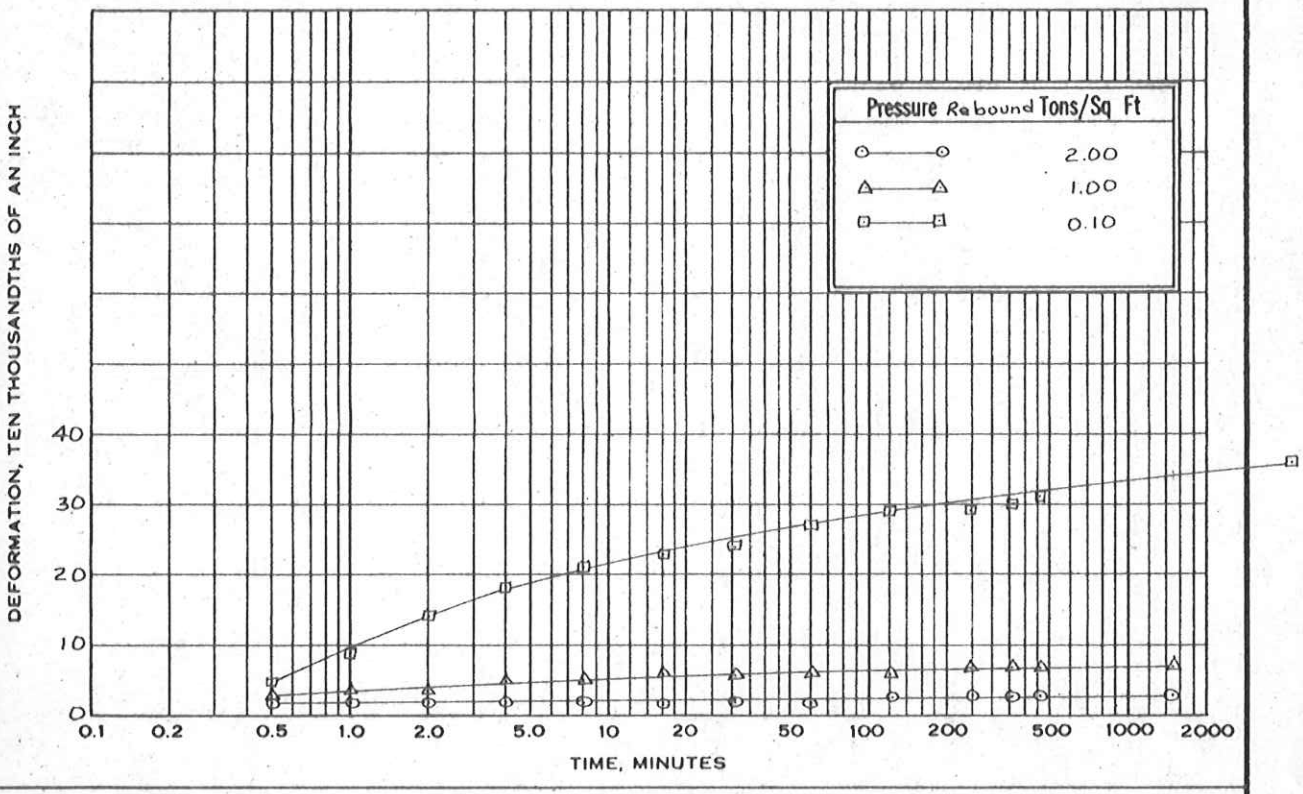
Project	Wallisville Reservoir		
Area	FOUNDATION MATERIAL		
Boring No. 35T-114	Sample No. M-8026	Elev or Depth 40.0-41.0	Date DEC 64

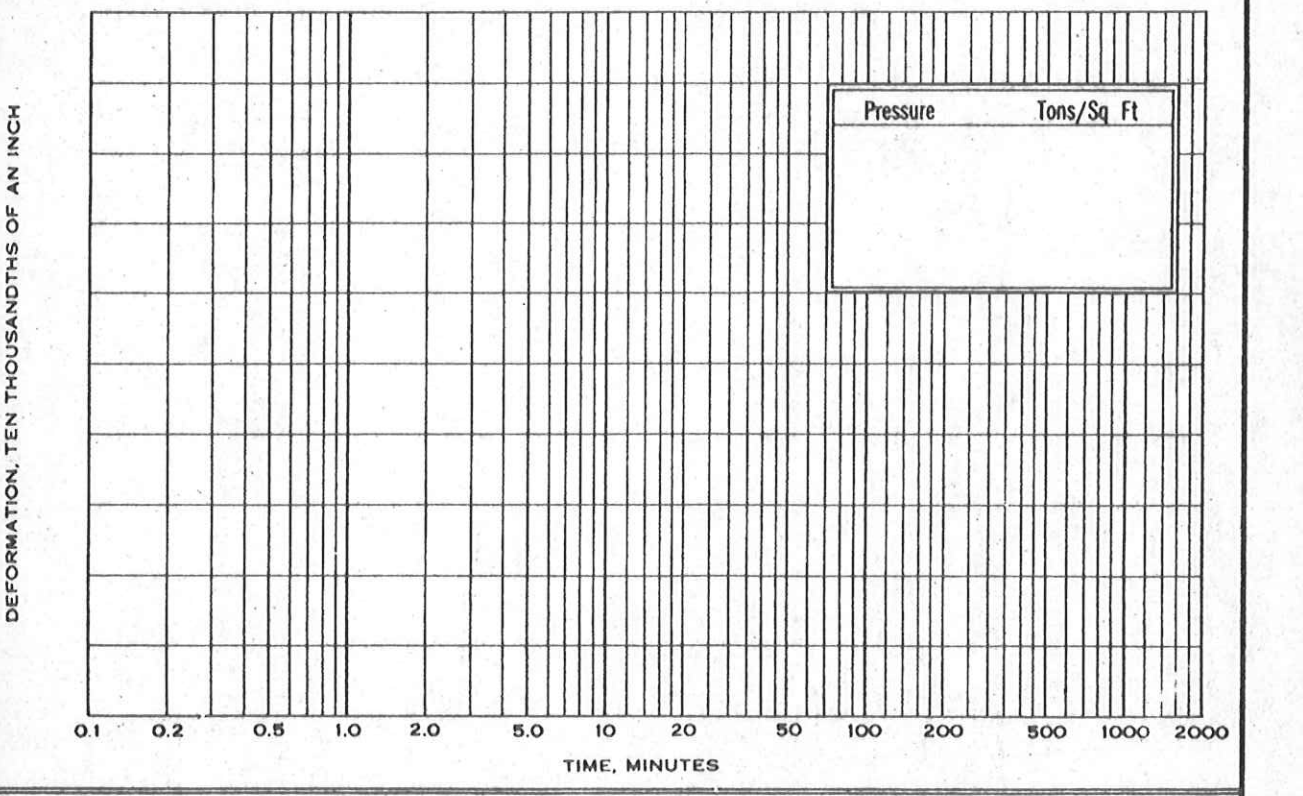
CONSOLIDATION TEST-TIME CURVES

ENG FORM 2088 (Translucent) (EM 1110-2-1803)

PLATE NO. 55

SWDGL Report No. 9211





Project Wallisville Reservoir			
Area FOUNDATION MATERIAL			
Boring No. 35T-114	Sample No. M-8026	Elev or Depth 40.0-41.0	Date DEC 84

CONSOLIDATION TEST-TIME CURVES

EM 1110-2-1906 1 DEC 51 2088 (Translucent) (EM 1110-2-1803)

PLATE NO. 56