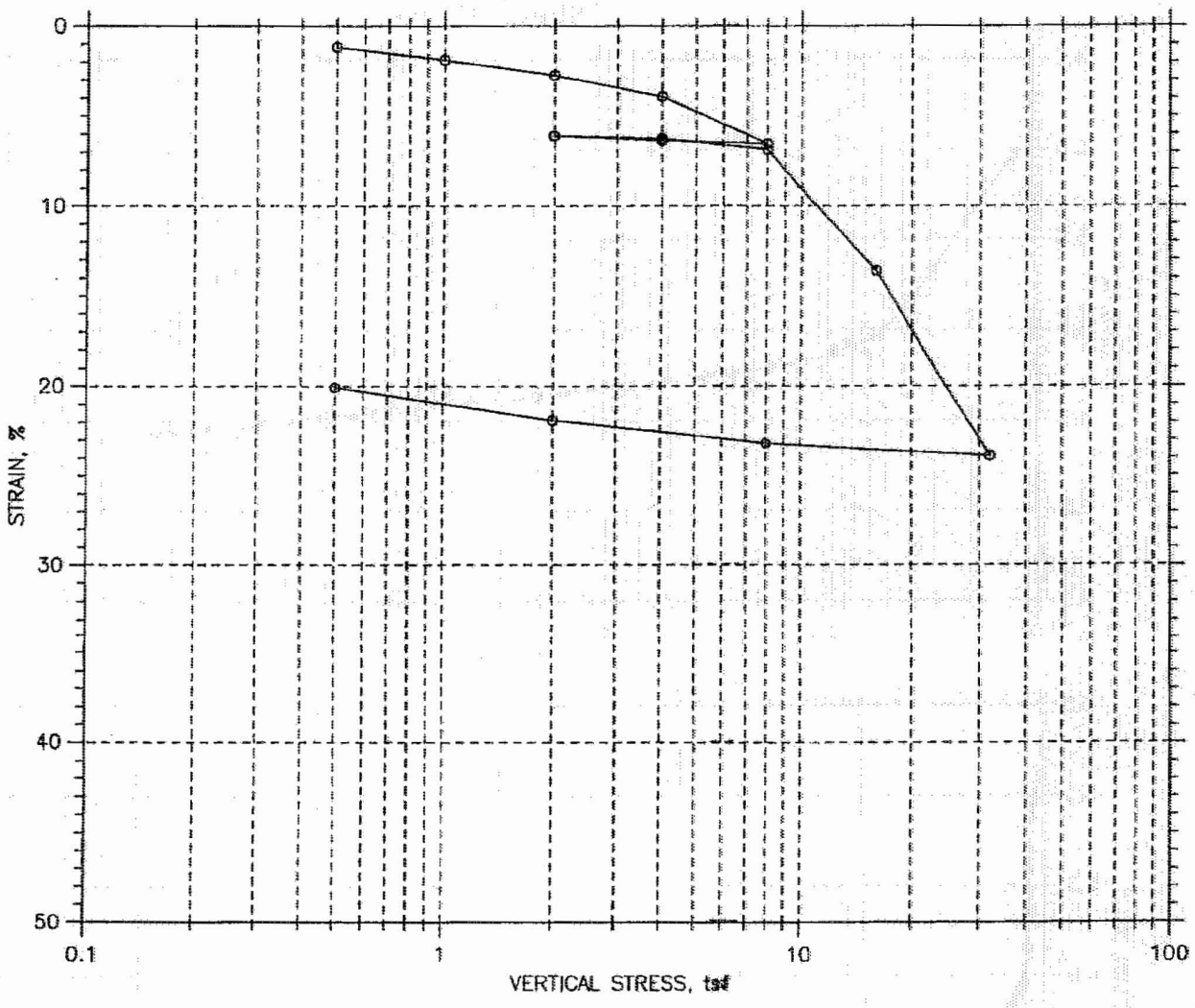
CONSOLIDATION TEST DATA

SUMMARY REPORT



					Before Test	After Test
Overburden Pressure: ---				Water Content, %	44.40	37.22
Preconsolidation Pressure: 10 tsf				Dry Unit Weight, pcf	67.94	84.99
Compression Index: ---				Saturation, %	79.76	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	1.54	1.03
LL: 72	PL: 45	PI: 27	GS: 2.76			

GeoTesting express a subsidiary of Geocomp Corporation	Project: Calvert Cliffs Nuclear	Location: Calvert County, MD	Project No.: GTX-6880
	Boring No.: B-328	Tested By: md	Checked By: njh
	Sample No.: S-28	Test Date: 09/09/06	Depth: 123.5-125.1
	Test No.: C-6	Sample Type: tube	Elevation: ---
	Description: Moist, olive gray silt with sand (MH), 83% passing #200 sieve, inundated @ 0.5 tsf		
	Remarks: System G - Compression Ratio: 0.38, Recompression Ratio: 0.02		

Thu, 09-NOV-2006 16:17:04

CONSOLIDATION TEST DATA

Project: Calvert Cliffs Nuclear	Location: Calvert County, MD	Project No.: GTX-6880
Boring No.: B-328	Tested By: md	Checked By: njh
Sample No.: S-28	Test Date: 09/09/06	Depth: 123.5-125.t
Test No.: C-6	Sample Type: tube	Elevation: ---

Soil Description: Moist, olive gray silt with sand (MH), 83% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System G - Compression Ratio: 0.38, Recompression Ratio: 0.02

Measured Specific Gravity: 2.76	Liquid Limit: 72	Initial Height: 1.00 in
Initial Void Ratio: 1.54	Plastic Limit: 45	Specimen Diameter: 2.50 in
Final Void Ratio: 1.03	Plasticity Index: 27	

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	1225	RING		1111
Wt. Container + Wet Soil, gm	172.09	342.88	336.6	127.46
Wt. Container + Dry Soil, gm	121.87	304.02	304.02	95.07
Wt. Container, gm	8.37	216.48	216.48	8.05
Wt. Dry Soil, gm	113.5	87.537	87.537	87.02
Water Content, %	44.25	44.40	37.22	37.22
Void Ratio	---	1.54	1.03	---
Degree of Saturation, %	---	79.76	100.00	---
Dry Unit Weight, pcf	---	67.936	84.99	---

CONSOLIDATION TEST DATA

Project: Calvert Cliffs Nuclear
Boring No.: B-328
Sample No.: S-28
Test No.: C-6

Location: Calvert County, MD
Tested By: md
Test Date: 09/09/06
Sample Type: tube

Project No.: GTX-6880
Checked By: njh
Depth: 123.5-125.t
Elevation: ---

Soil Description: Moist, olive gray silt with sand (MH), 83% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System G - Compression Ratio: 0.38, Recompression Ratio: 0.02

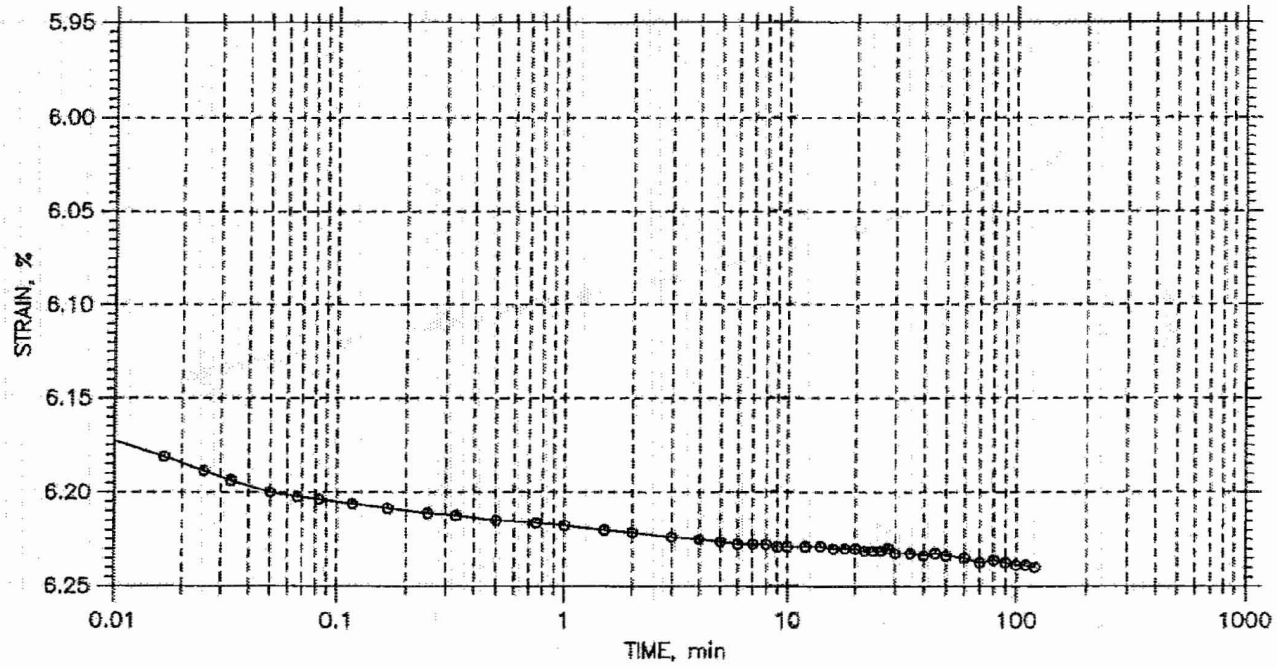
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.5	0.01171	1.507	1.17	0.0	0.0	2.77e-002	0.00e+000	2.77e-002
2	1	0.01889	1.488	1.89	0.0	0.0	2.06e-002	3.21e-002	2.51e-002
3	2	0.02737	1.467	2.74	0.0	0.0	5.02e-002	4.00e-002	4.45e-002
4	4	0.03904	1.437	3.90	0.0	0.0	2.18e-002	5.35e-002	3.10e-002
5	8	0.06528	1.371	6.53	0.1	0.0	7.44e-003	4.97e-002	1.29e-002
6	4	0.06356	1.375	6.36	0.0	0.0	1.67e-001	0.00e+000	1.67e-001
7	2	0.061	1.382	6.10	0.0	0.0	7.35e-002	0.00e+000	7.35e-002
8	4	0.0624	1.378	6.24	0.0	0.0	1.47e-001	0.00e+000	1.47e-001
9	8	0.06856	1.362	6.86	0.7	0.0	9.70e-004	0.00e+000	9.70e-004
10	16	0.136	1.191	13.60	0.3	0.0	2.27e-003	1.92e-002	4.06e-003
11	32	0.2389	0.930	23.89	0.6	0.3	8.66e-004	1.71e-003	1.15e-003
12	8	0.2319	0.948	23.19	0.0	0.0	6.63e-002	0.00e+000	6.63e-002
13	2	0.2189	0.981	21.89	0.7	0.0	7.08e-004	0.00e+000	7.08e-004
14	0.5	0.2007	1.027	20.07	2.9	3.4	1.78e-004	1.52e-004	1.64e-004

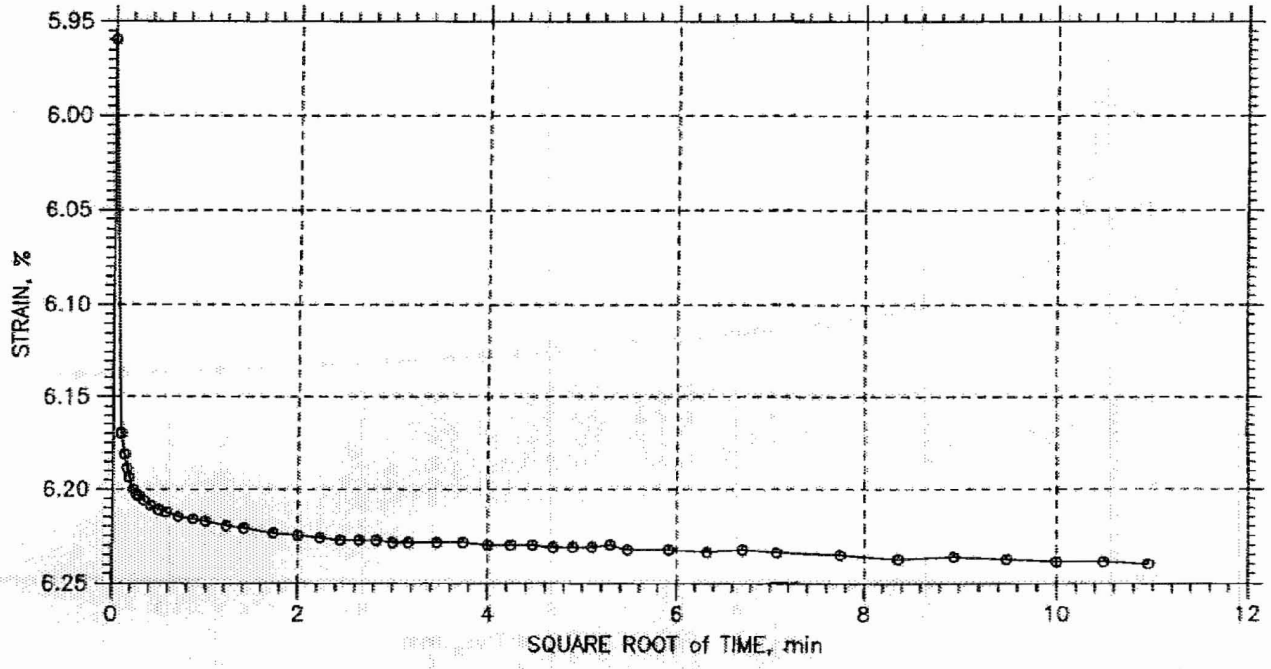
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 14

Stress: 4. tsf





GeoTesting express a subsidiary of Geocomp Corporation	Project: Calvert Cliffs Nuclear	Location: Calvert County, MD	Project No.: GTX-6880
	Boring No.: B-328	Tested By: md	Checked By: njh
	Sample No.: S-28	Test Date: 09/09/06	Depth: 123.5-125.t
	Test No.: C-6	Sample Type: tube	Elevation: ---
	Description: Moist, olive gray silt with sand (MH), 83% passing #200 sieve, inundated @ 0.5 tsf		
	Remarks: System G - Compression Ratio: 0.38, Recompression Ratio: 0.02		

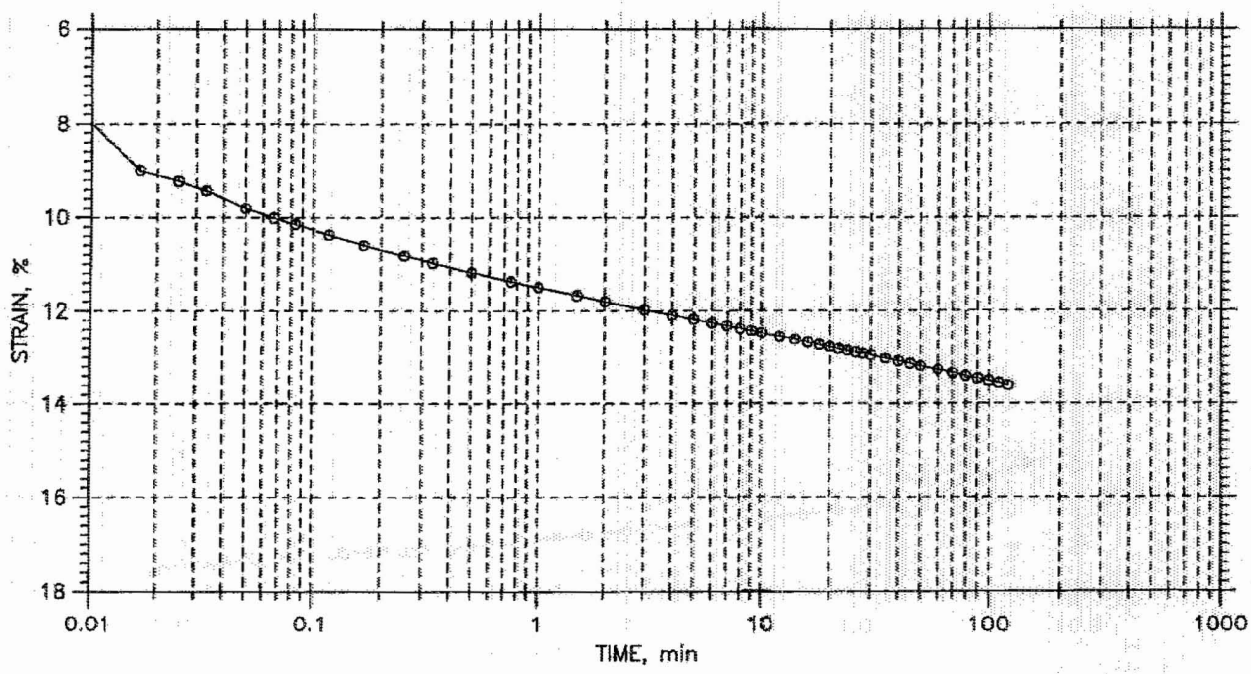
Thu, 09-NOV-2006 16:17:23

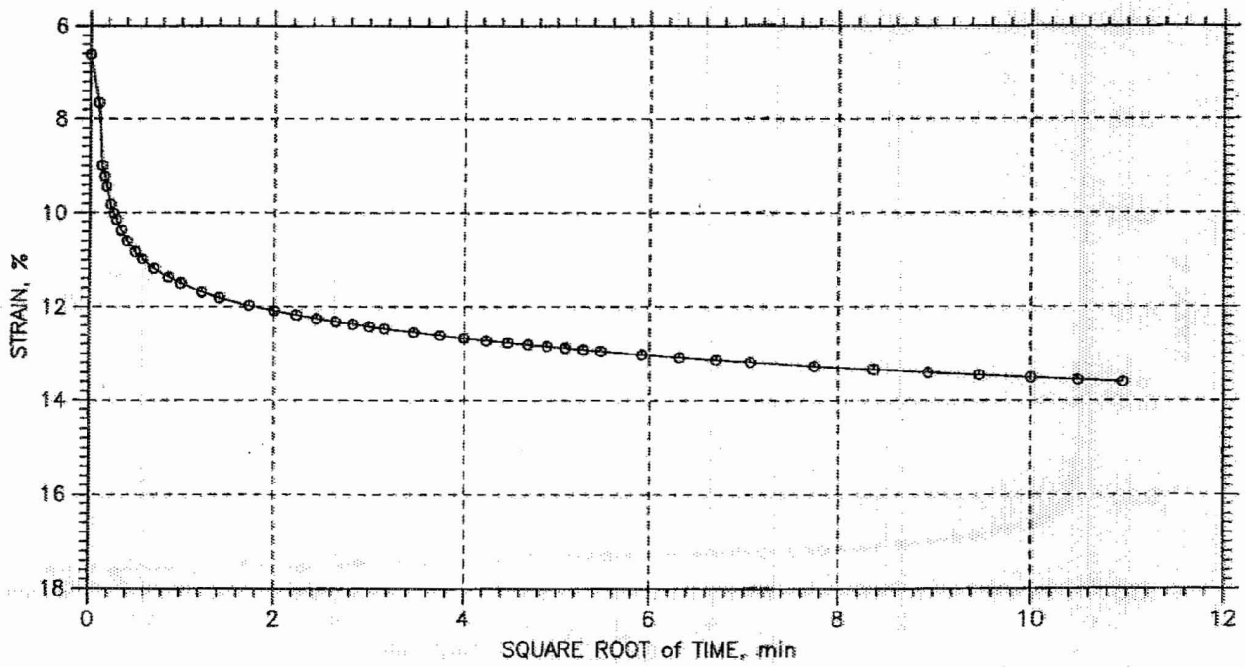
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 14

Stress: 16. tsf





GeoTesting express a subsidiary of Geocomp Corporation	Project: Calvert Cliffs Nuclear	Location: Calvert County, MD	Project No.: GTX-6880
	Boring No.: B-328	Tested By: md	Checked By: njh
	Sample No.: S-28	Test Date: 09/09/06	Depth: 123.5-125.t
	Test No.: C-6	Sample Type: tube	Elevation: ---
	Description: Moist, olive gray silt with sand (MH), 83% passing #200 sieve, inundated @ 0.5 tsf		
	Remarks: System G - Compression Ratio: 0.38, Recompression Ratio: 0.02		

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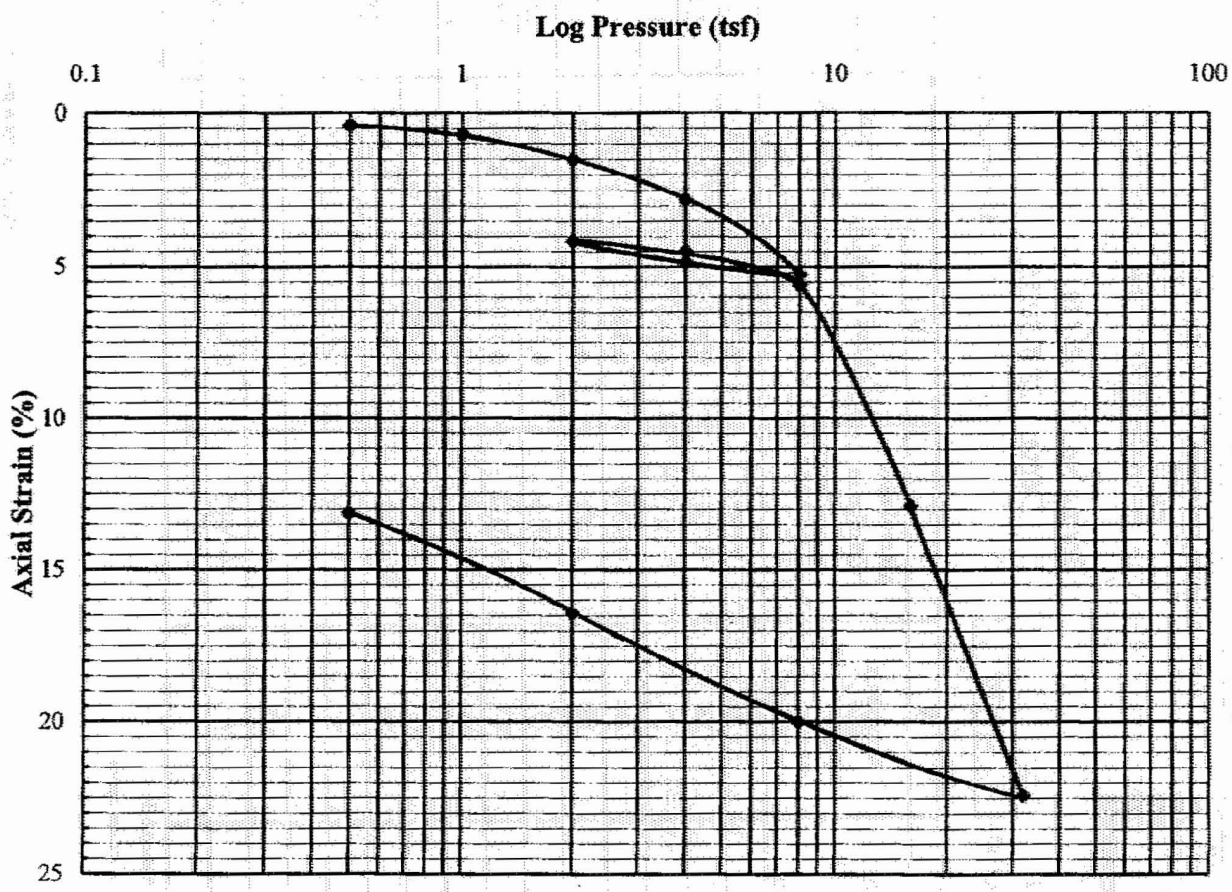


REVISED FORM FOR
NCR NO. 25237-NCR-028
2/12/2007

Probable Preconsolidation Pressure (Pp), tsf:	*9.3*	**Recompression Ratio (Cεr):**	*0.021*
Type of Specimen:	*Tube Sample*	**Compression Ratio (Cεc):**	*0.316*
Description:	*FAT CLAY with sand (CH) - gray*		

	Initial	Final
Water Content, %	*39.5*	*31.4*
Void Ratio	*1.15*	*0.87*
Saturation, %	*97*	*100*
Dry Unit Weight, pcf	*81.7*	*94.0*

LL:	*52*	**PI:**	*33*	**Gs:**	*2.82*
P_o' (tsf):	*1.15*				
% < No. 200:	*85.3*	**Test Method:**	*ASTM D2435 Method A*		
Test Condition:	*Inundated @ 2 tsf*				

Remarks: Coefficient of Consolidation, Cv, equals 196 and 17 ft2/yr at average pressures of 3 and 12 tsf (square root of time method).

Average Water Content of Trimmings, %: *37.4*

Schnabel
Schnabel Engineering

Project: Calvert Cliffs Nuclear Power Plant

Location:	*Calvert County, MD*		
Boring:	*B-333*	**Schnabel No.:**	*06120048*
Depth:	*28.5-30.5ft.*	**Elevation:**	*61 to 59 ft*
Date:	*11/21/2006*	**Reviewed by:**	*CJS*

Consolidation Test Report

Consolidation Test Data Sheet

Consolidometer ID: 3

11/21/06

REVISED FORM FOR
NCR NO. 25237-NCR-028
2/12/07

Schnabel Contract: *06120048*

Test Method: *ASTM D2435 Method A*

Project: *Calvert Cliffs Nuclear Power Plant*

Test Condition: *Inundated @ 2 tsf*

Initial Height of Specimen (H_o), in.: 0.7497

Boring No.: *B-333*

Height of Solids (H_s), in.: 0.3481

Depth: *28.5-30.5ft.*

Seating Press. (tsf): 0.05

Initial Dial Gauge Reading (D_o), in.: -0.0010

Reviewed by: CJS

Pressure, P (tsf)	Time Readings Required	Date Load Applied	Time Load Applied	Load Applied By	A: Final[1] Dial Reading, D_{fi} x 10^{-4} in.	B: Apparatus Correction[2], D_{ci} x 10^{-4} in.	C: Cumulative Change in Height[3], ΔH_i in.	D: Height of Voids[4], H_{vi} in.	Vertical Strain[5], ε_i (%)	Void Ratio[6], e_i
0.5		10/14/2006	9:25	CJS	29	8	0.0031	0.3985	0.41	1.145
1		10/16/2006	9:00	DWC	56	13	0.0053	0.3963	0.71	1.138
2		10/17/2006	9:00	DWC	120	17	0.0113	0.3903	1.51	1.121
4		10/18/2006	9:00	DWC	224	25	0.0209	0.3807	2.79	1.094
8		10/19/2006	9:00	DWC	424	39	0.0395	0.3621	5.27	1.040
4		10/20/2006	9:00	DWC	379	25	0.0364	0.3652	4.86	1.049
2		10/21/2006	9:00	DWC	319	17	0.0312	0.3704	4.16	1.064
4		10/23/2006	9:00	DWC	352	25	0.0337	0.3679	4.50	1.057
8		10/24/2006	9:00	DWC	450	39	0.0421	0.3595	5.62	1.033
16		10/25/2006	9:00	DWC	1005	48	0.0967	0.3049	12.90	0.876
32		10/26/2006	9:00	DWC	1727	56	0.1681	0.2335	22.42	0.671
8		10/27/2006	9:00	DWC	1528	39	0.1499	0.2517	19.99	0.723
2		10/30/2006	1:00	DWC	1239	17	0.1232	0.2784	16.43	0.800
0.5		10/31/2006	1:00	DWC	983	8	0.0985	0.3031	13.14	0.871

Notes:
1. "Final" based on test method; 24 hrs for Method A, end of primary for Method B.
2. Correction value, for the current pressure, from the consolidometer's calibration curve.
3. $\Delta H = D_{fi} - D_o - D_{ci}$ = Col. A - D_o - Col. B
4. $H_{vi} = (H_o - H_s) - \Delta H$
5. $\varepsilon_i = (\Delta H / H_o) \times 100$ = (Col. C / H_o) x 100
6. $e_i = H_{vi} / Hs$ = Col. D / Hs

Consol 8/2006 Rev. 1

Schnabel
Schnabel Engineering

Load Time Readings

11/21/06

Project: Calvert Cliffs Nuclear Power Plant
Schnabel Contract: 06120048
Boring No.: B-333 Depth: 28.5-30.5ft.

Consol. ID: 3 Reviewed by: CJS

Elapsed Time (min.)	Dial Guage Readings (inches)					
	4 tsf Reload 10/23/2006	32 tsf Load 10/26/2006	X tsf Load Date	X tsf Load Date	X tsf Load Date	X tsf Load Date
0.1	0.0174	0.0441				
0.25	0.0175	0.0457				
0.5	0.0176	0.0473				
1	0.0177	0.0496				
2	0.0178	0.0525				
4	0.0178	0.0561				
8	0.0178	0.0608				
15	0.0179	0.0657				
30	0.0179	0.0715				
60	0.0179	0.0770				
120	0.0180	0.0817				
240	0.0180	0.0856				
480	0.0181	0.0890				
720	0.0181	0.0907				
960	0.0181	0.0918				
1200	0.0181	0.0926				
1440	0.0181	0.0933				
1680						
1920						
2160						
2400						
2640						
2880						

Schnabel Engineering

Consolidation Time Curves

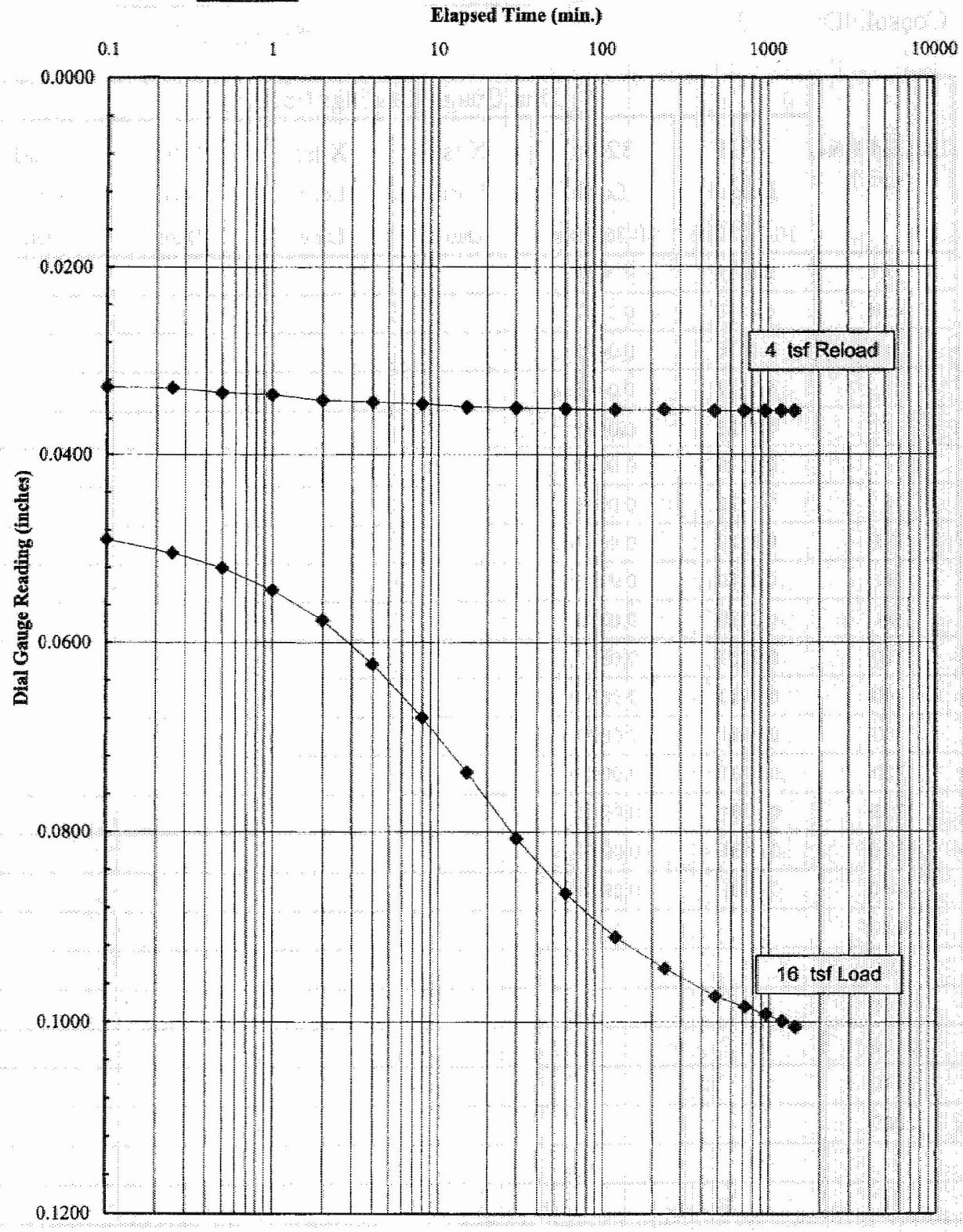
11/21/06

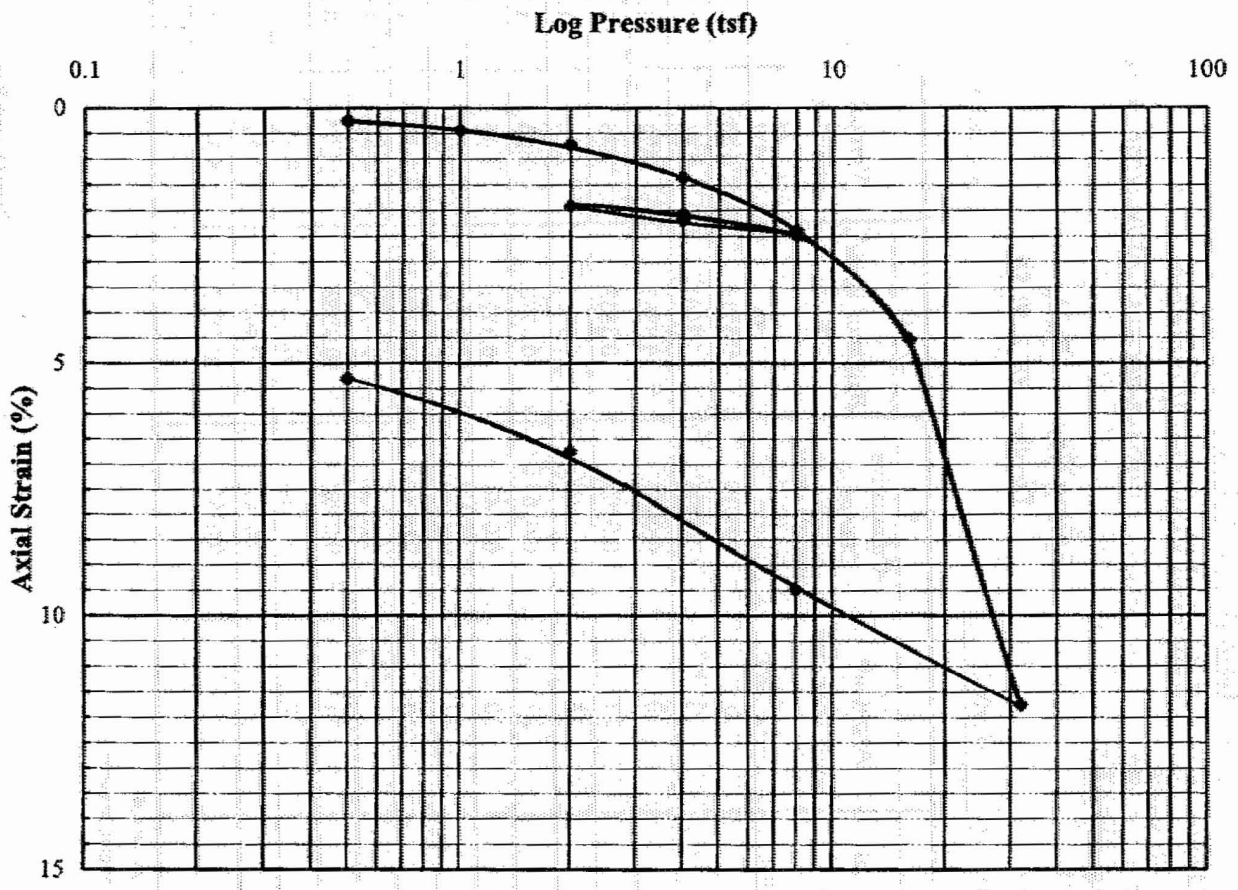
Project: Calvert Cliffs Nuclear Power Plant

Schnabel Contract: 06120048

Boring No.: B-333 Depth: 28.5-30.5ft.

Reviewed by: CJS





REVISED FORM FOR
NCR NO. 25237-NCR-028
2/12/07

Probable Preconsolidation Pressure (Pp), tsf:	*15.2*			**Recompression Ratio (Cεr):**	*0.009*
Type of Specimen:	*Tube Sample*			**Compression Ratio (Cεc):**	*0.240*
Description:	*FAT CLAY (CH) - gray*				**Initial** / **Final**
				Water Content, %	*37.2* / *34.9*
LL: *61*	**PI:** *38*	**Gs:** *2.85*	**P_c' (tsf):** *1.40*	**Void Ratio**	*1.10* / *0.99*
% < No. 200: *98.8*		**Test Method:** *ASTM D2435 Method A*		**Saturation, %**	*96* / *100*
Test Condition: *Inundated @ 2.0tsf*				**Dry Unit Weight, pcf**	*84.6* / *89.3*

Remarks: Coefficient of Consolidation, Cv, equals 279 and 34 ft2/yr at average pressures of 3 and 16 tsf (square root of time method).

Average Water Content of Trimmings, %: *32.8*

Project: Calvert Cliffs Nuclear Power Plant

Location:	*Calvert County, MD*		
Boring:	*B-333*	**Schnabel No.:**	*06120048*
Depth:	*38.5-40.5ft.*	**Elevation:**	*51 to 49 ft*
Date:	*11/21/2006*	**Reviewed by:**	*CJS*

Schnabel
Schnabel Engineering

Consolidation Test Report

Consolidation Test Data Sheet

Consolidometer ID: 3

11/21/06

REVISED FORM FOR
NCR NO. 25237-NCR-028
2/12/2007

Schnabel Contract: *06120048*

Test Method: *ASTM D2435 Method A*

Project: *Calvert Cliffs Nuclear Power Plant*

Test Condition: *Inundated @ 2.0tsf*

Initial Height of Specimen (H_o), in.: 0.7504

Boring No.: *B-333*

Height of Solids (H_s), in.: 0.3569

Depth: *38.5-40.5ft.*

Seating Press. (tsf): 0.05

Initial Dial Gauge Reading (D_o), in.: -0.0002

Reviewed by: CJS

Pressure, P (tsf)	TimeReadings Required	Date Load Applied	Time Load Applied	Load Applied By	A: Final[1] Dial Reading, D_{fi} x 10^{-4} in.	B: Apparatus Correction[2], D_{ci} x 10^{-4} in.	C: Cumulative Change in Height[3], ΔH_i in.	D: Height of Voids[4], H_{vi} in.	Vertical Strain[5], ε_i (%)	Void Ratio[6], e_i
0.5		10/25/2006	9:10	DWC	23	6	0.0019	0.3916	0.25	1.097
1		10/26/2006	9:10	DWC	44	13	0.0033	0.3902	0.44	1.093
2		10/27/2006	9:10	DWC	72	20	0.0054	0.3881	0.72	1.087
4		10/31/2006	9:10	DWC	127	27	0.0102	0.3833	1.36	1.074
8		11/1/2006	9:10	DWC	214	36	0.0180	0.3755	2.40	1.052
4		11/2/2006	9:10	DWC	190	27	0.0165	0.3770	2.20	1.056
2		11/3/2006	9:10	DWC	162	20	0.0144	0.3791	1.92	1.062
4		11/4/2006	9:10	CJS	181	27	0.0156	0.3779	2.08	1.059
8		11/6/2006	9:10	DWC	221	36	0.0187	0.3748	2.49	1.050
16		11/7/2006	9:10	DWC	382	44	0.0340	0.3595	4.53	1.007
32		11/8/2006	9:10	DWC	933	53	0.0882	0.3053	11.75	0.855
8		11/9/2006	9:10	DWC	746	36	0.0712	0.3223	9.49	0.903
2		11/10/2006	9:10	DWC	525	20	0.0507	0.3428	6.76	0.961
0.5		11/11/2006	9:10	DWC	402	6	0.0398	0.3537	5.30	0.991

Notes:
1. "Final" based on test method; 24 hrs for Method A, end of primary for Method B.
2. Correction value, for the current pressure, from the consolidometer's calibration curve.
3. $\Delta H = D_{fi} - D_o - D_{ci}$ = Col. A - D_o - Col. B
4. $H_{vi} = (H_o - H_s) - \Delta H$
5. $\varepsilon_i = (\Delta H / H_o) \times 100$ = (Col. C / H_o) x 100
6. $e_i = H_{vi} / Hs$ = Col. D / Hs

Consol 8/2006 Rev. 1

Schnabel
Schnabel Engineering

Load Time Readings

11/21/06

Project: Calvert Cliffs Nuclear Power Plant
Schnabel Contract: 06120048
Boring No.: B-333 Depth: 38.5-40.5ft.

Consol. ID: 3 Reviewed by: CJS

Elapsed Time (min.)	Dial Guage Readings (inches)					
	4 tsf Reload 11/4/2006	32 tsf Load 11/8/2006	X tsf Load Date	X tsf Load Date	X tsf Load Date	X tsf Load Date
0.1	0.0174	0.0441				
0.25	0.0175	0.0457				
0.5	0.0176	0.0473				
1	0.0177	0.0496				
2	0.0178	0.0525				
4	0.0178	0.0561				
8	0.0178	0.0608				
15	0.0179	0.0657				
30	0.0179	0.0715				
60	0.0179	0.0770				
120	0.0180	0.0817				
240	0.0180	0.0856				
480	0.0181	0.0890				
720	0.0181	0.0907				
960	0.0181	0.0918				
1200	0.0181	0.0926				
1440	0.0181	0.0933				
1680						
1920						
2160						
2400						
2640						
2880						

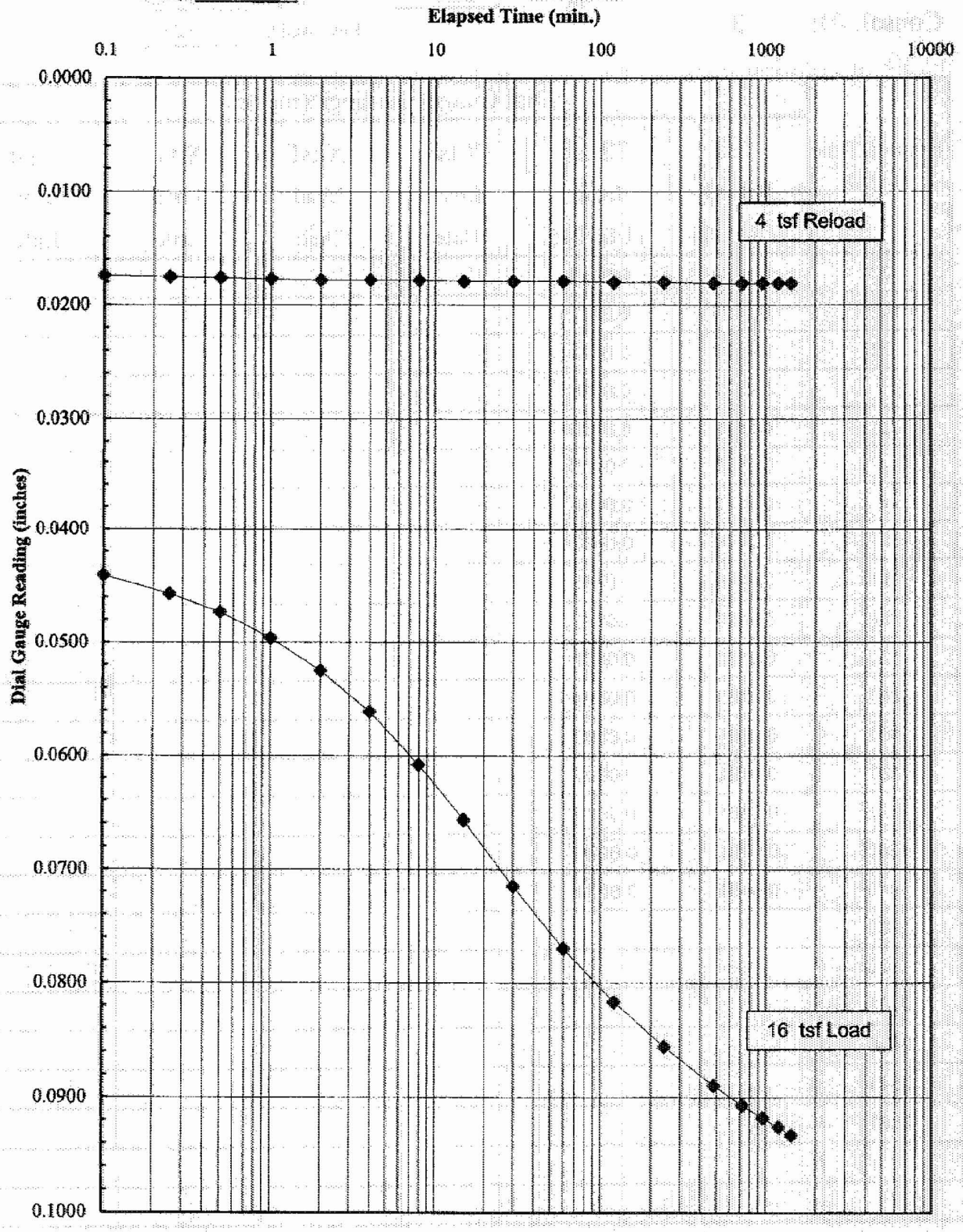
Schnabel
Schnabel Engineering

Consolidation Time Curves

11/21/06

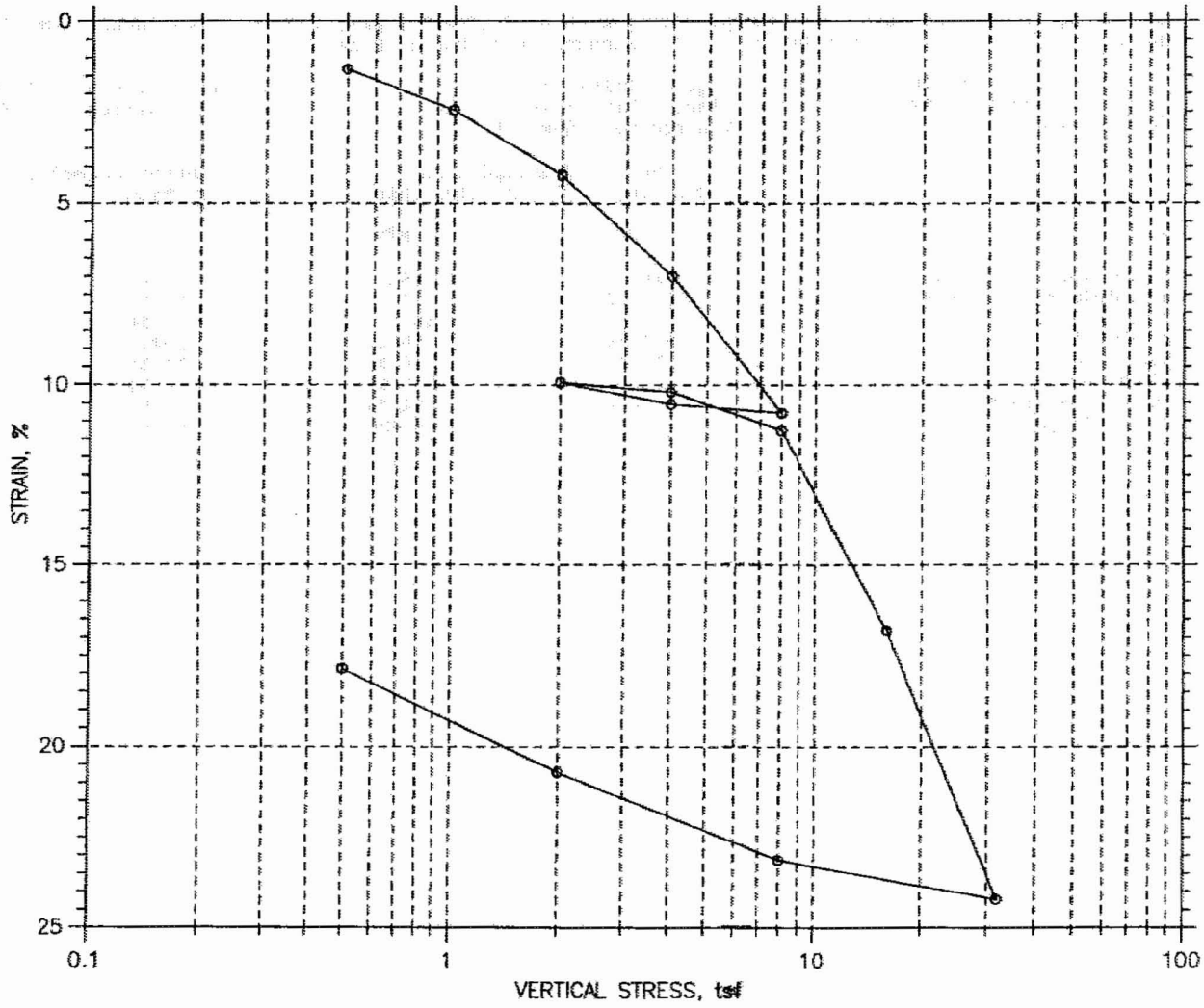
Project: Calvert Cliffs Nuclear Power Plant
Schnabel Contract: 06120048
Boring No.: B-333 Depth: 38.5-40.5ft.

Reviewed by: CJS



Consol 8/2006 Rev. 1

CONSOLIDATION TEST DATA
SUMMARY REPORT



					Before Test	After Test
Overburden Pressure: ---				Water Content, %	38.34	27.36
Preconsolidation Pressure: 5.3 tsf				Dry Unit Weight, pcf	79.63	96.94
Compression Index: ---				Saturation, %	92.70	99.99
Diameter: 2.5 in		Height: 1 in		Void Ratio	1.12	0.74
LL: 51	PL: 16	PI: 35	GS: 2.70			

GeoTesting express a subsidiary of Geocomp Corporation	Project: Calvert Cliffs Nuclear PP	Location: Calvert County	Project No.: GTX-6880
	Boring No.: B-334	Tested By: md	Checked By: jdt
	Sample No.: S-8	Test Date: 09/11/2006	Depth: 23-25
	Test No.: C-9	Sample Type: tube	Elevation: ---
	Description: Moist, dark greenish gray clay with sand (CH),79% passing #200 sieve,inundated@0.5 tsf		
	Remarks: System T - Compression Ratio: 0.22 , Recompression Ratio: 0.02		

Thu, 09-NOV-2006 16:24:11

CONSOLIDATION TEST DATA

Project: Calvert Cliffs Nuclear PP	Location: Calvert County	Project No.: GTX-6880
Boring No.: B-334	Tested By: md	Checked By: jdt
Sample No.: S-8	Test Date: 09/11/2006	Depth: 23-25
Test No.: C-9	Sample Type: tube	Elevation: ---

Soil Description: Moist, dark greenish gray clay with sand (CH),79% passing #200 sieve,inundated@0.5 tsf
Remarks: System T - Compression Ratio: 0.22 , Recompression Ratio: 0.02

Measured Specific Gravity: 2.70	Liquid Limit: 51	Initial Height: 1.00 in
Initial Void Ratio: 1.12	Plastic Limit: 16	Specimen Diameter: 2.50 in
Final Void Ratio: 0.74	Plasticity Index: 35	

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	Six	RING		1729
Wt. Container + Wet Soil, gm	216.61	251.1	239.83	140.93
Wt. Container + Dry Soil, gm	164.26	211.76	211.76	112.48
Wt. Container, gm	7.95	109.16	109.16	8.49
Wt. Dry Soil, gm	156.31	102.6	102.6	103.99
Water Content, %	33.49	38.34	27.36	27.36
Void Ratio	---	1.12	0.74	---
Degree of Saturation, %	---	92.70	99.99	---
Dry Unit Weight, pcf	---	79.626	96.942	---

CONSOLIDATION TEST DATA

Project: Calvert Cliffs Nuclear PP
Boring No.: B-334
Sample No.: S-8
Test No.: C-9

Location: Calvert County
Tested By: md
Test Date: 09/11/2006
Sample Type: tube

Project No.: GTX-6880
Checked By: jdt
Depth: 23-25
Elevation: ---

Soil Description: Moist, dark greenish gray clay with sand (CH),79% passing #200 sieve,inundated@0.5 tsf
Remarks: System T - Compression Ratio: 0.22 , Recompression Ratio: 0.02

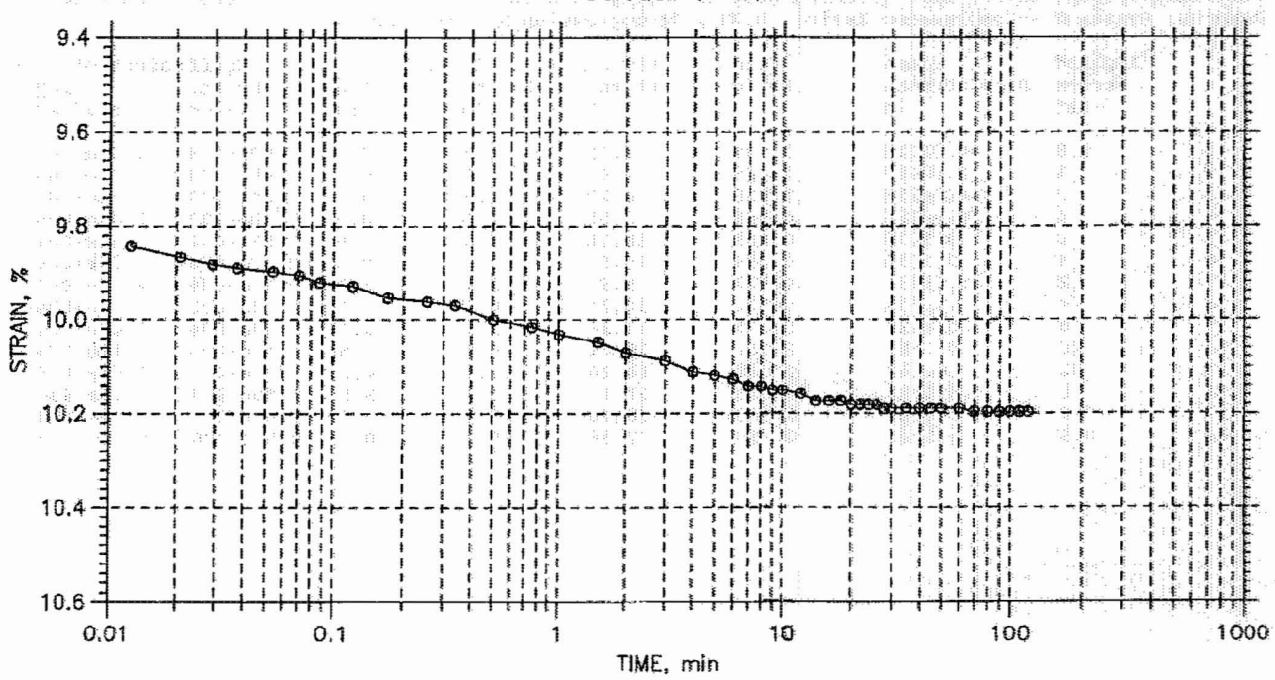
	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.5	0.01318	1.089	1.32	0.1	0.1	8.69e-003	1.03e-002	9.41e-003
2	1	0.02453	1.065	2.45	0.1	0.1	5.95e-003	8.32e-003	6.94e-003
3	2	0.04216	1.028	4.22	0.3	0.1	2.64e-003	9.60e-003	4.14e-003
4	4	0.06976	0.969	6.98	0.6	0.0	1.20e-003	0.00e+000	1.20e-003
5	8	0.1078	0.889	10.78	1.8	1.9	3.89e-004	3.54e-004	3.71e-004
6	4	0.1054	0.894	10.54	0.8	0.0	8.17e-004	0.00e+000	8.17e-004
7	2	0.09933	0.907	9.93	2.1	3.3	3.17e-004	2.02e-004	2.47e-004
8	4	0.102	0.901	10.20	0.6	0.0	1.13e-003	0.00e+000	1.13e-003
9	8	0.1126	0.878	11.26	1.9	1.9	3.40e-004	3.49e-004	3.44e-004
10	16	0.1681	0.761	16.81	6.4	10.5	9.43e-005	5.79e-005	7.18e-005
11	32	0.242	0.604	24.20	13.9	14.2	3.75e-005	3.67e-005	3.71e-005
12	8	0.2312	0.627	23.12	3.1	3.5	1.55e-004	1.36e-004	1.45e-004
13	2	0.207	0.679	20.70	12.8	0.0	3.93e-005	0.00e+000	3.93e-005
14	0.5	0.1786	0.739	17.86	56.0	0.0	9.57e-006	0.00e+000	9.57e-006

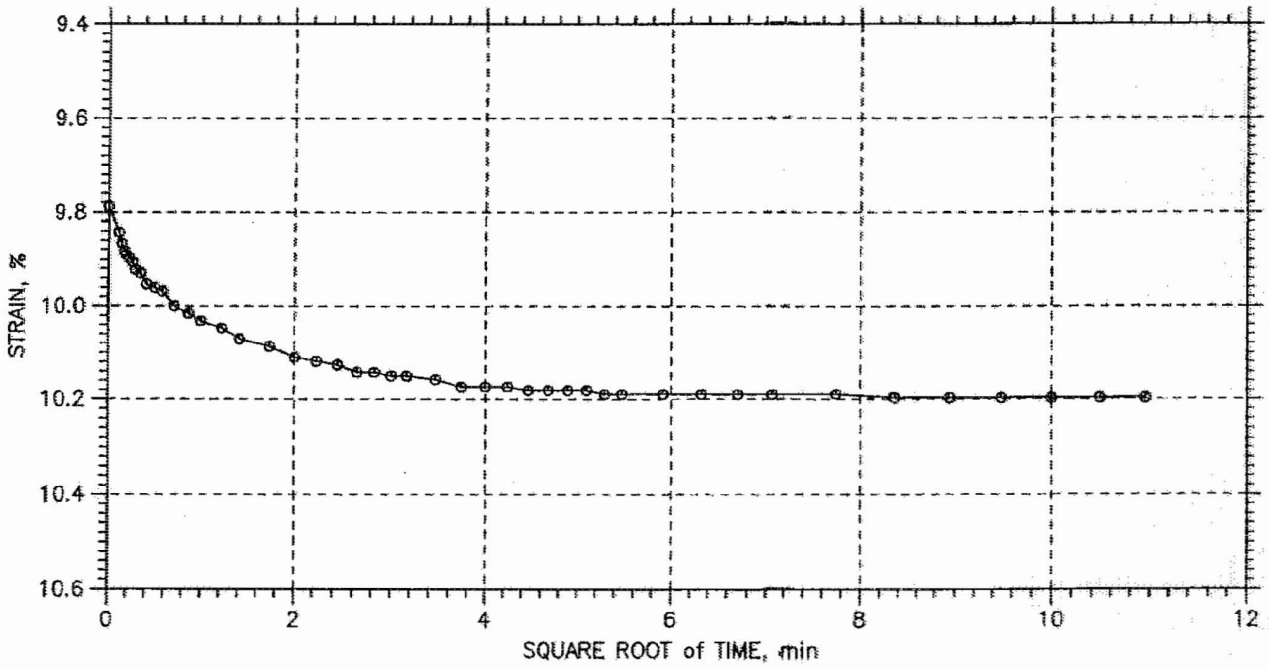
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 14

Stress: 4. tsf





GeoTesting express a subsidiary of Geocomp Corporation	Project: Calvert Cliffs Nuclear PP	Location: Calvert County	Project No.: GTX-6880
	Boring No.: B-334	Tested By: md	Checked By: jdt
	Sample No.: S-8	Test Date: 09/11/2006	Depth: 23-25
	Test No.: C-9	Sample Type: tube	Elevation: ---
	Description: Moist, dark greenish gray clay with sand (CH),79% passing #200 sieve,inundated@0.5 tsf		
	Remarks: System T - Compression Ratio: 0.22 , Recompression Ratio: 0.02		

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