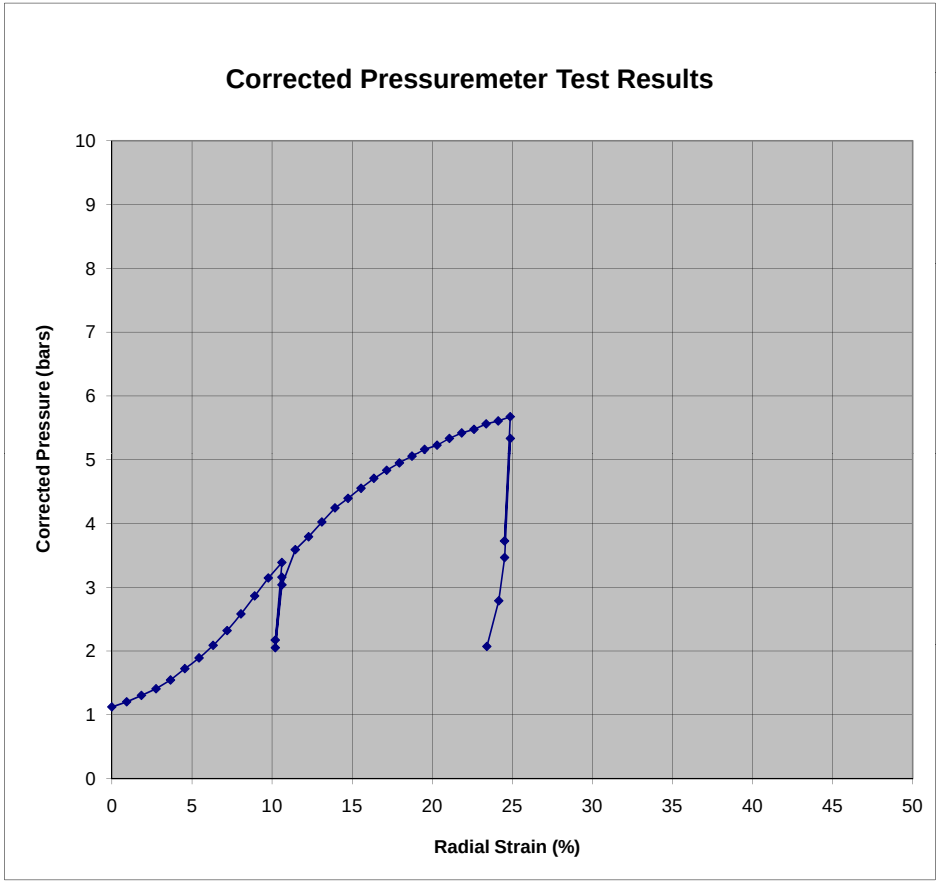
PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	1
IN-SITU SOIL TESTING, L.C.		DEPTH:	14.0 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/4/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.12	0	0.00	
1.20	40	0.93	
1.30	80	1.85	
1.41	120	2.76	
1.55	160	3.66	
1.72	199	4.56	
1.89	239	5.45	
2.09	279	6.32	
2.32	319	7.20	
2.58	359	8.06	Eo1
2.86	399	8.92	
3.15	438	9.77	
3.39	478	10.61	Eo2
2.17	459	10.20	Er1
3.16	478	10.62	Er2
2.05	459	10.21	Er3
3.04	478	10.62	Er4
3.59	518	11.45	
3.79	558	12.28	
4.02	598	13.11	
4.24	637	13.93	
4.39	677	14.75	
4.55	717	15.56	
4.71	757	16.36	
4.83	797	17.16	
4.95	837	17.95	
5.06	877	18.74	
5.16	917	19.52	
5.23	957	20.30	
5.33	997	21.08	
5.42	1036	21.84	
5.48	1076	22.61	
5.56	1116	23.37	
5.61	1156	24.12	
5.67	1196	24.87	Eu1
3.73	1177	24.52	Eu2
5.33	1197	24.88	Eu3
3.47	1178	24.52	Eu4
2.79	1158	24.16	
2.07	1119	23.41	

Interpreted Pressuremeter Parameters		
P_o	1.7	bar
P_L	6.5	bar
P_l^*	4.8	bar
E_o	46	bar
E_{r1}	350	bar
E_{r2}	350	bar
E_o/P_L^*	9.6	
E_{u1}	907	bar
E_{r3}	738	bar
E_{u2}	868	bar



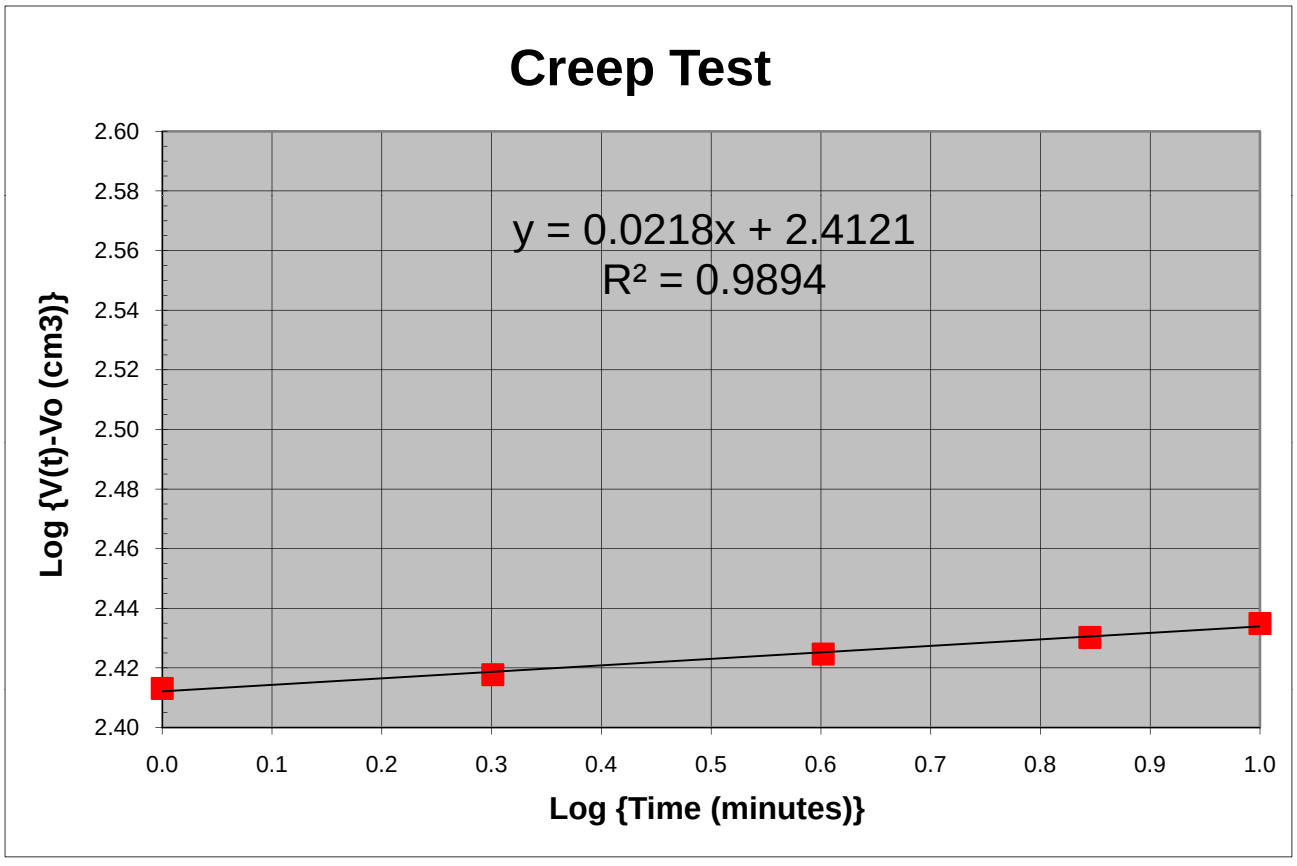
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 14 feet

Holding Gauge Pressure =	2.72	bars
Corrected Pressure =	3.59	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2403	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	523.25	2662.06	258.89	2.413
2	0.301	526.00	2664.81	261.64	2.418
4	0.602	530.21	2669.02	265.85	2.425
7	0.845	533.66	2672.47	269.30	2.430
10	1.000	536.56	2675.37	272.20	2.435

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0218

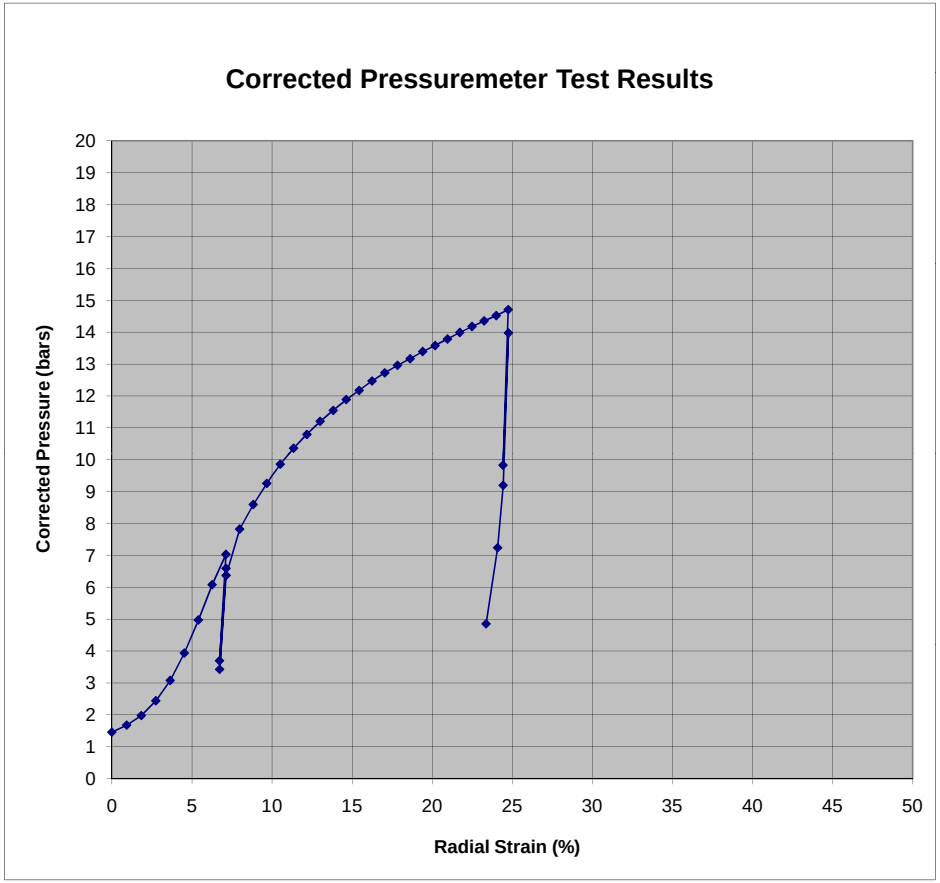


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	2
IN-SITU SOIL TESTING, L.C.		DEPTH:	23.4 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/4/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.45	0	0.00	
1.67	40	0.92	
1.97	79	1.84	
2.44	119	2.75	
3.08	159	3.64	
3.93	198	4.52	Eo1
4.97	237	5.40	
6.08	276	6.26	
7.03	316	7.12	Eo2
3.69	297	6.72	Er1
6.59	316	7.13	Er2
3.42	298	6.73	Er3
6.37	316	7.13	Er4
7.82	355	7.98	
8.59	394	8.83	
9.26	434	9.67	
9.86	473	10.51	
10.36	513	11.35	
10.79	553	12.18	
11.20	592	13.00	
11.54	632	13.82	
11.88	672	14.63	
12.17	712	15.44	
12.47	751	16.25	
12.72	791	17.04	
12.96	831	17.84	
13.17	871	18.62	
13.39	911	19.41	
13.58	951	20.18	
13.78	990	20.96	
13.99	1030	21.72	
14.18	1070	22.49	
14.35	1110	23.25	
14.52	1150	24.00	
14.70	1190	24.75	Eu1
9.83	1172	24.42	Eu2
13.97	1190	24.76	Eu3
9.20	1173	24.43	Eu4
7.24	1154	24.09	
4.85	1116	23.37	

Interpreted Pressuremeter Parameters		
P_o	2.2	bar
P_L	17.5	bar
P_L^*	15.3	bar
E_o	168	bar
E_{r1}	1011	bar
E_{r2}	1033	bar
E_o/P_L^*	11.0	
E_{u1}	2460	bar
E_{r3}	2027	bar
E_{u2}	2403	bar



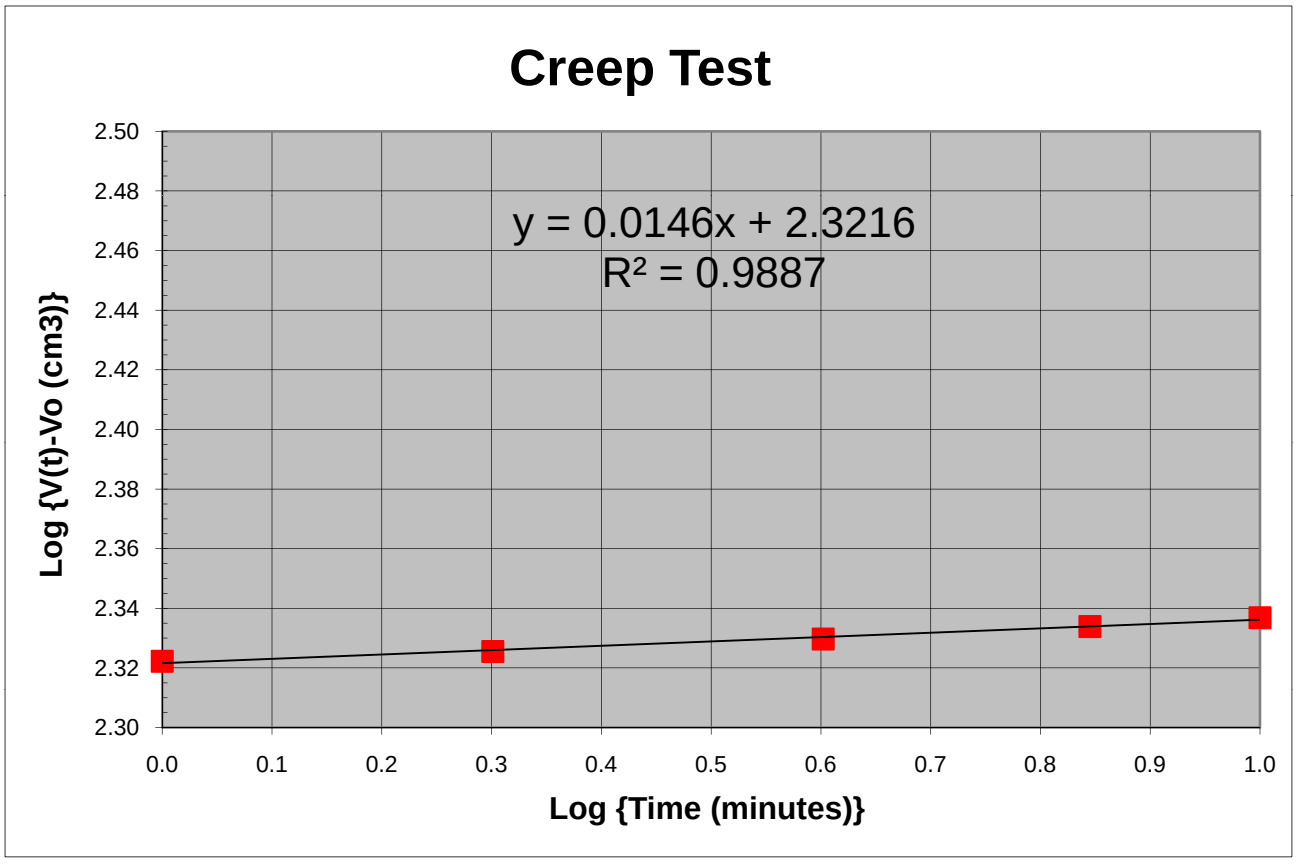
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 23.4 feet

Holding Gauge Pressure =	6.64	bars
Corrected Pressure =	7.82	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.82	cm
Initial Borehole Volume, Vo =	2291	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	362.35	2501.16	210.01	2.322
2	0.301	363.93	2502.74	211.59	2.326
4	0.602	365.97	2504.78	213.63	2.330
7	0.845	368.05	2506.86	215.71	2.334
10	1.000	369.53	2508.34	217.19	2.337

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0146

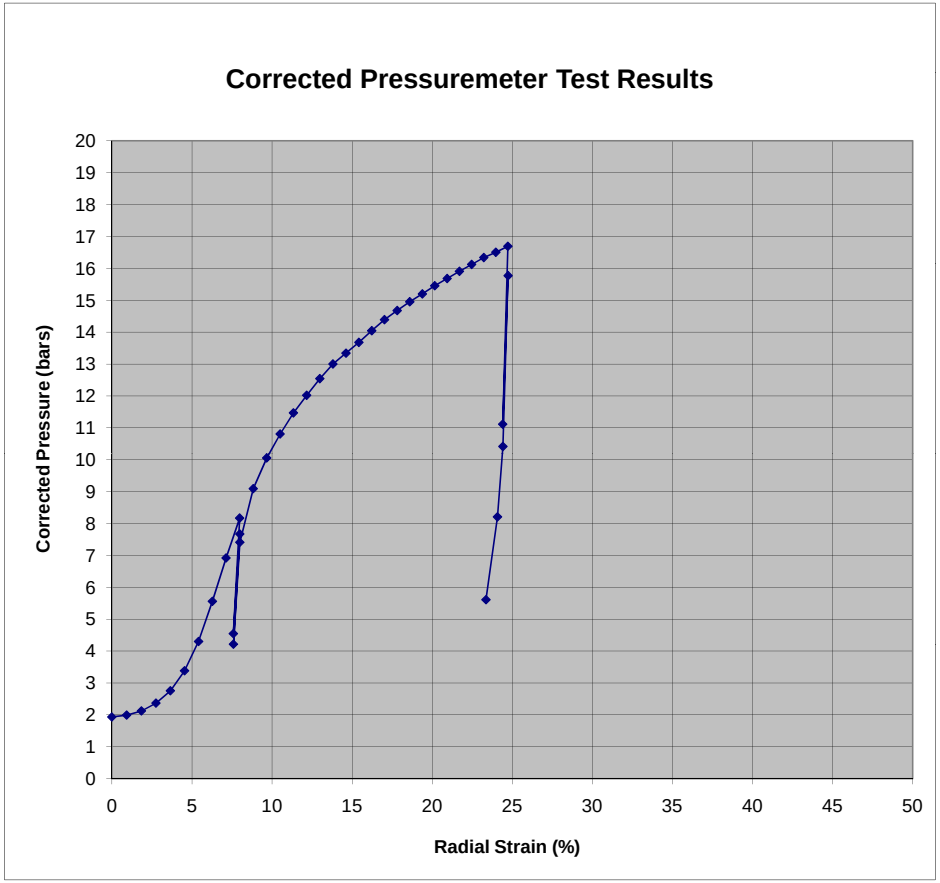


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	3
IN-SITU SOIL TESTING, L.C.		DEPTH:	33.7 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/4/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.93	0	0.00	
1.99	40	0.92	
2.12	80	1.84	
2.37	119	2.75	
2.75	159	3.65	
3.38	199	4.54	
4.30	238	5.41	Eo1
5.56	277	6.28	
6.92	316	7.13	
8.17	355	7.98	Eo2
4.54	337	7.59	Er1
7.67	355	7.99	Er2
4.21	337	7.59	Er3
7.41	355	7.99	Er4
9.09	394	8.83	
10.05	433	9.67	
10.81	473	10.50	
11.47	512	11.34	
12.02	552	12.16	
12.54	592	12.99	
13.00	631	13.80	
13.34	671	14.62	
13.68	711	15.42	
14.05	750	16.23	
14.39	790	17.02	
14.68	830	17.81	
14.95	870	18.60	
15.20	910	19.38	
15.46	949	20.16	
15.68	989	20.93	
15.91	1029	21.70	
16.12	1069	22.46	
16.34	1109	23.22	
16.51	1148	23.97	
16.69	1188	24.72	Eu1
11.11	1171	24.40	Eu2
15.77	1189	24.74	Eu3
10.41	1172	24.41	Eu4
8.21	1154	24.08	
5.61	1116	23.36	

Interpreted Pressuremeter Parameters		
P_o	2.3	bar
P_L	20.0	bar
P_l^*	17.7	bar
E_o	214	bar
E_{r1}	1115	bar
E_{r2}	1146	bar
E_o/P_L^*	12.1	
E_{u1}	2870	bar
E_{r3}	2303	bar
E_{u2}	2740	bar



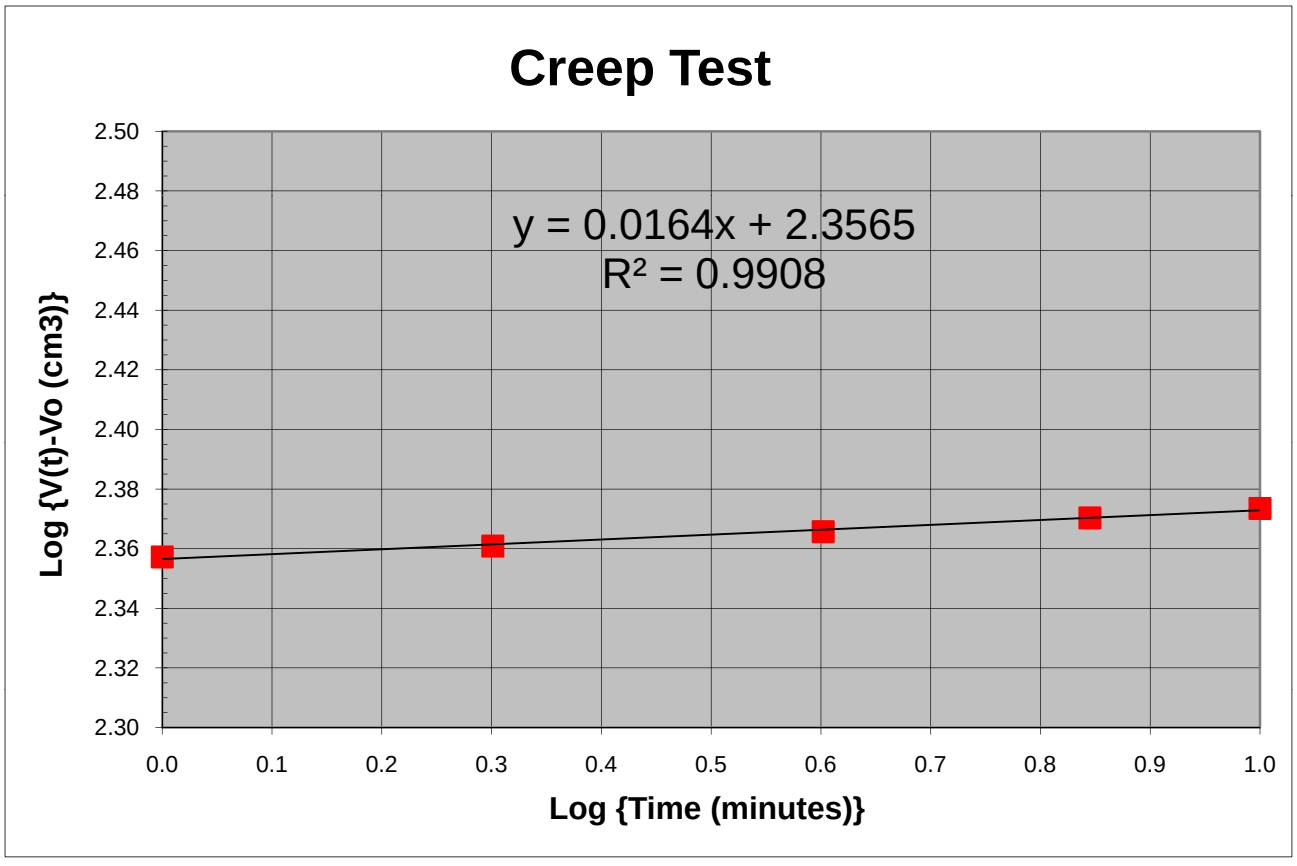
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 33.7 feet

Holding Gauge Pressure =	7.61	bars
Corrected Pressure =	9.09	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.84	cm
Initial Borehole Volume, Vo =	2313	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	402.14	2540.95	227.61	2.357
2	0.301	404.06	2542.87	229.53	2.361
4	0.602	406.65	2545.46	232.12	2.366
7	0.845	409.13	2547.94	234.60	2.370
10	1.000	410.85	2549.66	236.32	2.374

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0164

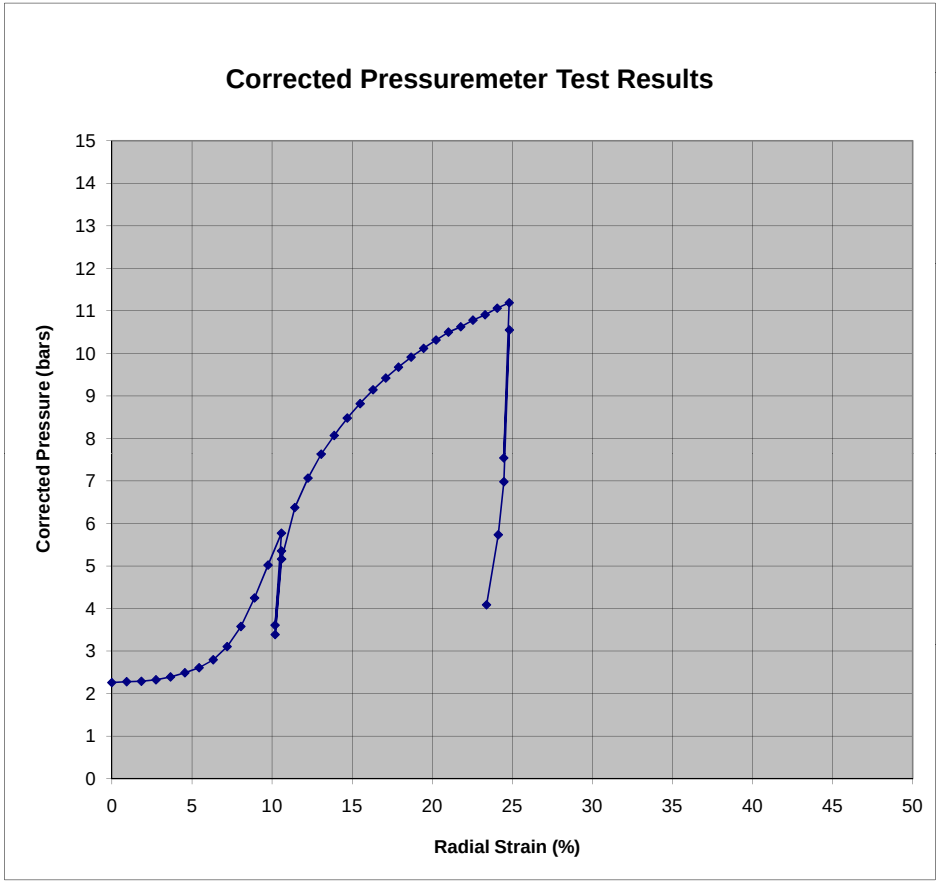


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	4
IN-SITU SOIL TESTING, L.C.		DEPTH:	44.0 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/4/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.26	0	0.00	
2.28	40	0.92	
2.29	80	1.85	
2.32	120	2.76	
2.39	160	3.66	
2.49	200	4.56	
2.61	239	5.45	
2.80	279	6.33	
3.11	319	7.20	
3.58	359	8.06	Eo1
4.25	398	8.91	
5.02	438	9.75	
5.77	477	10.59	Eo2
3.61	458	10.19	Er1
5.35	477	10.60	Er2
3.39	458	10.19	Er3
5.16	477	10.60	Er4
6.38	516	11.42	
7.07	556	12.25	
7.63	596	13.07	
8.07	635	13.89	
8.48	675	14.70	
8.82	715	15.50	
9.14	754	16.31	
9.42	794	17.10	
9.68	834	17.89	
9.91	874	18.68	
10.12	914	19.46	
10.31	953	20.24	
10.50	993	21.01	
10.63	1033	21.78	
10.78	1073	22.54	
10.91	1113	23.30	
11.06	1153	24.06	
11.19	1193	24.81	Eu1
7.54	1175	24.47	Eu2
10.55	1193	24.82	Eu3
6.98	1175	24.48	Eu4
5.73	1156	24.12	
4.09	1118	23.39	

Interpreted Pressuremeter Parameters		
P_o	2.5	bar
P_L	14.0	bar
P_l^*	11.5	bar
E_o	126	bar
E_{r1}	630	bar
E_{r2}	643	bar
E_o/P_L^*	11.0	
E_{u1}	1777	bar
E_{r3}	1427	bar
E_{u2}	1735	bar



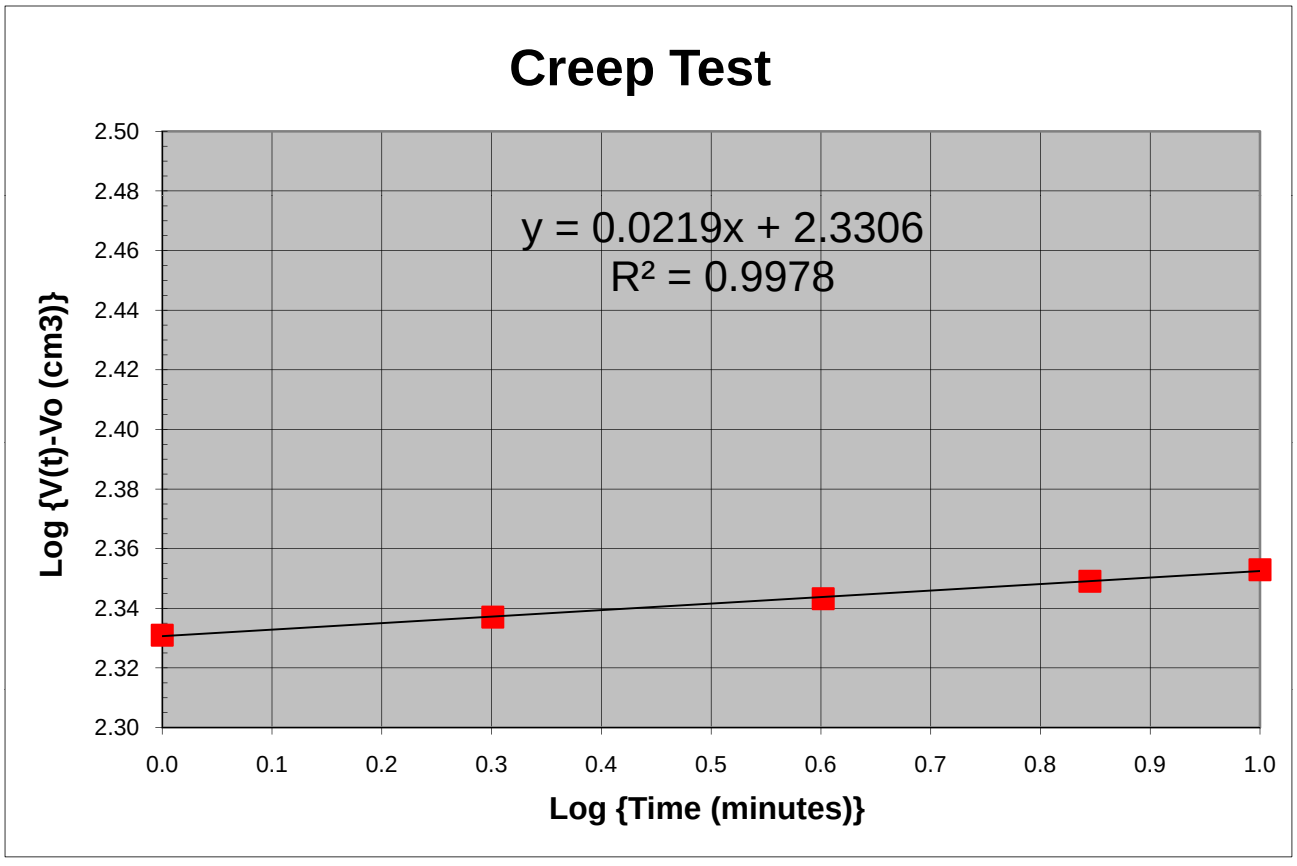
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 44 feet

Holding Gauge Pressure =	4.61	bars
Corrected Pressure =	6.38	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2449	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	524.20	2663.01	214.29	2.331
2	0.301	527.21	2666.02	217.30	2.337
4	0.602	530.32	2669.13	220.41	2.343
7	0.845	533.30	2672.11	223.39	2.349
10	1.000	535.31	2674.12	225.40	2.353

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0219

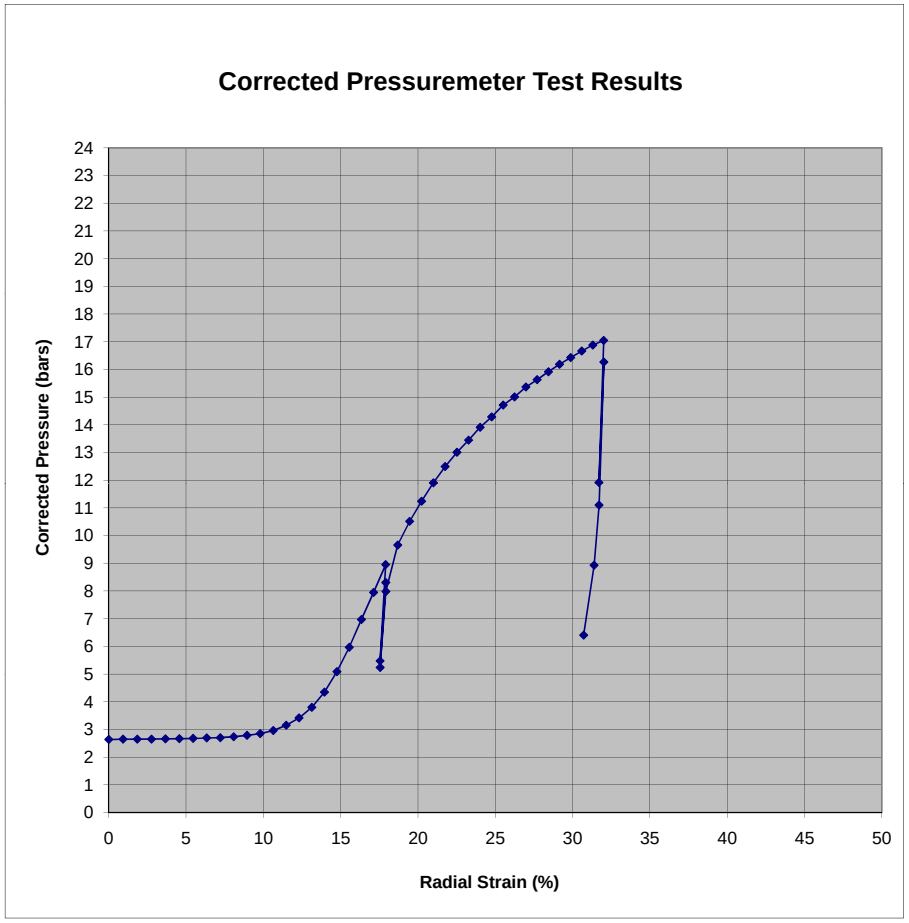


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	5
IN-SITU SOIL TESTING, L.C.		DEPTH:	54.2 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/4/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.64	0	0.00	
2.65	40	0.92	
2.65	80	1.84	
2.65	120	2.76	
2.66	160	3.66	
2.67	200	4.56	
2.67	240	5.45	
2.69	280	6.33	
2.70	320	7.21	
2.73	360	8.08	
2.79	399	8.94	
2.85	439	9.79	
2.96	479	10.64	
3.15	519	11.48	
3.41	559	12.31	
3.80	599	13.13	
4.35	638	13.95	
5.09	678	14.75	
5.96	717	15.55	Eo1
6.97	756	16.34	
7.95	796	17.13	
8.95	835	17.91	Eo2
5.47	817	17.55	Er1
8.30	835	17.92	Er2
5.23	817	17.55	Er3
7.98	835	17.92	Er4
9.66	874	18.69	
10.51	914	19.46	
11.24	953	20.23	
11.91	992	21.00	
12.49	1032	21.76	
13.01	1072	22.52	
13.44	1111	23.27	
13.91	1151	24.02	
14.29	1191	24.77	
14.71	1230	25.51	
15.01	1270	26.25	
15.36	1310	26.98	
15.63	1350	27.71	
15.92	1389	28.44	
16.19	1429	29.16	
16.43	1469	29.88	
16.66	1509	30.59	
16.88	1549	31.30	
17.05	1589	32.01	Eu1
11.92	1571	31.70	Eu2
16.27	1589	32.02	Eu3
11.10	1572	31.71	Eu4
8.93	1554	31.39	
6.40	1516	30.72	

Interpreted Pressuremeter Parameters		
P_o	2.8	bar
P_L	23.0	bar
P_l^*	20.2	bar
E_o	197	bar
E_{r1}	1191	bar
E_{r2}	1160	bar
E_o/P_L^*	9.7	
E_{u1}	2918	bar
E_{r3}	2392	bar
E_{u2}	2944	bar



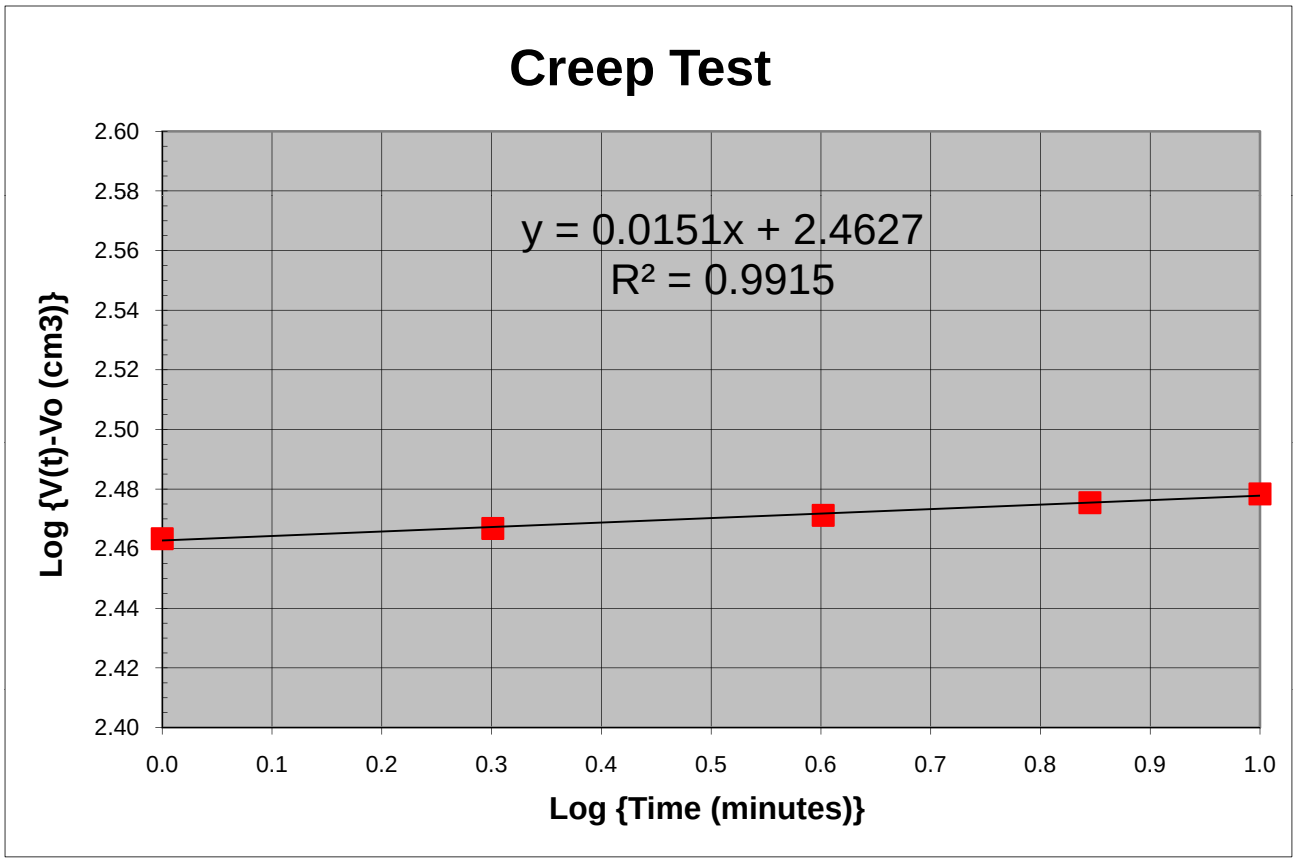
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 54.2 feet

Holding Gauge Pressure =	7.62	bars
Corrected Pressure =	9.66	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	4.17	cm
Initial Borehole Volume, Vo =	2731	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	882.85	3021.66	290.61	2.463
2	0.301	885.19	3024.00	292.95	2.467
4	0.602	888.15	3026.96	295.91	2.471
7	0.845	891.05	3029.86	298.81	2.475
10	1.000	893.09	3031.90	300.85	2.478

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0151

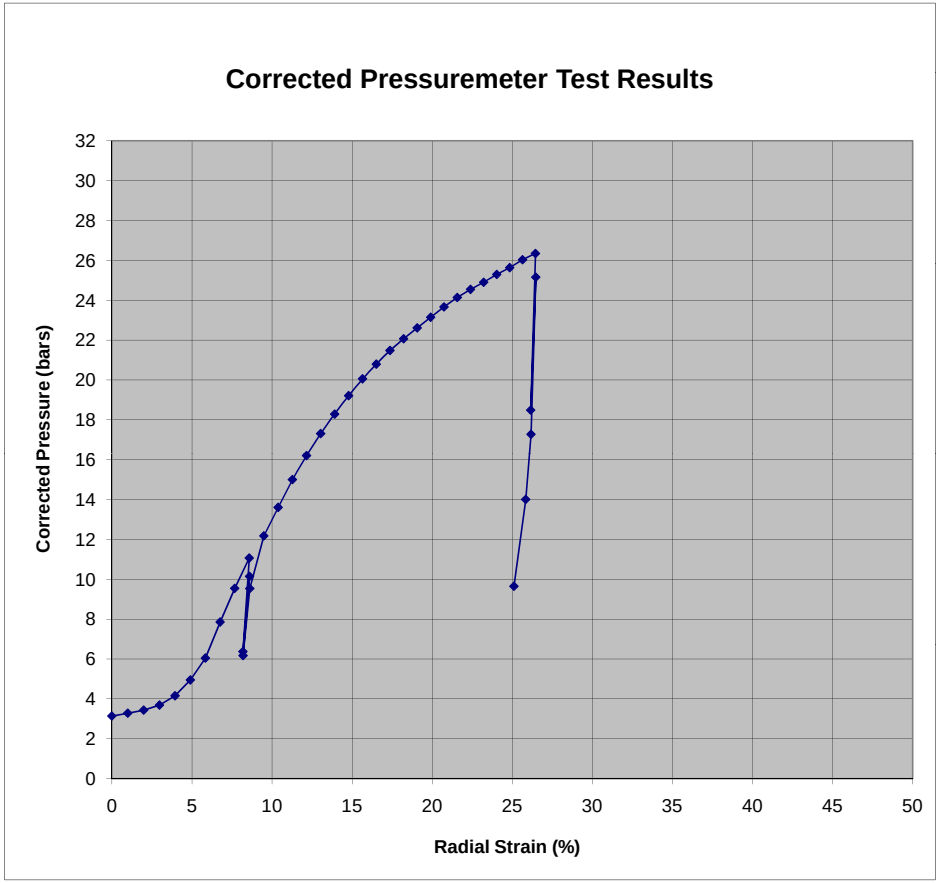


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	6
IN-SITU SOIL TESTING, L.C.		DEPTH:	63.7 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/4/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.14	-1	0.00	
3.28	39	0.99	
3.43	79	1.99	
3.69	119	2.98	
4.15	158	3.95	
4.95	198	4.90	
6.05	237	5.84	Eo1
7.86	275	6.76	
9.55	314	7.67	
11.07	352	8.58	Eo2
6.37	335	8.18	Er1
10.15	353	8.60	Er2
6.17	336	8.19	Er3
9.54	354	8.61	Er4
12.18	391	9.49	
13.61	430	10.38	
15.00	469	11.27	
16.21	508	12.16	
17.31	547	13.04	
18.29	586	13.91	
19.22	625	14.79	
20.06	664	15.65	
20.80	703	16.51	
21.48	743	17.37	
22.07	782	18.22	
22.62	822	19.07	
23.15	861	19.91	
23.67	901	20.74	
24.14	940	21.57	
24.55	980	22.40	
24.91	1020	23.22	
25.30	1059	24.03	
25.64	1099	24.84	
26.04	1139	25.65	
26.35	1178	26.45	Eu1
18.49	1164	26.15	Eu2
25.16	1180	26.47	Eu3
17.28	1165	26.17	Eu4
14.01	1148	25.84	
9.65	1112	25.11	

Interpreted Pressuremeter Parameters		
P_o	4.0	bar
P_L	32.0	bar
P_L^*	28.0	bar
E_o	262	bar
E_{r1}	1312	bar
E_{r2}	1156	bar
E_o/P_L^*	9.3	
E_{u1}	4438	bar
E_{r3}	3514	bar
E_{u2}	4454	bar



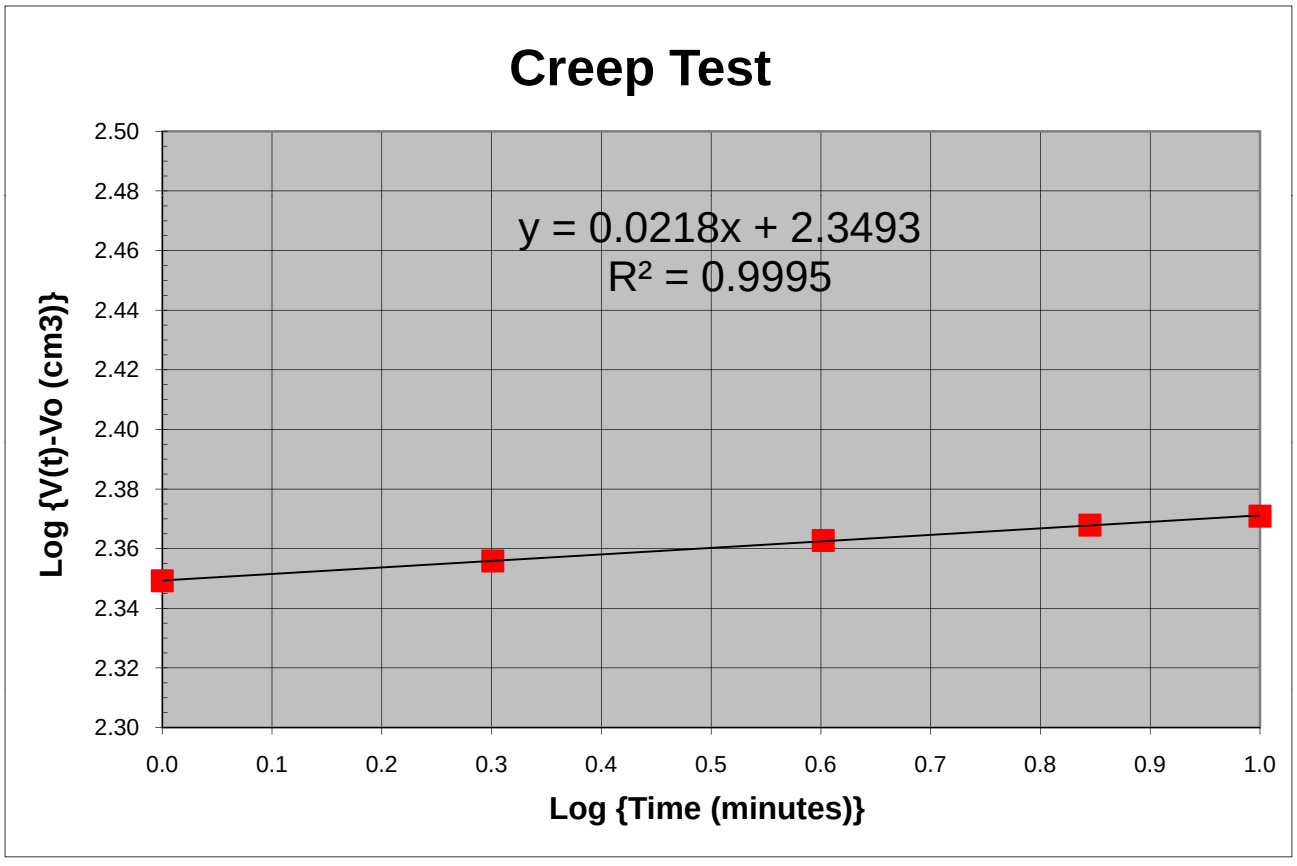
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 63.7 feet

Holding Gauge Pressure =	9.90	bars
Corrected Pressure =	12.18	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.86	cm
Initial Borehole Volume, Vo =	2149	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	404.55	2372.26	223.47	2.349
2	0.301	408.01	2375.72	226.93	2.356
4	0.602	411.62	2379.33	230.54	2.363
7	0.845	414.38	2382.09	233.30	2.368
10	1.000	415.99	2383.70	234.91	2.371

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0218

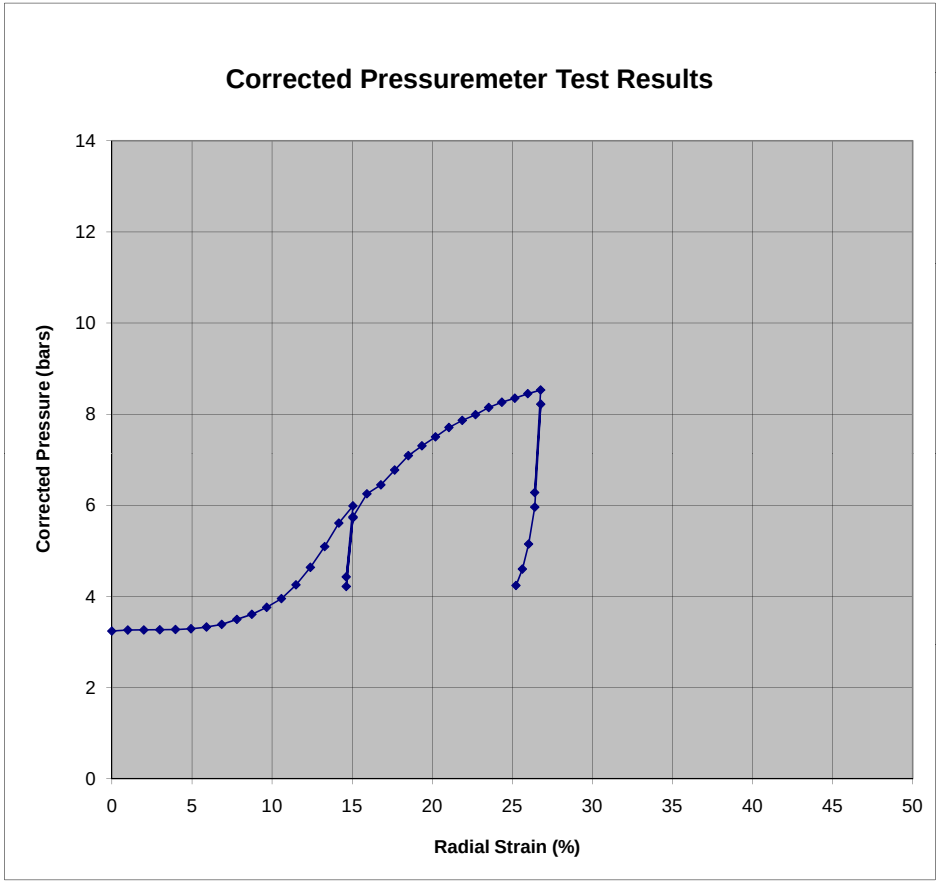


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	7
IN-SITU SOIL TESTING, L.C.		DEPTH:	73.33 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	04/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.24	0	0.00	
3.26	40	1.00	
3.26	79	2.00	
3.27	119	2.99	
3.27	159	3.97	
3.29	199	4.94	
3.33	239	5.91	
3.39	279	6.86	
3.50	319	7.81	
3.61	359	8.74	
3.76	399	9.67	
3.95	439	10.59	
4.25	478	11.50	Eo1
4.64	518	12.40	
5.09	558	13.29	
5.61	597	14.17	Eo2
5.99	637	15.05	
4.43	618	14.63	Er1
5.73	637	15.06	Er2
4.22	618	14.64	Er3
5.75	637	15.06	Er4
6.25	677	15.93	
6.45	716	16.80	
6.77	756	17.66	
7.09	796	18.51	
7.31	836	19.36	
7.50	876	20.21	
7.71	915	21.04	
7.86	955	21.88	
7.99	995	22.71	
8.15	1035	23.53	
8.26	1075	24.35	
8.35	1115	25.16	
8.45	1155	25.97	
8.53	1195	26.77	Eu1
6.28	1176	26.40	Eu2
8.22	1195	26.78	Eu3
5.96	1176	26.41	Eu4
5.15	1157	26.02	
4.60	1138	25.63	
4.24	1118	25.23	

Interpreted Pressuremeter Parameters		
P_o	3.4	bar
P_L	9.5	bar
P_L^*	6.1	bar
E_o	76	bar
E_{r1}	467	bar
E_{r2}	556	bar
E_o/P_L^*	12.5	
E_{u1}	1020	bar
E_{r3}	866	bar
E_{u2}	1025	bar



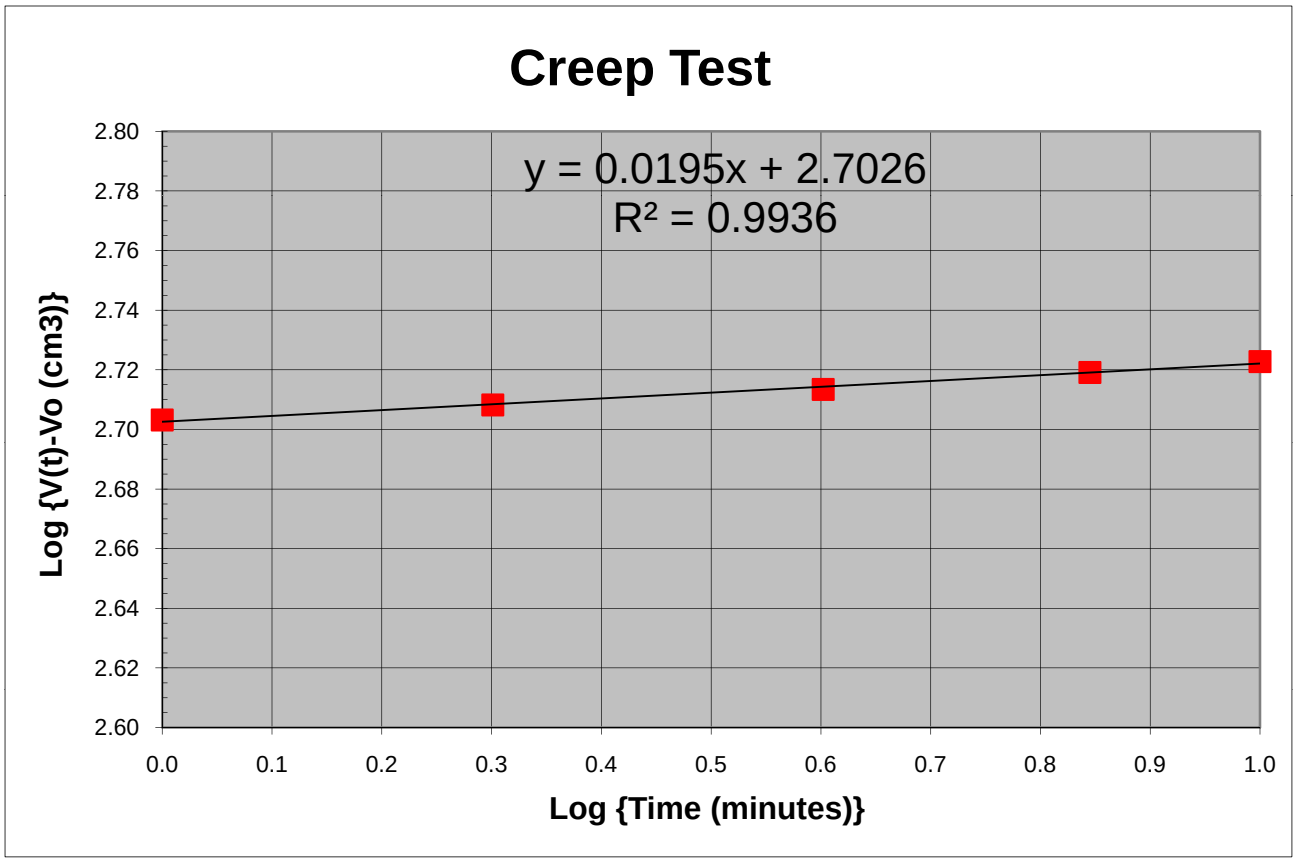
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 73.33 feet

Holding Gauge Pressure =	3.73	bars
Corrected Pressure =	6.25	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.86	cm
Initial Borehole Volume, Vo =	2149	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	685.90	2653.61	504.82	2.703
2	0.301	691.80	2659.51	510.72	2.708
4	0.602	698.00	2665.71	516.92	2.713
7	0.845	704.80	2672.51	523.72	2.719
10	1.000	709.20	2676.91	528.12	2.723

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0195

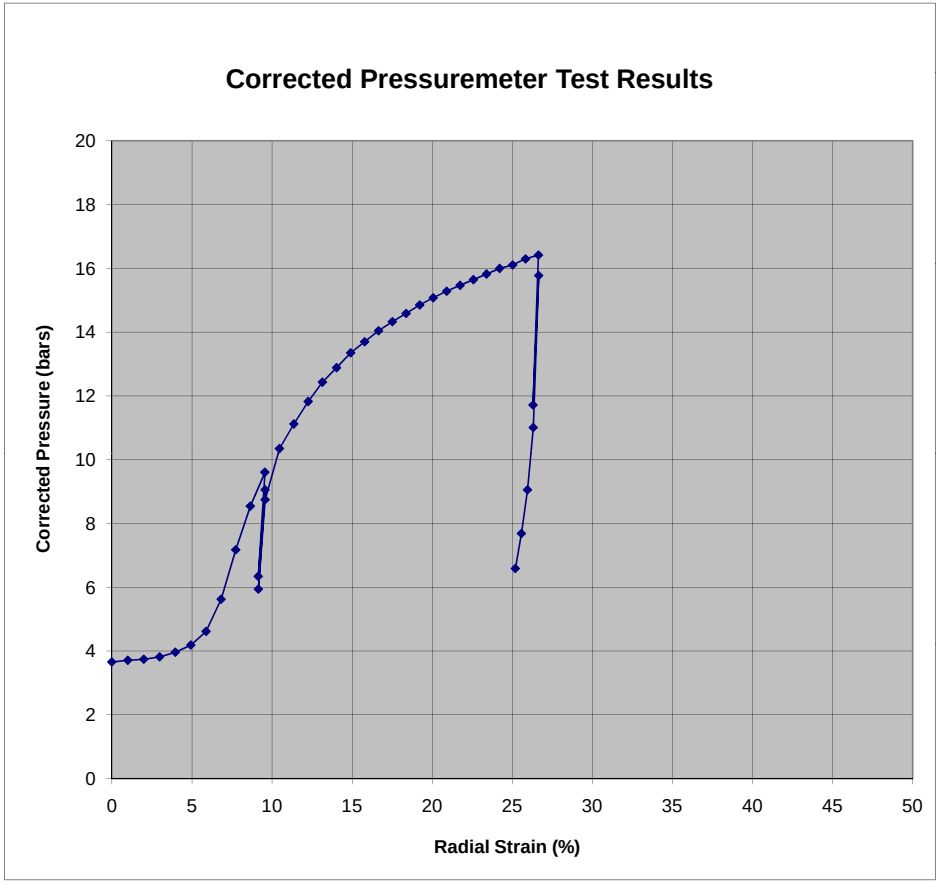


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	8
IN-SITU SOIL TESTING, L.C.		DEPTH:	82.7 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	04/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.66	-1	0.00	
3.71	39	1.00	
3.74	79	2.00	
3.82	119	2.99	
3.96	159	3.96	
4.19	199	4.93	
4.62	238	5.89	
5.62	278	6.82	Eo1
7.17	316	7.73	
8.55	355	8.65	Eo2
9.61	394	9.55	
6.34	376	9.14	Er1
9.06	394	9.57	Er2
5.94	377	9.15	Er3
8.75	395	9.57	Er4
10.35	433	10.46	
11.12	473	11.36	
11.83	512	12.26	
12.43	551	13.15	
12.89	591	14.03	
13.35	631	14.91	
13.70	670	15.79	
14.05	710	16.65	
14.33	750	17.52	
14.59	789	18.37	
14.85	829	19.22	
15.08	869	20.07	
15.29	909	20.91	
15.47	949	21.74	
15.65	989	22.57	
15.82	1028	23.39	
16.00	1068	24.21	
16.11	1108	25.03	
16.30	1148	25.83	
16.42	1188	26.64	Eu1
11.72	1171	26.30	Eu2
15.78	1188	26.65	Eu3
11.01	1172	26.31	Eu4
9.06	1154	25.95	
7.69	1135	25.57	
6.59	1116	25.19	

Interpreted Pressuremeter Parameters		
P_o	4.1	bar
P_L	19.5	bar
P_L^*	15.4	bar
E_o	229	bar
E_{r1}	928	bar
E_{r2}	965	bar
E_o/P_L^*	14.9	
E_{u1}	2330	bar
E_{r3}	1947	bar
E_{u2}	2372	bar



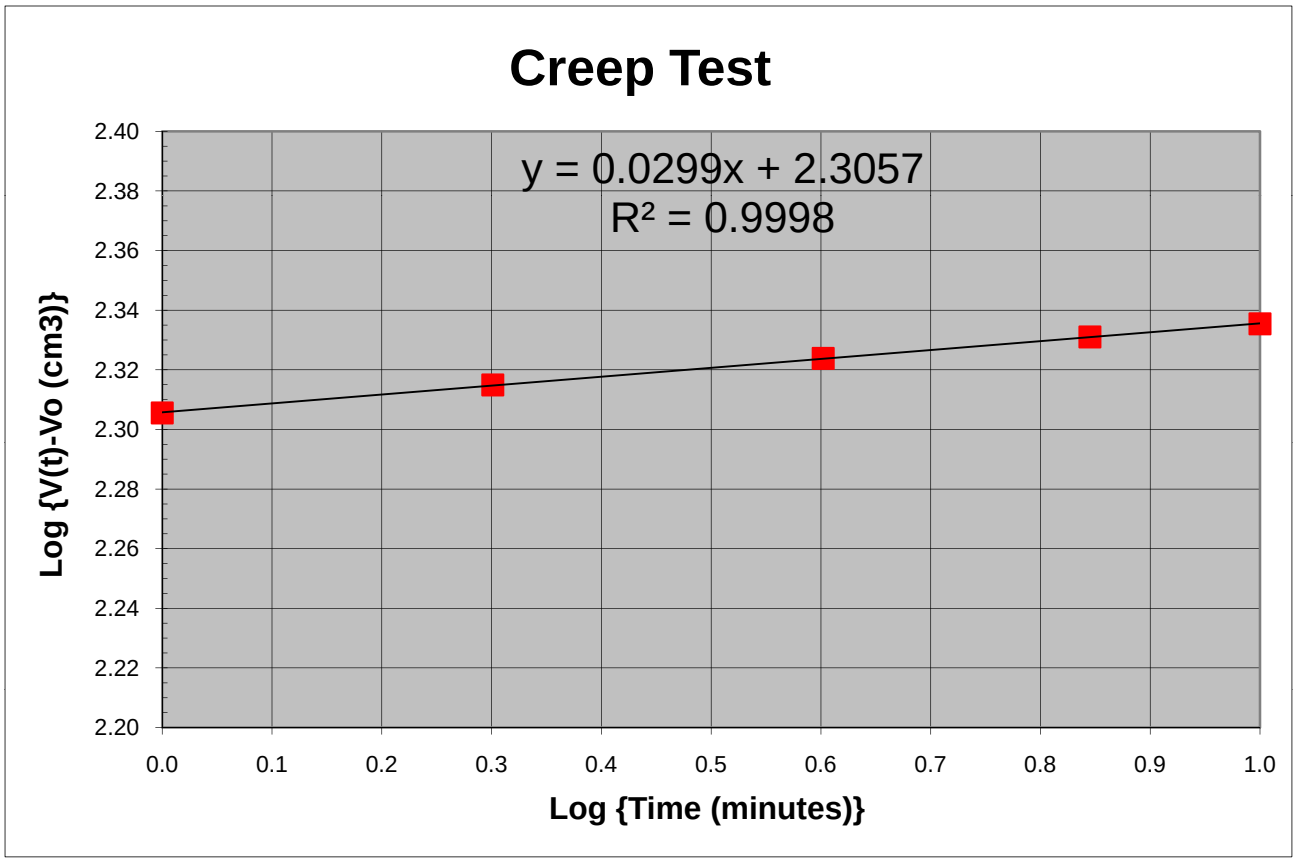
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 82.7 feet

Holding Gauge Pressure =	7.50	bars
Corrected Pressure =	10.35	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2211	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	445.30	2413.01	202.09	2.306
2	0.301	449.70	2417.41	206.49	2.315
4	0.602	454.00	2421.71	210.79	2.324
7	0.845	457.50	2425.21	214.29	2.331
10	1.000	459.70	2427.41	216.49	2.335

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0299

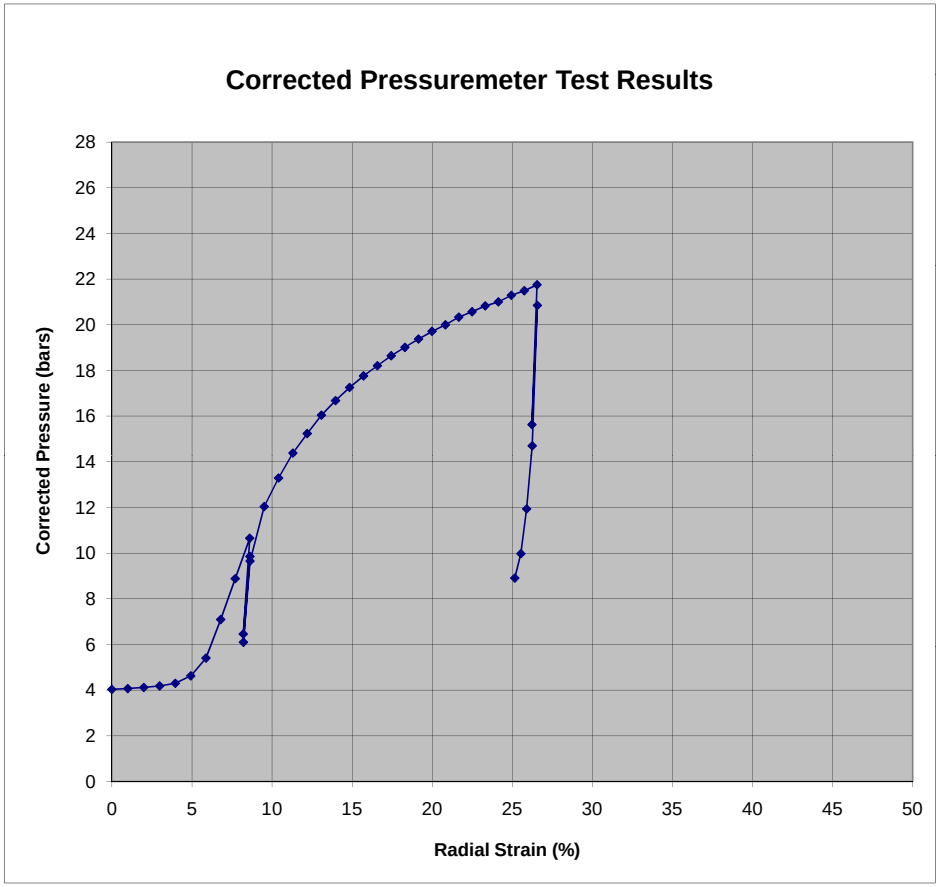


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	9
IN-SITU SOIL TESTING, L.C.		DEPTH:	92.3 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	04/06/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
4.04	-1	0.00	
4.07	39	0.99	
4.12	79	1.99	
4.19	119	2.98	
4.30	159	3.96	
4.63	199	4.93	
5.41	238	5.88	Eo1
7.09	277	6.80	
8.88	315	7.70	Eo2
10.66	353	8.61	Er1
6.46	336	8.20	Er2
9.86	354	8.62	Er3
6.10	337	8.21	Er4
9.66	354	8.63	
12.04	392	9.51	
13.29	431	10.41	
14.38	470	11.30	
15.24	509	12.20	
16.04	548	13.08	
16.68	588	13.96	
17.25	627	14.84	
17.76	667	15.71	
18.21	707	16.58	
18.64	746	17.44	
19.01	786	18.29	
19.37	825	19.14	
19.71	865	19.99	
20.00	905	20.83	
20.33	945	21.66	
20.57	984	22.49	
20.82	1024	23.31	
21.00	1064	24.13	
21.29	1104	24.94	
21.49	1144	25.74	
21.75	1183	26.55	Eu1
15.63	1167	26.23	Eu2
20.85	1184	26.56	Eu3
14.70	1168	26.24	Eu4
11.94	1151	25.90	
9.98	1133	25.53	
8.91	1114	25.15	

Interpreted Pressuremeter Parameters		
P_o	4.4	bar
P_L	25.0	bar
P_L^*	20.6	bar
E_o	270	bar
E_{r1}	1499	bar
E_{r2}	1320	bar
E_o/P_L^*	13.1	
E_{u1}	3210	bar
E_{r3}	2607	bar
E_{u2}	3230	bar



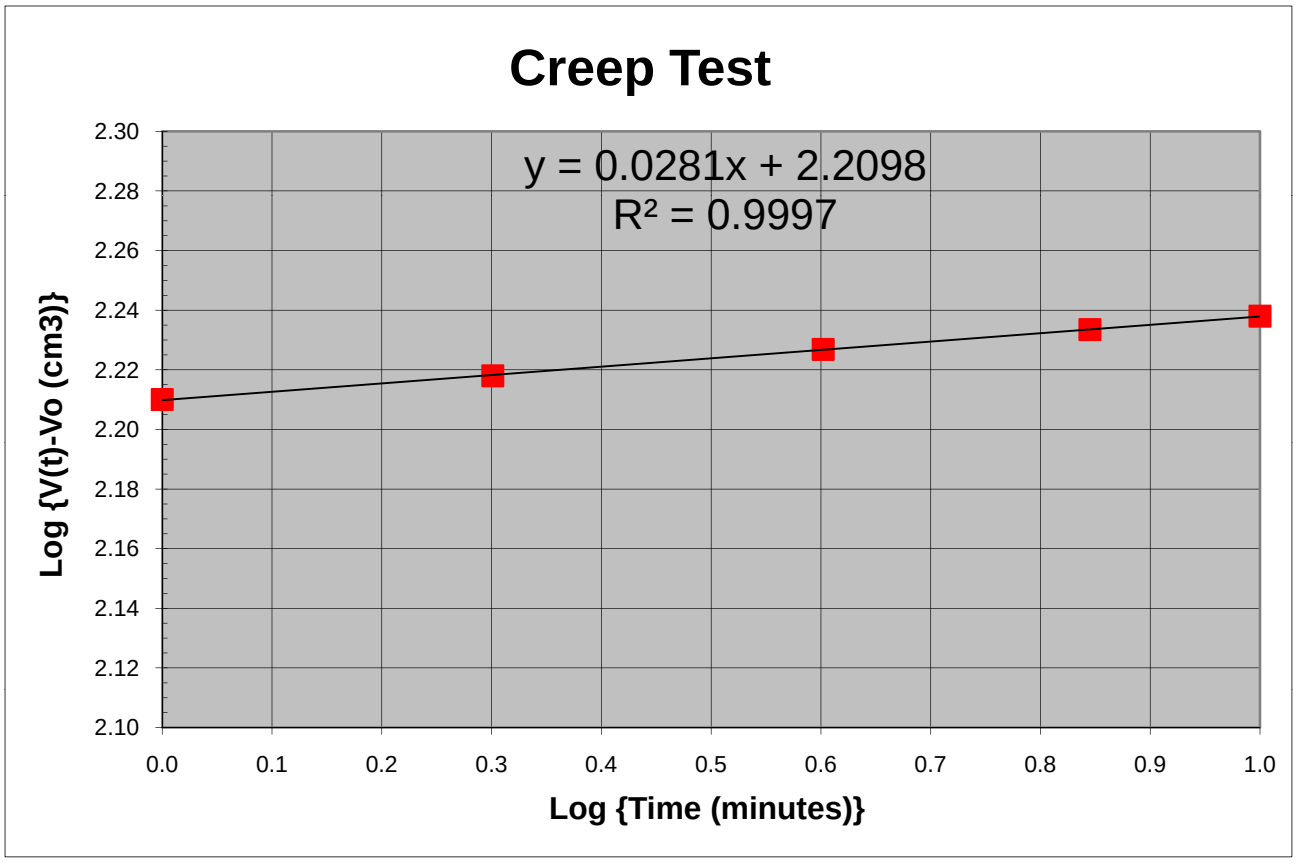
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 92.3 feet

Holding Gauge Pressure =	8.89	bars
Corrected Pressure =	12.04	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2211	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	405.40	2373.11	162.19	2.210
2	0.301	408.40	2376.11	165.19	2.218
4	0.602	411.80	2379.51	168.59	2.227
7	0.845	414.40	2382.11	171.19	2.233
10	1.000	416.20	2383.91	172.99	2.238

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0281

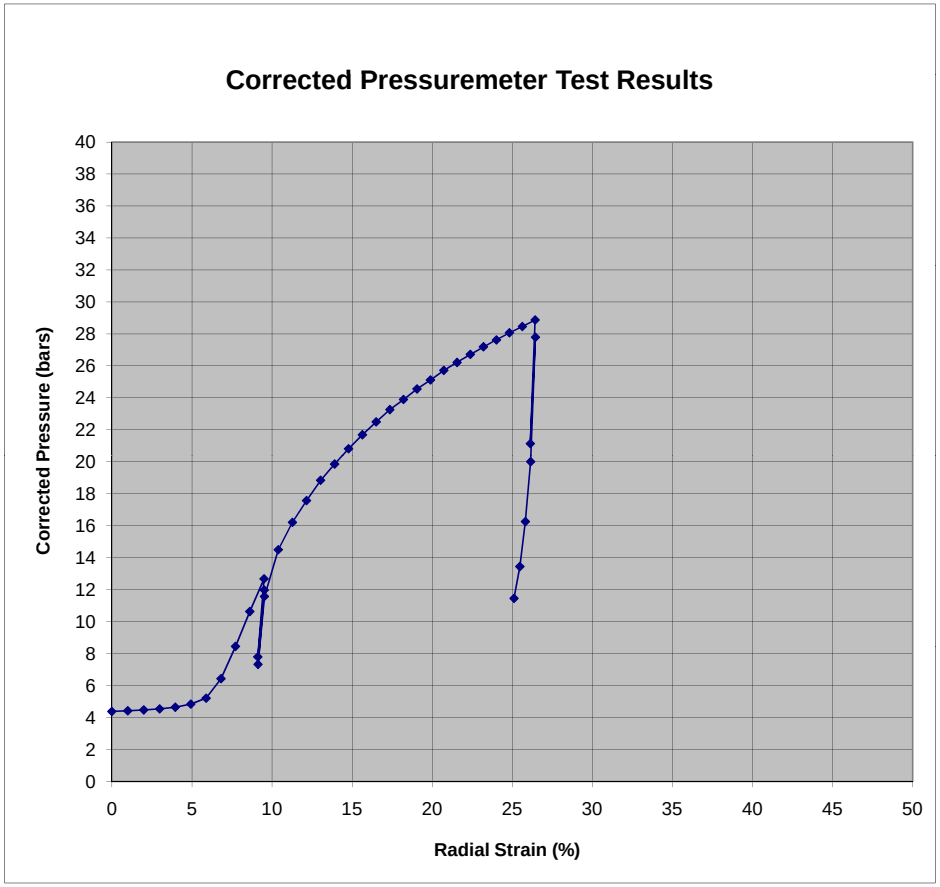


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	10
IN-SITU SOIL TESTING, L.C.		DEPTH:	102.4 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	05/06/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
4.39	-1	0.00	
4.43	39	0.99	
4.48	79	1.99	
4.54	119	2.98	
4.65	159	3.96	
4.85	199	4.93	
5.21	238	5.89	
6.43	277	6.82	Eo1
8.45	316	7.72	
10.63	354	8.61	Eo2
12.68	392	9.50	Er1
7.80	375	9.11	Er2
11.98	392	9.52	Er3
7.33	375	9.12	Er4
11.58	393	9.53	
14.50	430	10.39	
16.21	469	11.27	
17.57	507	12.15	
18.84	546	13.03	
19.86	585	13.91	
20.81	624	14.78	
21.69	664	15.64	
22.49	703	16.50	
23.26	742	17.36	
23.90	782	18.21	
24.55	821	19.05	
25.12	861	19.89	
25.71	900	20.72	
26.21	940	21.55	
26.72	979	22.38	
27.19	1019	23.20	
27.62	1058	24.01	
28.07	1098	24.82	
28.46	1138	25.62	
28.87	1177	26.42	Eu1
21.14	1162	26.12	Eu2
27.79	1178	26.44	Eu3
20.01	1163	26.14	Eu4
16.26	1147	25.82	
13.45	1130	25.47	
11.46	1112	25.11	

Interpreted Pressuremeter Parameters		
P_o	4.8	bar
P_L	36.0	bar
P_L^*	31.2	bar
E_o	335	bar
E_{r1}	1819	bar
E_{r2}	1718	bar
E_o/P_L^*	10.7	
E_{u1}	4337	bar
E_{r3}	3505	bar
E_{u2}	4376	bar



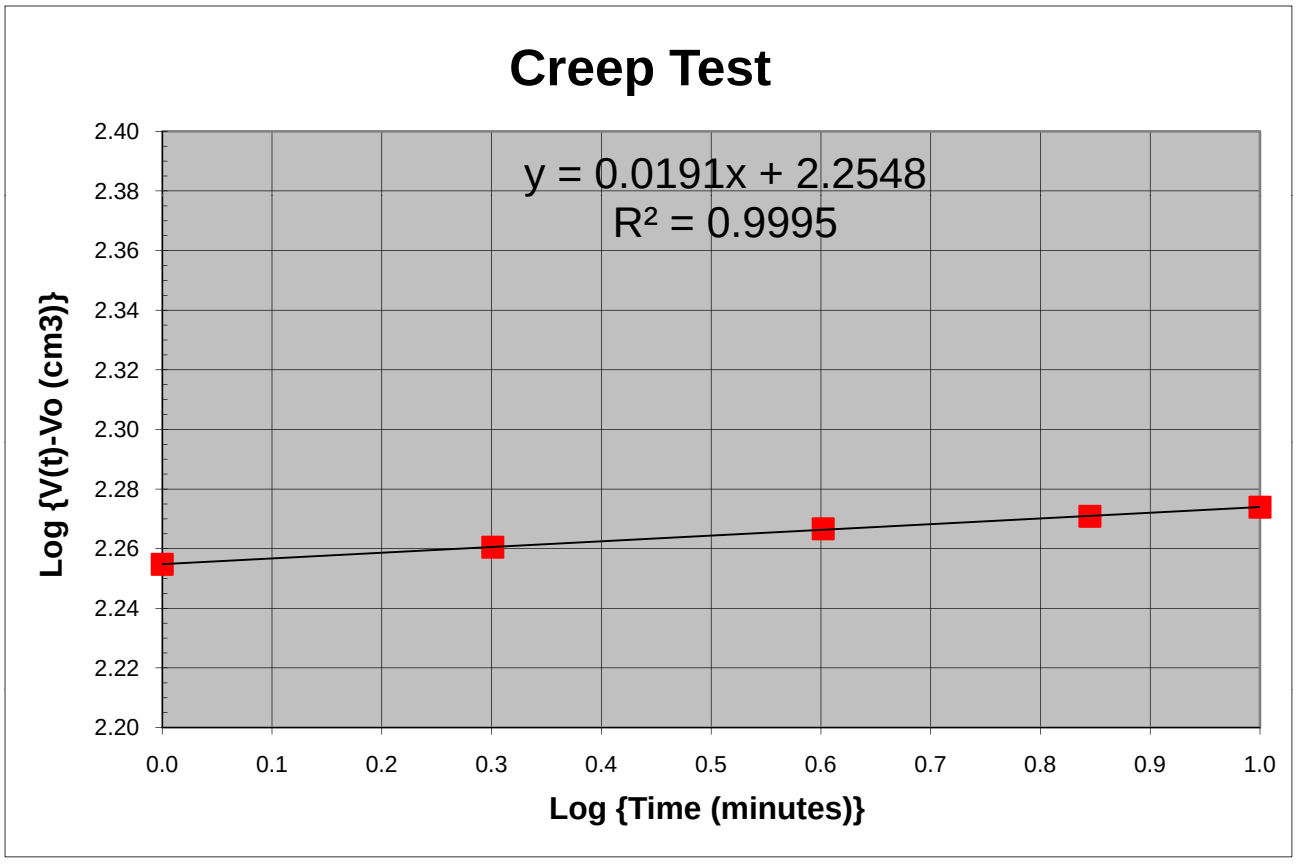
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 102.4 feet

Holding Gauge Pressure =	11.08	bars
Corrected Pressure =	14.50	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2232	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	443.90	2411.61	179.78	2.255
2	0.301	446.30	2414.01	182.18	2.261
4	0.602	448.90	2416.61	184.78	2.267
7	0.845	450.70	2418.41	186.58	2.271
10	1.000	452.00	2419.71	187.88	2.274

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0191

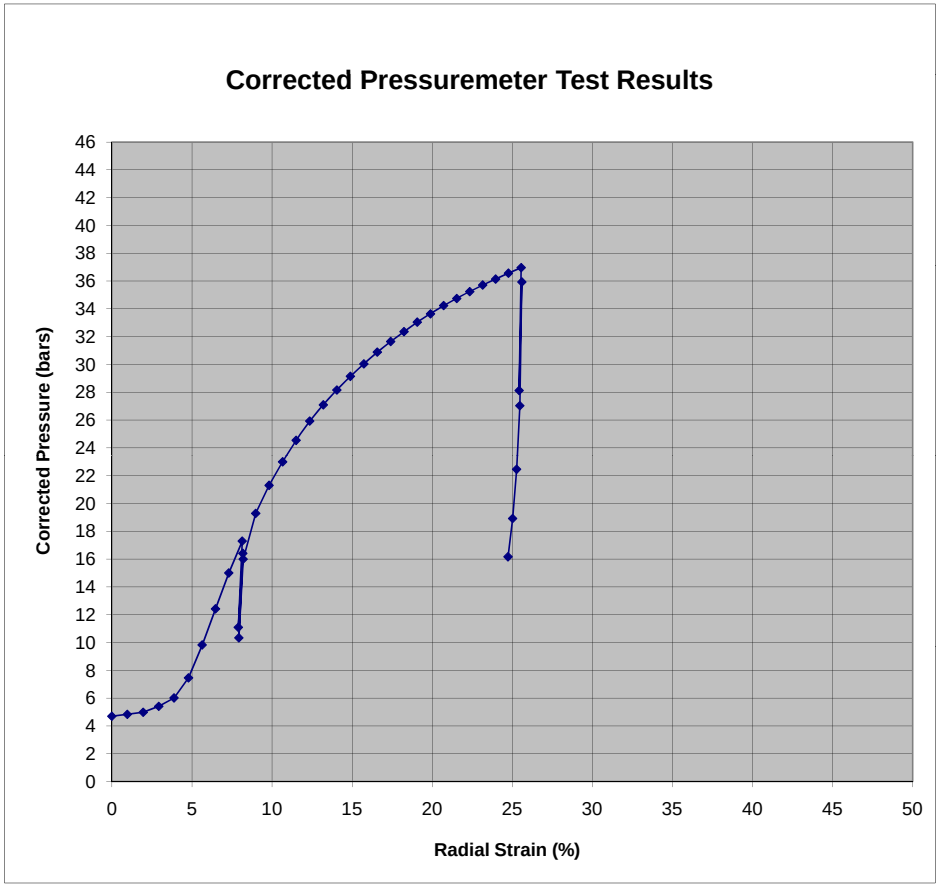


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	11
IN-SITU SOIL TESTING, L.C.		DEPTH:	113.7 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	05/06/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
4.69	-1	0.00	
4.83	38	0.97	
4.98	78	1.96	
5.41	117	2.93	
6.01	156	3.88	
7.45	193	4.79	Eo1
9.82	228	5.64	
12.42	263	6.47	
15.00	298	7.30	Eo2
17.29	333	8.14	
11.09	323	7.89	Er1
16.41	335	8.18	Er2
10.34	324	7.93	Er3
15.99	336	8.20	Er4
19.28	369	8.98	
21.31	405	9.82	
23.00	442	10.66	
24.54	479	11.51	
25.93	516	12.35	
27.09	554	13.20	
28.16	592	14.05	
29.15	630	14.89	
30.04	668	15.73	
30.89	706	16.57	
31.65	745	17.41	
32.36	783	18.24	
33.05	822	19.07	
33.64	861	19.89	
34.24	900	20.71	
34.74	939	21.53	
35.24	978	22.34	
35.72	1017	23.15	
36.14	1056	23.96	
36.57	1095	24.76	
36.96	1134	25.55	Eu1
28.13	1128	25.43	Eu2
35.93	1136	25.59	Eu3
27.04	1130	25.47	Eu4
22.46	1120	25.27	
18.92	1108	25.02	
16.16	1094	24.73	

Interpreted Pressuremeter Parameters		
P_o	5.2	bar
P_L	43.0	bar
P_L^*	37.8	bar
E_o	423	bar
E_{r1}	2691	bar
E_{r2}	3037	bar
E_o/P_L^*	11.2	
E_{u1}	11632	bar
E_{r3}	7753	bar
E_{u2}	11896	bar



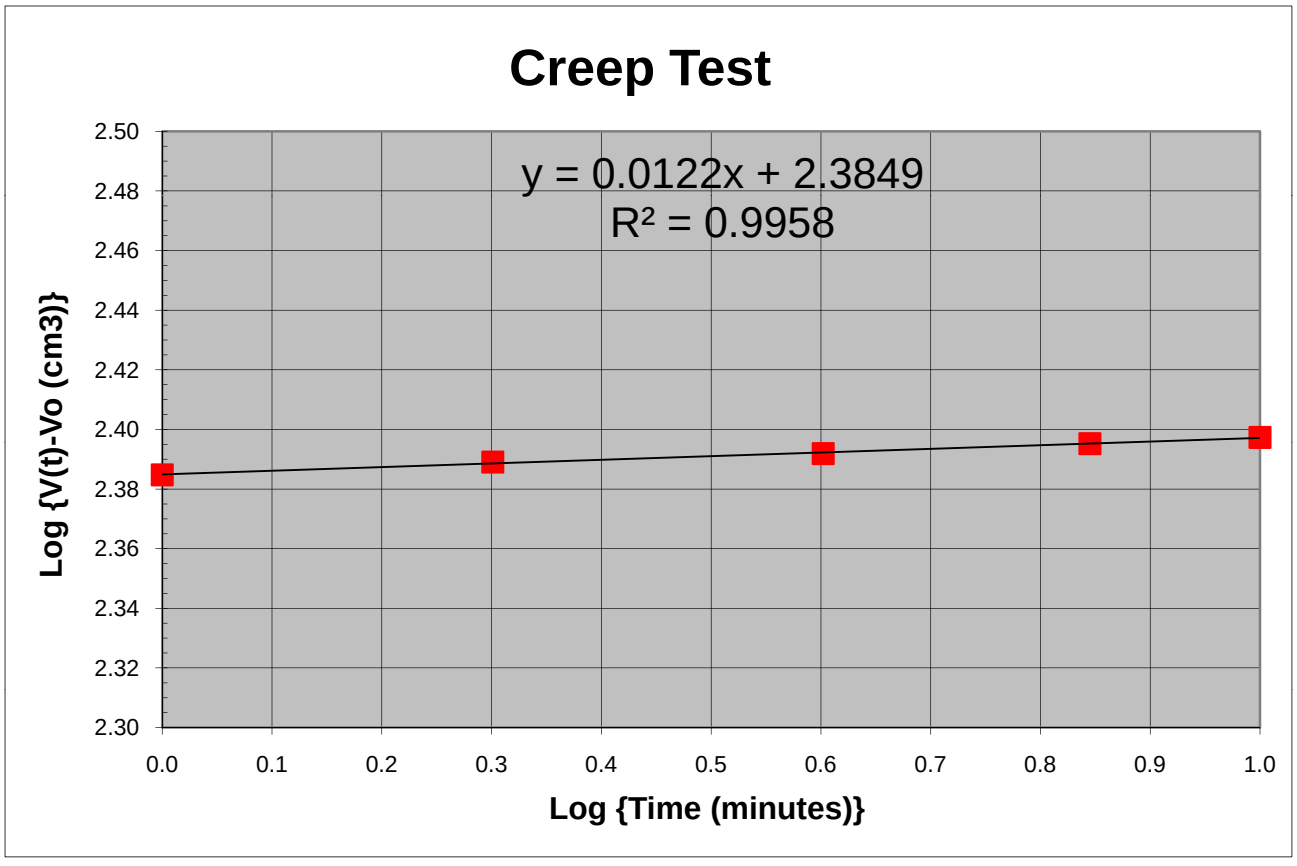
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 113.7 feet

Holding Gauge Pressure =	15.50	bars
Corrected Pressure =	19.28	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.84	cm
Initial Borehole Volume, Vo =	2128	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	403.10	2370.81	242.54	2.385
2	0.301	405.50	2373.21	244.94	2.389
4	0.602	407.10	2374.81	246.54	2.392
7	0.845	409.00	2376.71	248.44	2.395
10	1.000	410.20	2377.91	249.64	2.397

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0122

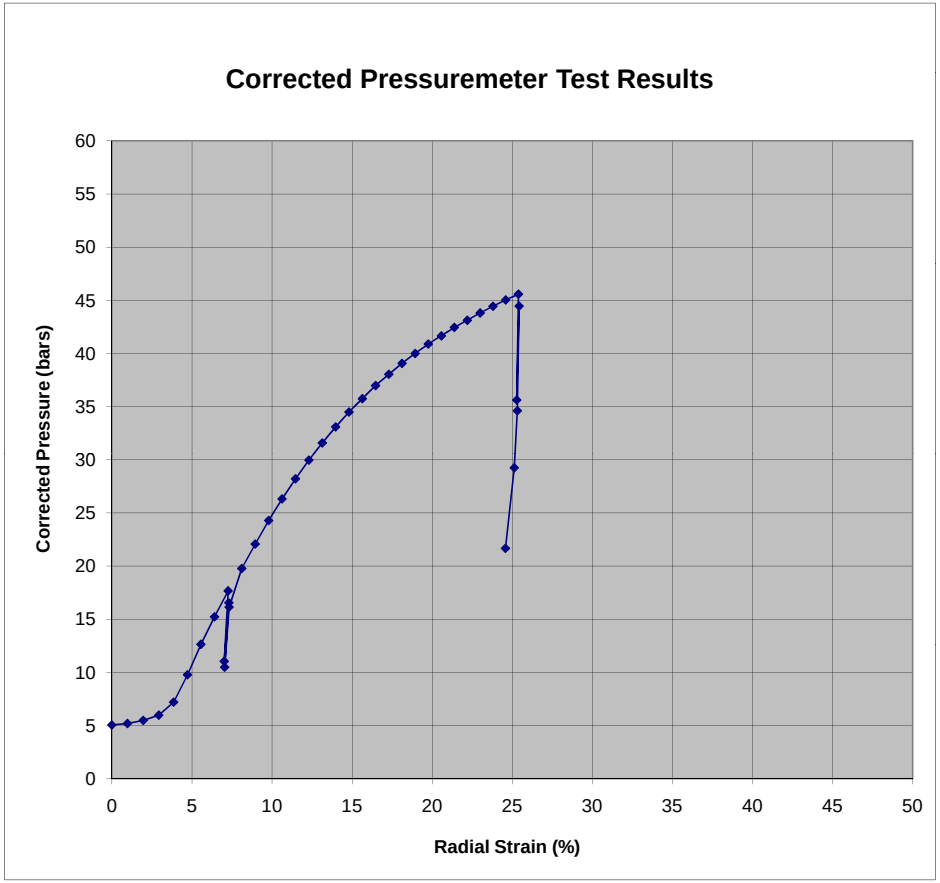


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	12
IN-SITU SOIL TESTING, L.C.		DEPTH:	123.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/5/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.05	-1	0.00	
5.19	38	0.97	
5.47	78	1.96	
5.97	117	2.93	
7.19	155	3.86	
9.77	190	4.72	Eo1
12.64	225	5.56	
15.22	260	6.41	
17.66	296	7.26	Eo2
11.04	286	7.02	Er1
16.54	298	7.30	Er2
10.48	287	7.04	Er3
16.13	299	7.32	Er4
19.77	332	8.11	
22.07	368	8.95	
24.28	404	9.79	
26.31	440	10.63	
28.20	477	11.46	
29.97	514	12.30	
31.58	551	13.14	
33.08	588	13.97	
34.49	626	14.80	
35.74	663	15.64	
36.98	701	16.46	
38.04	739	17.29	
39.06	778	18.12	
40.00	816	18.94	
40.89	854	19.76	
41.65	893	20.57	
42.45	931	21.38	
43.12	970	22.19	
43.81	1009	22.99	
44.44	1048	23.79	
45.03	1087	24.59	
45.58	1126	25.38	Eu1
35.62	1121	25.28	Eu2
44.46	1128	25.42	Eu3
34.61	1122	25.32	Eu4
29.24	1113	25.12	
21.67	1086	24.57	

Interpreted Pressuremeter Parameters		
P_o	5.8	bar
P_L	57.0	bar
P_L^*	51.2	bar
E_o	439	bar
E_{r1}	2714	bar
E_{r2}	2894	bar
E_o/P_L^*	8.6	
E_{u1}	15557	bar
E_{r3}	10004	bar
E_{u2}	14932	bar



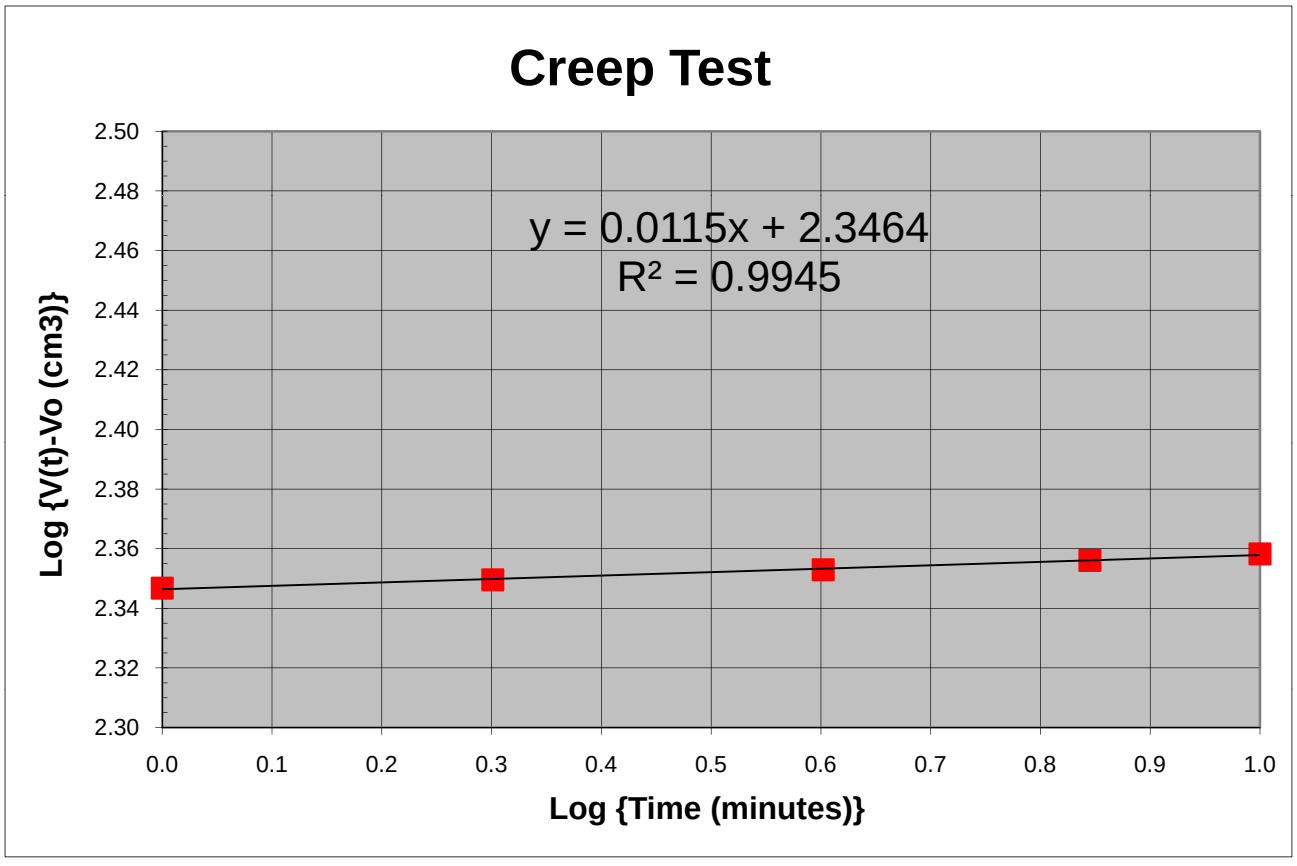
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 123.9 feet

Holding Gauge Pressure =	15.56	bars
Corrected Pressure =	19.77	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.82	cm
Initial Borehole Volume, Vo =	2108	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	362.35	2330.06	222.20	2.347
2	0.301	363.78	2331.49	223.63	2.350
4	0.602	365.54	2333.25	225.39	2.353
7	0.845	367.17	2334.88	227.02	2.356
10	1.000	368.30	2336.01	228.15	2.358

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0115

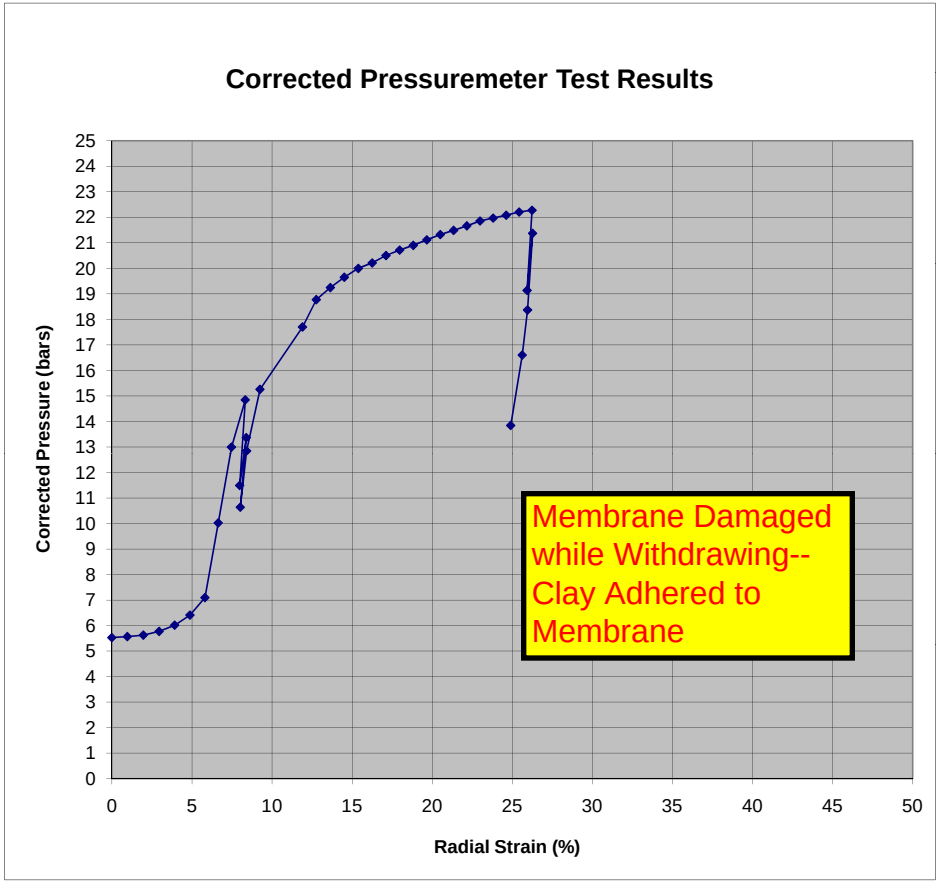


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	13
IN-SITU SOIL TESTING, L.C.		DEPTH:	133.3 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/5/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.53	-2	0.00	
5.57	38	0.97	
5.63	78	1.97	
5.77	118	2.95	
6.02	157	3.92	
6.41	197	4.88	
7.10	235	5.81	Eo1
10.03	270	6.64	
13.00	305	7.47	
14.85	341	8.33	Eo2
11.49	326	7.98	Er1
13.37	344	8.39	Er2
10.64	328	8.02	Er3
12.85	345	8.41	Er4
15.26	381	9.25	
17.71	496	11.90	
18.78	534	12.76	
19.25	574	13.64	
19.66	613	14.52	
20.00	652	15.39	
20.22	692	16.26	
20.51	731	17.12	
20.72	771	17.97	
20.91	810	18.82	
21.12	850	19.67	
21.33	890	20.51	
21.49	929	21.34	
21.67	969	22.17	
21.86	1009	22.99	
21.97	1049	23.81	
22.09	1088	24.62	
22.21	1128	25.43	
22.28	1168	26.24	Eu1
19.14	1153	25.93	Eu2
21.38	1170	26.27	Eu3
18.37	1154	25.96	Eu4
16.60	1137	25.62	
13.85	1102	24.90	

Interpreted Pressuremeter Parameters		
P_o	5.9	bar
P_L	24.0	bar
P_L^*	18.1	bar
E_o	438	bar
E_{r1}	650	bar
E_{r2}	801	bar
E_o/P_L^*	24.2	
E_{u1}	1701	bar
E_{r3}	1098	bar
E_{u2}	1611	bar



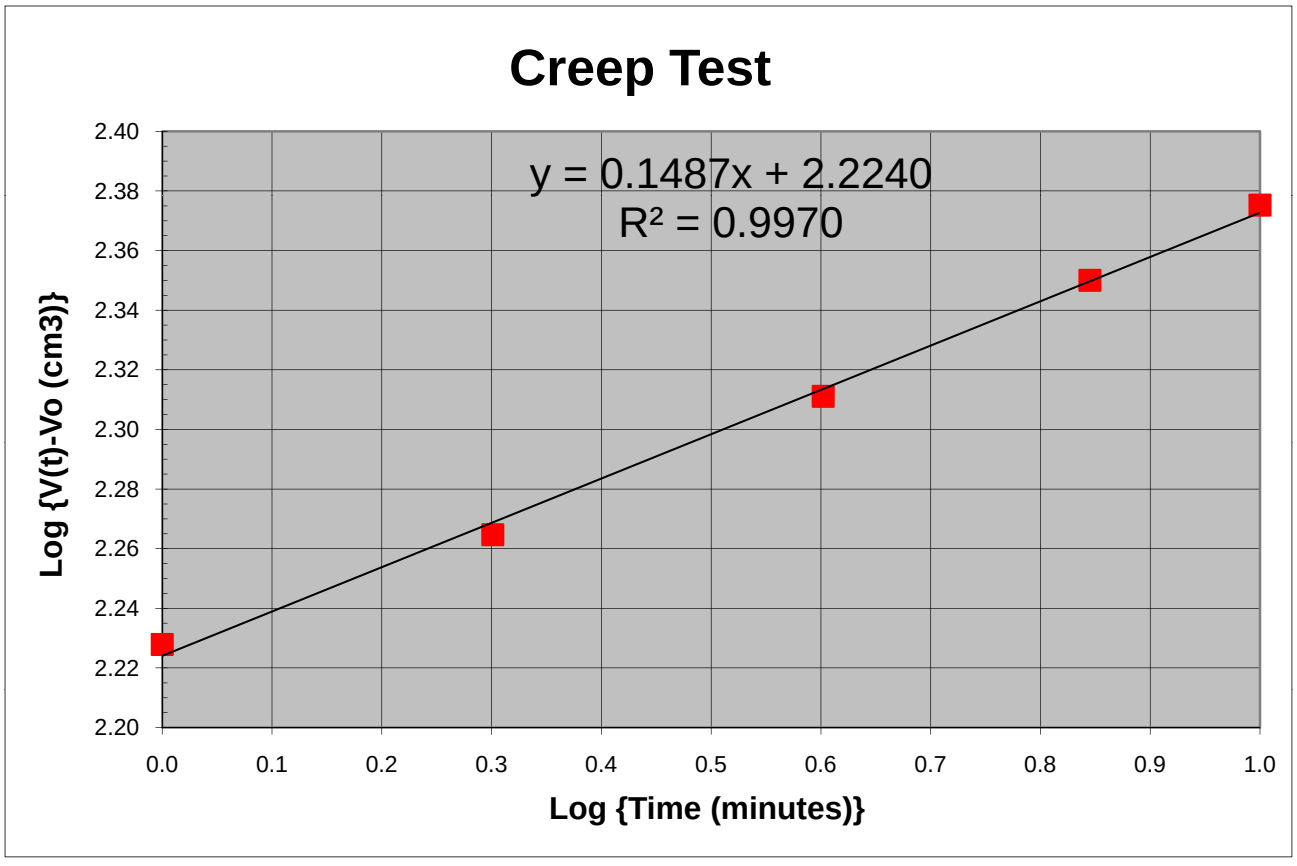
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 133.3 feet

Holding Gauge Pressure =	10.78	bars
Corrected Pressure =	15.26	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2211	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	412.20	2379.91	168.99	2.228
2	0.301	427.15	2394.86	183.94	2.265
4	0.602	447.90	2415.61	204.69	2.311
7	0.845	467.09	2434.80	223.88	2.350
10	1.000	480.47	2448.18	237.26	2.375

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1487

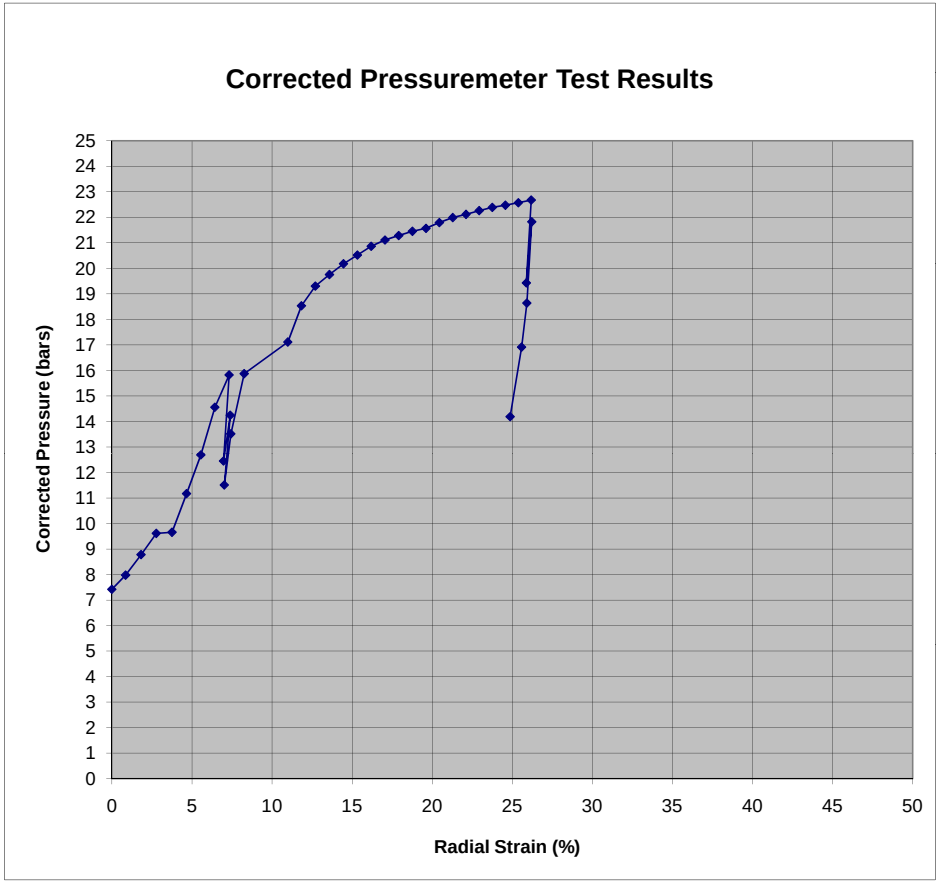


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	14
IN-SITU SOIL TESTING, L.C.		DEPTH:	143 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/5/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
7.42	-5	0.00	
7.97	34	0.86	
8.78	72	1.82	
9.61	111	2.77	
9.65	151	3.76	
11.17	188	4.66	Eo1
12.69	225	5.56	
14.55	261	6.43	
15.82	299	7.32	Eo2
12.45	284	6.97	Er1
14.24	302	7.39	Er2
11.51	286	7.02	Er3
13.51	303	7.43	Er4
15.87	339	8.26	
17.11	456	10.99	
18.53	493	11.84	
19.31	532	12.71	
19.76	571	13.59	
20.18	610	14.46	
20.52	649	15.33	
20.87	689	16.19	
21.11	728	17.05	
21.29	768	17.91	
21.45	808	18.76	
21.57	847	19.61	
21.80	887	20.45	
21.99	927	21.28	
22.12	966	22.11	
22.26	1006	22.93	
22.39	1046	23.75	
22.48	1086	24.57	
22.57	1125	25.38	
22.68	1165	26.18	Eu1
19.43	1150	25.88	Eu2
21.83	1167	26.21	Eu3
18.64	1152	25.91	Eu4
16.91	1135	25.58	
14.19	1100	24.87	

Interpreted Pressuremeter Parameters		
P_o	7.5	bar
P_L	24.0	bar
P_L^*	16.5	bar
E_o	247	bar
E_{r1}	602	bar
E_{r2}	699	bar
E_o/P_L^*	14.9	
E_{u1}	1789	bar
E_{r3}	1193	bar
E_{u2}	1747	bar



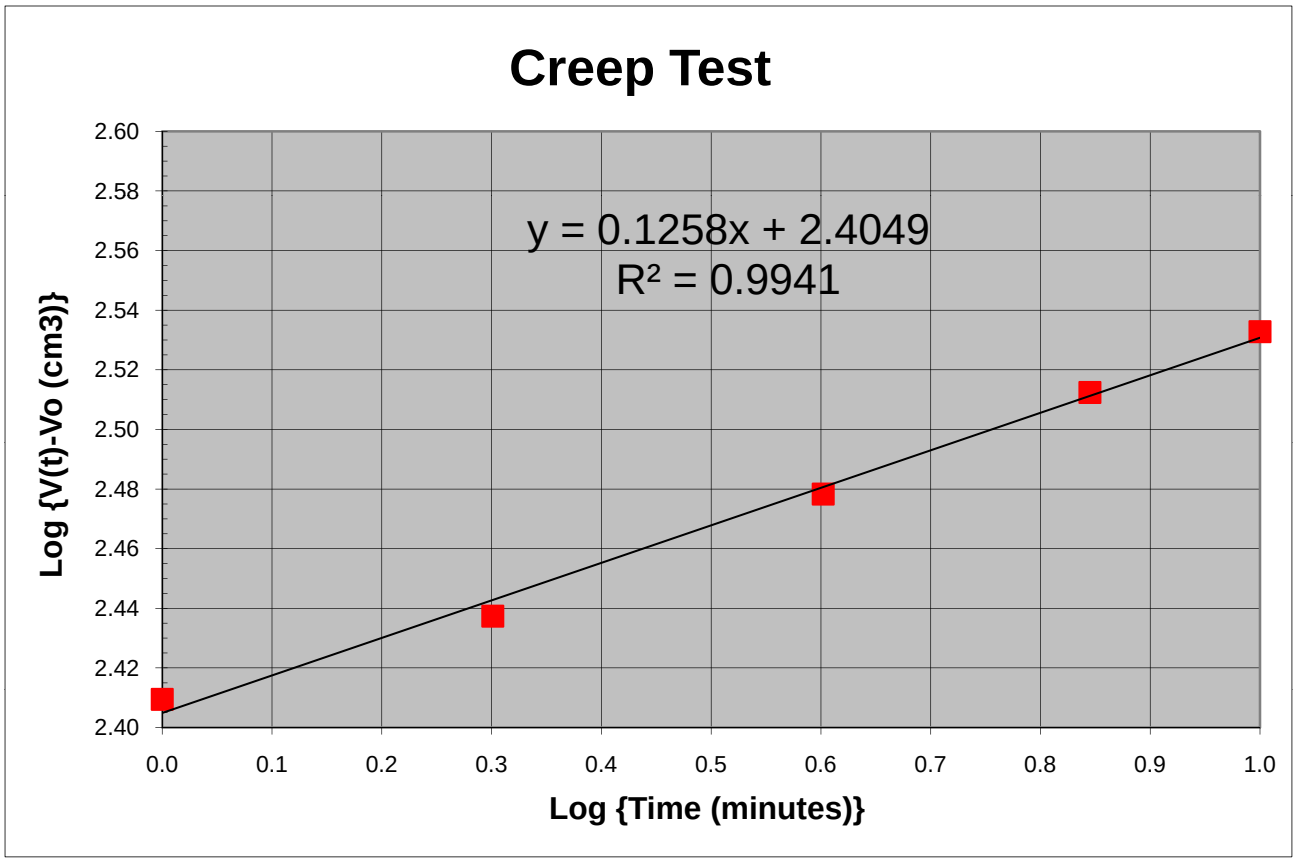
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 143 feet

Holding Gauge Pressure =	11.18	bars
Corrected Pressure =	15.87	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.80	cm
Initial Borehole Volume, Vo =	2088	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	376.55	2344.26	256.72	2.409
2	0.301	393.58	2361.29	273.75	2.437
4	0.602	420.65	2388.36	300.82	2.478
7	0.845	445.23	2412.94	325.40	2.512
10	1.000	460.86	2428.57	341.03	2.533

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1258

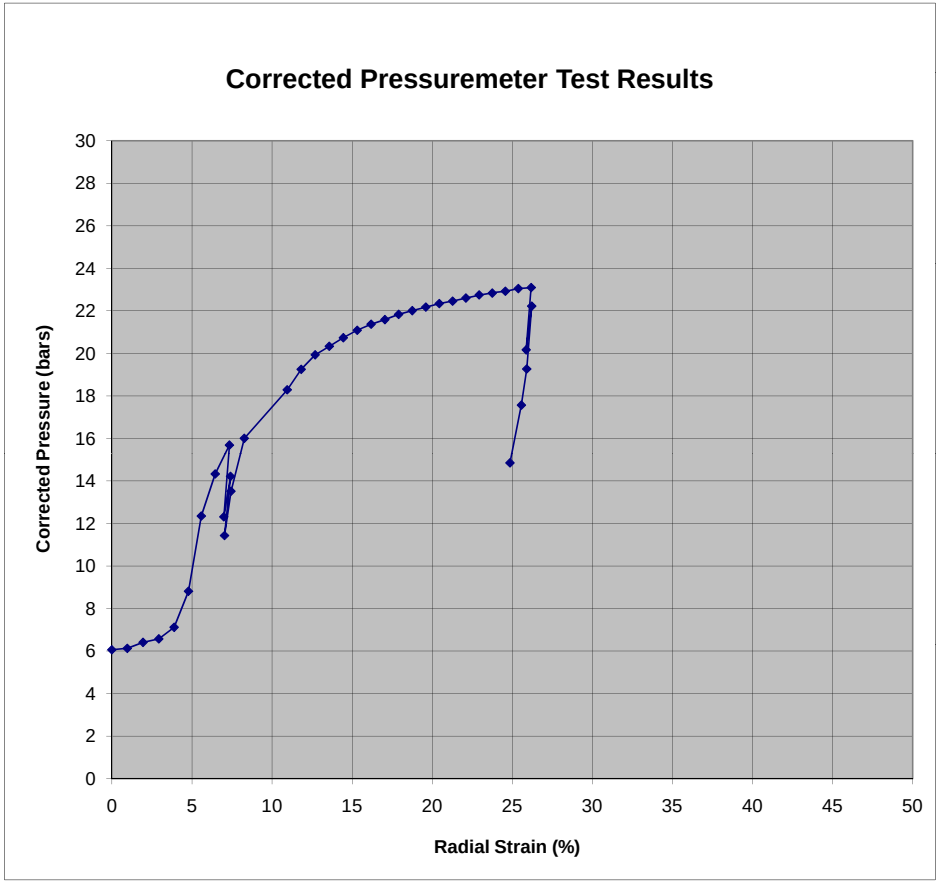


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	15
IN-SITU SOIL TESTING, L.C.		DEPTH:	152.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/5/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.06	-2	0.00	
6.13	38	0.96	
6.41	77	1.95	
6.58	117	2.93	
7.12	156	3.89	
8.81	193	4.78	Eo1
12.35	226	5.58	
14.33	262	6.45	
15.69	299	7.34	Eo2
12.31	285	6.99	Er1
14.22	302	7.41	Er2
11.43	287	7.03	Er3
13.52	304	7.44	Er4
16.01	339	8.27	
18.29	454	10.95	
19.25	493	11.82	
19.93	531	12.69	
20.33	570	13.57	
20.74	610	14.45	
21.09	649	15.32	
21.37	688	16.18	
21.59	728	17.05	
21.83	767	17.90	
22.01	807	18.75	
22.18	847	19.60	
22.34	887	20.44	
22.46	926	21.27	
22.60	966	22.10	
22.75	1006	22.93	
22.84	1046	23.75	
22.92	1085	24.56	
23.05	1125	25.37	
23.09	1165	26.18	Eu1
20.17	1149	25.86	Eu2
22.22	1167	26.21	Eu3
19.27	1151	25.90	Eu4
17.57	1135	25.56	
14.85	1100	24.85	

Interpreted Pressuremeter Parameters		
P_o	6.7	bar
P_L	25.0	bar
P_L^*	18.3	bar
E_o	379	bar
E_{r1}	646	bar
E_{r2}	732	bar
E_o/P_L^*	20.7	
E_{u1}	1563	bar
E_{r3}	992	bar
E_{u2}	1584	bar



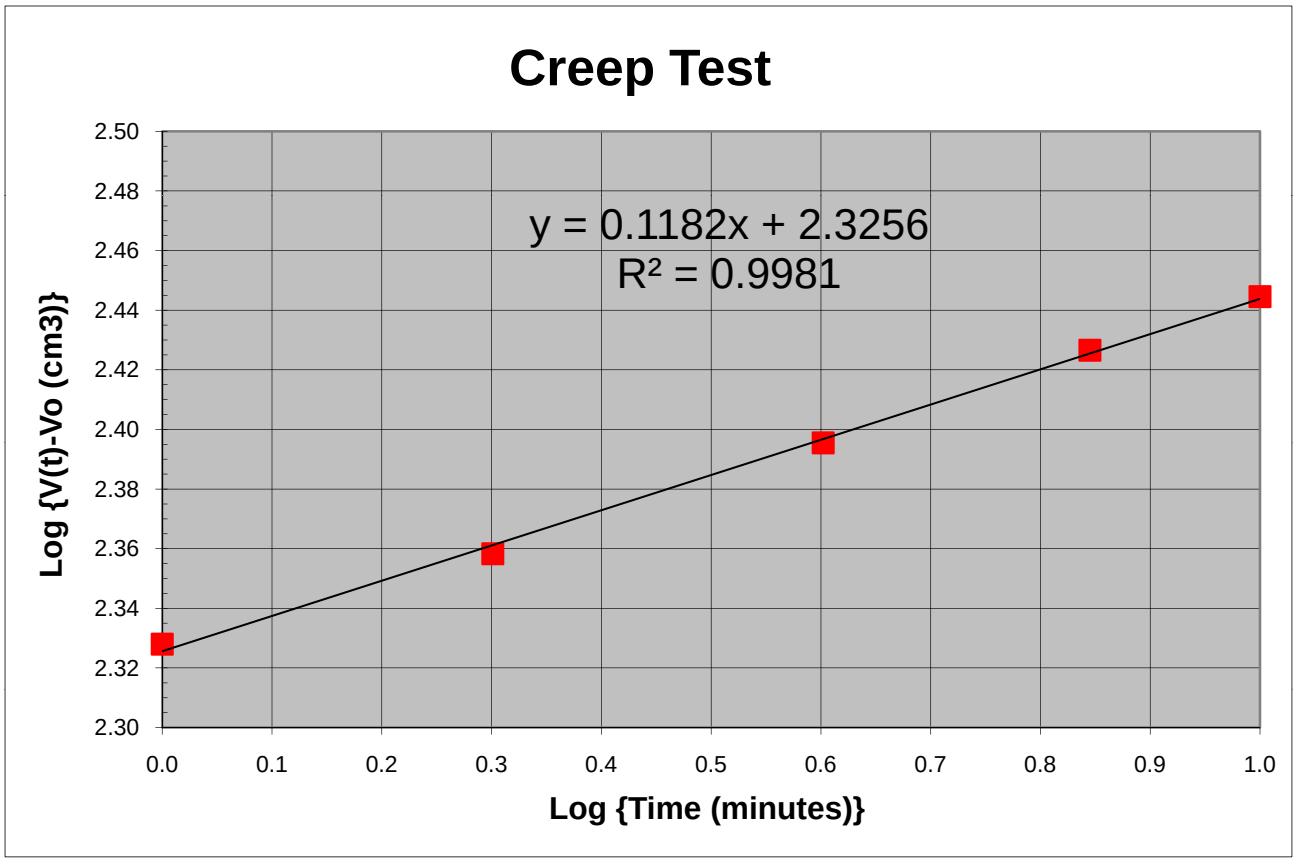
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 152.9 feet

Holding Gauge Pressure =	11.02	bars
Corrected Pressure =	16.01	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.84	cm
Initial Borehole Volume, Vo =	2128	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	373.35	2341.06	212.79	2.328
2	0.301	388.75	2356.46	228.19	2.358
4	0.602	409.15	2376.86	248.59	2.395
7	0.845	427.59	2395.30	267.03	2.427
10	1.000	438.87	2406.58	278.31	2.445

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1182

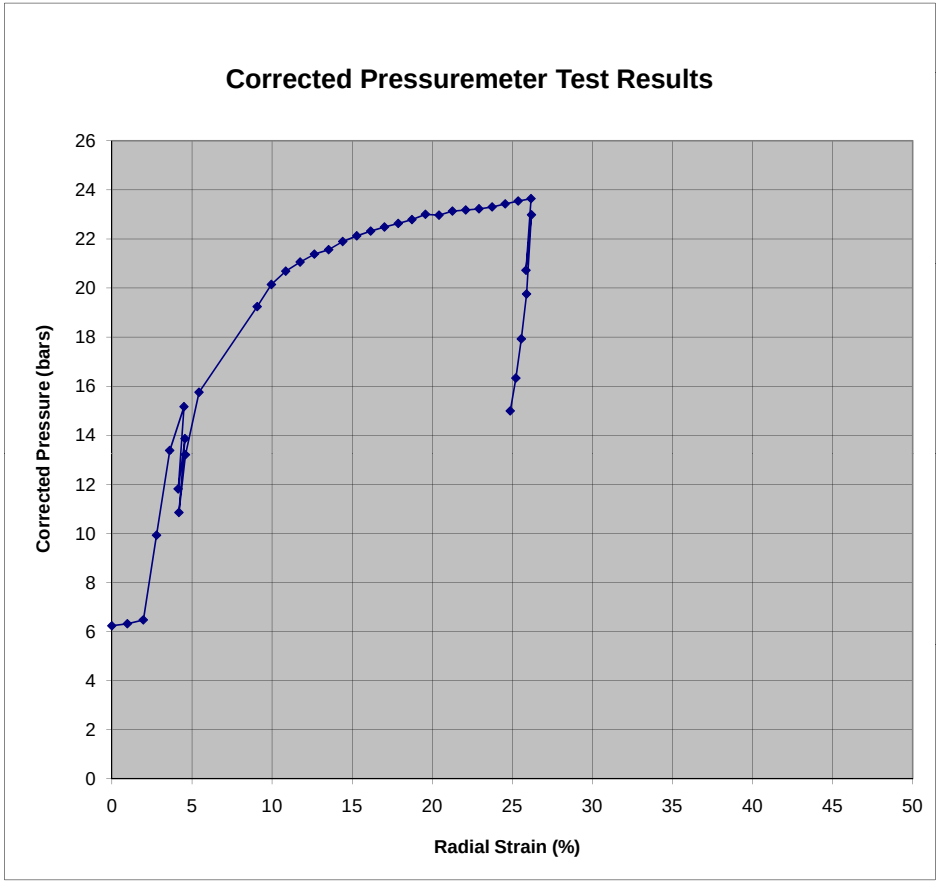


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	16
IN-SITU SOIL TESTING, L.C.		DEPTH:	163 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	05/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.23	-1	0.00	
6.31	38	0.97	
6.47	78	1.96	Eo1
9.92	111	2.79	
13.38	145	3.61	Eo2
15.16	181	4.50	
11.81	166	4.14	Er1
13.86	184	4.56	Er2
10.85	168	4.19	Er3
13.20	185	4.59	Er4
15.75	220	5.44	
19.24	373	9.07	
20.14	411	9.96	
20.68	450	10.86	
21.06	490	11.75	
21.38	529	12.64	
21.56	569	13.54	
21.89	608	14.41	
22.12	648	15.29	
22.32	687	16.16	
22.48	727	17.02	
22.63	767	17.88	
22.79	806	18.73	
23.00	846	19.58	
22.97	886	20.43	
23.13	926	21.26	
23.18	966	22.09	
23.23	1005	22.92	
23.30	1045	23.74	
23.43	1085	24.56	
23.54	1125	25.36	
23.64	1165	26.17	Eu1
20.72	1149	25.85	Eu2
22.98	1166	26.19	Eu3
19.75	1151	25.89	Eu4
17.92	1135	25.56	
16.33	1118	25.22	
14.99	1100	24.87	

Interpreted Pressuremeter Parameters		
P_o	6.6	bar
P_L	25.0	bar
P_L^*	18.4	bar
E_o	573	bar
E_{r1}	671	bar
E_{r2}	803	bar
E_o/P_L^*	31.1	
E_{u1}	1556	bar
E_{r3}	1114	bar
E_{u2}	1775	bar



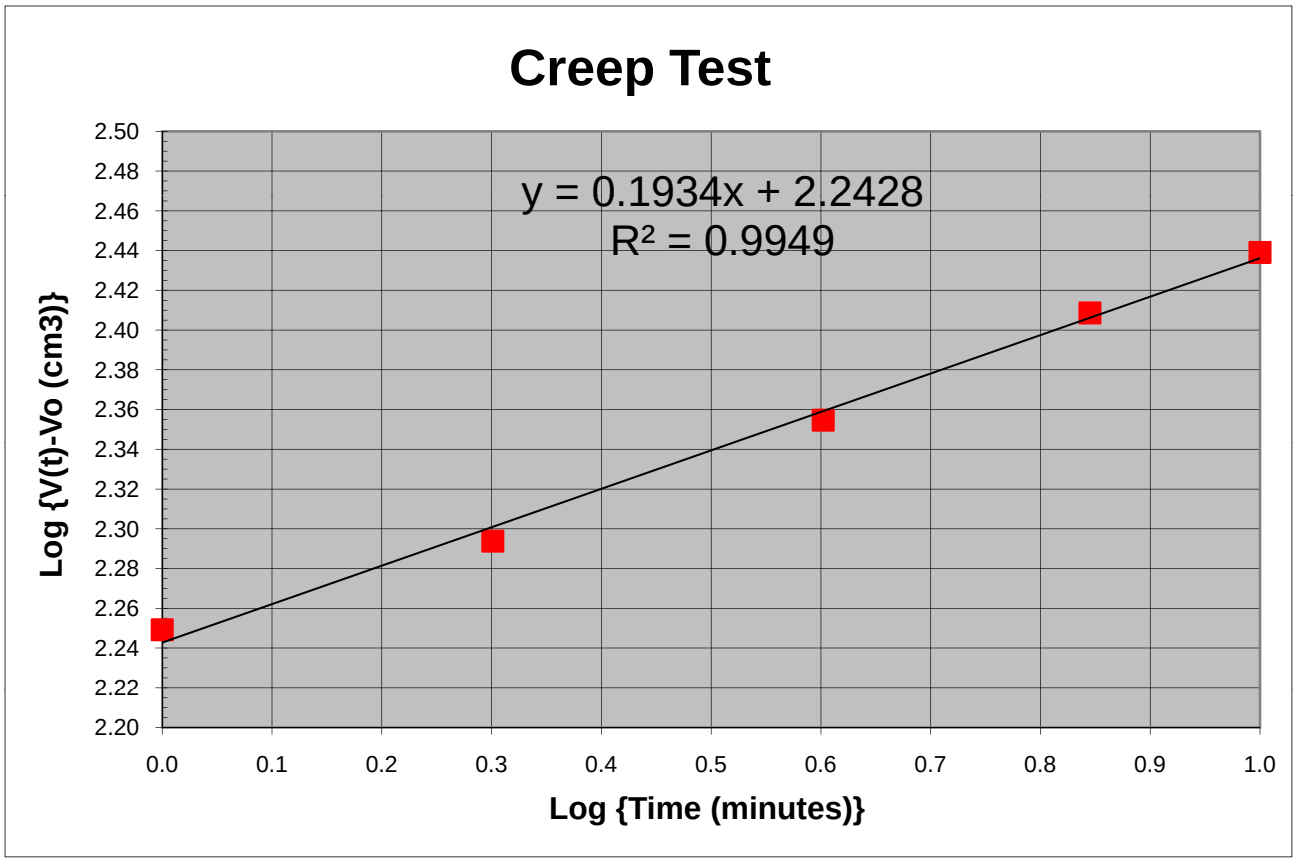
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 163 feet

Holding Gauge Pressure =	10.40	bars
Corrected Pressure =	15.75	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.76	cm
Initial Borehole Volume, Vo =	2047	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	257.00	2224.71	177.50	2.249
2	0.301	276.20	2243.91	196.70	2.294
4	0.602	305.80	2273.51	226.30	2.355
7	0.845	335.70	2303.41	256.20	2.409
10	1.000	354.30	2322.01	274.80	2.439

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1934

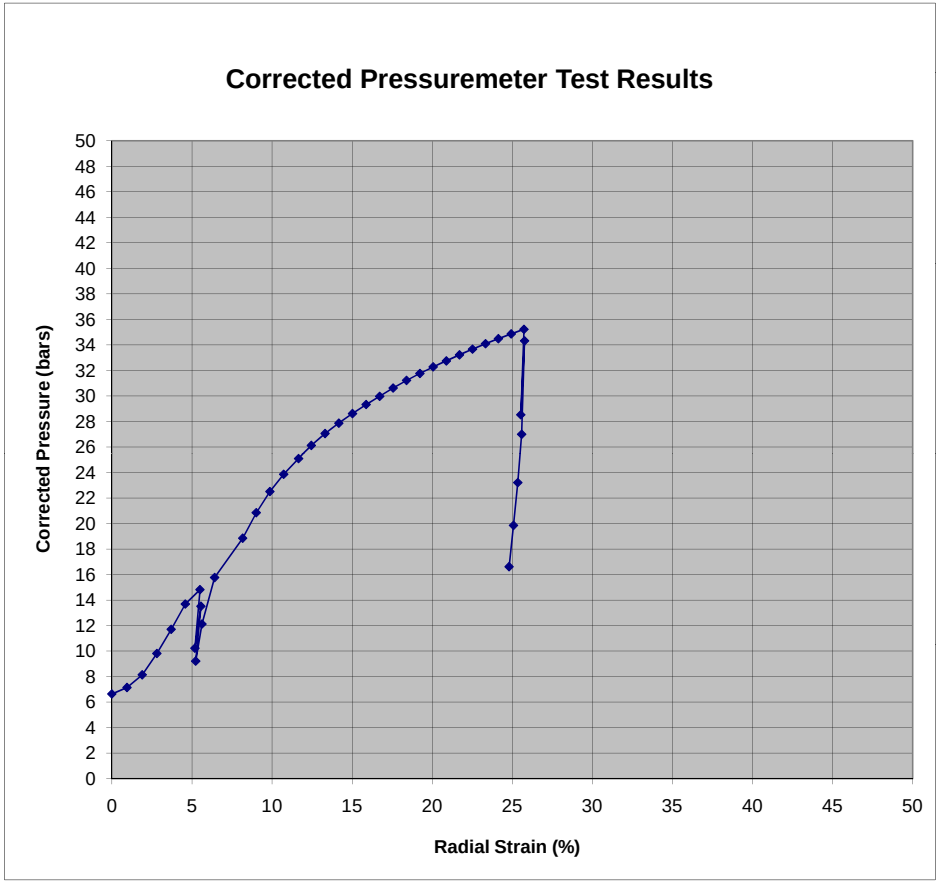


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-54B
LOCATION:	Wanchese, NC	TEST #:	17
IN-SITU SOIL TESTING, L.C.		DEPTH:	173.4 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	06/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.64	-2	0.00	
7.14	37	0.95	
8.13	75	1.90	
9.81	112	2.81	Eo1
11.70	148	3.70	
13.69	185	4.59	Eo2
14.81	222	5.50	
10.22	209	5.19	Er1
13.51	225	5.56	Er2
9.21	211	5.24	Er3
12.11	228	5.63	Er4
15.76	261	6.42	
18.85	335	8.17	
20.85	371	9.01	
22.51	408	9.87	
23.86	445	10.73	
25.09	486	11.66	
26.12	521	12.45	
27.06	559	13.31	
27.87	597	14.17	
28.62	636	15.03	
29.33	674	15.88	
29.97	713	16.72	
30.63	752	17.56	
31.22	791	18.40	
31.77	830	19.23	
32.28	869	20.06	
32.75	908	20.89	
33.23	947	21.70	
33.67	986	22.52	
34.10	1025	23.33	
34.49	1064	24.13	
34.87	1104	24.93	
35.23	1143	25.73	Eu1
28.53	1133	25.53	Eu2
34.33	1145	25.77	Eu3
27.00	1136	25.59	Eu4
23.21	1124	25.35	
19.85	1111	25.08	
16.61	1097	24.80	

Interpreted Pressuremeter Parameters		
P_o	7.5	bar
P_L	43.0	bar
P_L^*	35.5	bar
E_o	301	bar
E_{r1}	1231	bar
E_{r2}	1045	bar
E_o/P_L^*	8.5	
E_{u1}	5602	bar
E_{r3}	4129	bar
E_{u2}	6788	bar



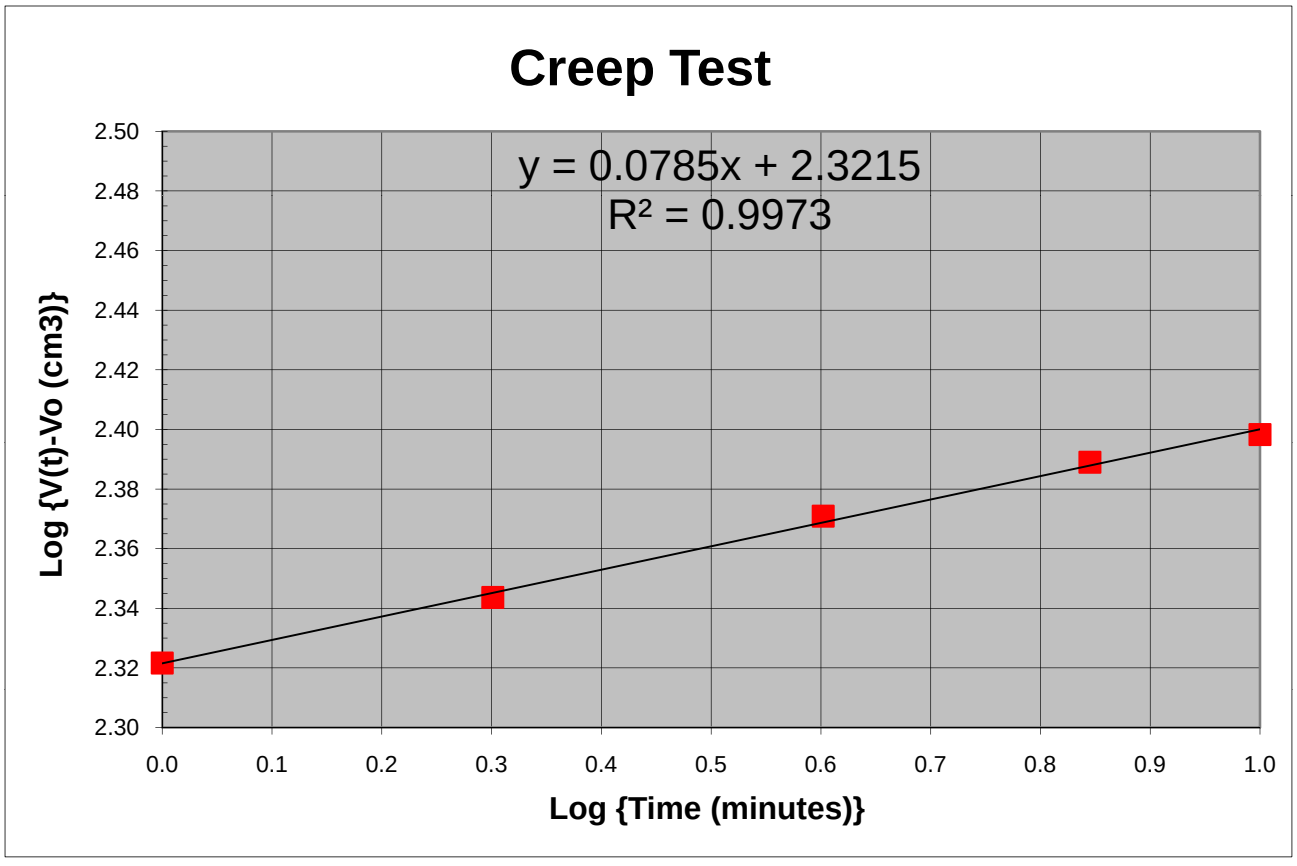
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-54B
Test Depth: 173.4 feet

Holding Gauge Pressure =	10.11	bars
Corrected Pressure =	15.76	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.76	cm
Initial Borehole Volume, Vo =	2047	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	289.20	2256.91	209.70	2.322
2	0.301	300.10	2267.81	220.60	2.344
4	0.602	314.40	2282.11	234.90	2.371
7	0.845	324.40	2292.11	244.90	2.389
10	1.000	329.70	2297.41	250.20	2.398

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0785

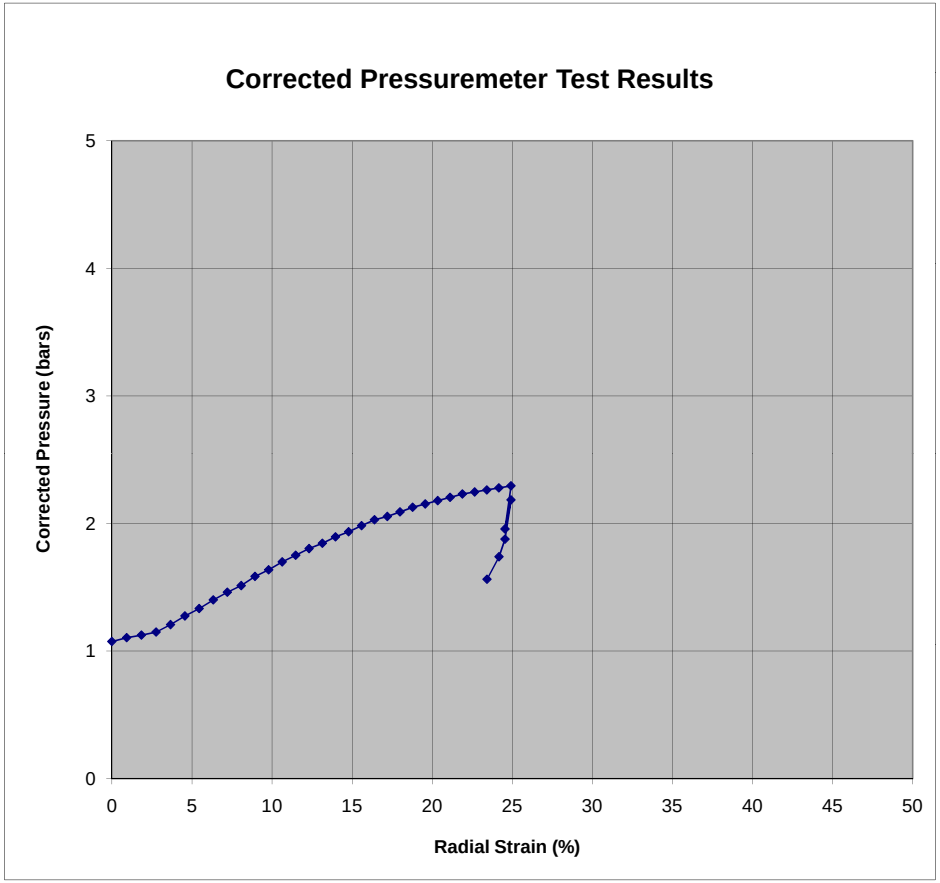


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	1
IN-SITU SOIL TESTING, L.C.		DEPTH:	10 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/15/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.08	0	0.00	
1.11	40	0.93	
1.13	80	1.85	
1.15	120	2.76	Eo1
1.21	160	3.67	
1.28	200	4.56	
1.33	240	5.45	
1.40	280	6.33	Eo2
1.46	319	7.21	
1.51	359	8.08	
1.59	399	8.94	
1.64	439	9.79	
1.70	479	10.64	
1.75	519	11.48	
1.80	559	12.31	
1.85	599	13.14	
1.90	639	13.97	
1.94	679	14.78	
1.98	719	15.59	
2.03	759	16.40	
2.06	799	17.20	
2.09	839	17.99	
2.13	879	18.78	
2.15	919	19.57	
2.18	959	20.35	
2.21	999	21.12	
2.23	1039	21.89	
2.25	1079	22.65	
2.26	1119	23.41	
2.28	1159	24.17	
2.30	1199	24.92	Eu1
1.96	1179	24.55	Eu2
2.19	1199	24.92	Eu3
1.88	1179	24.55	Eu4
1.74	1159	24.18	
1.56	1119	23.42	

Interpreted Pressuremeter Parameters		
P_o	1.2	bar
P_L	2.5	bar
P_l^*	1.3	bar
E_o	10	bar
E_{r1}	#DIV/0!	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	7.5	
E_{u1}	151	bar
E_{r3}	101	bar
E_{u2}	137	bar

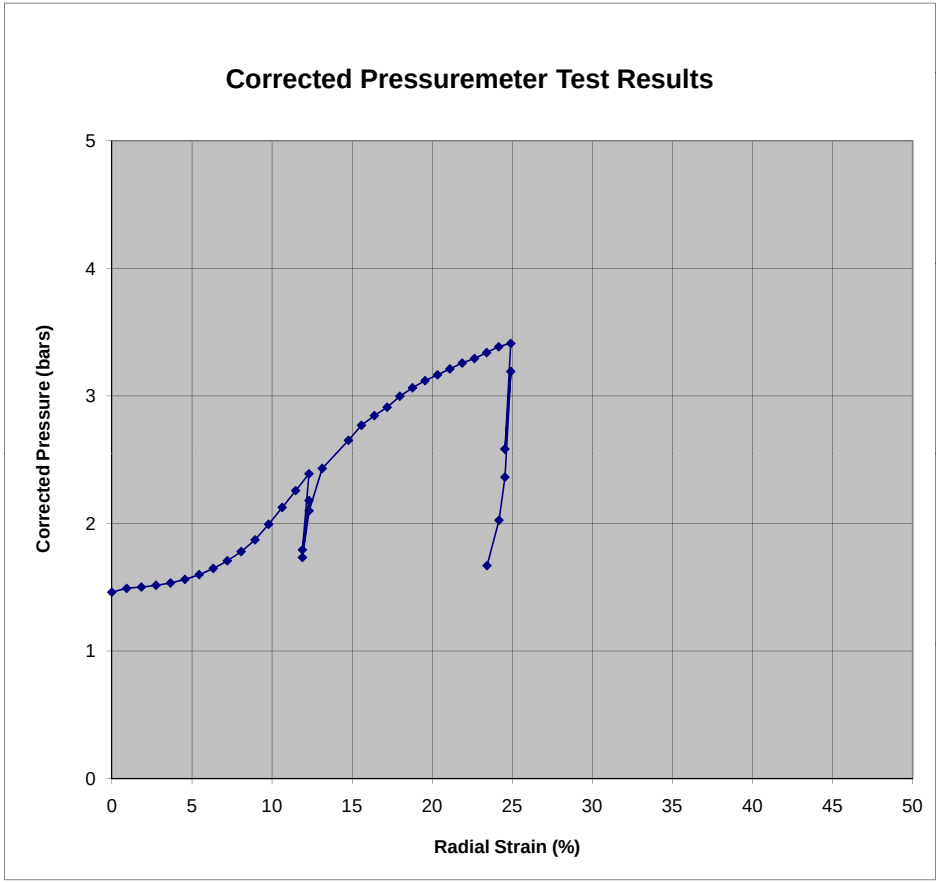


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	2
IN-SITU SOIL TESTING, L.C.		DEPTH:	19.6 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/15/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.46	0	0.00	
1.49	40	0.92	
1.50	80	1.85	
1.52	120	2.76	
1.53	160	3.67	
1.56	200	4.56	
1.60	240	5.45	
1.65	280	6.33	
1.71	319	7.21	
1.78	359	8.08	
1.87	399	8.94	
1.99	439	9.79	Eo1
2.13	479	10.64	
2.26	519	11.48	
2.39	559	12.31	Eo2
1.79	539	11.90	Er1
2.18	559	12.31	Er2
1.73	539	11.90	Er3
2.10	559	12.31	Er4
2.43	599	13.14	
2.65	679	14.78	
2.77	719	15.59	
2.85	759	16.39	
2.91	799	17.19	
3.00	838	17.98	
3.06	878	18.77	
3.12	918	19.56	
3.17	958	20.34	
3.21	998	21.11	
3.26	1038	21.88	
3.29	1078	22.64	
3.34	1118	23.40	
3.39	1158	24.16	
3.41	1198	24.91	Eu1
2.58	1179	24.54	Eu2
3.19	1198	24.91	Eu3
2.36	1179	24.54	Eu4
2.03	1159	24.17	
1.67	1119	23.42	

Interpreted Pressuremeter Parameters		
P_o	1.6	bar
P_L	4.2	bar
P_l^*	2.6	bar
E_o	23	bar
E_{r1}	139	bar
E_{r2}	132	bar
E_o/P_L^*	8.9	
E_{u1}	374	bar
E_{r3}	273	bar
E_{u2}	374	bar



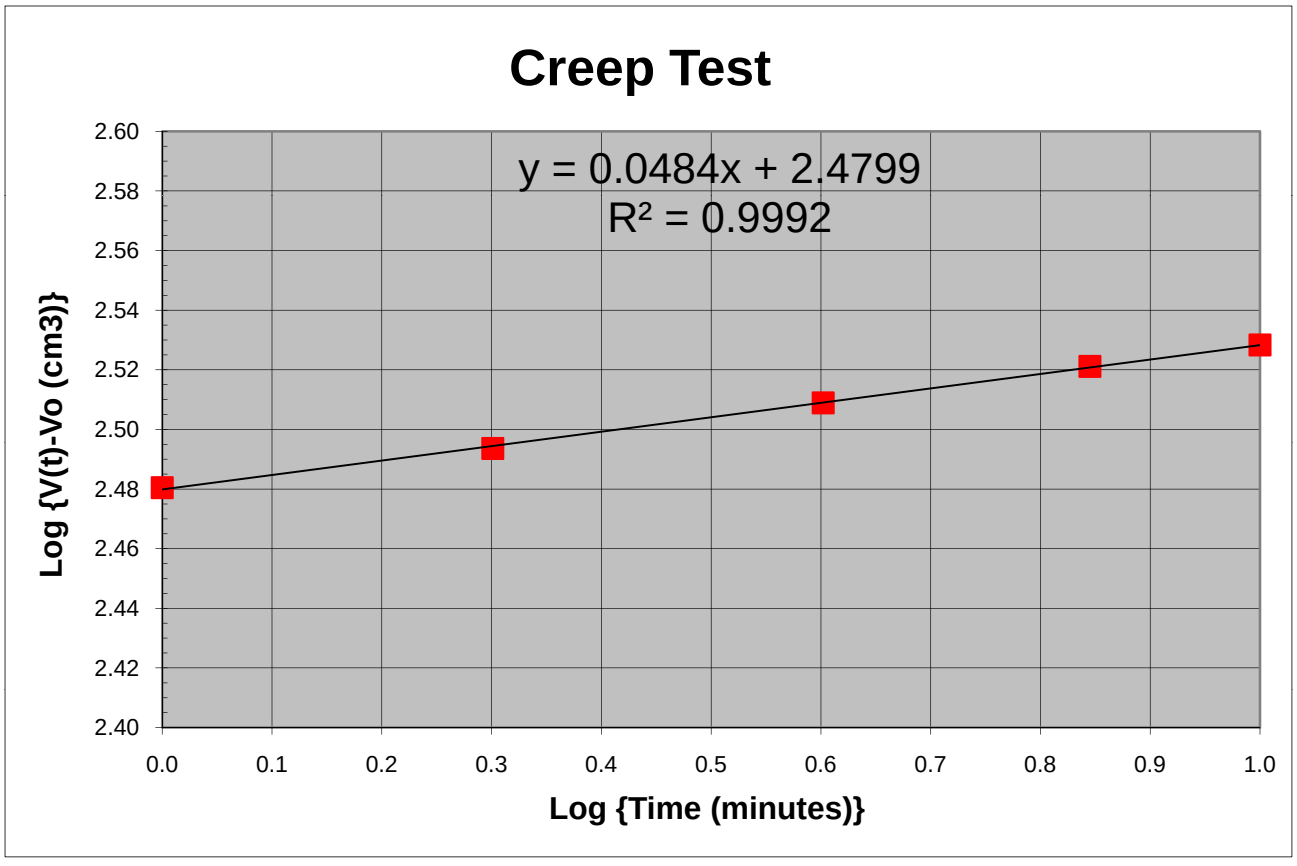
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 19.6 feet

Holding Gauge Pressure =	1.44	bars
Corrected Pressure =	2.43	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2449	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	612.23	2751.04	302.32	2.480
2	0.301	621.52	2760.33	311.61	2.494
4	0.602	632.70	2771.51	322.79	2.509
7	0.845	641.93	2780.74	332.02	2.521
10	1.000	647.45	2786.26	337.54	2.528

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0484

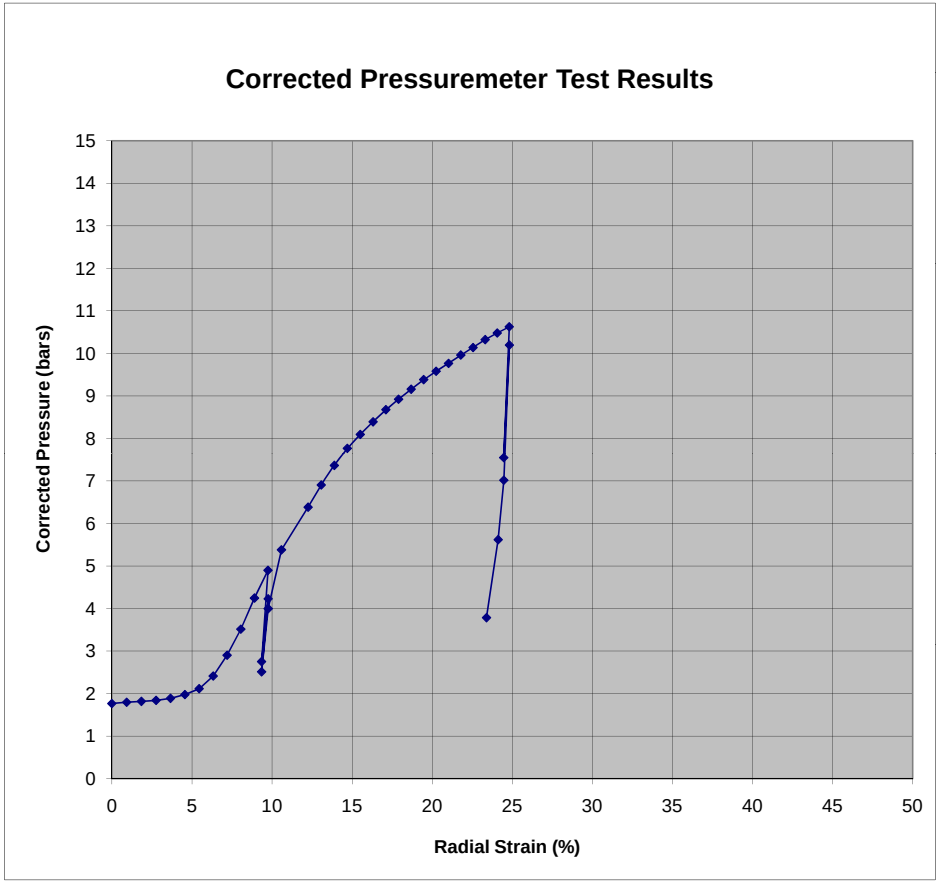


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	3
IN-SITU SOIL TESTING, L.C.		DEPTH:	29.8 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/15/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.77	0	0.00	
1.80	40	0.92	
1.82	80	1.85	
1.84	120	2.76	
1.89	160	3.66	
1.98	200	4.56	
2.11	239	5.45	
2.41	279	6.33	
2.90	319	7.19	Eo1
3.51	358	8.05	
4.25	398	8.90	
4.90	437	9.75	Eo2
2.75	418	9.34	Er1
4.23	438	9.76	Er2
2.51	419	9.35	Er3
4.00	438	9.76	Er4
5.38	477	10.59	
6.38	556	12.25	
6.91	596	13.07	
7.37	635	13.89	
7.77	675	14.70	
8.09	715	15.51	
8.39	755	16.31	
8.68	794	17.11	
8.92	834	17.90	
9.16	874	18.69	
9.38	914	19.47	
9.58	954	20.25	
9.77	994	21.02	
9.96	1033	21.78	
10.14	1073	22.55	
10.32	1113	23.31	
10.48	1153	24.06	
10.63	1193	24.81	Eu1
7.55	1174	24.46	Eu2
10.20	1193	24.81	Eu3
7.02	1175	24.47	Eu4
5.62	1156	24.12	
3.78	1117	23.39	

Interpreted Pressuremeter Parameters		
P_o	2.0	bar
P_L	13.5	bar
P_L^*	11.5	bar
E_o	113	bar
E_{r1}	519	bar
E_{r2}	526	bar
E_o/P_L^*	9.8	
E_{u1}	1476	bar
E_{r3}	1248	bar
E_{u2}	1528	bar



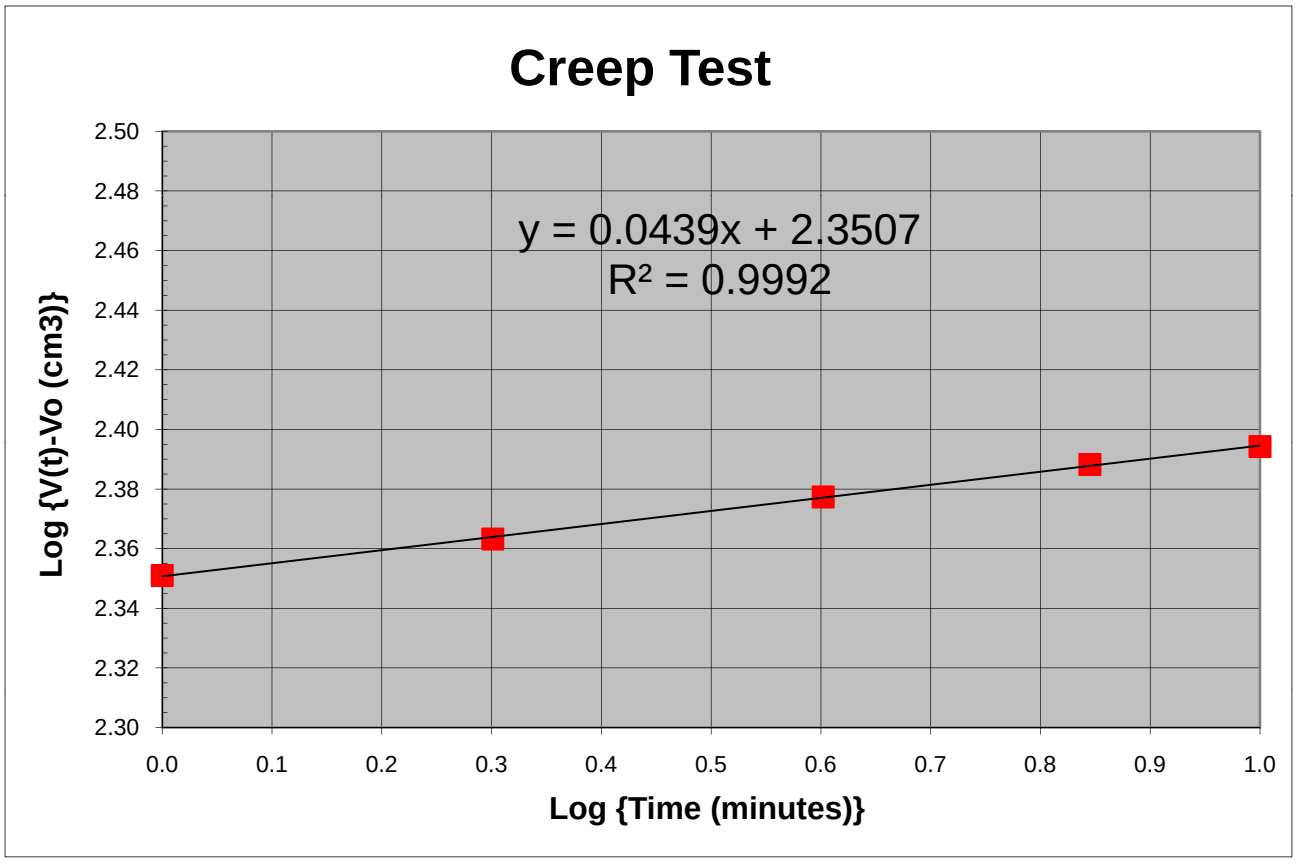
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 29.8 feet

Holding Gauge Pressure =	4.06	bars
Corrected Pressure =	5.38	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2403	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	488.75	2627.56	224.39	2.351
2	0.301	495.15	2633.96	230.79	2.363
4	0.602	502.79	2641.60	238.43	2.377
7	0.845	508.84	2647.65	244.48	2.388
10	1.000	512.24	2651.05	247.88	2.394

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0439

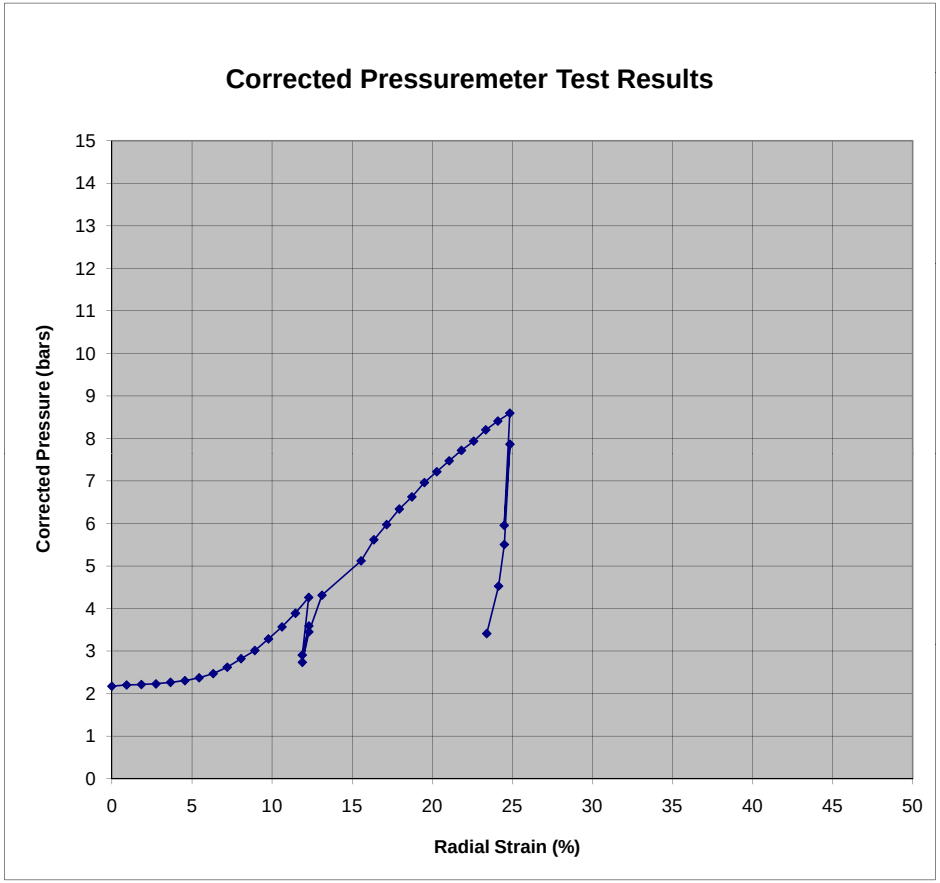


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	4
IN-SITU SOIL TESTING, L.C.		DEPTH:	40.1 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/15/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.17	0	0.00	
2.20	40	0.92	
2.21	80	1.84	
2.23	120	2.76	
2.27	160	3.66	
2.30	200	4.56	
2.37	239	5.45	
2.47	279	6.33	
2.62	319	7.20	
2.82	359	8.07	
3.01	399	8.93	
3.29	439	9.78	Eo1
3.57	479	10.62	
3.89	518	11.46	
4.26	558	12.29	Eo2
2.91	539	11.89	Er1
3.59	558	12.30	Er2
2.74	539	11.89	Er3
3.45	559	12.30	Er4
4.31	598	13.12	
5.12	717	15.56	
5.62	757	16.36	
5.97	797	17.15	
6.34	836	17.94	
6.63	876	18.73	
6.96	916	19.51	
7.22	956	20.28	
7.47	996	21.06	
7.72	1035	21.82	
7.94	1075	22.58	
8.20	1115	23.34	
8.41	1155	24.09	
8.59	1195	24.84	Eu1
5.96	1176	24.49	Eu2
7.86	1195	24.85	Eu3
5.51	1176	24.50	Eu4
4.53	1157	24.14	
3.41	1118	23.40	

Interpreted Pressuremeter Parameters		
P_o	2.3	bar
P_L	13.0	bar
P_l^*	10.7	bar
E_o	57	bar
E_{r1}	247	bar
E_{r2}	260	bar
E_o/P_L^*	5.4	
E_{u1}	1250	bar
E_{r3}	878	bar
E_{u2}	1109	bar



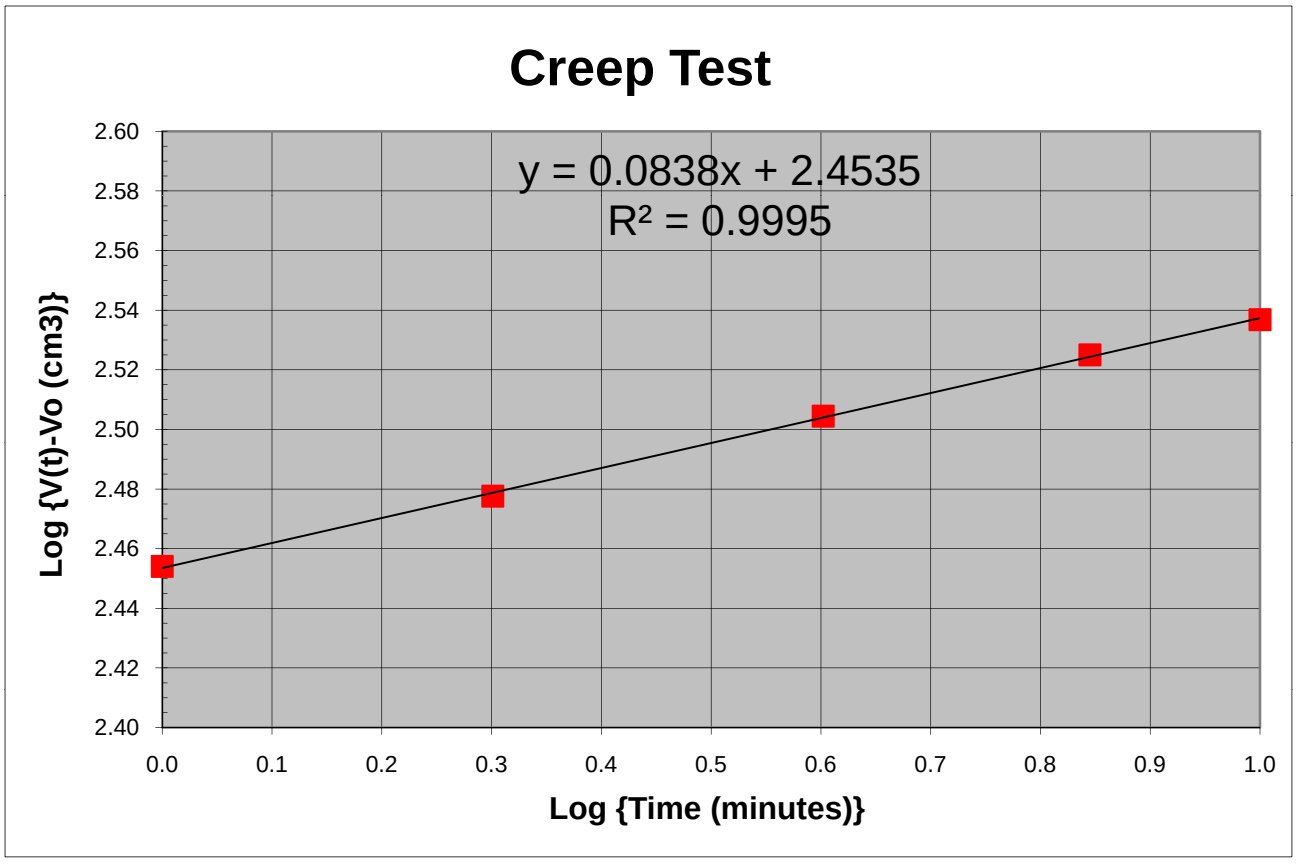
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 40.1 feet

Holding Gauge Pressure =	2.71	bars
Corrected Pressure =	4.31	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.97	cm
Initial Borehole Volume, Vo =	2472	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	617.32	2756.13	284.47	2.454
2	0.301	633.19	2772.00	300.34	2.478
4	0.602	652.35	2791.16	319.50	2.504
7	0.845	667.84	2806.65	334.99	2.525
10	1.000	677.05	2815.86	344.20	2.537

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0838

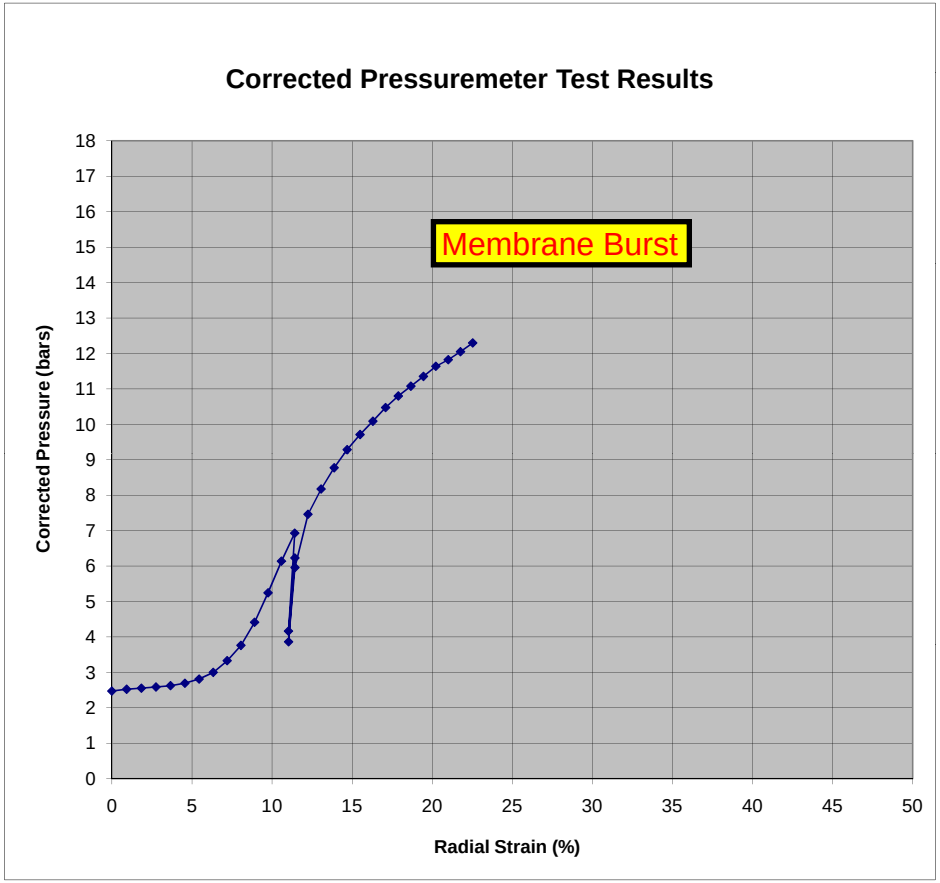


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	5
IN-SITU SOIL TESTING, L.C.		DEPTH:	50.4 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/15/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.47	0	0.00	
2.52	40	0.92	
2.55	80	1.84	
2.59	120	2.76	
2.62	160	3.66	
2.69	199	4.56	
2.81	239	5.45	
3.00	279	6.33	
3.33	319	7.20	
3.76	359	8.06	
4.41	398	8.91	Eo1
5.24	437	9.75	
6.14	477	10.59	
6.93	516	11.42	Eo2
4.16	498	11.03	Er1
6.23	517	11.43	Er2
3.86	498	11.03	Er3
5.96	517	11.43	Er4
7.46	556	12.24	
8.17	595	13.06	
8.77	635	13.88	
9.28	674	14.69	
9.71	714	15.49	
10.09	754	16.29	
10.47	793	17.09	
10.80	833	17.88	
11.07	873	18.67	
11.35	913	19.45	
11.64	953	20.22	
11.82	992	21.00	
12.05	1032	21.76	
12.29	1072	22.53	

Interpreted Pressuremeter Parameters		
P_o	2.8	bar
P_L	17.0	bar
P_L^*	14.2	bar
E_o	147	bar
E_{r1}	760	bar
E_{r2}	777	bar
E_o/P_L^*	10.4	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



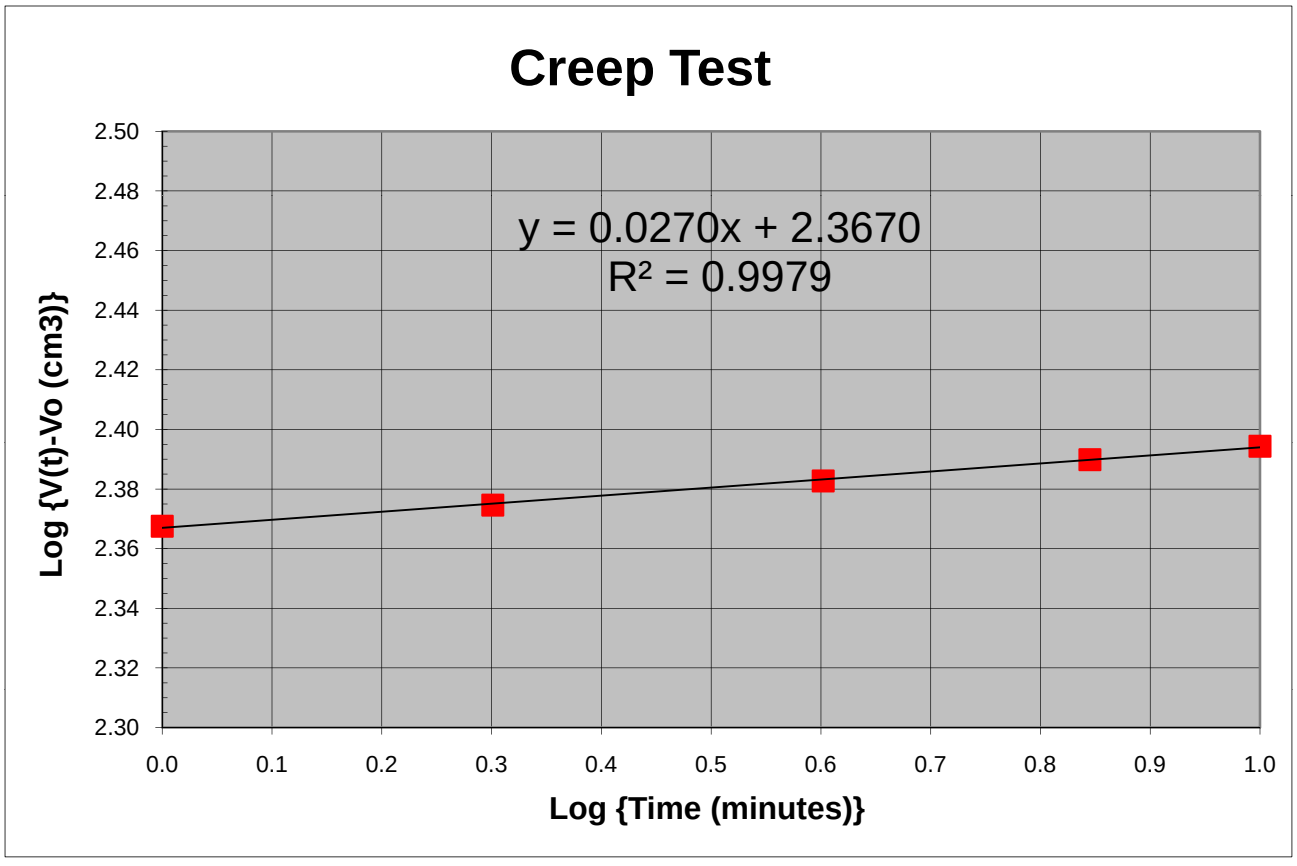
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 50.4 feet

Holding Gauge Pressure =	5.54	bars
Corrected Pressure =	7.46	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.97	cm
Initial Borehole Volume, Vo =	2472	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	565.95	2704.76	233.10	2.368
2	0.301	569.78	2708.59	236.93	2.375
4	0.602	574.24	2713.05	241.39	2.383
7	0.845	578.23	2717.04	245.38	2.390
10	1.000	580.81	2719.62	247.96	2.394

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0270

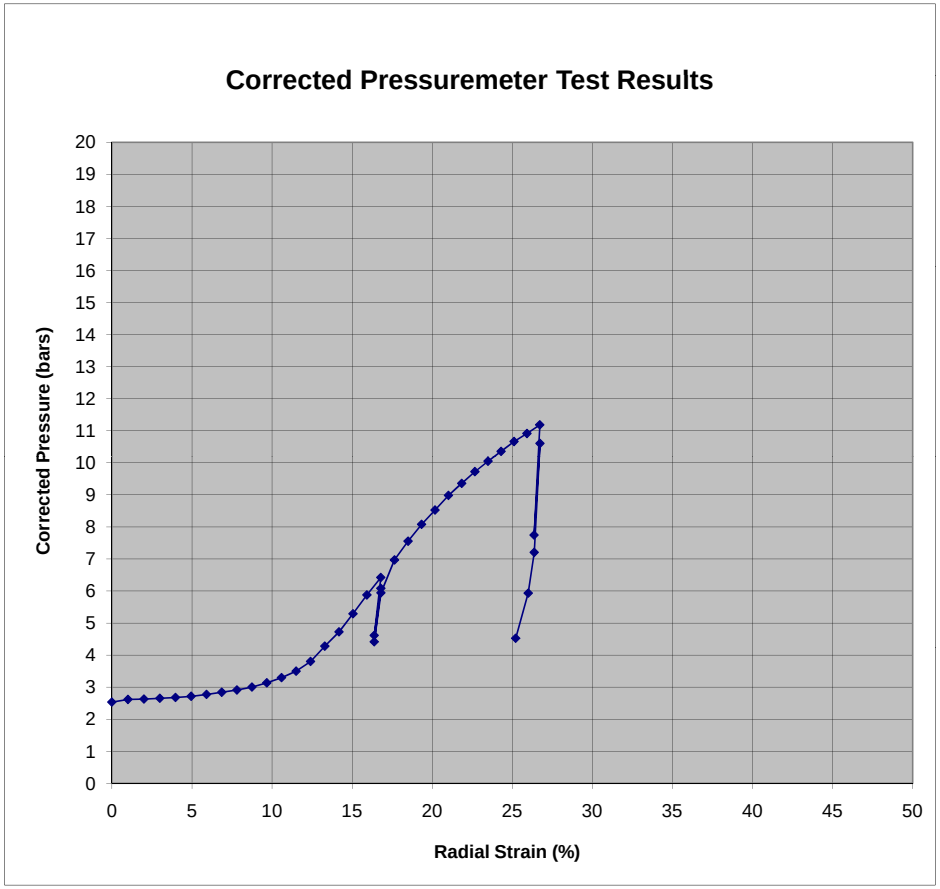


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	6
IN-SITU SOIL TESTING, L.C.		DEPTH:	60.2 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/15/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.54	0	0.00	
2.62	40	1.00	
2.63	80	2.00	
2.65	120	3.00	
2.68	160	3.98	
2.72	200	4.95	
2.77	239	5.91	
2.84	279	6.86	
2.91	319	7.81	
3.00	359	8.75	
3.14	399	9.67	
3.30	439	10.59	
3.50	479	11.50	
3.80	519	12.41	
4.28	558	13.30	
4.73	598	14.18	Eo1
5.29	637	15.06	
5.88	677	15.93	
6.42	716	16.79	Eo2
4.62	697	16.38	Er1
6.08	716	16.79	Er2
4.42	698	16.38	Er3
5.94	717	16.80	Er4
6.97	756	17.64	
7.56	795	18.49	
8.08	835	19.34	
8.53	874	20.18	
8.98	914	21.01	
9.36	954	21.84	
9.73	993	22.67	
10.05	1033	23.49	
10.36	1073	24.30	
10.67	1112	25.11	
10.92	1152	25.92	
11.19	1192	26.72	Eu1
7.75	1174	26.36	Eu2
10.61	1192	26.73	Eu3
7.21	1175	26.37	Eu4
5.94	1156	26.00	
4.53	1117	25.21	

Interpreted Pressuremeter Parameters		
P_o	3.0	bar
P_L	17.0	bar
P_L^*	14.0	bar
E_o	100	bar
E_{r1}	547	bar
E_{r2}	572	bar
E_o/P_L^*	7.1	
E_{u1}	1627	bar
E_{r3}	1314	bar
E_{u2}	1606	bar



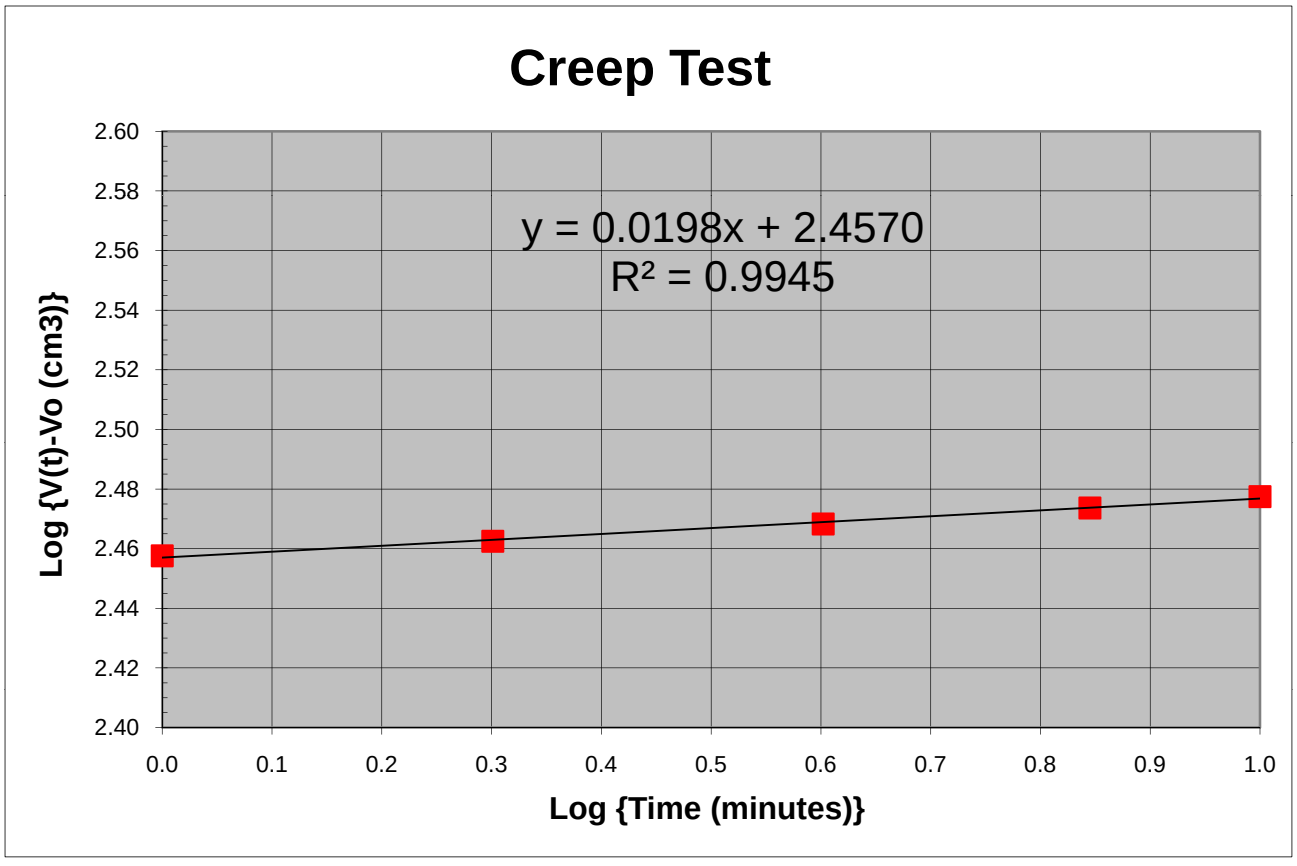
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 60.2 feet

Holding Gauge Pressure =	4.87	bars
Corrected Pressure =	6.97	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	4.11	cm
Initial Borehole Volume, Vo =	2446	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	765.40	2733.11	286.80	2.458
2	0.301	768.65	2736.36	290.05	2.462
4	0.602	772.53	2740.24	293.93	2.468
7	0.845	776.21	2743.92	297.61	2.474
10	1.000	778.81	2746.52	300.21	2.477

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0198

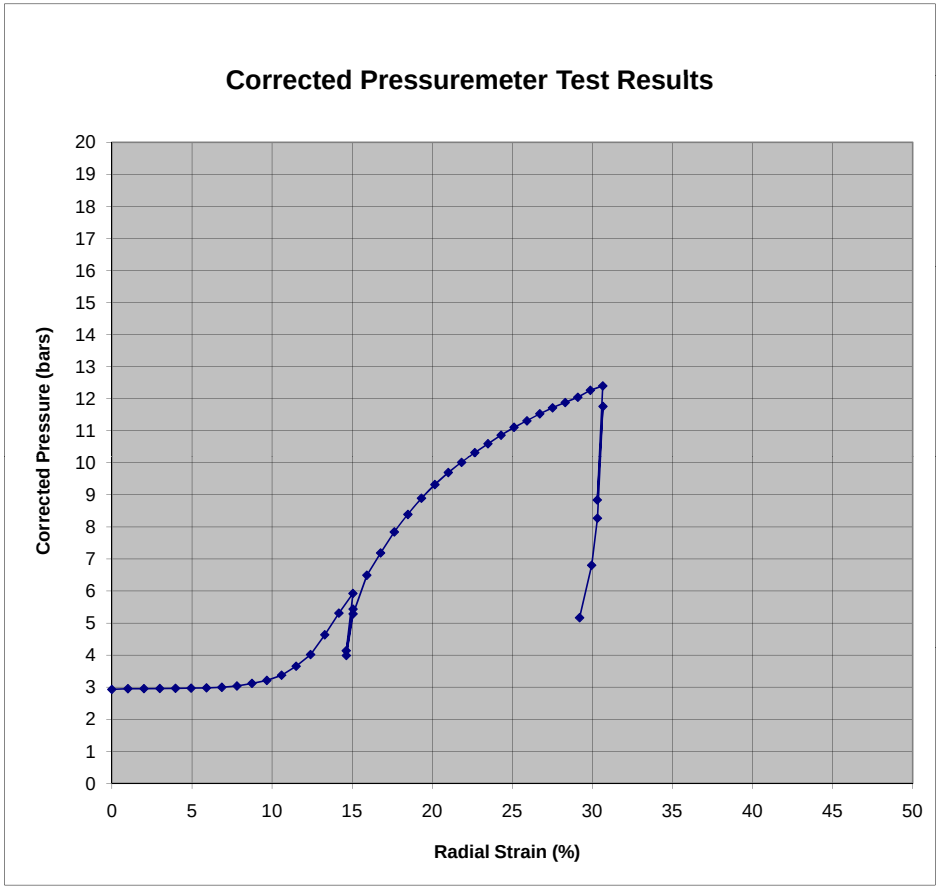


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	7
IN-SITU SOIL TESTING, L.C.		DEPTH:	69.4 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/15/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.93	0	0.00	
2.95	40	1.00	
2.95	80	2.00	
2.96	120	2.99	
2.96	160	3.98	
2.97	200	4.95	
2.98	240	5.91	
3.00	280	6.87	
3.04	319	7.81	
3.12	359	8.75	
3.21	399	9.68	
3.37	439	10.60	
3.65	479	11.51	
4.02	519	12.41	Eo1
4.63	558	13.30	
5.31	597	14.18	
5.93	637	15.05	Eo2
4.14	618	14.63	Er1
5.44	637	15.06	Er2
3.99	618	14.64	Er3
5.29	637	15.06	Er4
6.49	676	15.92	
7.19	716	16.78	
7.84	755	17.63	
8.39	795	18.48	
8.90	834	19.33	
9.32	874	20.17	
9.70	913	21.01	
10.01	953	21.84	
10.32	993	22.66	
10.60	1033	23.48	
10.86	1072	24.30	
11.11	1112	25.11	
11.31	1152	25.91	
11.53	1192	26.72	
11.72	1232	27.51	
11.88	1271	28.30	
12.05	1311	29.09	
12.26	1351	29.87	
12.40	1391	30.65	Eu1
8.84	1373	30.31	Eu2
11.76	1392	30.66	Eu3
8.27	1374	30.32	Eu4
6.80	1355	29.96	
5.17	1317	29.20	

Interpreted Pressuremeter Parameters		
P_o	3.0	bar
P_L	15.0	bar
P_L^*	12.0	bar
E_o	109	bar
E_{r1}	466	bar
E_{r2}	467	bar
E_o/P_L^*	9.1	
E_{u1}	1797	bar
E_{r3}	1428	bar
E_{u2}	1758	bar



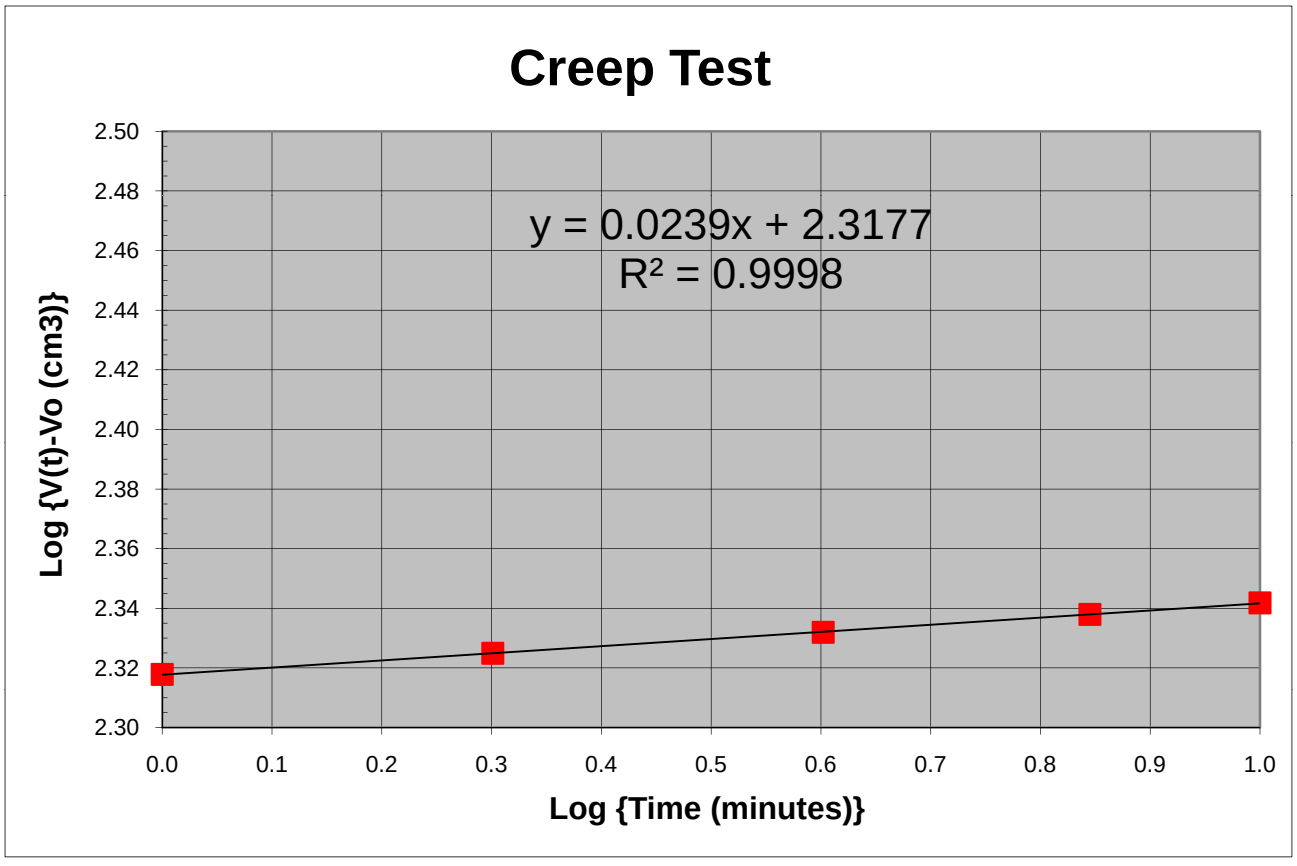
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 69.4 feet

Holding Gauge Pressure =	4.11	bars
Corrected Pressure =	6.49	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	4.11	cm
Initial Borehole Volume, Vo =	2446	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	686.49	2654.20	207.89	2.318
2	0.301	689.90	2657.61	211.30	2.325
4	0.602	693.35	2661.06	214.75	2.332
7	0.845	696.33	2664.04	217.73	2.338
10	1.000	698.29	2666.00	219.69	2.342

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0239

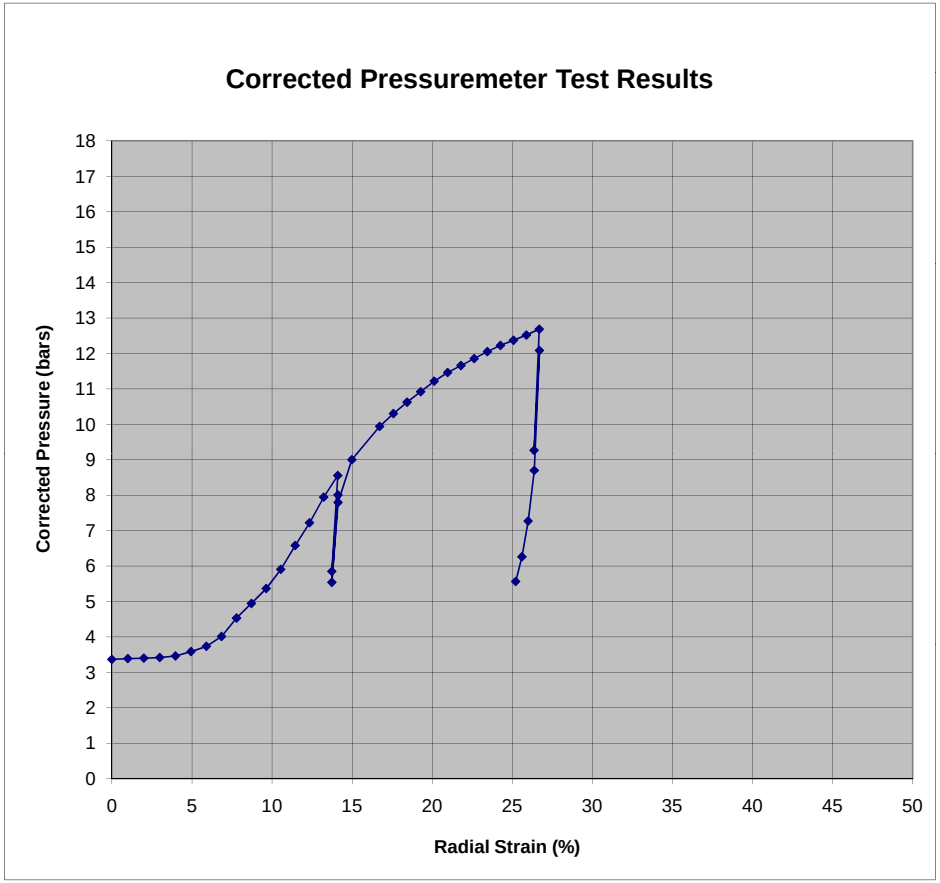


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	8
IN-SITU SOIL TESTING, L.C.		DEPTH:	77.4 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	15/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.37	0	0.00	
3.39	40	1.00	
3.40	79	2.00	
3.42	119	2.99	
3.46	159	3.97	
3.59	199	4.94	
3.73	239	5.90	
4.01	279	6.85	
4.53	318	7.78	
4.94	358	8.71	
5.37	397	9.64	
5.91	437	10.55	Eo1
6.58	476	11.45	
7.22	516	12.34	
7.94	555	13.23	
8.56	594	14.11	Eo2
5.85	578	13.73	Er1
8.01	595	14.12	Er2
5.54	578	13.74	Er3
7.80	595	14.12	Er4
9.00	634	14.99	
9.94	713	16.72	
10.30	753	17.58	
10.63	792	18.43	
10.92	832	19.28	
11.22	872	20.13	
11.46	912	20.96	
11.66	951	21.80	
11.86	991	22.63	
12.05	1031	23.45	
12.23	1071	24.26	
12.37	1111	25.08	
12.52	1150	25.88	
12.69	1190	26.69	Eu1
9.27	1174	26.36	Eu2
12.09	1191	26.70	Eu3
8.70	1175	26.37	Eu4
7.27	1156	25.99	
6.26	1137	25.61	
5.56	1117	25.21	

Interpreted Pressuremeter Parameters		
P_o	3.3	bar
P_L	14.5	bar
P_l^*	11.2	bar
E_o	111	bar
E_{r1}	843	bar
E_{r2}	885	bar
E_o/P_L^*	9.9	
E_{u1}	1789	bar
E_{r3}	1424	bar
E_{u2}	1770	bar



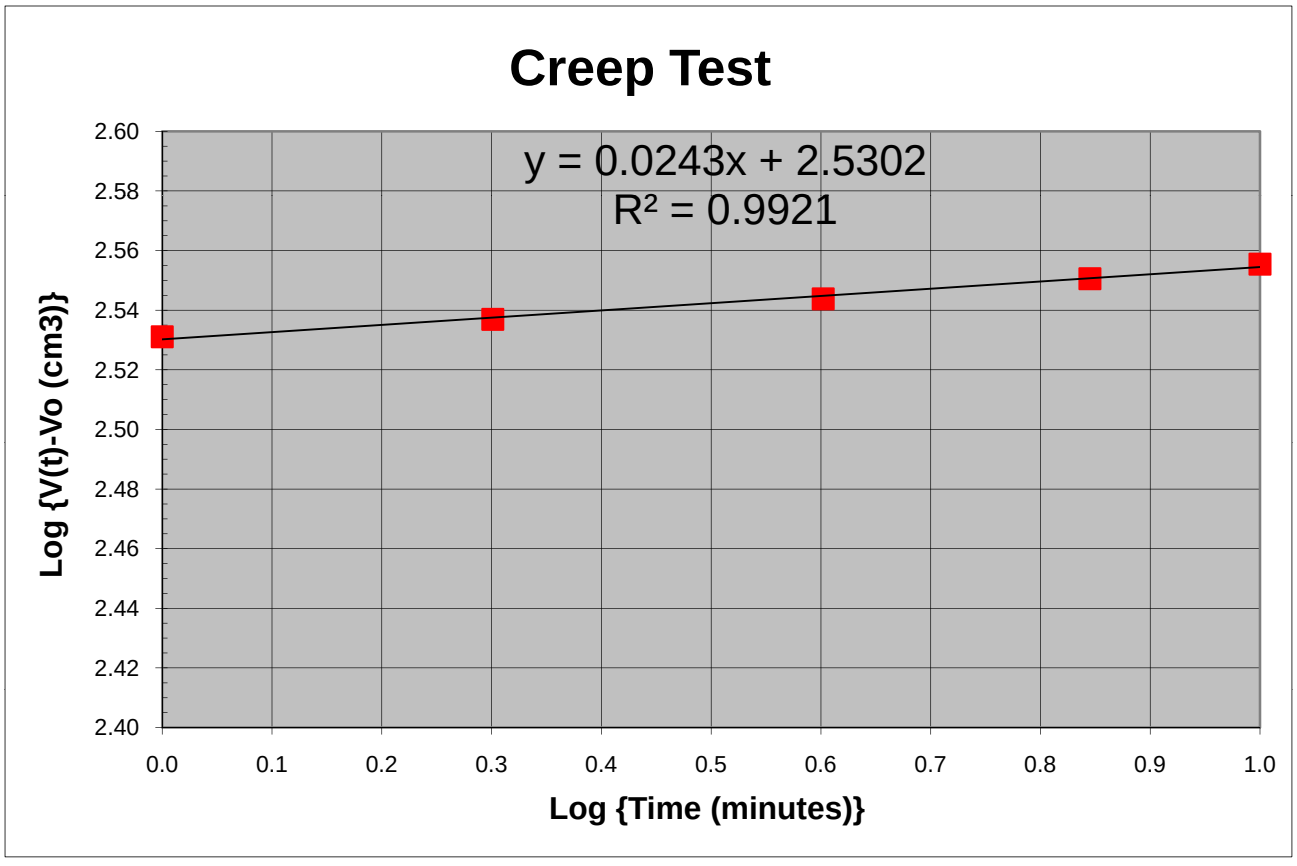
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 77.4 feet

Holding Gauge Pressure =	6.30	bars
Corrected Pressure =	9.00	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.97	cm
Initial Borehole Volume, Vo =	2274	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	645.90	2613.61	339.68	2.531
2	0.301	650.50	2618.21	344.28	2.537
4	0.602	656.00	2623.71	349.78	2.544
7	0.845	661.50	2629.21	355.28	2.551
10	1.000	665.50	2633.21	359.28	2.555

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0243

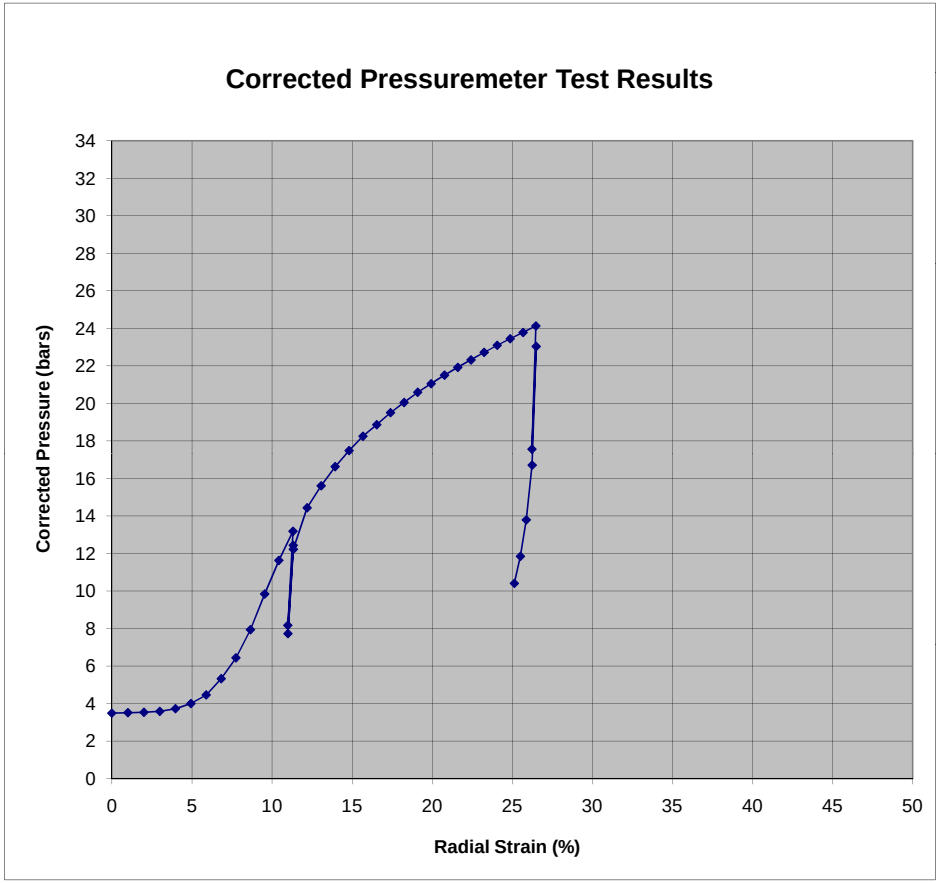


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	9
IN-SITU SOIL TESTING, L.C.		DEPTH:	87.2 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	15/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.49	0	0.00	
3.51	40	1.00	
3.54	80	2.00	
3.58	120	2.99	
3.73	159	3.97	
4.00	199	4.94	
4.46	239	5.89	
5.33	278	6.83	
6.44	317	7.75	Eo1
7.94	355	8.65	
9.84	393	9.54	
11.63	432	10.43	
13.19	470	11.31	Eo2
8.17	456	10.98	Er1
12.44	471	11.32	Er2
7.73	456	10.99	Er3
12.23	471	11.33	Er4
14.44	509	12.19	
15.61	548	13.07	
16.63	587	13.94	
17.49	626	14.81	
18.25	665	15.68	
18.87	705	16.54	
19.51	744	17.39	
20.05	784	18.24	
20.60	823	19.09	
21.05	863	19.93	
21.51	902	20.77	
21.93	942	21.60	
22.32	981	22.42	
22.73	1021	23.24	
23.10	1061	24.06	
23.45	1100	24.87	
23.79	1140	25.67	
24.13	1180	26.47	Eu1
17.56	1167	26.22	Eu2
23.04	1181	26.49	Eu3
16.71	1168	26.24	Eu4
13.80	1150	25.87	
11.85	1132	25.50	
10.41	1113	25.13	

Interpreted Pressuremeter Parameters		
P_o	3.7	bar
P_L	30.5	bar
P_l^*	26.8	bar
E_o	276	bar
E_{r1}	1856	bar
E_{r2}	1977	bar
E_o/P_L^*	10.3	
E_{u1}	4450	bar
E_{r3}	3420	bar
E_{u2}	4193	bar



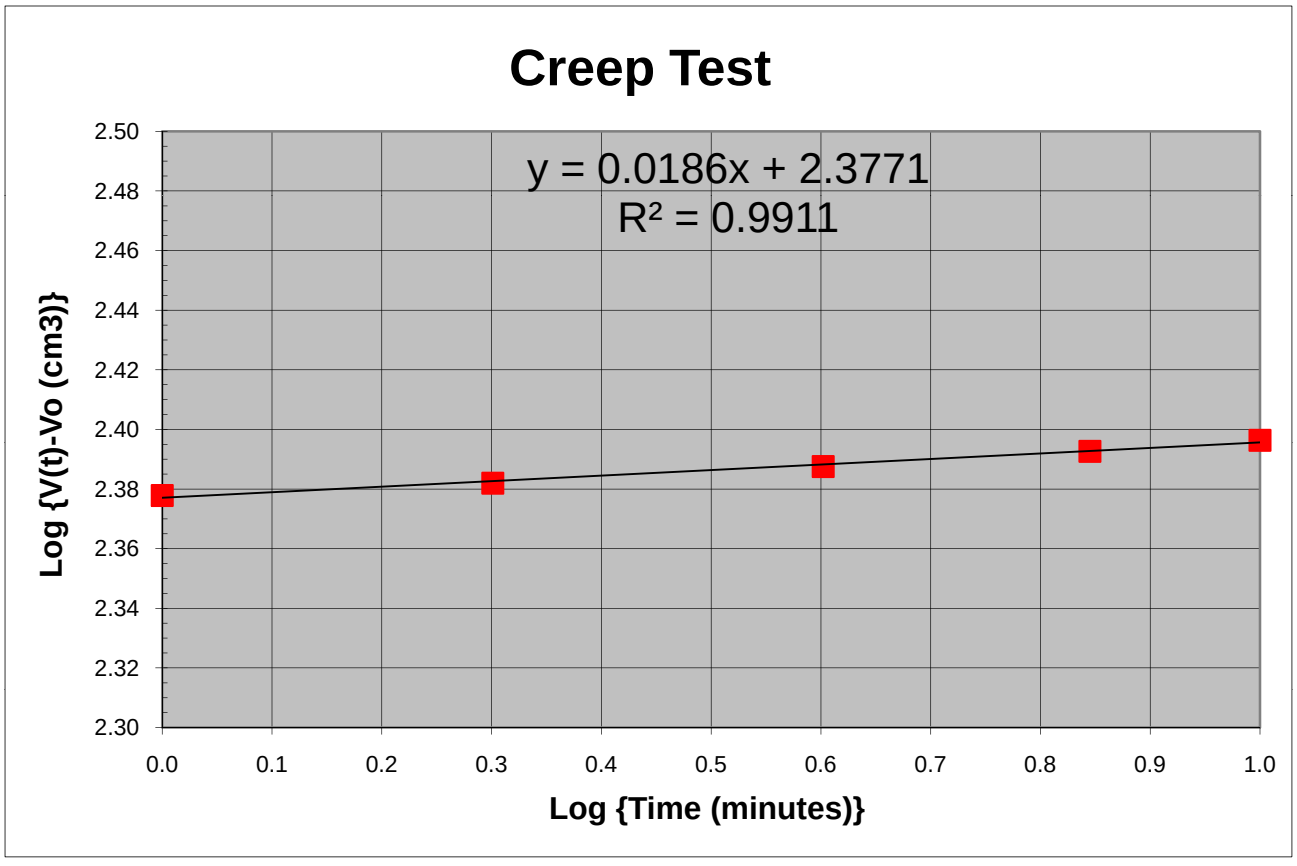
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 87.2 feet

Holding Gauge Pressure =	11.44	bars
Corrected Pressure =	14.44	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	523.80	2491.51	238.68	2.378
2	0.301	526.10	2493.81	240.98	2.382
4	0.602	529.20	2496.91	244.08	2.388
7	0.845	532.10	2499.81	246.98	2.393
10	1.000	534.20	2501.91	249.08	2.396

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0186

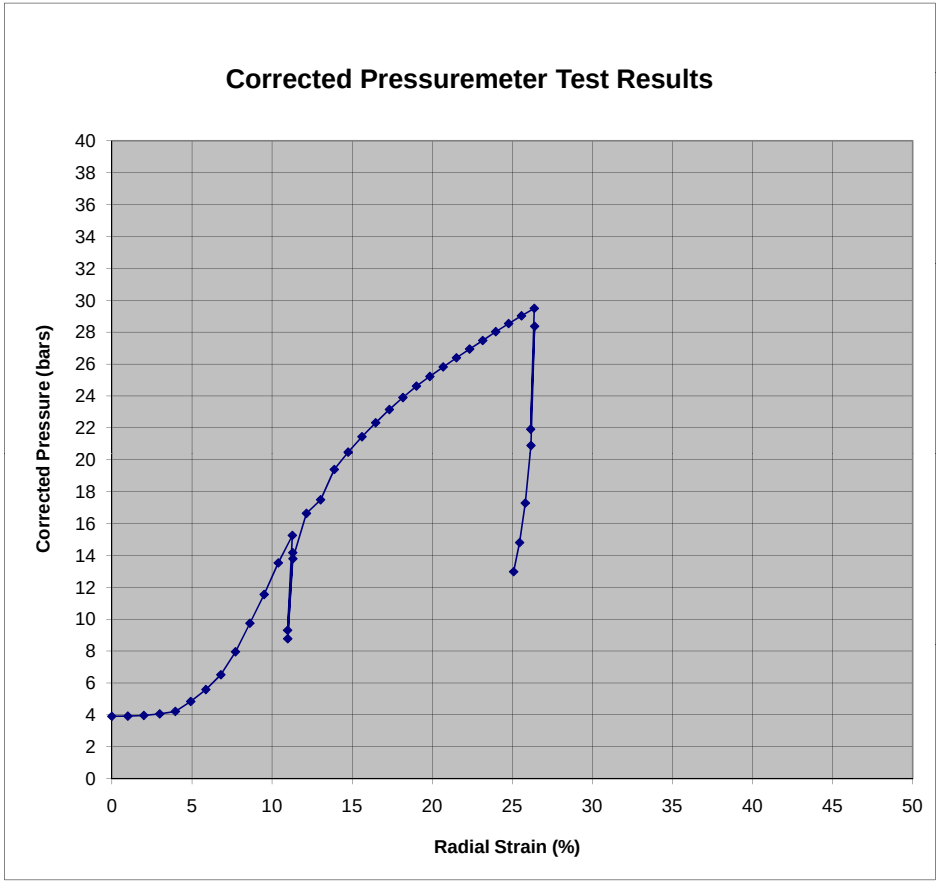


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	10
IN-SITU SOIL TESTING, L.C.		DEPTH:	97.5 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	16/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.91	0	0.00	
3.92	40	1.00	
3.96	79	2.00	
4.06	119	2.99	
4.22	159	3.97	
4.84	199	4.93	
5.59	238	5.87	
6.52	277	6.81	
7.96	316	7.72	Eo1
9.75	354	8.62	
11.55	392	9.51	
13.53	430	10.39	
15.25	468	11.27	Eo2
9.31	455	10.97	Er1
14.17	470	11.29	Er2
8.78	456	10.98	Er3
13.79	470	11.30	Er4
16.64	507	12.15	
17.49	546	13.03	
19.39	584	13.89	
20.48	623	14.75	
21.44	662	15.62	
22.32	702	16.47	
23.15	741	17.32	
23.90	780	18.17	
24.62	819	19.01	
25.22	859	19.85	
25.82	898	20.69	
26.39	938	21.51	
26.94	977	22.34	
27.48	1017	23.15	
28.03	1056	23.96	
28.54	1096	24.77	
29.02	1135	25.57	
29.49	1175	26.37	Eu1
21.91	1164	26.15	Eu2
28.37	1176	26.39	Eu3
20.89	1164	26.17	Eu4
17.28	1147	25.81	
14.81	1129	25.46	
12.98	1111	25.08	

Interpreted Pressuremeter Parameters		
P_o	3.9	bar
P_L	40.0	bar
P_l^*	36.1	bar
E_o	300	bar
E_{r1}	2231	bar
E_{r2}	2306	bar
E_o/P_L^*	8.3	
E_{u1}	5669	bar
E_{r3}	4405	bar
E_{u2}	5538	bar



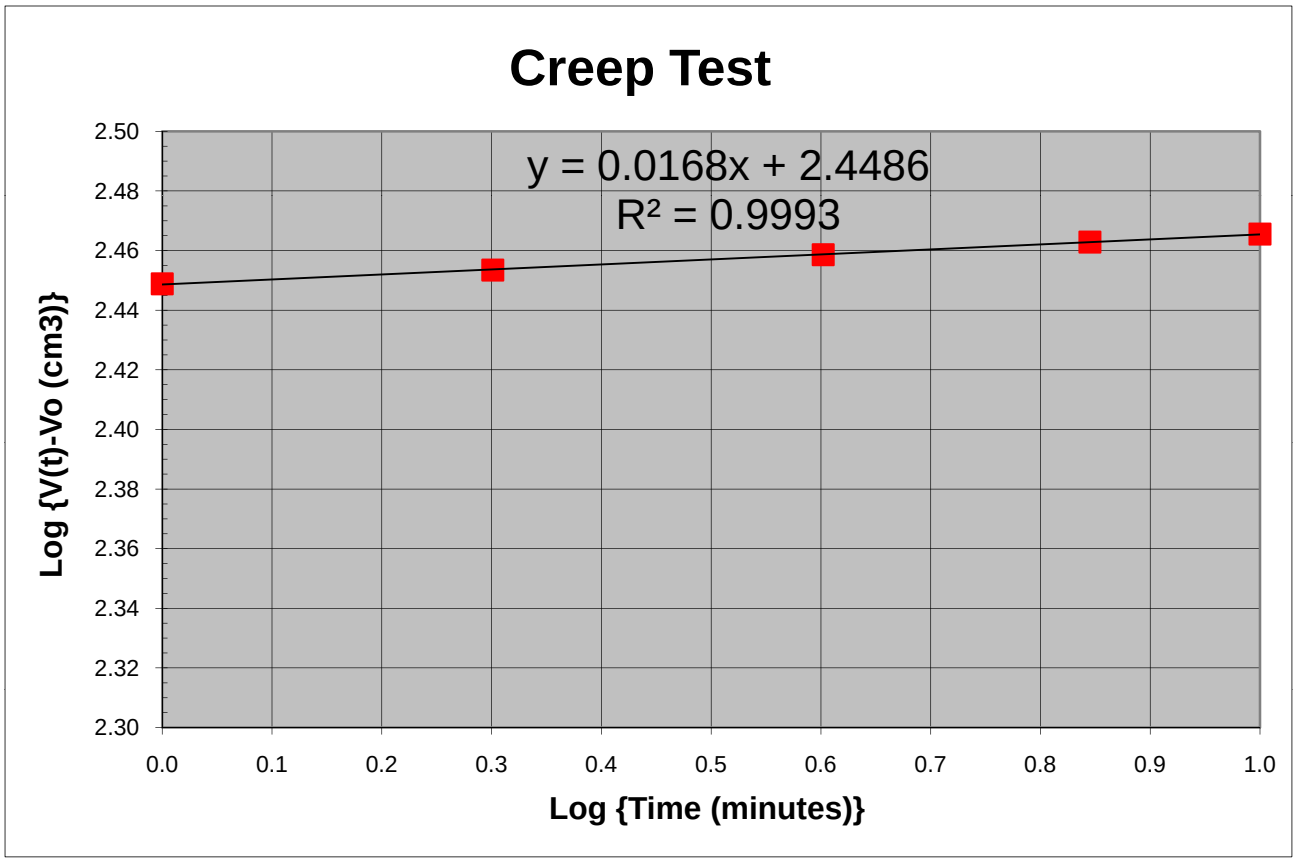
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 97.5 feet

Holding Gauge Pressure =	13.32	bars
Corrected Pressure =	16.64	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2211	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	524.30	2492.01	281.09	2.449
2	0.301	527.30	2495.01	284.09	2.453
4	0.602	530.70	2498.41	287.49	2.459
7	0.845	533.50	2501.21	290.29	2.463
10	1.000	535.30	2503.01	292.09	2.466

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0168

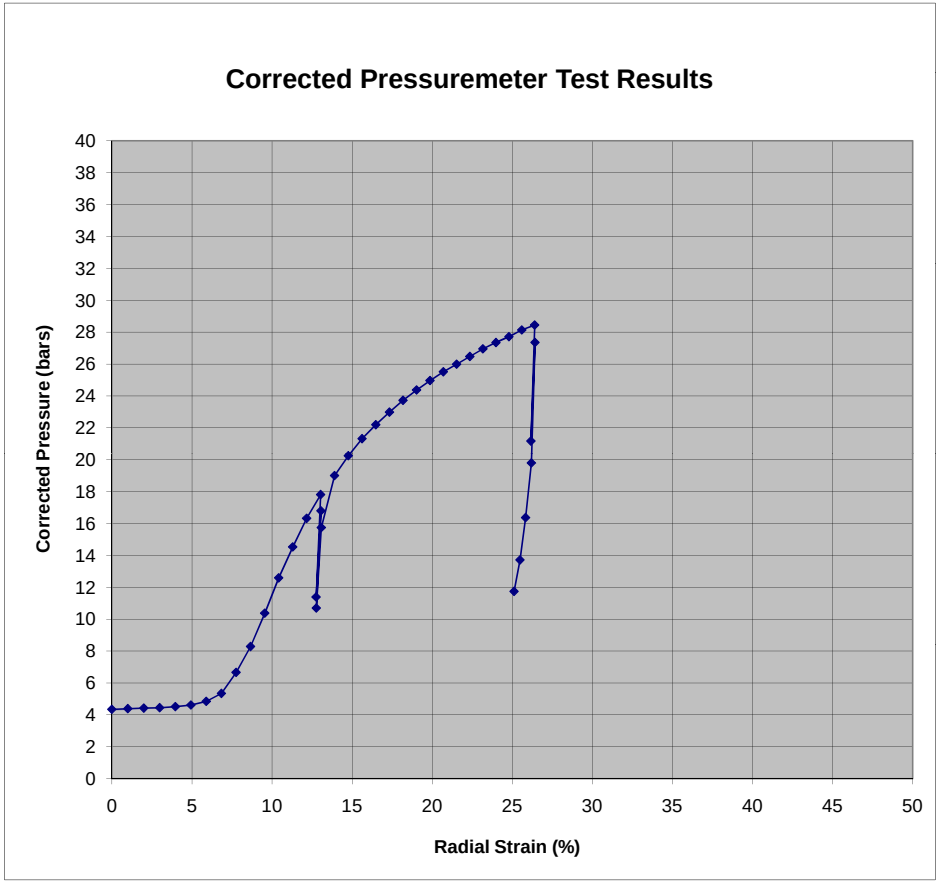


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	11
IN-SITU SOIL TESTING, L.C.		DEPTH:	109.5 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	16/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.34	-1	0.00	
4.39	39	1.00	
4.42	79	2.00	
4.45	119	2.99	
4.51	159	3.97	
4.61	199	4.94	
4.84	239	5.90	
5.34	278	6.84	
6.66	317	7.76	Eo1
8.28	356	8.66	
10.37	394	9.54	
12.59	431	10.42	
14.53	469	11.29	
16.32	508	12.16	
17.81	546	13.03	Eo2
11.39	534	12.75	Er1
16.79	547	13.05	Er2
10.70	534	12.76	Er3
15.74	548	13.08	Er4
19.00	585	13.90	
20.25	624	14.76	
21.32	663	15.62	
22.19	702	16.48	
22.98	741	17.33	
23.72	781	18.18	
24.37	820	19.03	
24.97	859	19.86	
25.51	899	20.70	
25.99	938	21.53	
26.47	978	22.35	
26.95	1017	23.17	
27.35	1057	23.98	
27.71	1097	24.79	
28.14	1136	25.60	
28.44	1176	26.40	Eu1
21.17	1164	26.17	Eu2
27.35	1177	26.42	Eu3
19.80	1166	26.19	Eu4
16.37	1148	25.83	
13.71	1131	25.48	
11.74	1112	25.11	

Interpreted Pressuremeter Parameters		
P_o	4.5	bar
P_L	37.0	bar
P_L^*	32.5	bar
E_o	311	bar
E_{r1}	2676	bar
E_{r2}	2424	bar
E_o/P_L^*	9.6	
E_{u1}	5281	bar
E_{r3}	4115	bar
E_{u2}	5646	bar



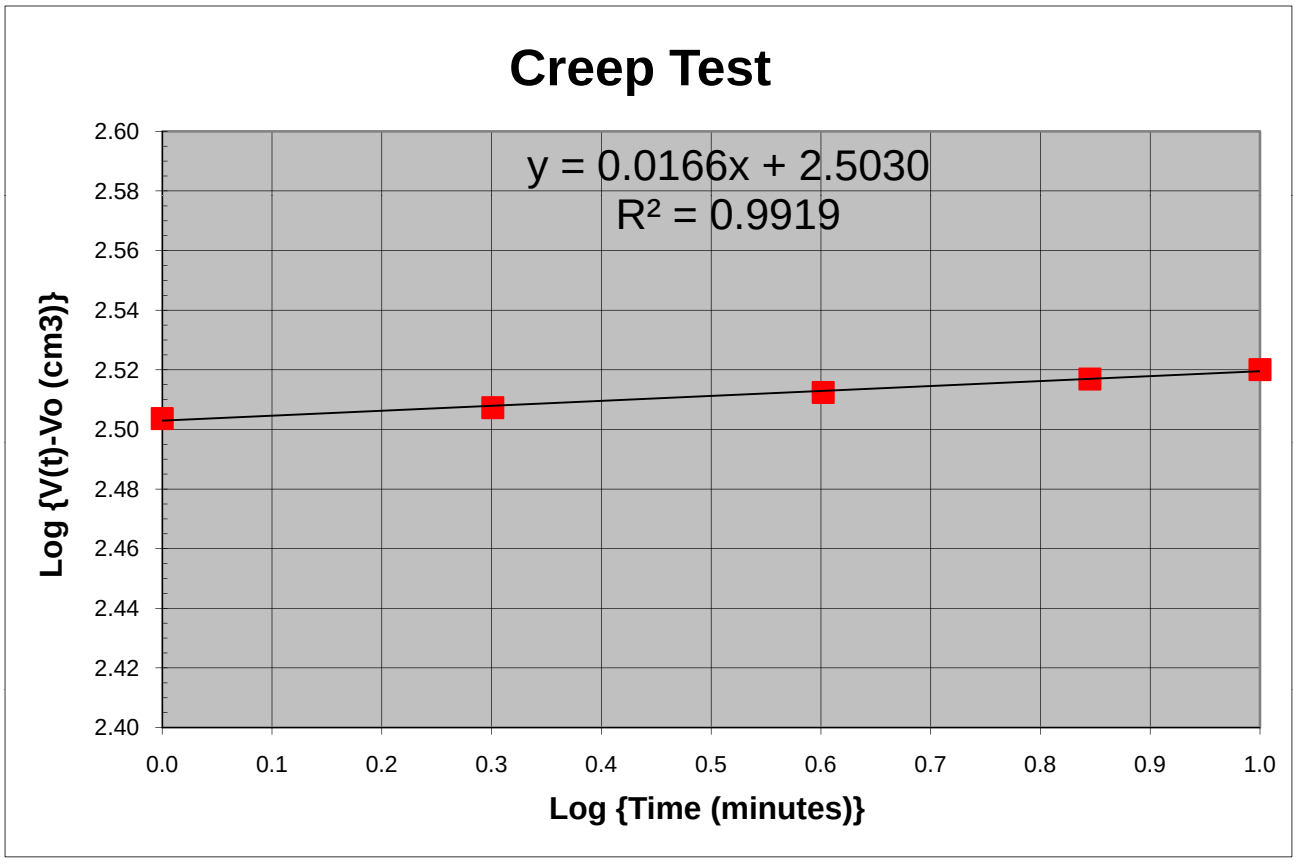
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 109.5 feet

Holding Gauge Pressure =	15.40	bars
Corrected Pressure =	19.00	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	604.00	2571.71	318.88	2.504
2	0.301	606.70	2574.41	321.58	2.507
4	0.602	610.50	2578.21	325.38	2.512
7	0.845	613.90	2581.61	328.78	2.517
10	1.000	616.30	2584.01	331.18	2.520

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0166

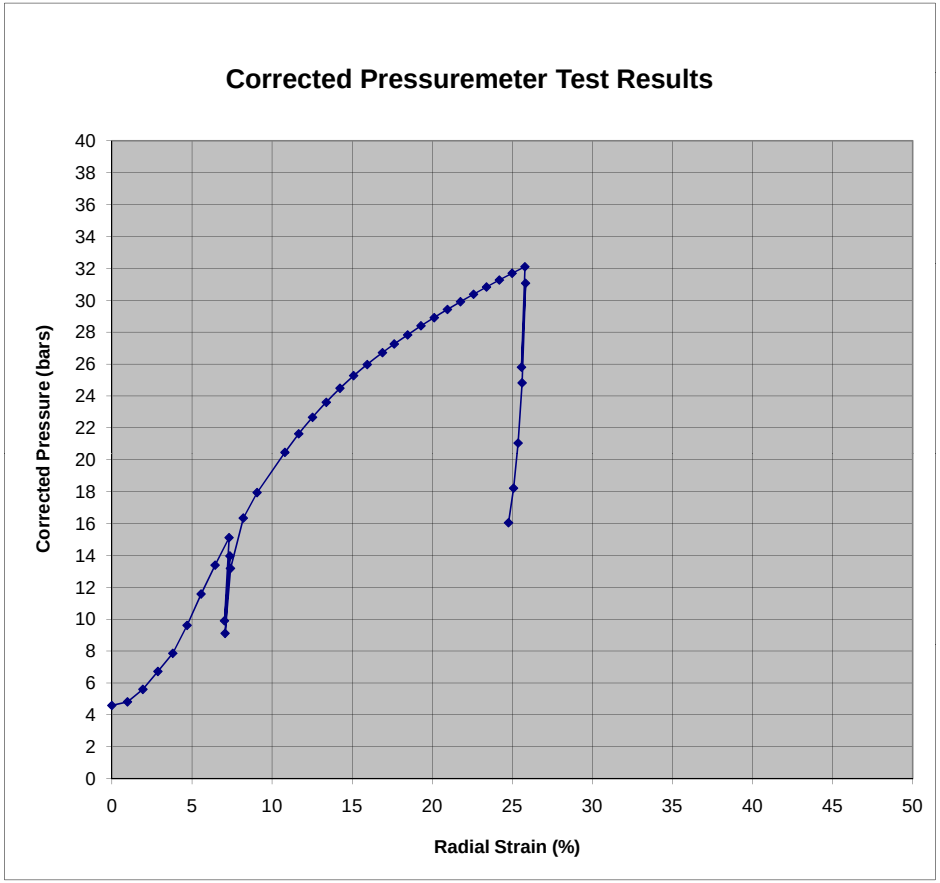


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	13
IN-SITU SOIL TESTING, L.C.		DEPTH:	119.5 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	16/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.59	-1	0.00	
4.82	39	0.98	
5.60	77	1.94	
6.73	115	2.88	
7.86	153	3.81	Eo1
9.61	189	4.70	
11.58	225	5.57	
13.39	262	6.45	
15.12	299	7.32	Eo2
9.90	286	7.03	Er1
13.97	301	7.37	Er2
9.11	288	7.07	Er3
13.19	302	7.41	Er4
16.35	336	8.21	
17.94	373	9.07	
20.47	448	10.81	
21.63	486	11.67	
22.66	524	12.53	
23.60	562	13.39	
24.49	600	14.24	
25.28	639	15.10	
25.97	678	15.95	
26.72	721	16.90	
27.26	755	17.63	
27.83	794	18.47	
28.41	833	19.30	
28.91	872	20.13	
29.43	911	20.95	
29.91	950	21.77	
30.38	989	22.58	
30.84	1028	23.39	
31.27	1067	24.19	
31.70	1106	24.99	
32.10	1146	25.79	Eu1
25.81	1135	25.58	Eu2
31.07	1148	25.83	Eu3
24.83	1137	25.61	Eu4
21.05	1125	25.37	
18.22	1111	25.08	
16.05	1095	24.77	

Interpreted Pressuremeter Parameters		
P_o	5.2	bar
P_L	40.0	bar
P_l^*	34.8	bar
E_o	290	bar
E_{r1}	1707	bar
E_{r2}	1733	bar
E_o/P_L^*	8.3	
E_{u1}	4968	bar
E_{r3}	3497	bar
E_{u2}	4896	bar



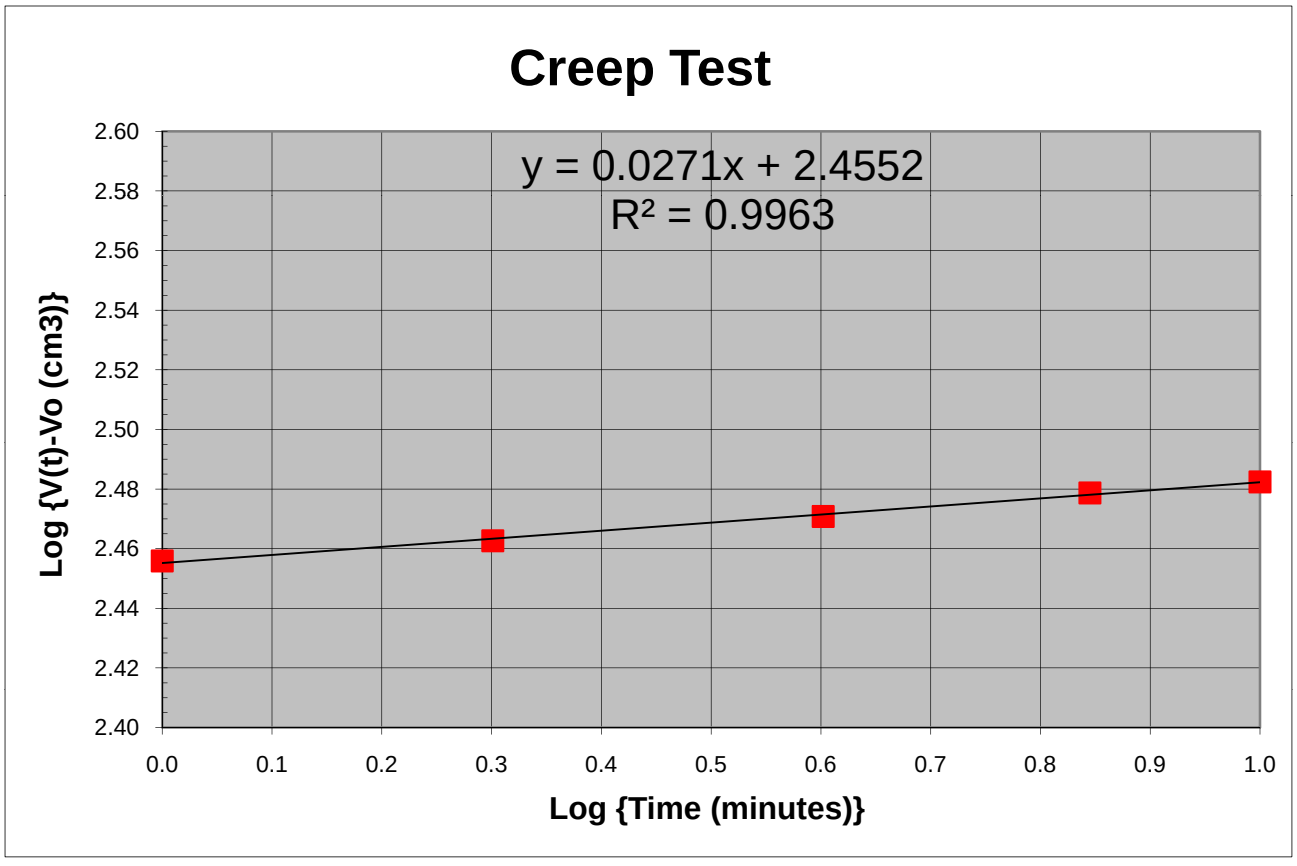
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 119.5 feet

Holding Gauge Pressure =	14.01	bars
Corrected Pressure =	17.94	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.80	cm
Initial Borehole Volume, Vo =	2088	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	405.50	2373.21	285.67	2.456
2	0.301	410.00	2377.71	290.17	2.463
4	0.602	415.50	2383.21	295.67	2.471
7	0.845	420.90	2388.61	301.07	2.479
10	1.000	423.50	2391.21	303.67	2.482

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0271

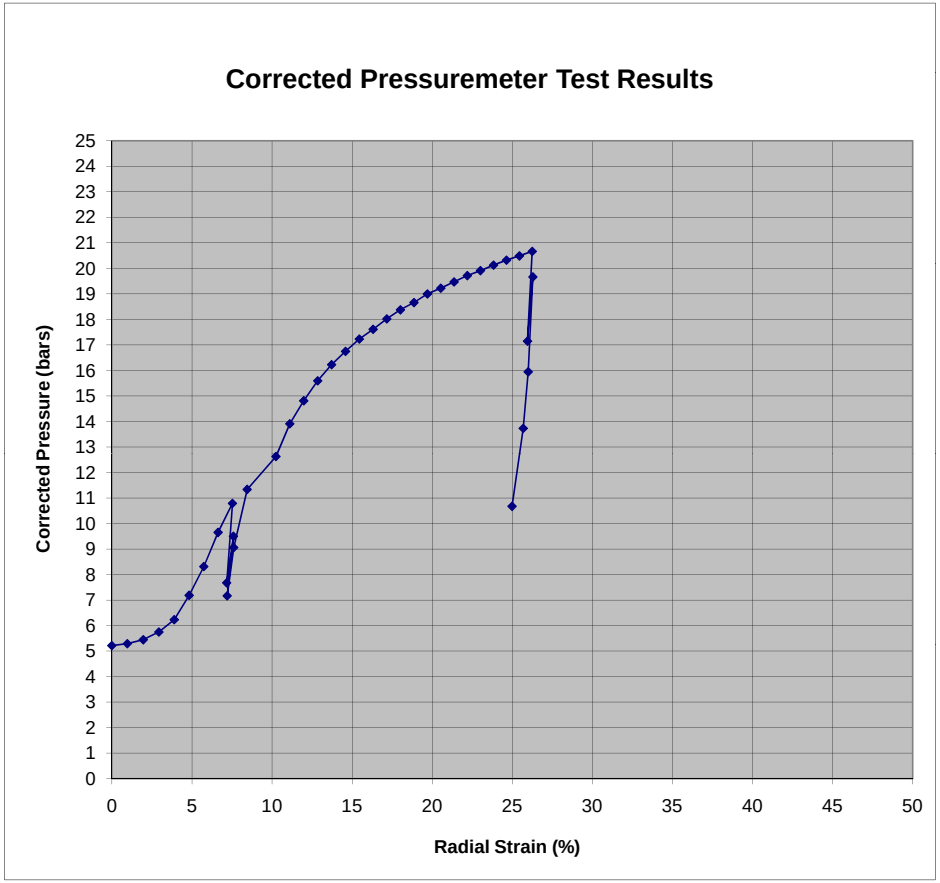


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	13
IN-SITU SOIL TESTING, L.C.		DEPTH:	127.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/16/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.22	-1	0.00	
5.29	38	0.97	
5.45	78	1.96	
5.75	117	2.94	
6.23	156	3.90	
7.19	194	4.83	Eo1
8.32	232	5.74	
9.65	270	6.63	
10.79	308	7.53	Eo2
7.68	292	7.17	Er1
9.50	310	7.59	Er2
7.17	294	7.20	Er3
9.06	311	7.61	Er4
11.34	346	8.45	
12.63	424	10.25	
13.91	461	11.11	
14.81	500	11.98	
15.60	538	12.85	
16.23	577	13.72	
16.75	616	14.59	
17.23	655	15.45	
17.62	694	16.31	
18.02	733	17.16	
18.38	773	18.01	
18.66	812	18.86	
19.00	852	19.70	
19.23	891	20.53	
19.47	931	21.37	
19.72	970	22.19	
19.91	1010	23.01	
20.13	1049	23.83	
20.33	1089	24.64	
20.49	1129	25.44	
20.67	1168	26.24	Eu1
17.15	1154	25.95	Eu2
19.67	1170	26.28	Eu3
15.95	1156	25.99	Eu4
13.73	1140	25.68	
10.68	1106	24.98	

Interpreted Pressuremeter Parameters		
P_o	5.7	bar
P_L	24.0	bar
P_l^*	18.3	bar
E_o	188	bar
E_{r1}	620	bar
E_{r2}	661	bar
E_o/P_L^*	10.3	
E_{u1}	1994	bar
E_{r3}	1263	bar
E_{u2}	2153	bar



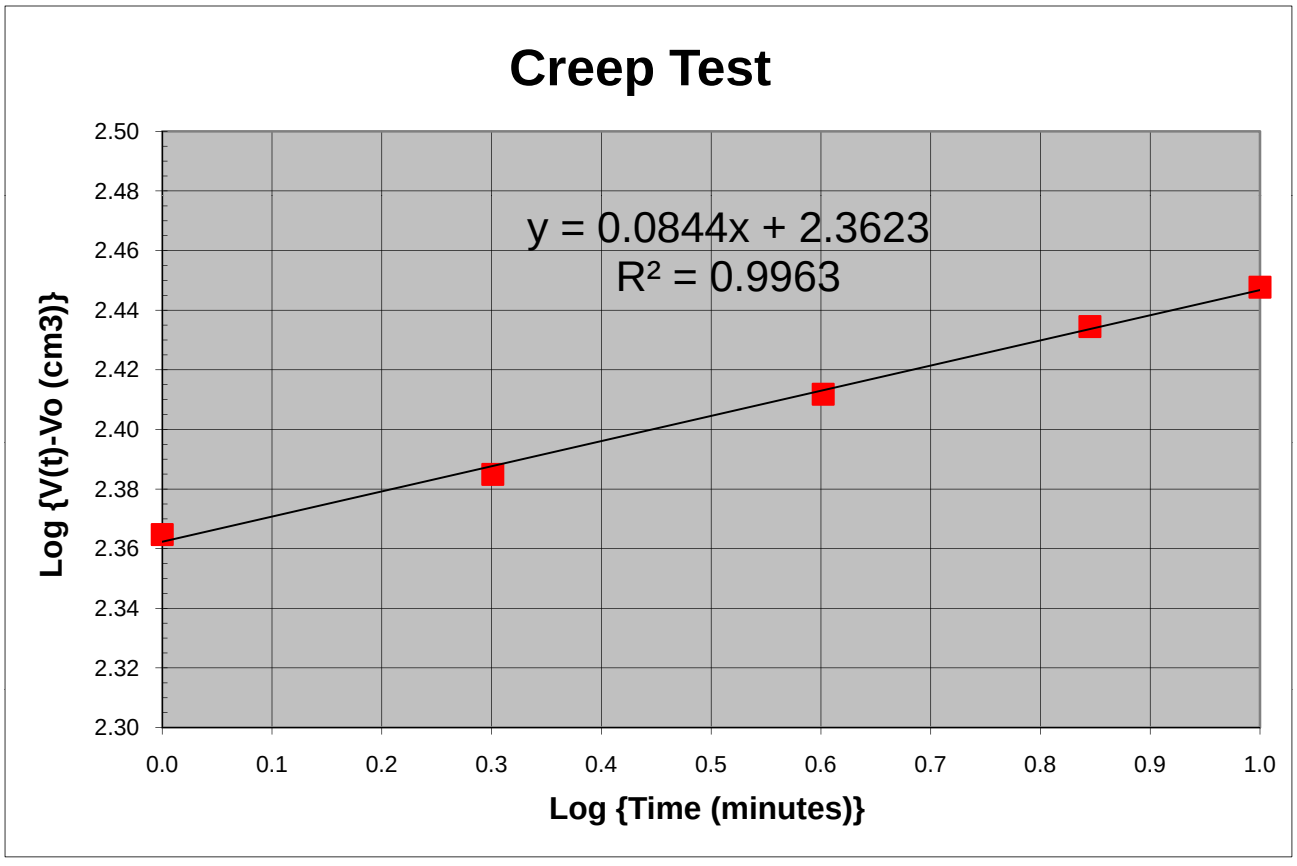
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 127.9 feet

Holding Gauge Pressure =	7.07	bars
Corrected Pressure =	11.34	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.82	cm
Initial Borehole Volume, Vo =	2108	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	371.75	2339.46	231.60	2.365
2	0.301	382.75	2350.46	242.60	2.385
4	0.602	398.25	2365.96	258.10	2.412
7	0.845	412.10	2379.81	271.95	2.434
10	1.000	420.52	2388.23	280.37	2.448

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0844

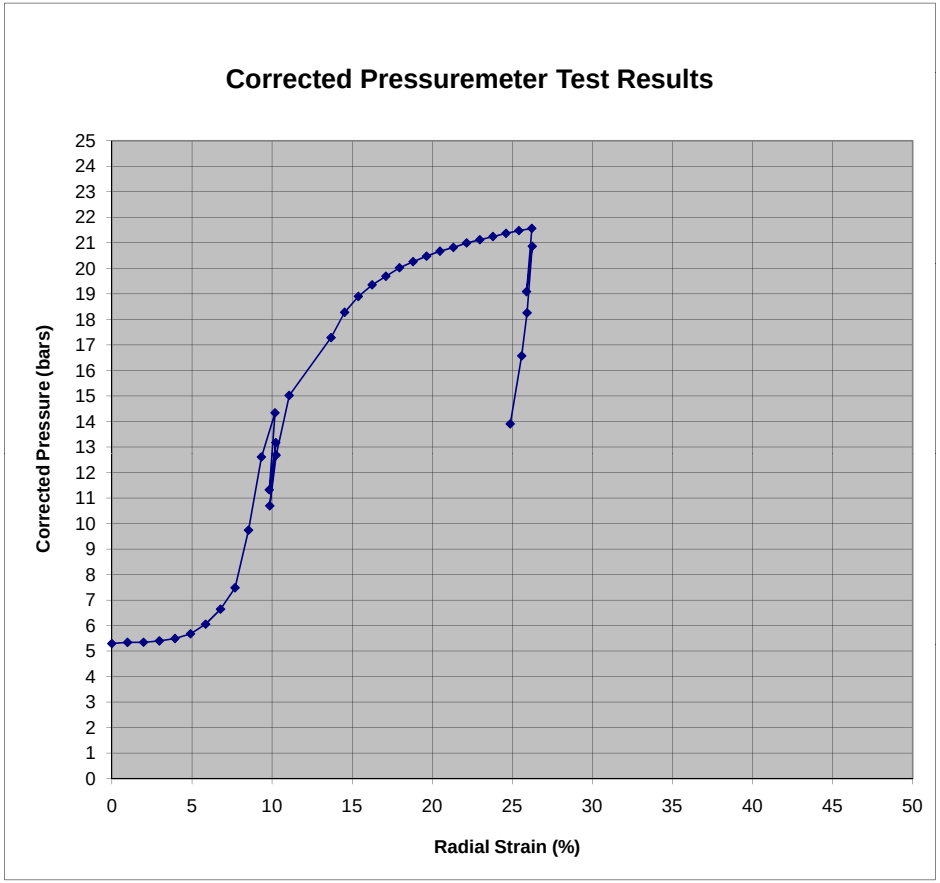


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	14
IN-SITU SOIL TESTING, L.C.		DEPTH:	137.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/16/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.30	-1	0.00	
5.34	39	0.98	
5.34	79	1.98	
5.40	119	2.97	
5.49	158	3.95	
5.68	198	4.91	
6.05	237	5.86	
6.64	276	6.78	
7.48	314	7.69	Eo1
9.74	350	8.53	
12.61	385	9.34	
14.34	421	10.18	Eo2
11.32	406	9.83	Er1
13.17	423	10.24	Er2
10.69	407	9.86	Er3
12.68	424	10.26	Er4
15.02	460	11.07	
17.29	575	13.69	
18.28	614	14.53	
18.90	652	15.39	
19.35	691	16.25	
19.69	731	17.11	
20.03	770	17.96	
20.26	810	18.81	
20.48	849	19.65	
20.67	889	20.49	
20.82	929	21.32	
21.00	968	22.15	
21.12	1008	22.97	
21.25	1048	23.79	
21.37	1088	24.61	
21.48	1127	25.42	
21.57	1167	26.22	Eu1
19.09	1151	25.89	Eu2
20.87	1168	26.25	Eu3
18.26	1152	25.92	Eu4
16.57	1136	25.59	
13.90	1101	24.87	

Interpreted Pressuremeter Parameters		
P_o	5.6	bar
P_L	23.5	bar
P_L^*	17.9	bar
E_o	399	bar
E_{r1}	662	bar
E_{r2}	732	bar
E_o/P_L^*	22.3	
E_{u1}	1268	bar
E_{r3}	841	bar
E_{u2}	1352	bar



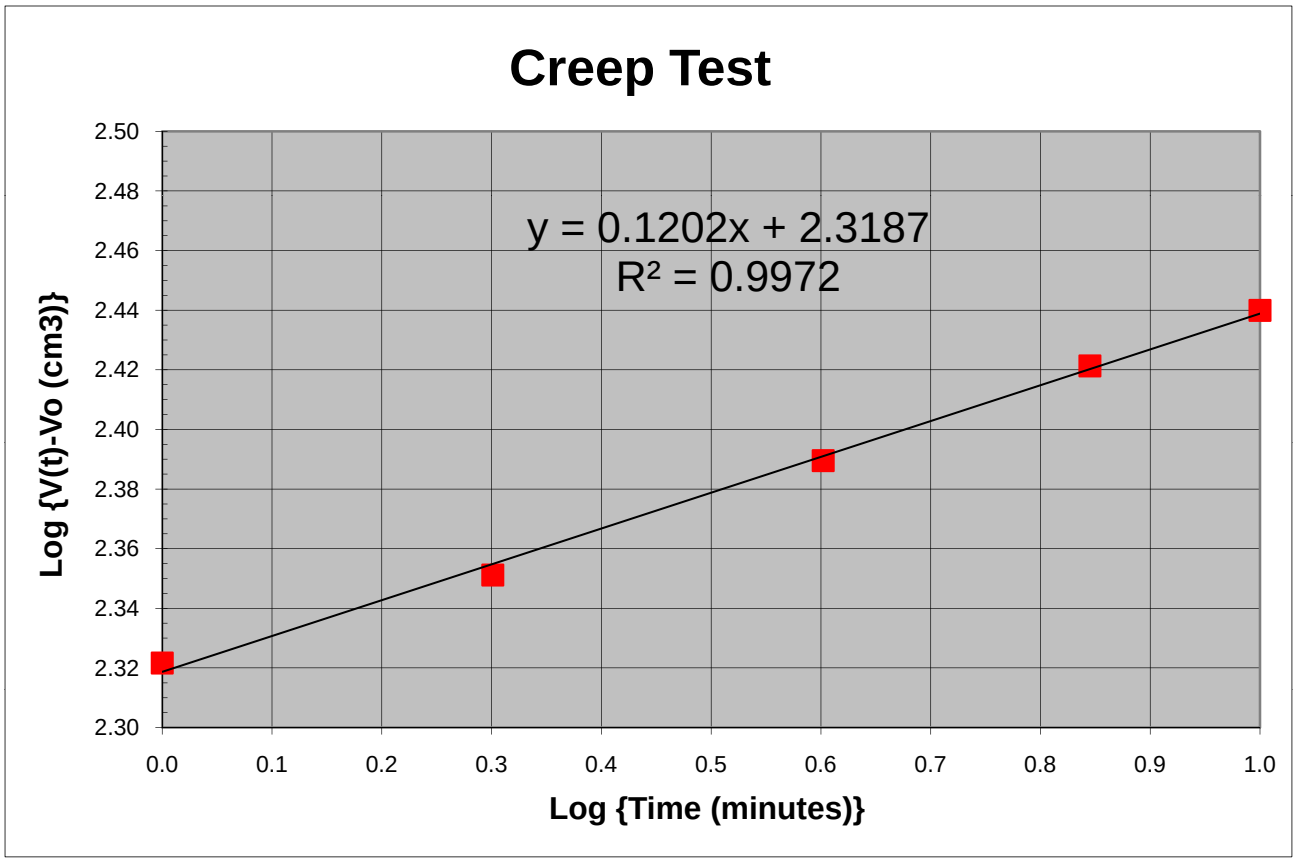
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 137.9 feet

Holding Gauge Pressure =	10.48	bars
Corrected Pressure =	15.02	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	494.85	2462.56	209.73	2.322
2	0.301	509.60	2477.31	224.48	2.351
4	0.602	530.32	2498.03	245.20	2.390
7	0.845	548.95	2516.66	263.83	2.421
10	1.000	560.49	2528.20	275.37	2.440

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1202

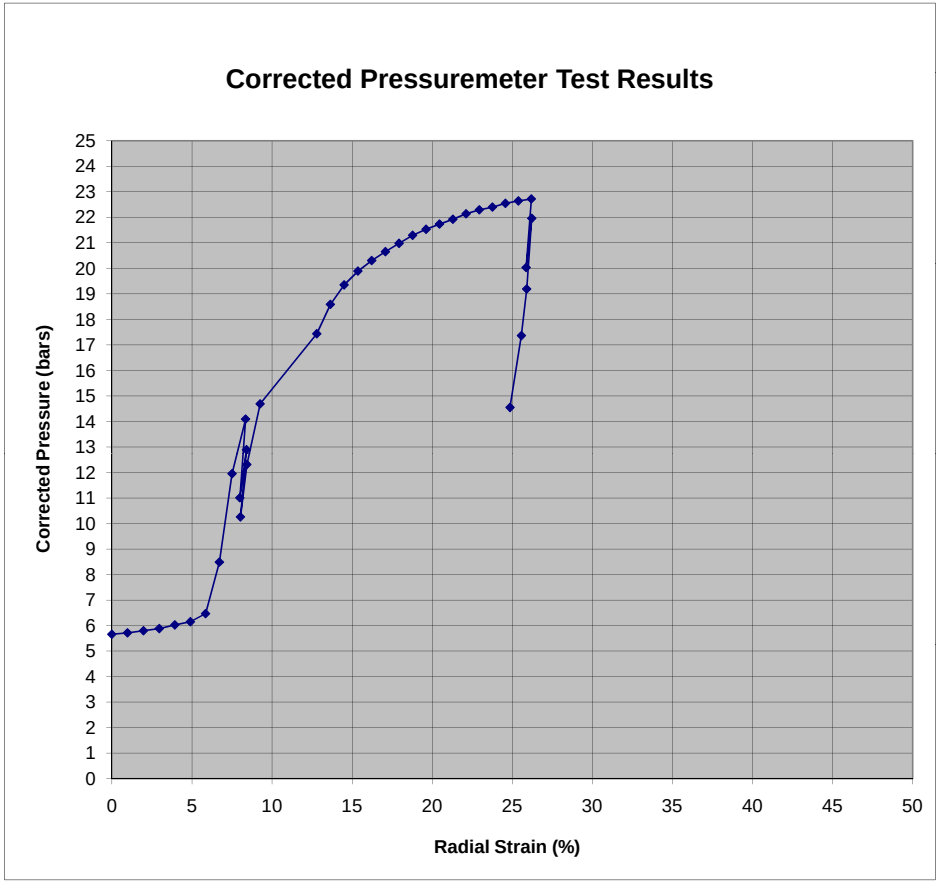


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	15
IN-SITU SOIL TESTING, L.C.		DEPTH:	148.4 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/16/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.66	-1	0.00	
5.71	39	0.98	
5.80	78	1.97	
5.88	118	2.96	
6.03	158	3.94	
6.15	198	4.90	
6.47	237	5.85	Eo1
8.49	273	6.71	
11.95	306	7.51	
14.09	342	8.35	Eo2
11.01	327	7.99	Er1
12.89	345	8.40	Er2
10.26	329	8.03	Er3
12.31	346	8.43	Er4
14.69	381	9.26	
17.44	536	12.80	
18.59	574	13.64	
19.35	612	14.50	
19.89	651	15.36	
20.31	690	16.22	
20.65	730	17.08	
20.98	769	17.93	
21.30	808	18.78	
21.53	848	19.62	
21.74	887	20.46	
21.92	927	21.29	
22.14	967	22.12	
22.30	1006	22.94	
22.40	1046	23.76	
22.55	1086	24.57	
22.64	1126	25.38	
22.72	1166	26.19	Eu1
20.03	1150	25.87	Eu2
21.96	1167	26.22	Eu3
19.19	1151	25.90	Eu4
17.36	1135	25.57	
14.55	1100	24.86	

Interpreted Pressuremeter Parameters		
P_o	6.2	bar
P_L	25.0	bar
P_l^*	18.8	bar
E_o	435	bar
E_{r1}	655	bar
E_{r2}	735	bar
E_o/P_L^*	23.1	
E_{u1}	1402	bar
E_{r3}	922	bar
E_{u2}	1456	bar



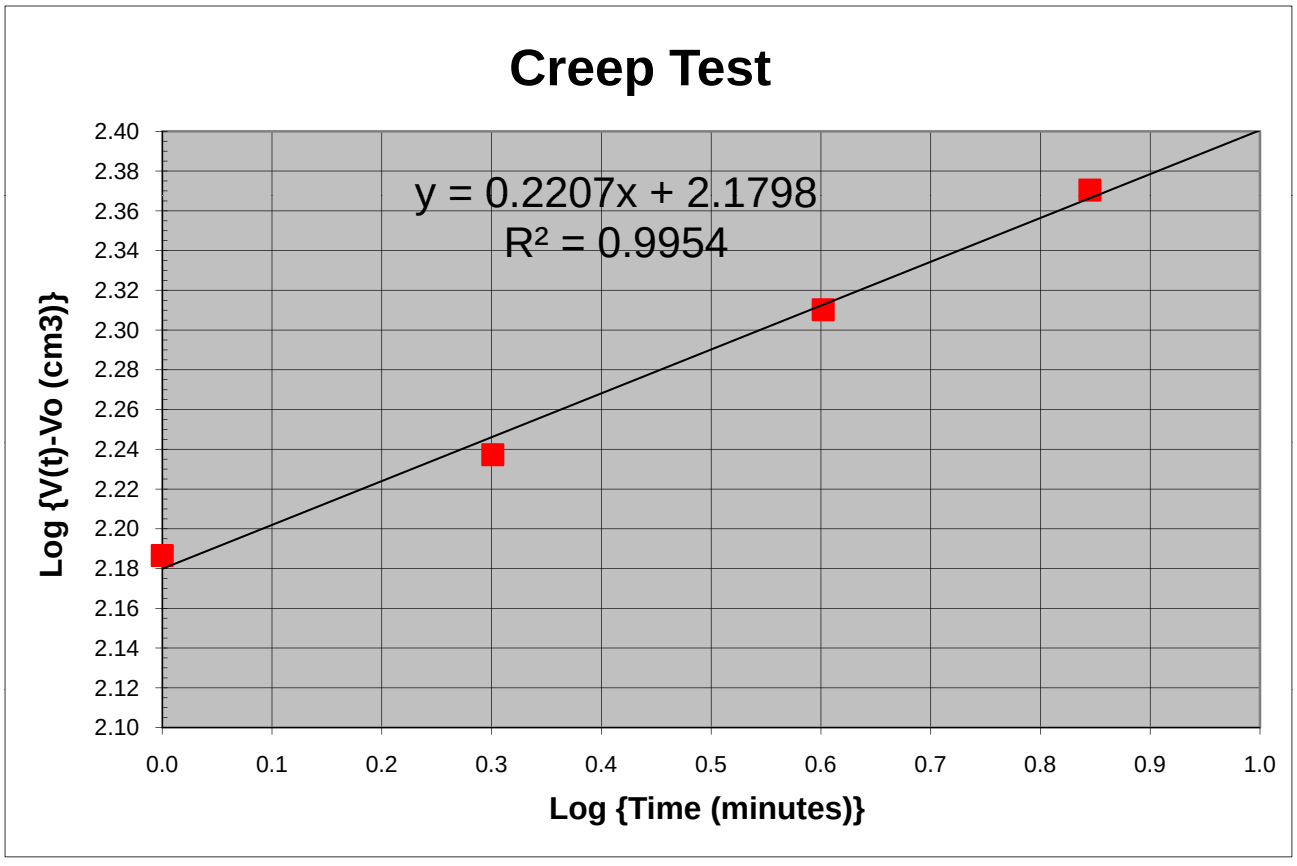
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 148.4 feet

Holding Gauge Pressure =	9.82	bars
Corrected Pressure =	14.69	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2232	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	417.76	2385.47	153.64	2.187
2	0.301	436.80	2404.51	172.68	2.237
4	0.602	468.40	2436.11	204.28	2.310
7	0.845	498.76	2466.47	234.64	2.370
10	1.000	516.10	2483.81	251.98	2.401

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.2207

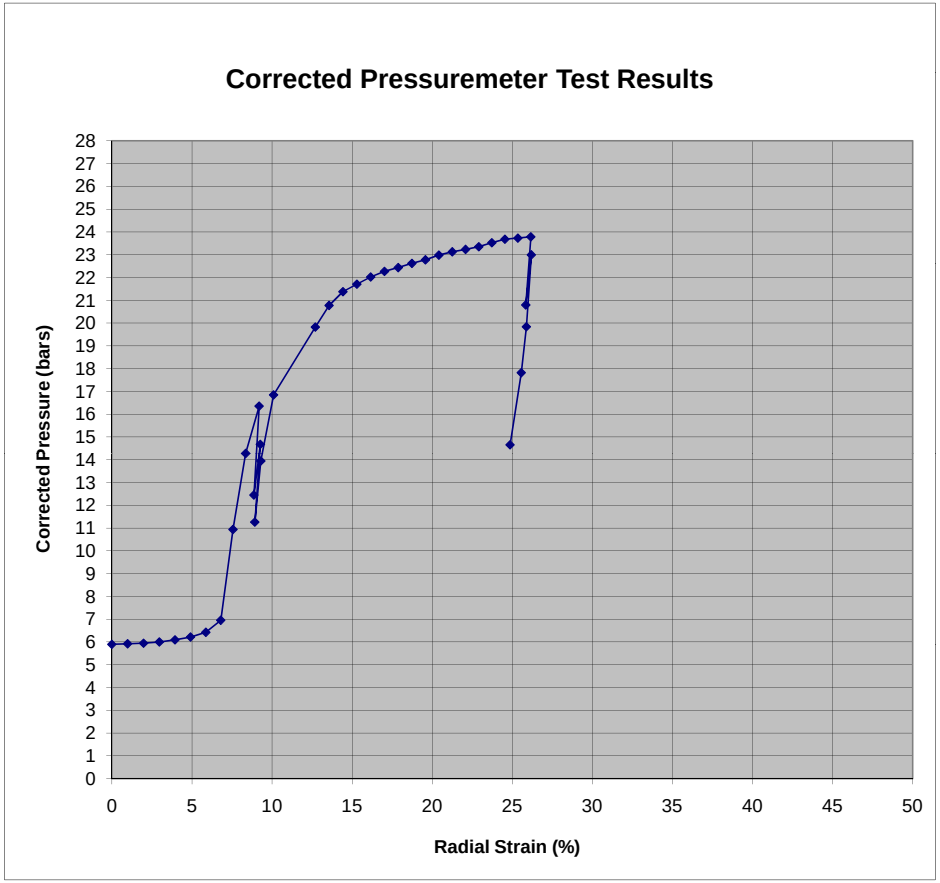


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	16
IN-SITU SOIL TESTING, L.C.		DEPTH:	158 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/16/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.90	-1	0.00	
5.92	39	0.98	
5.94	79	1.98	
6.00	119	2.97	
6.09	158	3.95	
6.22	198	4.91	
6.42	238	5.87	
6.95	277	6.80	Eo1
10.94	309	7.56	
14.28	343	8.35	
16.36	378	9.20	Eo2
12.45	364	8.87	Er1
14.68	382	9.27	Er2
11.26	367	8.92	Er3
13.95	383	9.30	Er4
16.85	418	10.10	
19.82	532	12.71	
20.78	570	13.56	
21.38	609	14.43	
21.71	648	15.30	
22.02	687	16.16	
22.27	727	17.02	
22.44	767	17.88	
22.62	806	18.73	
22.78	846	19.58	
22.98	886	20.42	
23.13	925	21.25	
23.24	965	22.09	
23.35	1005	22.91	
23.53	1045	23.73	
23.68	1084	24.54	
23.73	1124	25.35	
23.79	1164	26.16	Eu1
20.80	1149	25.84	Eu2
23.00	1166	26.19	Eu3
19.84	1150	25.88	Eu4
17.82	1134	25.56	
14.65	1100	24.86	

Interpreted Pressuremeter Parameters		
P_o	6.1	bar
P_L	26.0	bar
P_L^*	19.9	bar
E_o	564	bar
E_{r1}	800	bar
E_{r2}	1030	bar
E_o/P_L^*	28.3	
E_{u1}	1604	bar
E_{r3}	1075	bar
E_{u2}	1724	bar



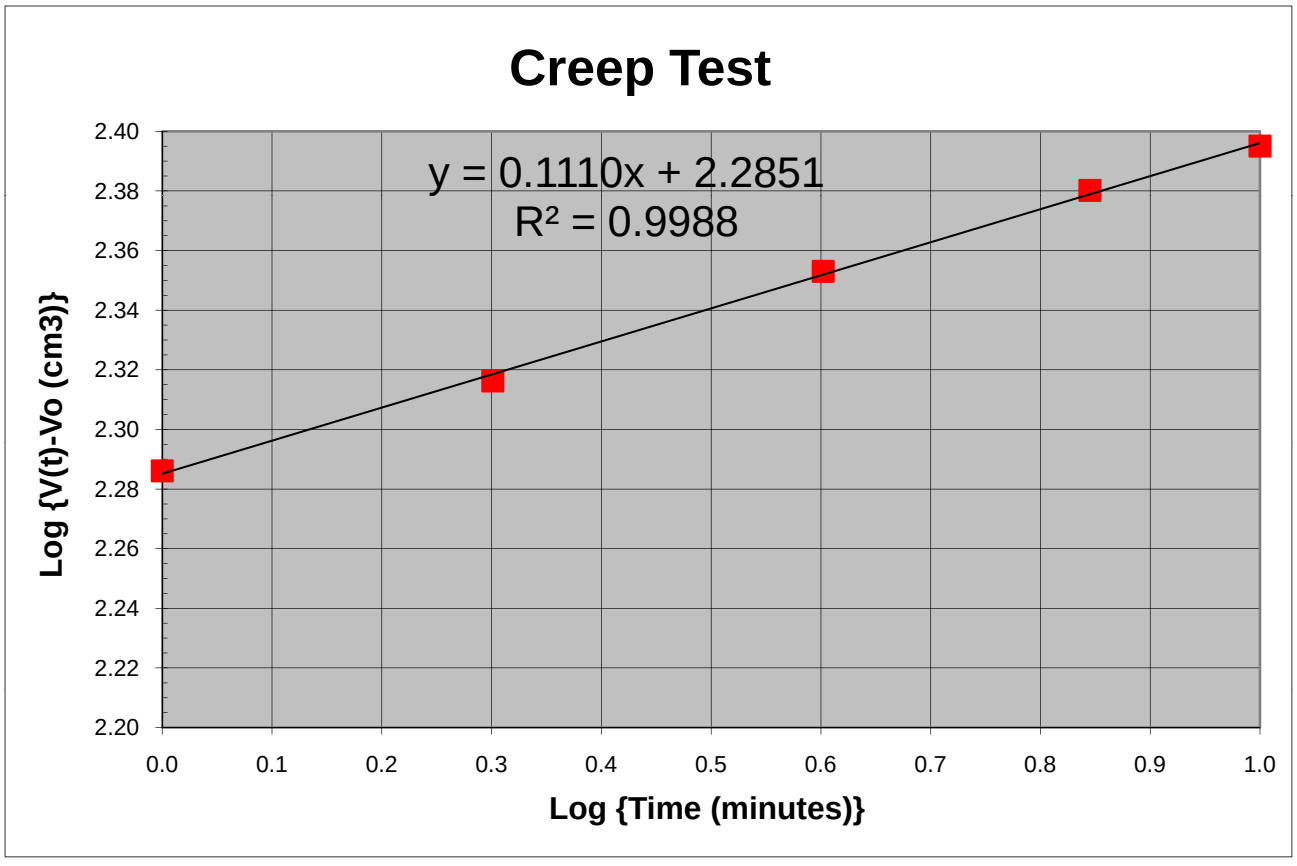
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 158 feet

Holding Gauge Pressure =	11.70	bars
Corrected Pressure =	16.85	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2232	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	457.35	2425.06	193.23	2.286
2	0.301	471.25	2438.96	207.13	2.316
4	0.602	489.55	2457.26	225.43	2.353
7	0.845	504.09	2471.80	239.97	2.380
10	1.000	512.45	2480.16	248.33	2.395

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1110

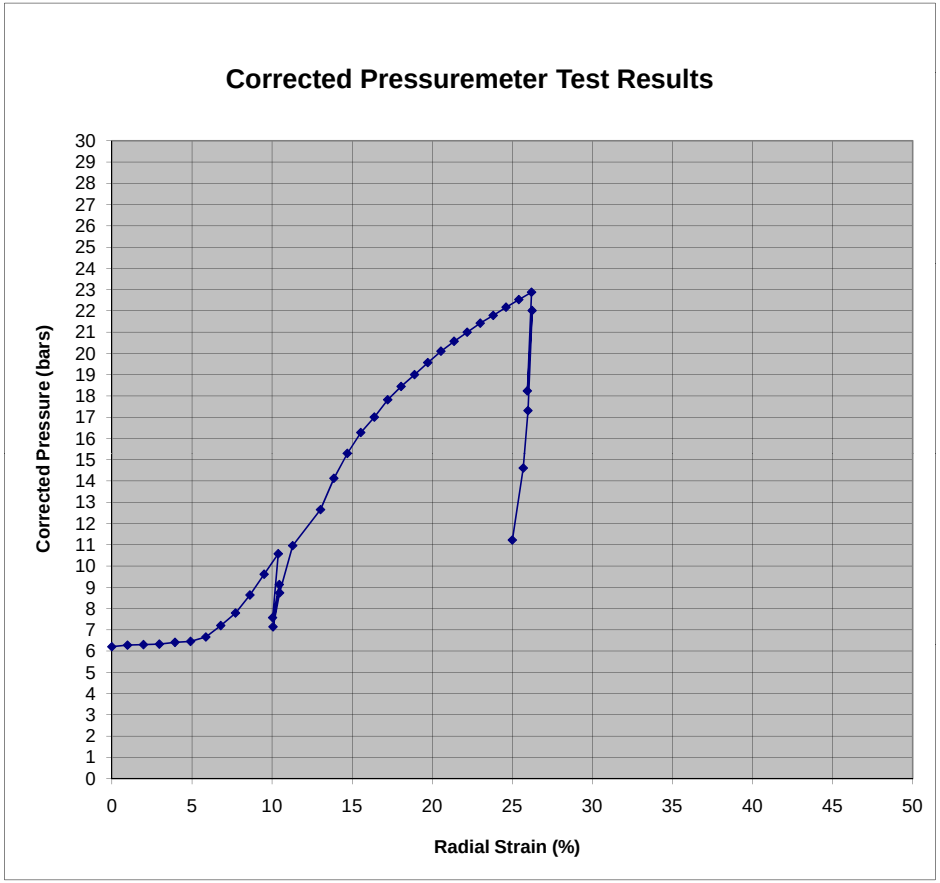


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	17
IN-SITU SOIL TESTING, L.C.		DEPTH:	168.3 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/16/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.20	-1	0.00	
6.28	39	0.98	
6.30	79	1.98	
6.33	119	2.97	
6.41	158	3.95	
6.45	198	4.92	
6.66	238	5.87	
7.20	277	6.80	
7.79	316	7.72	Eo1
8.64	354	8.62	
9.61	392	9.51	
10.58	430	10.39	Eo2
7.57	415	10.03	Er1
9.13	433	10.45	Er2
7.14	416	10.06	Er3
8.74	434	10.47	Er4
10.96	469	11.29	
12.65	546	13.03	
14.12	583	13.86	
15.30	621	14.70	
16.28	659	15.54	
17.00	698	16.39	
17.82	736	17.22	
18.44	775	18.06	
19.00	814	18.90	
19.57	853	19.72	
20.10	892	20.55	
20.57	931	21.37	
20.99	970	22.19	
21.42	1009	23.00	
21.79	1048	23.81	
22.17	1088	24.61	
22.53	1127	25.41	
22.87	1166	26.20	Eu1
18.24	1153	25.94	Eu2
22.01	1168	26.24	Eu3
17.31	1155	25.98	Eu4
14.61	1141	25.69	
11.22	1107	25.00	

Interpreted Pressuremeter Parameters		
P_o	6.6	bar
P_L	30.0	bar
P_L^*	23.4	bar
E_o	151	bar
E_{r1}	543	bar
E_{r2}	572	bar
E_o/P_L^*	6.5	
E_{u1}	2971	bar
E_{r3}	2147	bar
E_{u2}	3042	bar



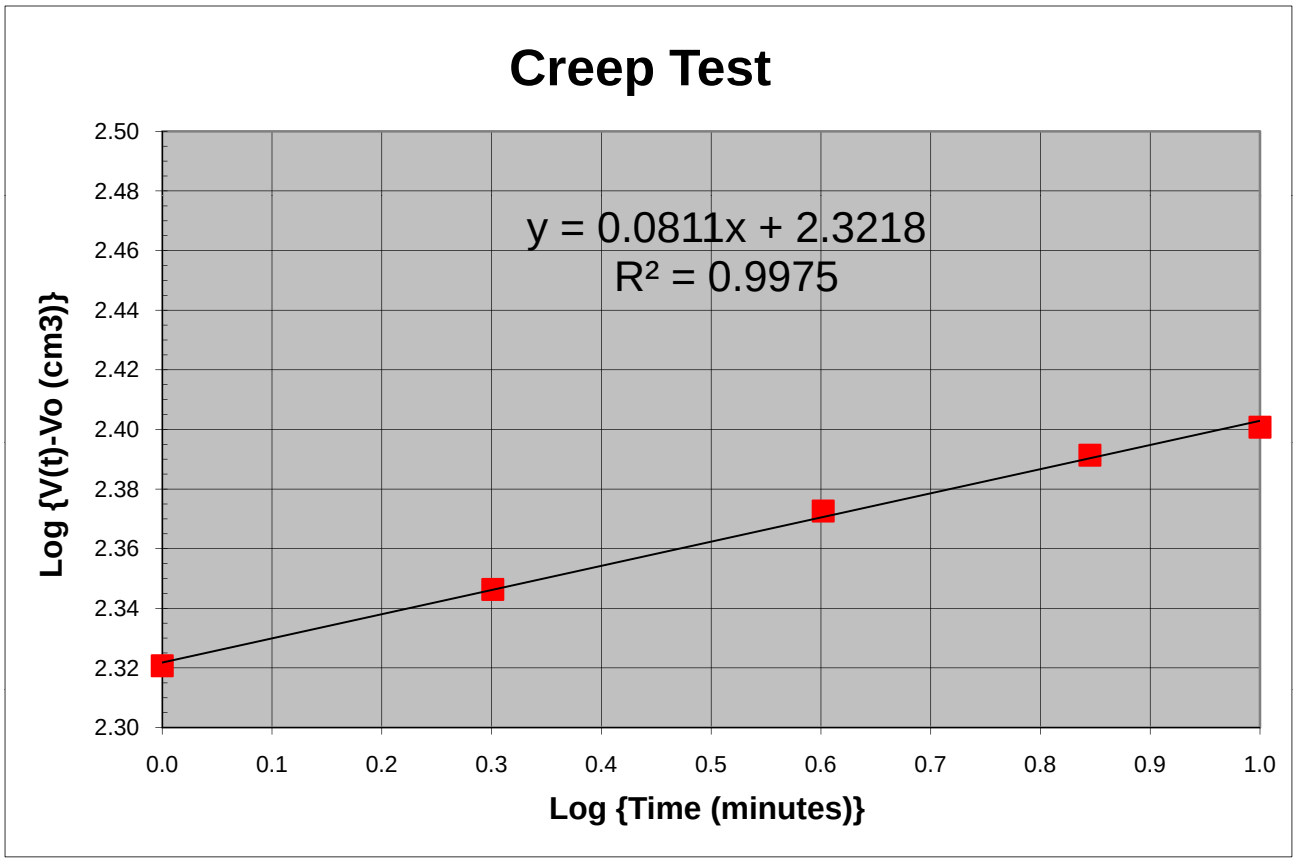
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 168.3 feet

Holding Gauge Pressure =	5.51	bars
Corrected Pressure =	10.96	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	494.40	2462.11	209.28	2.321
2	0.301	507.10	2474.81	221.98	2.346
4	0.602	520.95	2488.66	235.83	2.373
7	0.845	531.35	2499.06	246.23	2.391
10	1.000	536.75	2504.46	251.63	2.401

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0811

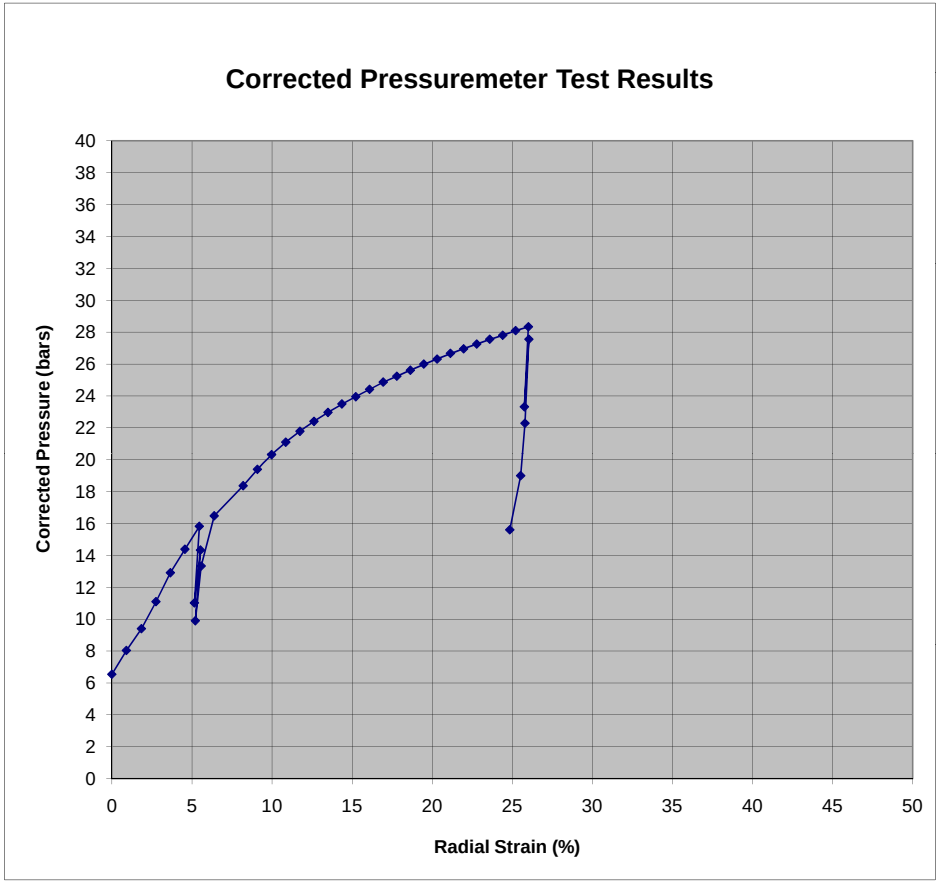


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-55
LOCATION:	Wanchese, NC	TEST #:	18
IN-SITU SOIL TESTING, L.C.		DEPTH:	178.3 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/16/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.54	-1	0.00	
8.04	36	0.91	
9.40	73	1.84	
11.10	110	2.76	Eo1
12.91	146	3.65	
14.38	184	4.56	
15.82	221	5.46	Eo2
11.02	208	5.15	Er1
14.33	224	5.53	Er2
9.90	210	5.21	Er3
13.33	226	5.58	Er4
16.48	259	6.39	
18.37	336	8.20	
19.39	374	9.09	
20.32	412	9.97	
21.10	451	10.86	
21.78	489	11.74	
22.40	528	12.62	
22.96	567	13.49	
23.50	606	14.36	
23.95	645	15.23	
24.41	684	16.09	
24.87	723	16.94	
25.23	762	17.79	
25.61	802	18.64	
26.00	841	19.47	
26.31	880	20.31	
26.67	920	21.14	
26.95	959	21.96	
27.25	999	22.78	
27.56	1038	23.59	
27.80	1077	24.40	
28.10	1117	25.20	
28.33	1156	26.00	Eu1
23.32	1144	25.75	Eu2
27.55	1158	26.03	Eu3
22.29	1146	25.79	Eu4
19.00	1133	25.52	
15.60	1099	24.84	

Interpreted Pressuremeter Parameters		
P_o	N/A	bar
P_L	32.0	bar
P_L^*	#VALUE!	bar
E_o	242	bar
E_{r1}	1234	bar
E_{r2}	1313	bar
E_o/P_L^*	#VALUE!	
E_{u1}	3352	bar
E_{r3}	2527	bar
E_{u2}	3632	bar



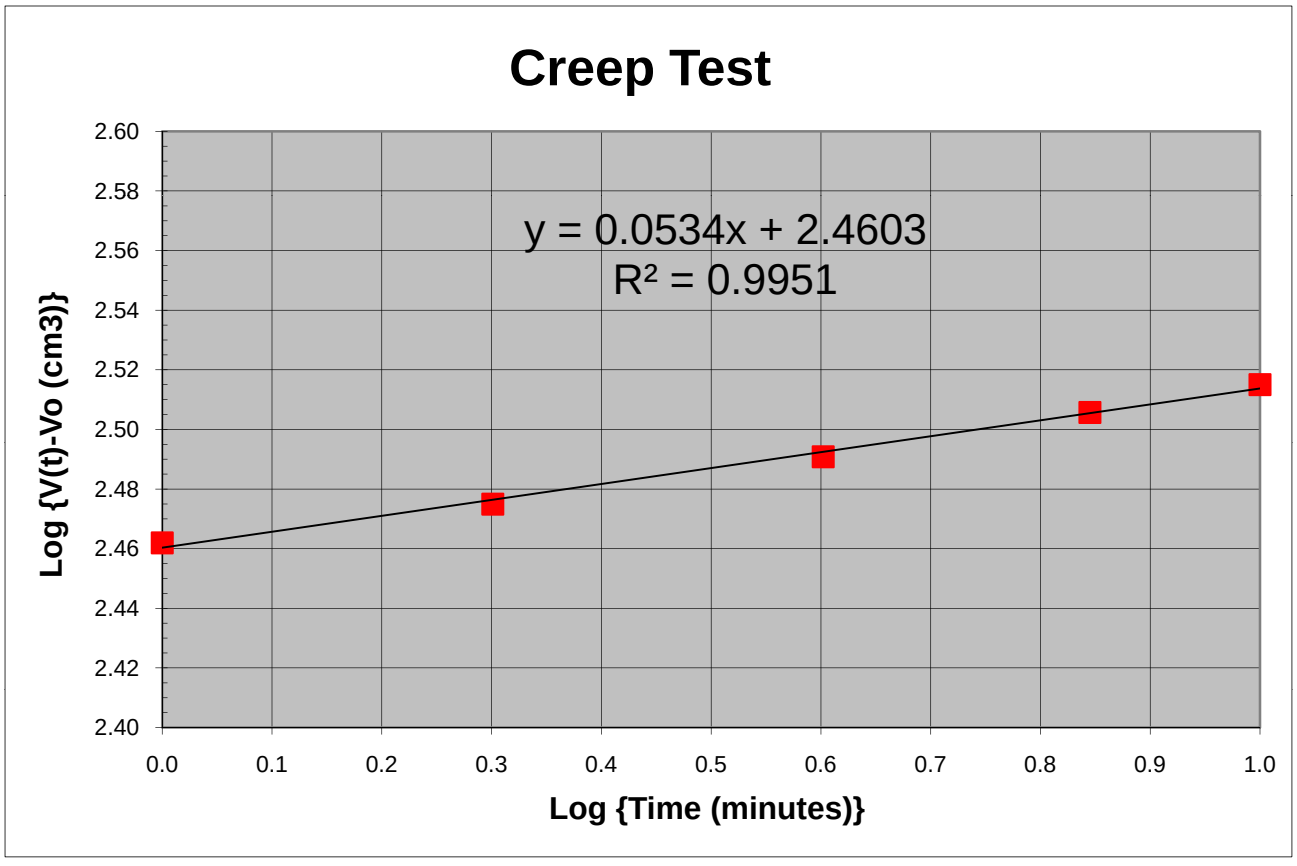
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-55
Test Depth: 178.3 feet

Holding Gauge Pressure =	10.68	bars
Corrected Pressure =	16.48	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.69	cm
Initial Borehole Volume, Vo =	1968	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	289.71	2257.42	289.71	2.462
2	0.301	298.50	2266.21	298.50	2.475
4	0.602	309.63	2277.34	309.63	2.491
7	0.845	320.39	2288.10	320.39	2.506
10	1.000	327.35	2295.06	327.35	2.515

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0534

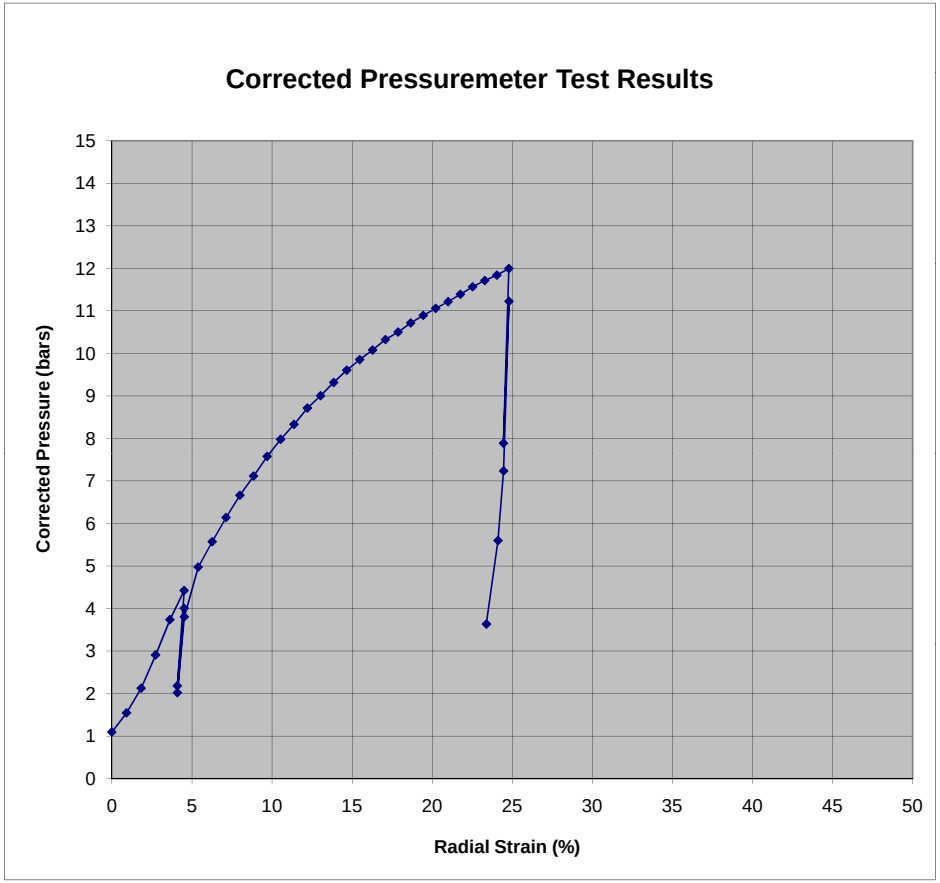


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	1
IN-SITU SOIL TESTING, L.C.		DEPTH:	11.3 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/6/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.09	0	0.00	
1.54	39	0.92	
2.12	79	1.83	Eo1
2.91	118	2.73	
3.74	158	3.62	
4.42	197	4.51	Eo2
2.18	178	4.09	Er1
4.00	198	4.52	Er2
2.02	179	4.09	Er3
3.80	198	4.52	Er4
4.97	237	5.39	
5.57	276	6.26	
6.14	316	7.13	
6.66	355	7.99	
7.11	395	8.85	
7.58	435	9.69	
7.98	474	10.54	
8.33	514	11.37	
8.71	554	12.20	
9.00	594	13.03	
9.31	633	13.85	
9.60	673	14.66	
9.85	713	15.47	
10.08	753	16.28	
10.32	793	17.07	
10.50	833	17.87	
10.72	872	18.65	
10.89	912	19.44	
11.06	952	20.21	
11.21	992	20.99	
11.39	1032	21.76	
11.57	1072	22.52	
11.71	1112	23.28	
11.84	1151	24.03	
11.99	1191	24.78	Eu1
7.89	1173	24.44	Eu2
11.22	1192	24.79	Eu3
7.24	1174	24.45	Eu4
5.60	1155	24.11	
3.63	1117	23.38	

Interpreted Pressuremeter Parameters		
P_o	N/A	bar
P_L	14.5	bar
P_l^*	#VALUE!	bar
E_o	118	bar
E_{r1}	589	bar
E_{r2}	577	bar
E_o/P_L^*	#VALUE!	
E_{u1}	2027	bar
E_{r3}	1595	bar
E_{u2}	1961	bar



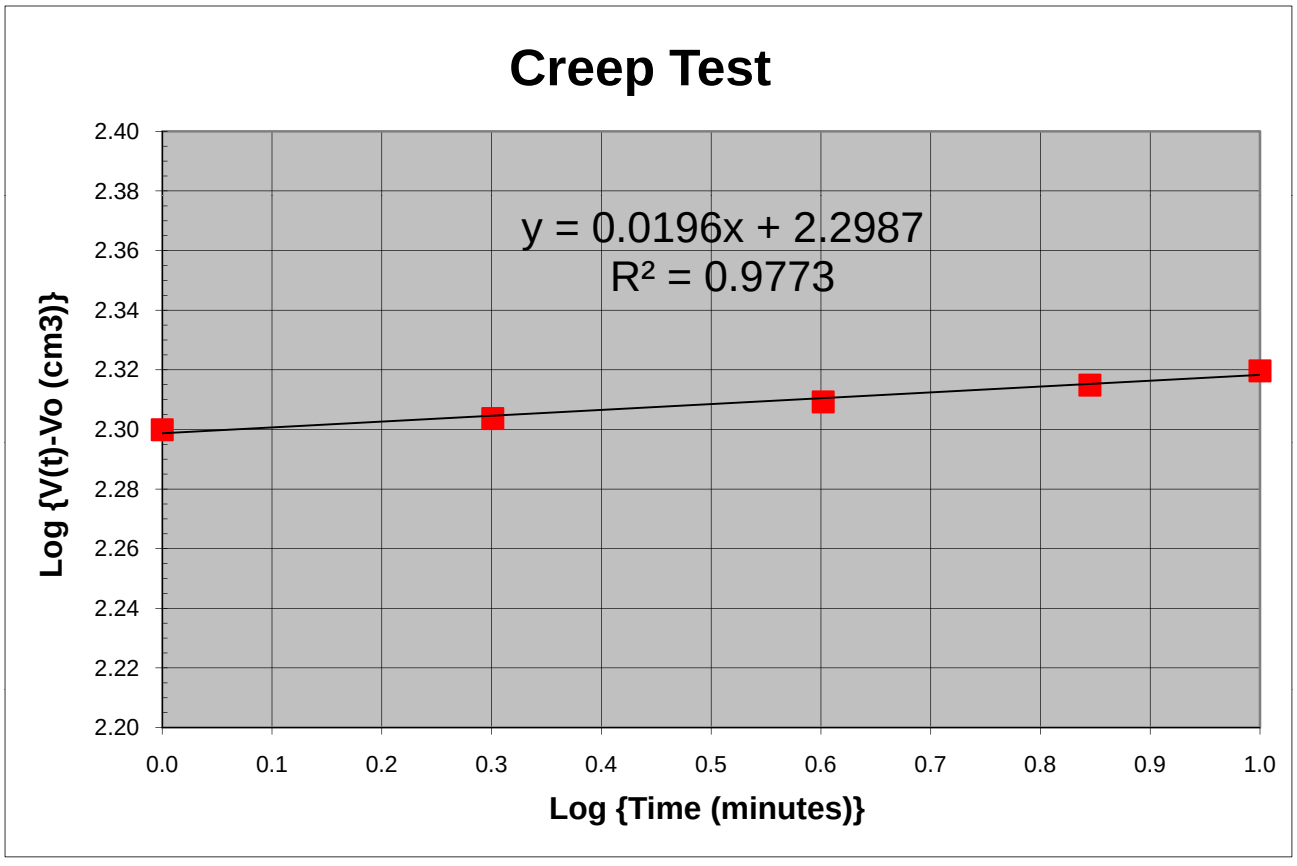
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 11.3 feet

Holding Gauge Pressure =	4.20	bars
Corrected Pressure =	4.97	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.73	cm
Initial Borehole Volume, Vo =	2182	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	242.47	2381.28	199.48	2.300
2	0.301	244.20	2383.01	201.21	2.304
4	0.602	246.81	2385.62	203.82	2.309
7	0.845	249.47	2388.28	206.48	2.315
10	1.000	251.75	2390.56	208.76	2.320

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0196

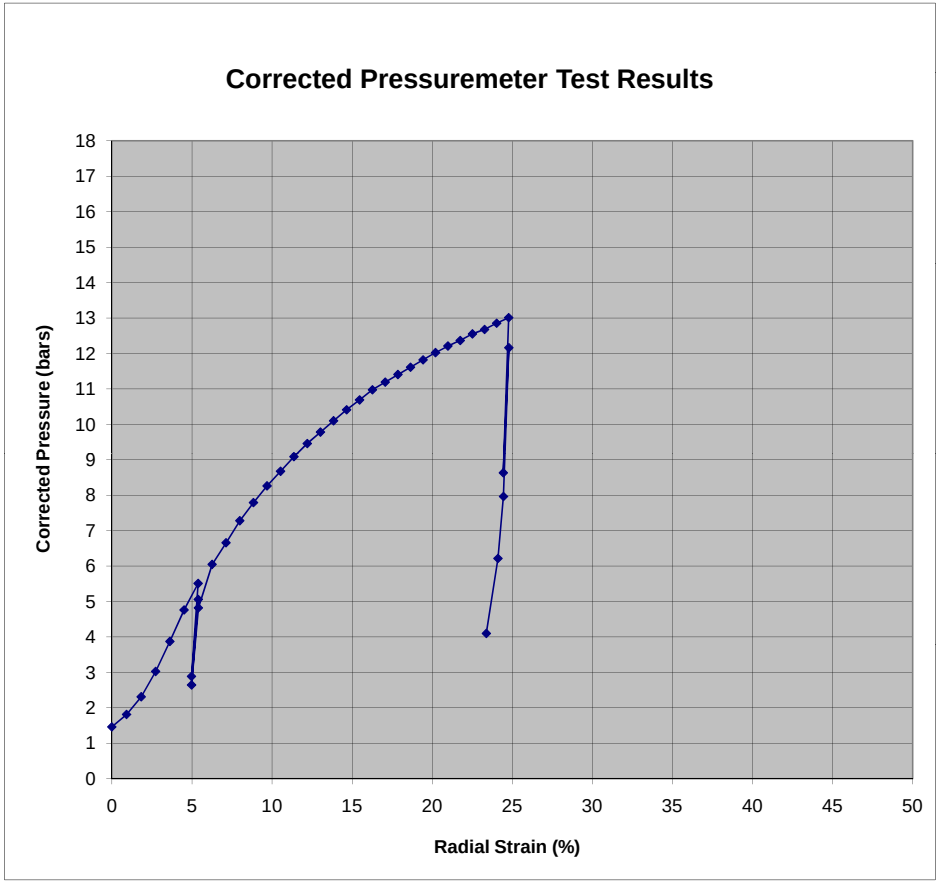


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	2
IN-SITU SOIL TESTING, L.C.		DEPTH:	20.5 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/6/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.46	0	0.00	
1.81	39	0.92	
2.31	79	1.83	
3.02	119	2.73	Eo1
3.87	158	3.62	
4.76	197	4.51	
5.51	237	5.39	Eo2
2.88	218	4.97	Er1
5.06	237	5.39	Er2
2.64	218	4.98	Er3
4.82	237	5.40	Er4
6.05	276	6.26	
6.66	316	7.13	
7.28	355	7.99	
7.79	395	8.84	
8.26	434	9.69	
8.67	474	10.53	
9.09	514	11.37	
9.46	554	12.20	
9.78	593	13.02	
10.10	633	13.84	
10.41	673	14.65	
10.69	713	15.46	
10.97	752	16.27	
11.19	792	17.06	
11.41	832	17.86	
11.61	872	18.64	
11.82	912	19.43	
12.02	952	20.20	
12.21	991	20.98	
12.37	1031	21.74	
12.55	1071	22.51	
12.68	1111	23.27	
12.85	1151	24.02	
13.01	1191	24.77	Eu1
8.63	1173	24.44	Eu2
12.16	1191	24.78	Eu3
7.96	1174	24.45	Eu4
6.21	1155	24.10	
4.10	1117	23.38	

Interpreted Pressuremeter Parameters		
P_o	1.5	bar
P_L	15.5	bar
P_L^*	14.0	bar
E_o	130	bar
E_{r1}	720	bar
E_{r2}	722	bar
E_o/P_L^*	9.3	
E_{u1}	2177	bar
E_{r3}	1693	bar
E_{u2}	2077	bar



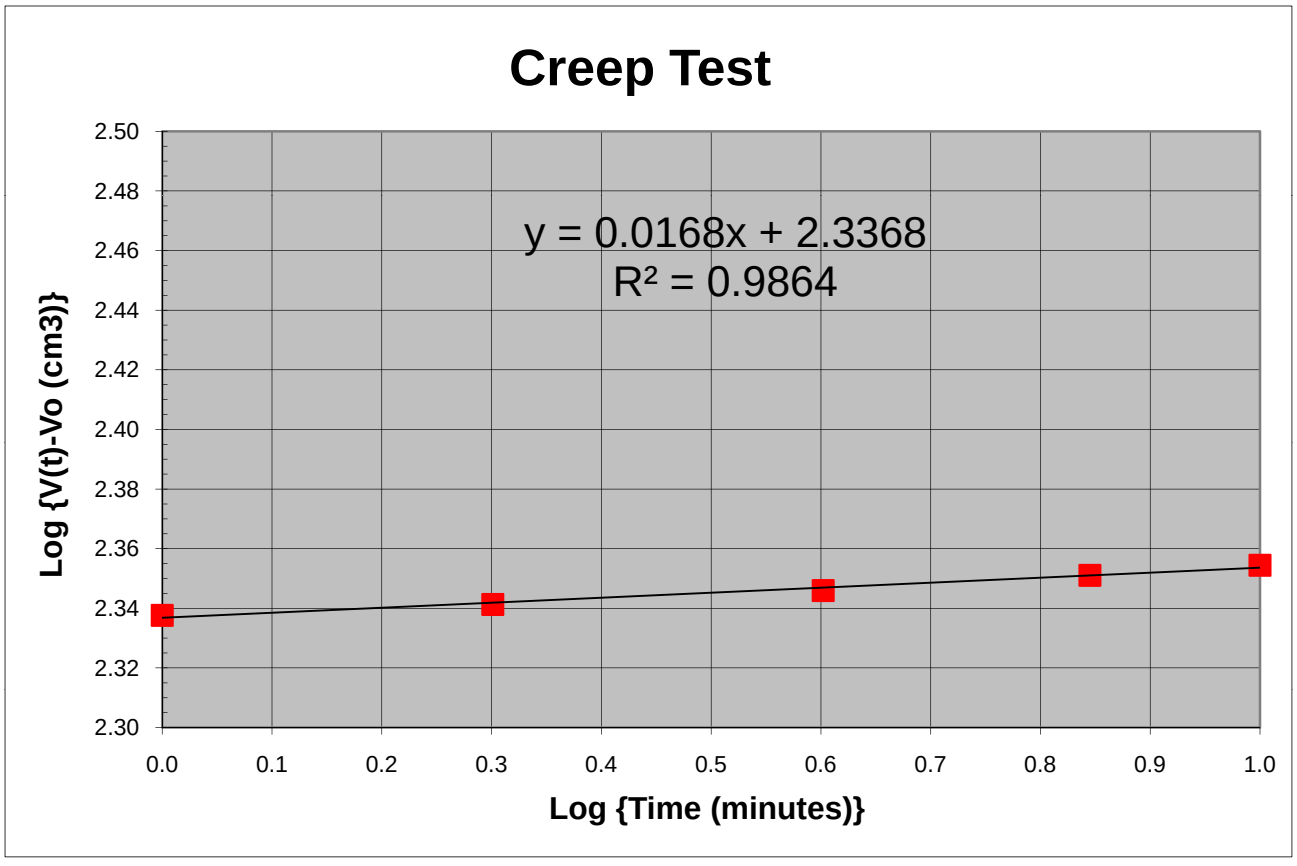
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 20.5 feet

Holding Gauge Pressure =	5.01	bars
Corrected Pressure =	6.05	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.75	cm
Initial Borehole Volume, Vo =	2203	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	282.22	2421.03	217.57	2.338
2	0.301	284.07	2422.88	219.42	2.341
4	0.602	286.44	2425.25	221.79	2.346
7	0.845	289.05	2427.86	224.40	2.351
10	1.000	290.80	2429.61	226.15	2.354

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0168

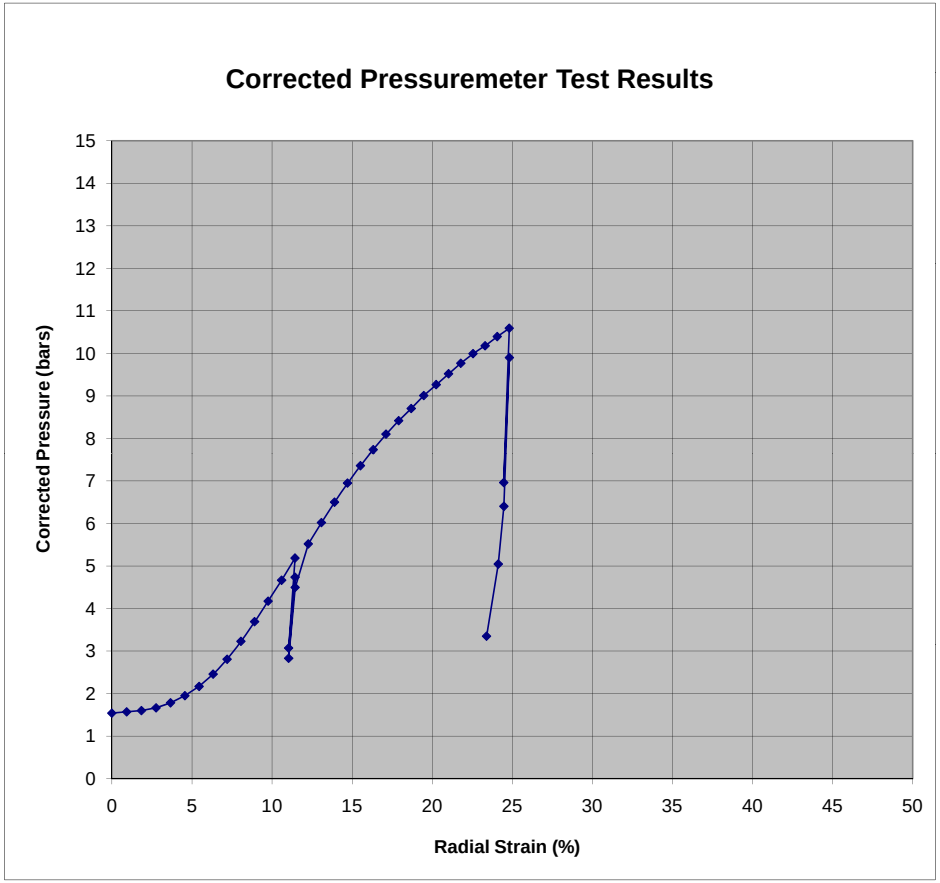


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	3
IN-SITU SOIL TESTING, L.C.		DEPTH:	29.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/6/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.54	0	0.00	
1.57	40	0.93	
1.60	80	1.85	
1.66	120	2.76	
1.78	160	3.67	
1.95	200	4.56	
2.17	239	5.45	
2.46	279	6.33	
2.81	319	7.20	
3.23	359	8.06	
3.69	398	8.91	Eo1
4.17	438	9.76	
4.66	477	10.60	
5.19	517	11.43	Eo2
3.07	498	11.04	Er1
4.74	517	11.44	Er2
2.83	498	11.04	Er3
4.50	518	11.44	Er4
5.52	557	12.26	
6.02	596	13.09	
6.50	636	13.90	
6.95	676	14.71	
7.36	715	15.52	
7.73	755	16.32	
8.10	795	17.12	
8.42	835	17.91	
8.70	874	18.69	
9.01	914	19.47	
9.26	954	20.25	
9.52	994	21.02	
9.77	1033	21.79	
9.99	1073	22.55	
10.18	1113	23.31	
10.39	1153	24.06	
10.59	1193	24.81	Eu1
6.96	1175	24.47	Eu2
9.90	1193	24.82	Eu3
6.40	1175	24.48	Eu4
5.04	1156	24.12	
3.35	1118	23.39	

Interpreted Pressuremeter Parameters		
P_o	1.7	bar
P_L	15.0	bar
P_l^*	13.3	bar
E_o	87	bar
E_{r1}	609	bar
E_{r2}	611	bar
E_o/P_L^*	6.5	
E_{u1}	1767	bar
E_{r3}	1391	bar
E_{u2}	1697	bar



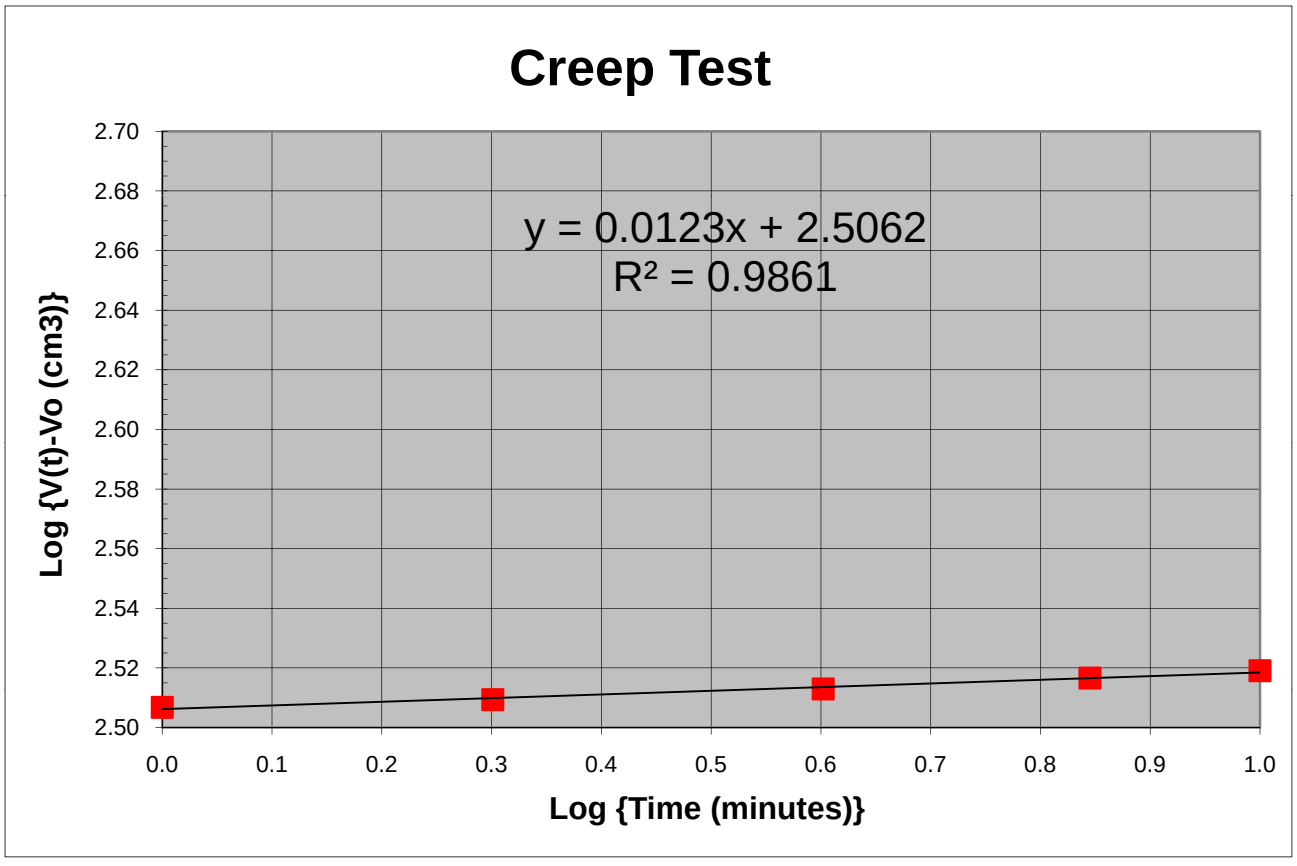
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 29.9 feet

Holding Gauge Pressure =	4.26	bars
Corrected Pressure =	5.52	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.89	cm
Initial Borehole Volume, Vo =	2381	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	562.95	2701.76	321.21	2.507
2	0.301	564.85	2703.66	323.11	2.509
4	0.602	567.53	2706.34	325.79	2.513
7	0.845	570.26	2709.07	328.52	2.517
10	1.000	572.15	2710.96	330.41	2.519

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0123

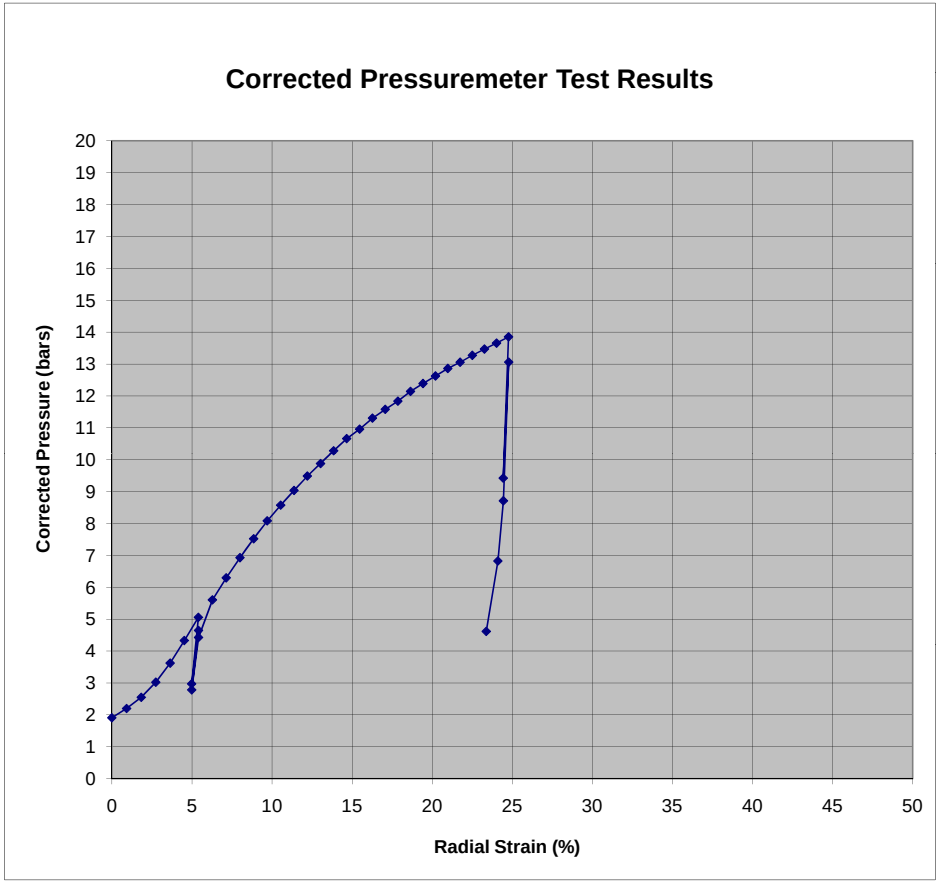


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	4
IN-SITU SOIL TESTING, L.C.		DEPTH:	39.6 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/6/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.91	0	0.00	
2.20	40	0.92	
2.55	79	1.84	
3.02	119	2.74	Eo1
3.62	158	3.64	
4.33	198	4.53	
5.06	237	5.40	Eo2
2.97	218	4.98	Er1
4.65	238	5.41	Er2
2.78	219	4.99	Er3
4.43	238	5.41	Er4
5.61	277	6.28	
6.30	316	7.14	
6.93	356	8.00	
7.52	395	8.85	
8.08	435	9.70	
8.57	475	10.54	
9.04	514	11.38	
9.49	554	12.21	
9.88	594	13.03	
10.28	633	13.85	
10.66	673	14.66	
10.96	713	15.47	
11.30	753	16.27	
11.58	792	17.07	
11.84	832	17.86	
12.14	872	18.65	
12.39	912	19.43	
12.62	952	20.20	
12.86	991	20.98	
13.06	1031	21.74	
13.27	1071	22.51	
13.47	1111	23.26	
13.65	1151	24.02	
13.85	1191	24.77	Eu1
9.42	1173	24.43	Eu2
13.06	1191	24.78	Eu3
8.71	1173	24.44	Eu4
6.82	1155	24.10	
4.62	1117	23.38	

Interpreted Pressuremeter Parameters		
P_o	2.0	bar
P_L	17.0	bar
P_L^*	15.0	bar
E_o	106	bar
E_{r1}	548	bar
E_{r2}	539	bar
E_o/P_L^*	7.1	
E_{u1}	2205	bar
E_{r3}	1752	bar
E_{u2}	2160	bar



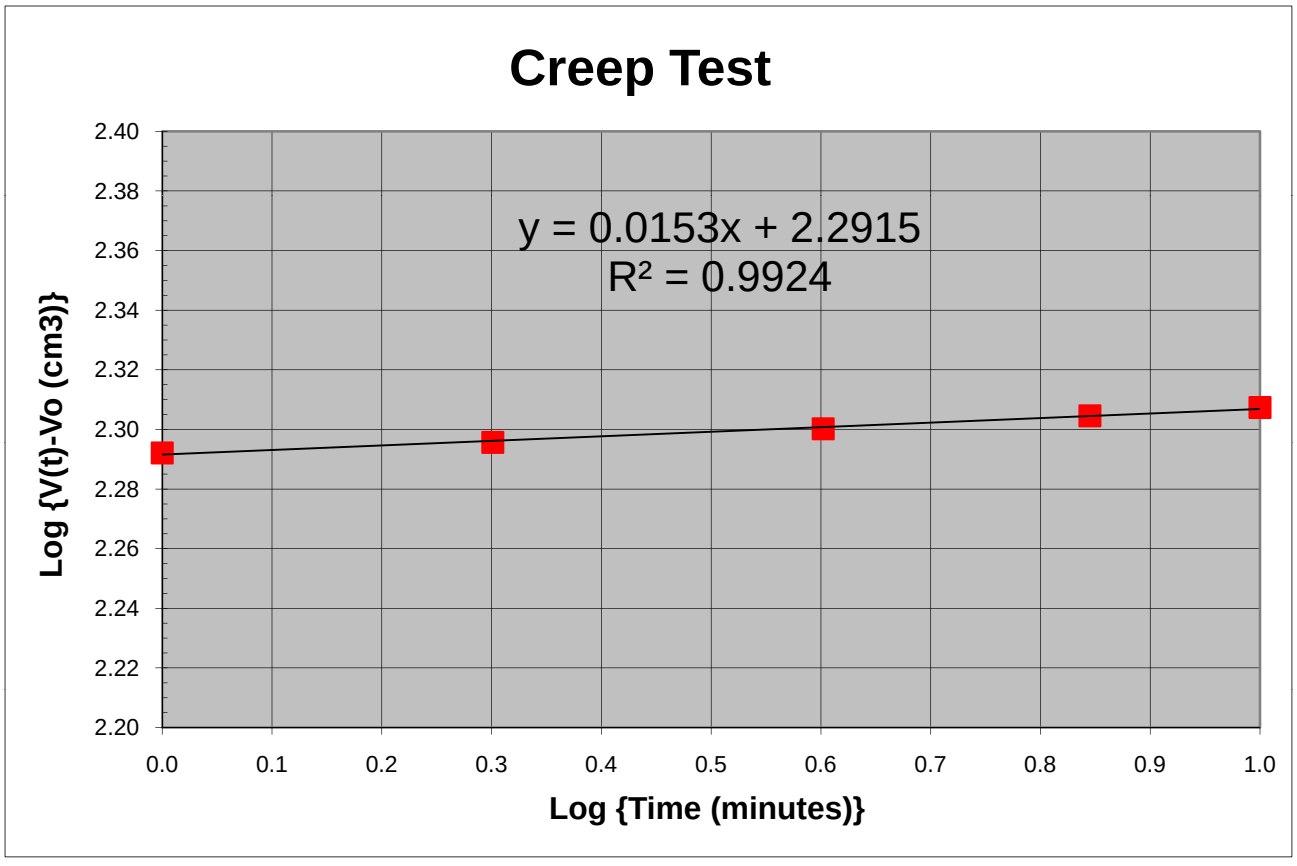
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 39.6 feet

Holding Gauge Pressure =	4.00	bars
Corrected Pressure =	5.61	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.76	cm
Initial Borehole Volume, Vo =	2225	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	282.35	2421.16	195.94	2.292
2	0.301	283.95	2422.76	197.54	2.296
4	0.602	286.02	2424.83	199.61	2.300
7	0.845	288.03	2426.84	201.62	2.305
10	1.000	289.35	2428.16	202.94	2.307

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0153

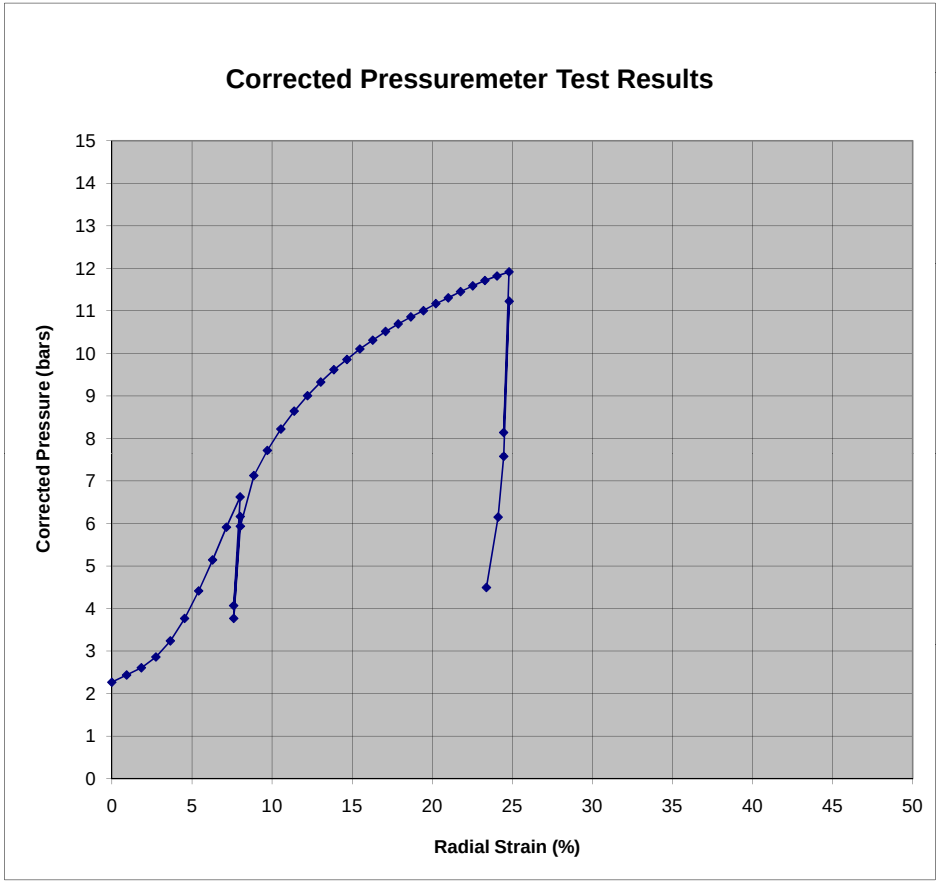


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	5
IN-SITU SOIL TESTING, L.C.		DEPTH:	50.2 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/6/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.27	0	0.00	
2.44	40	0.92	
2.61	80	1.84	
2.86	119	2.75	
3.24	159	3.65	
3.77	199	4.54	
4.42	238	5.42	Eo1
5.14	278	6.29	
5.91	317	7.15	
6.63	356	8.01	Eo2
4.07	338	7.61	Er1
6.17	357	8.02	Er2
3.77	338	7.61	Er3
5.94	357	8.02	Er4
7.13	396	8.86	
7.72	436	9.71	
8.22	475	10.55	
8.64	515	11.39	
9.01	555	12.22	
9.33	594	13.04	
9.62	634	13.86	
9.86	674	14.68	
10.11	714	15.49	
10.31	754	16.29	
10.52	793	17.09	
10.69	833	17.88	
10.86	873	18.67	
11.01	913	19.45	
11.17	953	20.23	
11.31	993	21.00	
11.45	1033	21.77	
11.59	1073	22.53	
11.72	1112	23.29	
11.82	1152	24.05	
11.92	1192	24.80	Eu1
8.14	1174	24.46	Eu2
11.23	1193	24.81	Eu3
7.58	1175	24.47	Eu4
6.15	1156	24.12	
4.50	1117	23.39	

Interpreted Pressuremeter Parameters		
P_o	2.9	bar
P_L	14.0	bar
P_l^*	11.1	bar
E_o	121	bar
E_{r1}	728	bar
E_{r2}	756	bar
E_o/P_L^*	10.9	
E_{u1}	1847	bar
E_{r3}	1467	bar
E_{u2}	1777	bar



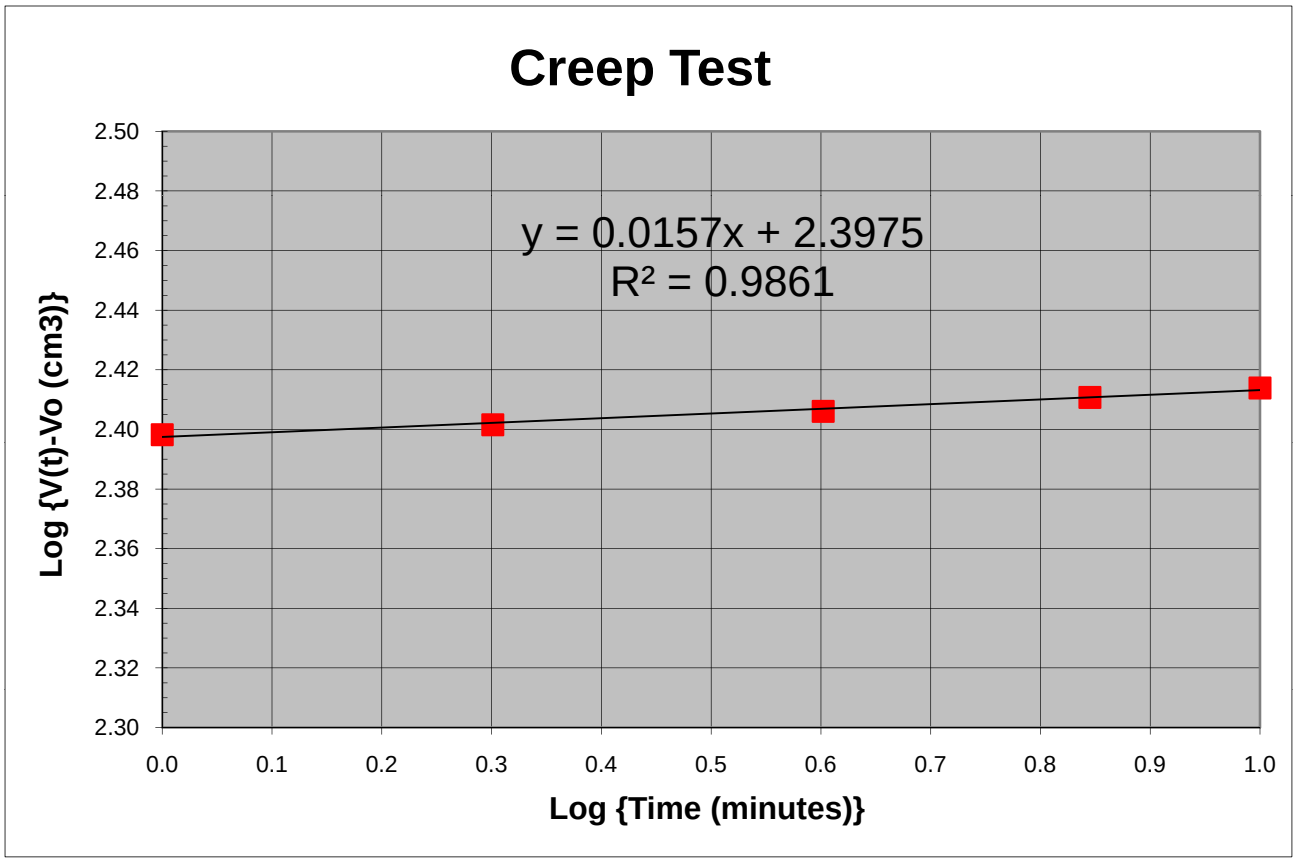
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 50.2 feet

Holding Gauge Pressure =	5.23	bars
Corrected Pressure =	7.13	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.82	cm
Initial Borehole Volume, Vo =	2291	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	402.51	2541.32	250.17	2.398
2	0.301	404.44	2543.25	252.10	2.402
4	0.602	407.05	2545.86	254.71	2.406
7	0.845	409.80	2548.61	257.46	2.411
10	1.000	411.70	2550.51	259.36	2.414

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0157

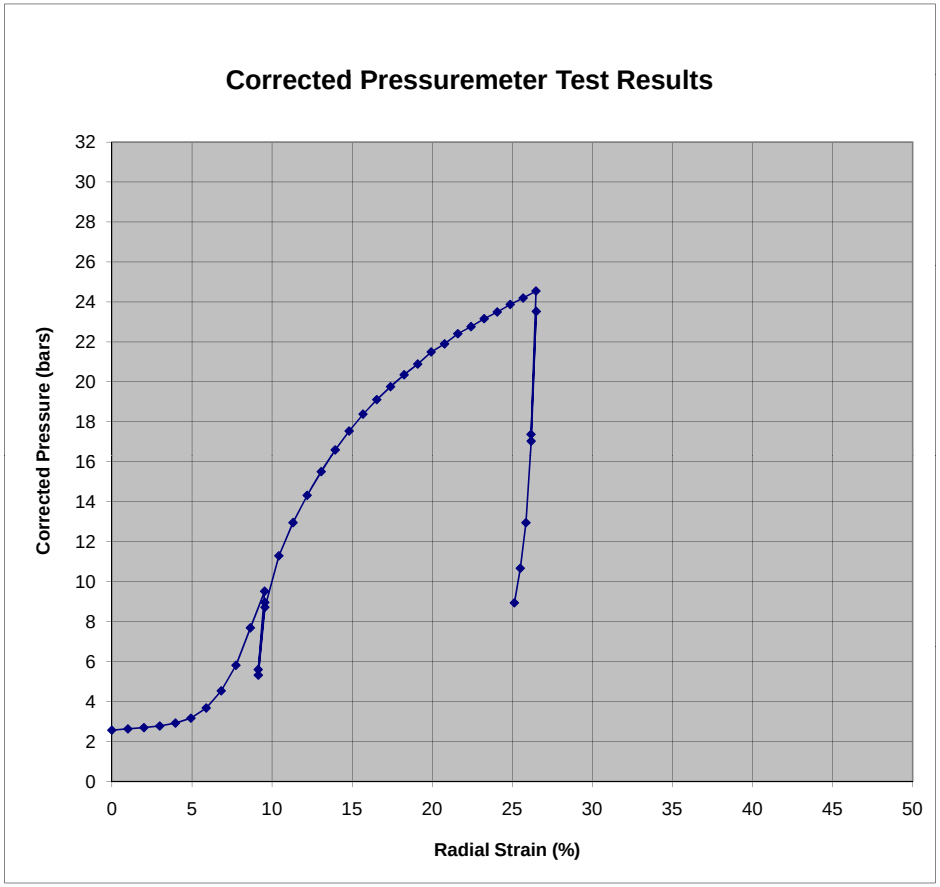


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	6
IN-SITU SOIL TESTING, L.C.		DEPTH:	58.9 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	06/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.57	0	0.00	
2.63	40	1.00	
2.70	80	2.00	
2.78	119	2.99	
2.93	159	3.97	
3.17	199	4.94	
3.68	239	5.89	
4.54	278	6.83	Eo1
5.82	317	7.75	
7.69	355	8.65	
9.52	393	9.54	Eo2
5.61	376	9.14	Er1
8.96	394	9.55	Er2
5.33	376	9.14	Er3
8.72	394	9.56	Er4
11.29	432	10.43	
12.96	470	11.31	
14.32	509	12.19	
15.51	548	13.07	
16.59	587	13.94	
17.54	626	14.81	
18.38	665	15.68	
19.11	705	16.54	
19.76	744	17.40	
20.35	784	18.25	
20.89	823	19.09	
21.49	863	19.93	
21.90	902	20.77	
22.41	942	21.60	
22.76	982	22.43	
23.16	1021	23.25	
23.49	1061	24.06	
23.87	1101	24.87	
24.19	1140	25.68	
24.54	1180	26.48	Eu1
17.37	1165	26.17	Eu2
23.52	1181	26.50	Eu3
17.03	1165	26.18	Eu4
12.95	1149	25.85	
10.67	1131	25.50	
8.94	1113	25.13	

Interpreted Pressuremeter Parameters		
P_o	3.2	bar
P_L	30.0	bar
P_L^*	26.8	bar
E_o	264	bar
E_{r1}	1173	bar
E_{r2}	1194	bar
E_o/P_L^*	9.9	
E_{u1}	3928	bar
E_{r3}	3180	bar
E_{u2}	3454	bar



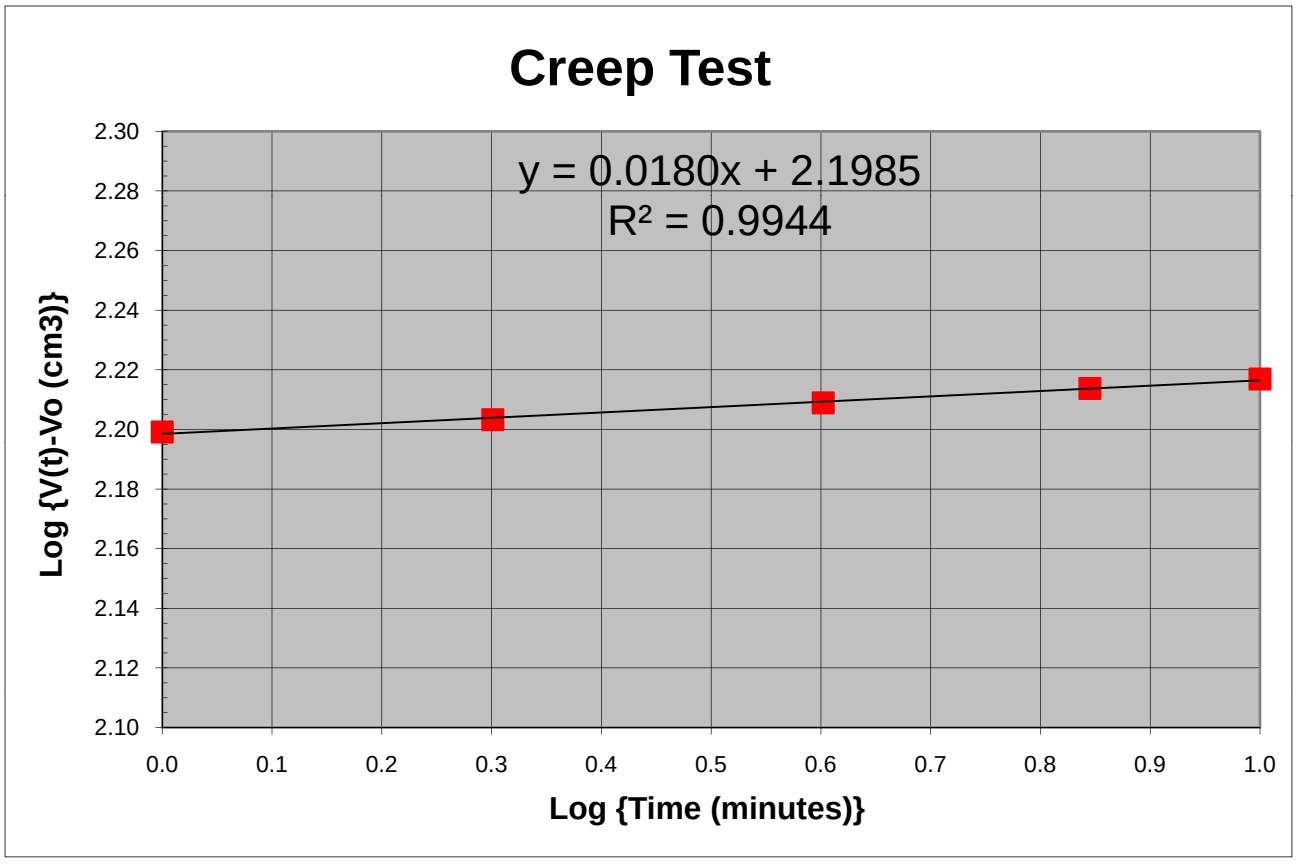
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 58.9 feet

Holding Gauge Pressure =	9.20	bars
Corrected Pressure =	11.29	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	443.30	2411.01	158.18	2.199
2	0.301	444.80	2412.51	159.68	2.203
4	0.602	446.90	2414.61	161.78	2.209
7	0.845	448.70	2416.41	163.58	2.214
10	1.000	449.90	2417.61	164.78	2.217

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0180

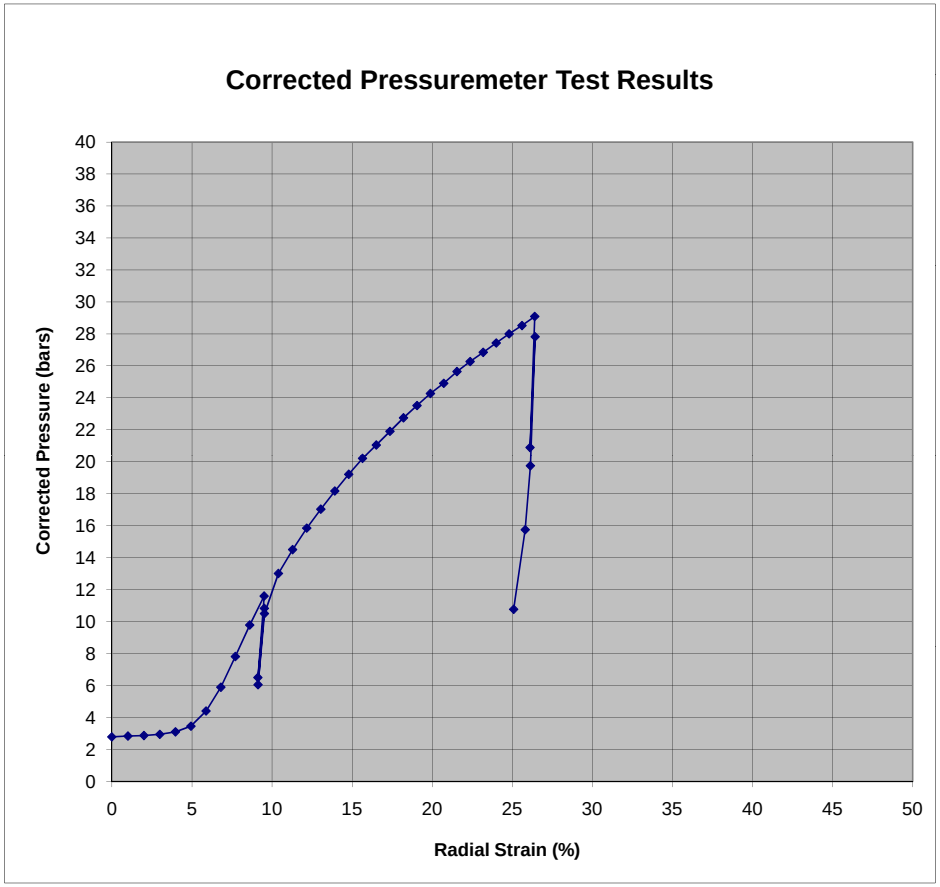


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	7
IN-SITU SOIL TESTING, L.C.		DEPTH:	70.4 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/7/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.79	0	0.00	
2.84	40	1.00	
2.87	80	2.00	
2.95	120	2.99	
3.10	159	3.97	
3.46	199	4.94	
4.41	238	5.88	
5.90	277	6.80	Eo1
7.82	315	7.71	
9.79	353	8.61	
11.60	392	9.50	Eo2
6.50	375	9.12	Er1
10.83	392	9.52	Er2
6.05	376	9.13	Er3
10.50	393	9.53	Er4
13.01	431	10.40	
14.50	469	11.29	
15.85	508	12.17	
17.03	547	13.05	
18.17	586	13.92	
19.22	625	14.79	
20.21	664	15.65	
21.05	703	16.51	
21.90	743	17.36	
22.75	782	18.21	
23.52	821	19.05	
24.27	860	19.89	
24.91	900	20.72	
25.64	939	21.54	
26.27	979	22.37	
26.85	1018	23.18	
27.43	1058	24.00	
28.00	1097	24.80	
28.52	1137	25.60	
29.09	1176	26.40	Eu1
20.89	1162	26.11	Eu2
27.82	1177	26.42	Eu3
19.75	1163	26.13	Eu4
15.75	1147	25.81	
10.77	1111	25.08	

Interpreted Pressuremeter Parameters		
P_o	3.0	bar
P_L	39.0	bar
P_L^*	36.0	bar
E_o	304	bar
E_{r1}	1564	bar
E_{r2}	1624	bar
E_o/P_L^*	8.4	
E_{u1}	4698	bar
E_{r3}	3685	bar
E_{u2}	4598	bar



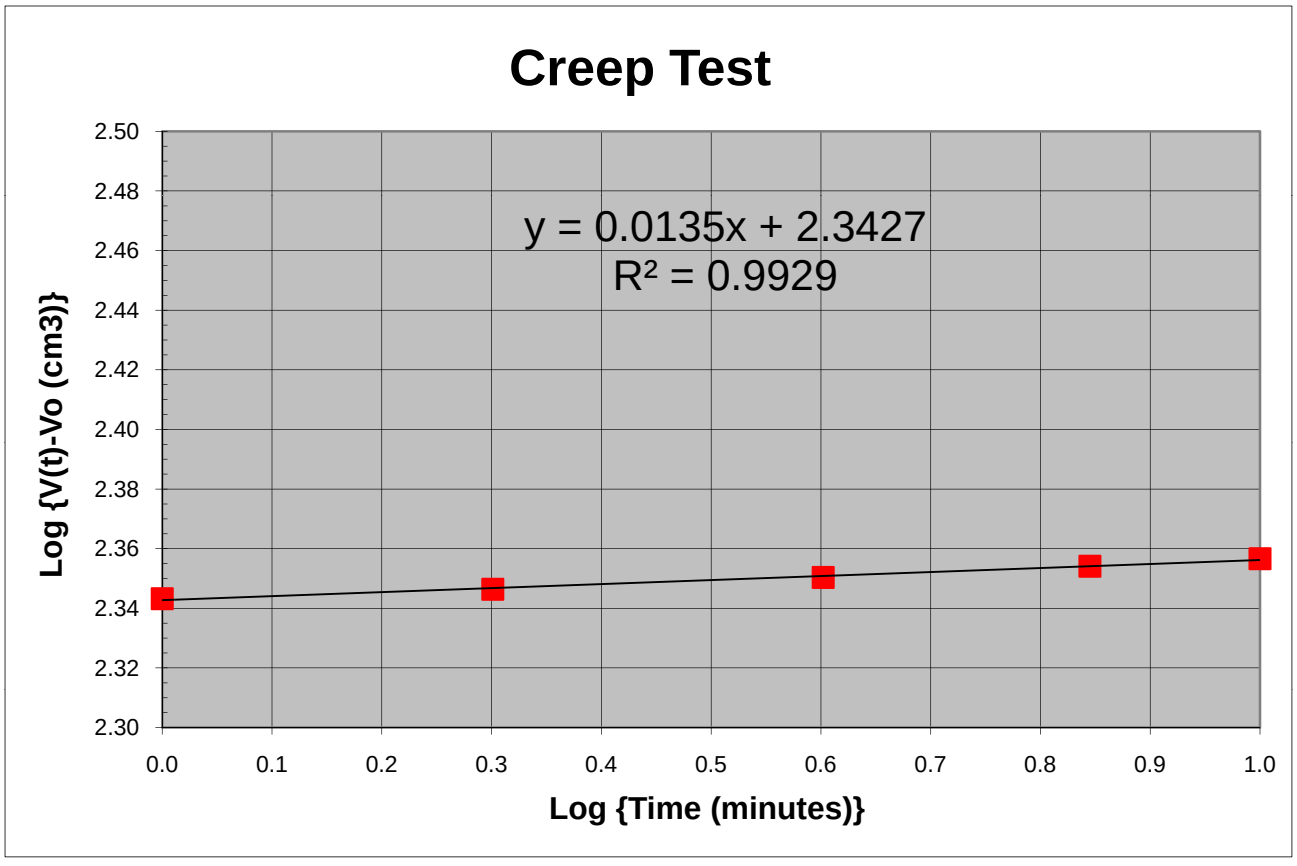
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 70.4 feet

Holding Gauge Pressure =	10.62	bars
Corrected Pressure =	13.01	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.89	cm
Initial Borehole Volume, Vo =	2190	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	442.80	2410.51	220.40	2.343
2	0.301	444.40	2412.11	222.00	2.346
4	0.602	446.45	2414.16	224.05	2.350
7	0.845	448.40	2416.11	226.00	2.354
10	1.000	449.72	2417.43	227.32	2.357

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0135

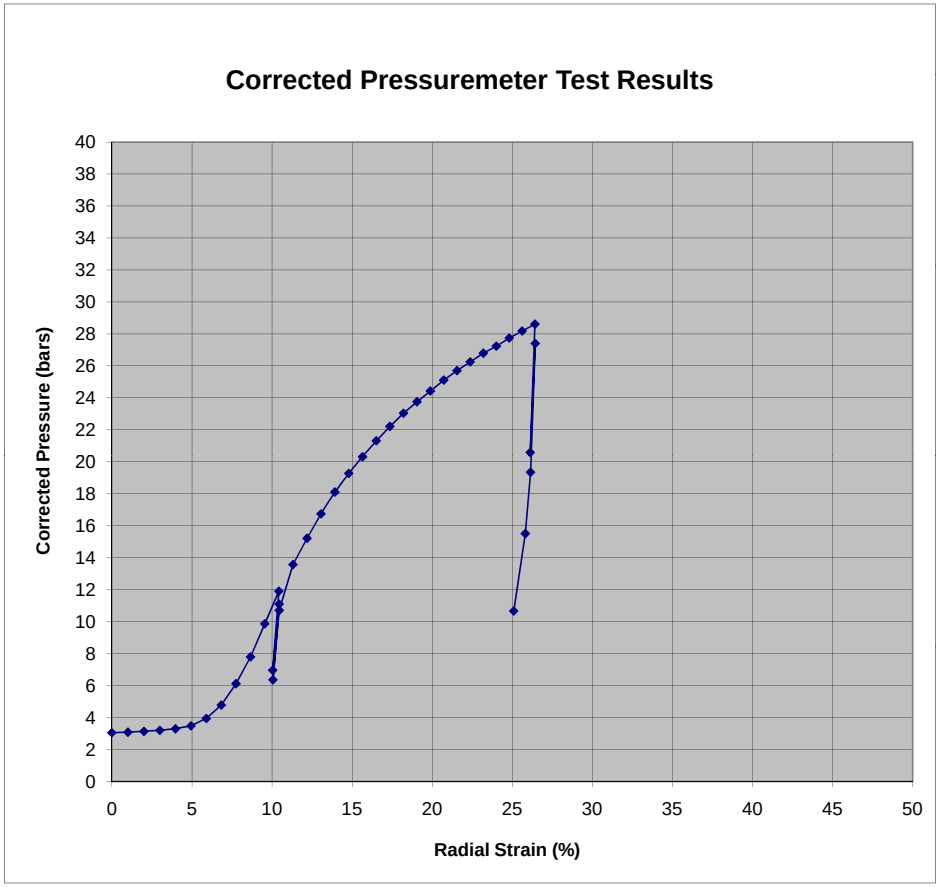


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	8
IN-SITU SOIL TESTING, L.C.		DEPTH:	79.9 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/7/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.05	0	0.00	
3.09	40	1.01	
3.14	80	2.01	
3.20	120	2.99	
3.30	160	3.97	
3.48	199	4.94	
3.94	239	5.90	
4.78	278	6.83	
6.12	317	7.75	Eo1
7.79	355	8.66	
9.86	394	9.55	
11.91	432	10.43	Eo2
6.96	415	10.04	Er1
11.10	432	10.44	Er2
6.36	416	10.06	Er3
10.71	433	10.45	Er4
13.57	470	11.31	
15.21	509	12.19	
16.74	547	13.06	
18.10	586	13.93	
19.27	625	14.79	
20.31	664	15.65	
21.31	703	16.51	
22.21	743	17.36	
23.03	782	18.21	
23.75	821	19.05	
24.43	861	19.89	
25.10	900	20.72	
25.70	939	21.55	
26.24	979	22.37	
26.79	1018	23.19	
27.23	1058	24.00	
27.73	1098	24.81	
28.17	1137	25.62	
28.60	1177	26.41	Eu1
20.58	1162	26.12	Eu2
27.39	1178	26.44	Eu3
19.34	1163	26.14	Eu4
15.50	1147	25.82	
10.66	1111	25.09	

Interpreted Pressuremeter Parameters		
P_o	3.4	bar
P_L	36.0	bar
P_L^*	32.6	bar
E_o	314	bar
E_{r1}	1509	bar
E_{r2}	1607	bar
E_o/P_L^*	9.6	
E_{u1}	4558	bar
E_{r3}	3606	bar
E_{u2}	4583	bar



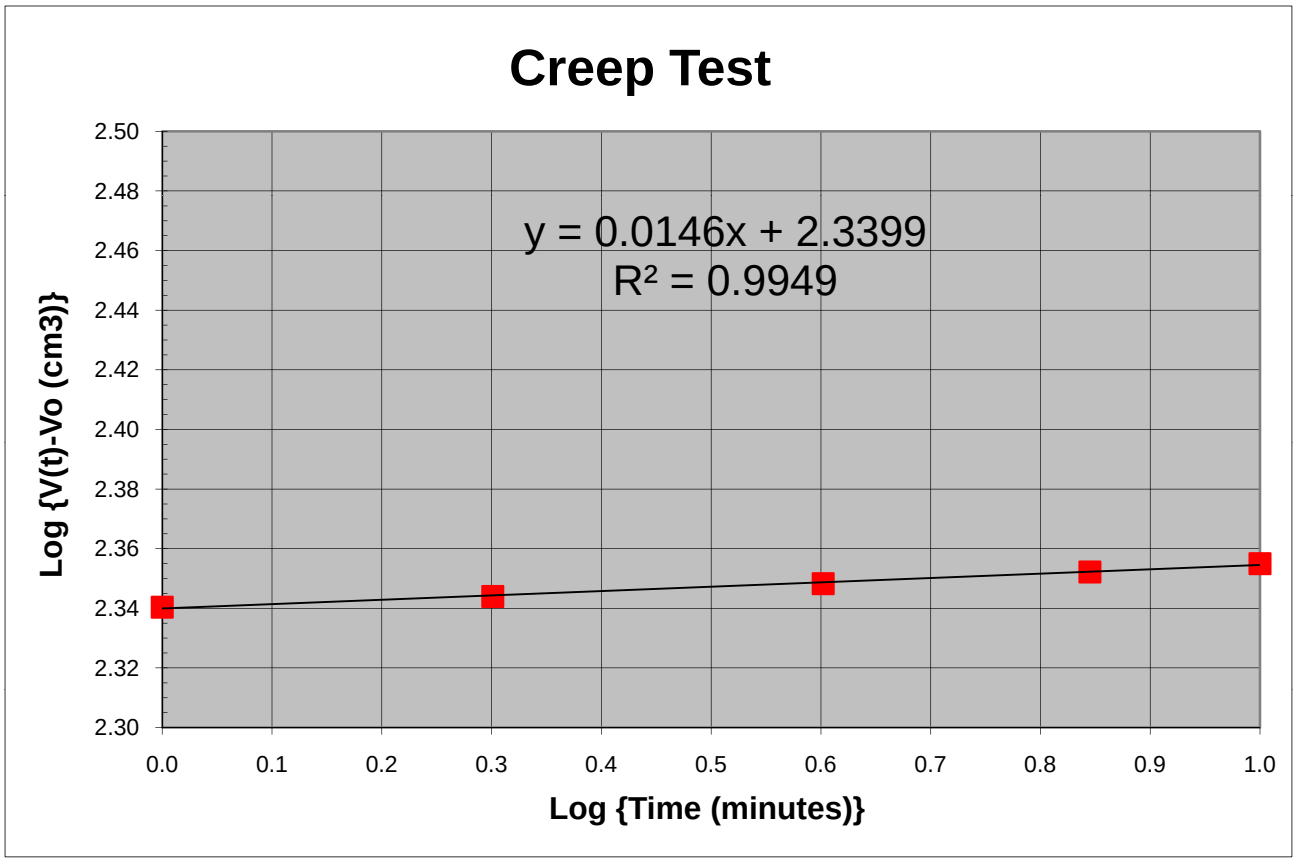
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 79.9 feet

Holding Gauge Pressure =	10.90	bars
Corrected Pressure =	13.57	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2232	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	483.07	2450.78	218.95	2.340
2	0.301	484.90	2452.61	220.78	2.344
4	0.602	487.08	2454.79	222.96	2.348
7	0.845	489.12	2456.83	225.00	2.352
10	1.000	490.55	2458.26	226.43	2.355

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0146

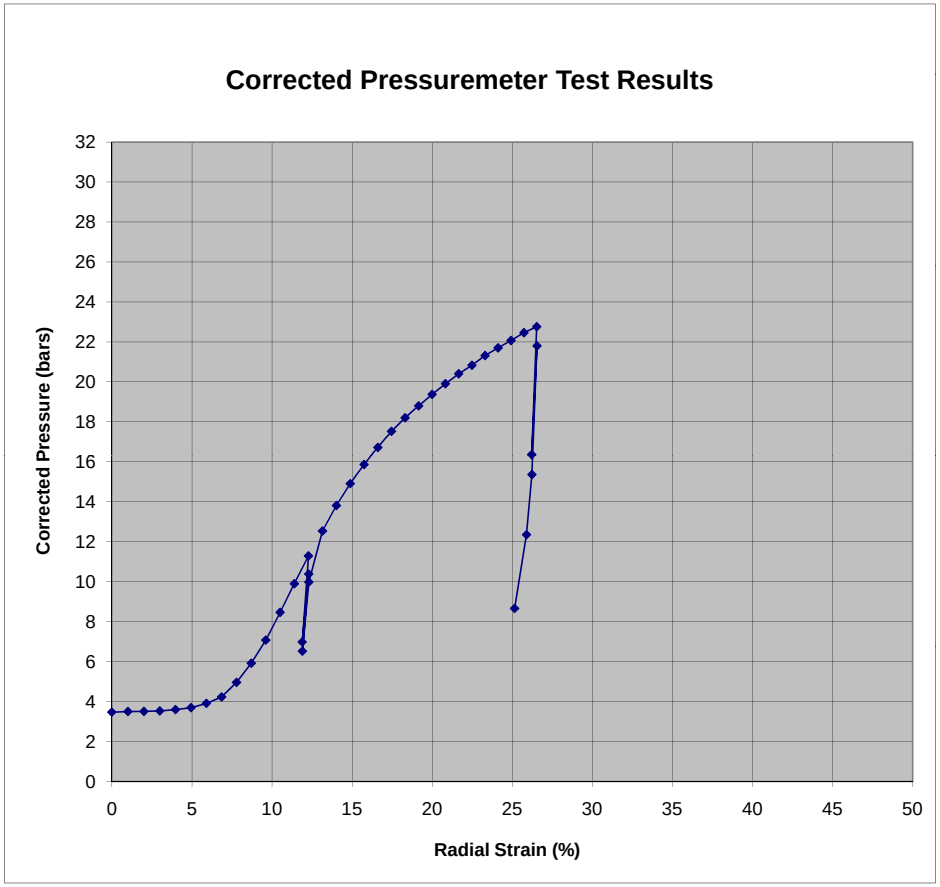


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	9
IN-SITU SOIL TESTING, L.C.		DEPTH:	89.1 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/7/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.47	0	0.00	
3.50	40	1.00	
3.50	80	2.00	
3.53	120	2.99	
3.59	160	3.97	
3.69	199	4.94	
3.91	239	5.90	
4.23	279	6.85	
4.96	318	7.78	
5.92	357	8.70	
7.07	396	9.61	Eo1
8.46	435	10.50	
9.89	474	11.39	
11.29	513	12.27	Eo2
6.98	495	11.88	Er1
10.38	513	12.29	Er2
6.52	496	11.89	Er3
9.98	514	12.30	Er4
12.53	551	13.15	
13.81	590	14.02	
14.91	629	14.88	
15.86	668	15.75	
16.72	708	16.60	
17.52	747	17.46	
18.20	786	18.31	
18.80	826	19.15	
19.37	865	19.99	
19.91	905	20.82	
20.40	944	21.65	
20.83	984	22.48	
21.32	1024	23.30	
21.70	1063	24.11	
22.07	1103	24.92	
22.46	1143	25.72	
22.76	1182	26.52	Eu1
16.36	1167	26.21	Eu2
21.80	1183	26.54	Eu3
15.36	1167	26.23	Eu4
12.35	1150	25.88	
8.66	1114	25.14	

Interpreted Pressuremeter Parameters		
P_o	3.7	bar
P_L	30.0	bar
P_L^*	26.3	bar
E_o	234	bar
E_{r1}	1245	bar
E_{r2}	1278	bar
E_o/P_L^*	8.9	
E_{u1}	3395	bar
E_{r3}	2737	bar
E_{u2}	3423	bar



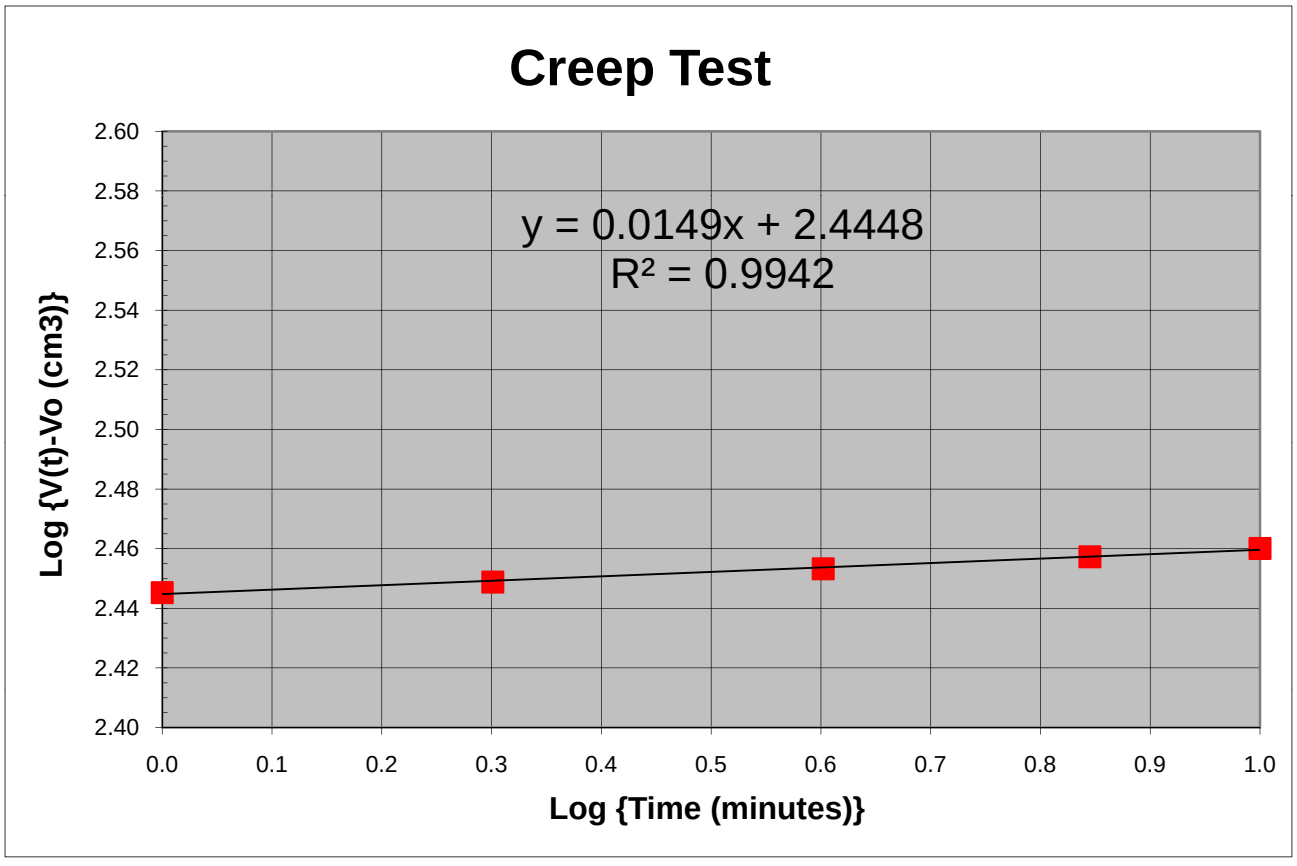
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 89.1 feet

Holding Gauge Pressure =	9.60	bars
Corrected Pressure =	12.53	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	563.90	2531.61	278.78	2.445
2	0.301	566.18	2533.89	281.06	2.449
4	0.602	569.08	2536.79	283.96	2.453
7	0.845	571.72	2539.43	286.60	2.457
10	1.000	573.57	2541.28	288.45	2.460

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0149

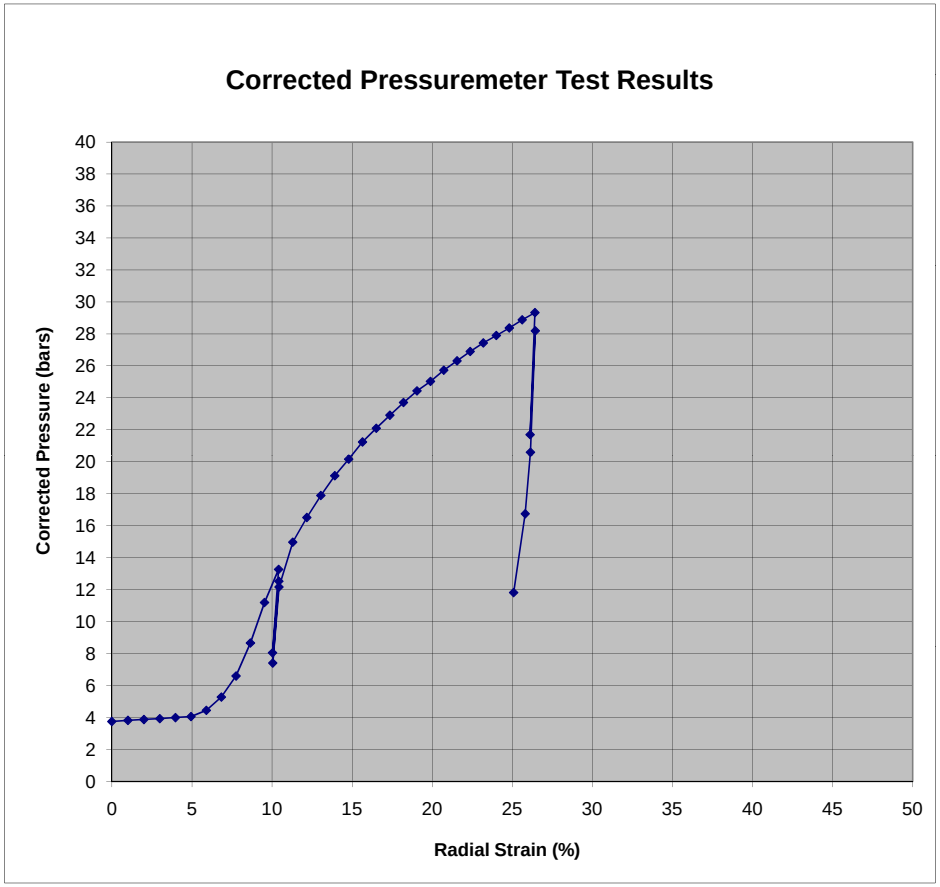


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	10
IN-SITU SOIL TESTING, L.C.		DEPTH:	99.0 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/7/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
3.76	0	0.00	
3.83	40	1.00	
3.88	80	2.00	
3.93	119	2.99	
4.00	159	3.97	
4.07	199	4.94	
4.45	239	5.90	
5.28	278	6.84	
6.60	317	7.76	Eo1
8.66	355	8.65	
11.20	393	9.53	
13.27	431	10.41	Eo2
8.05	415	10.03	Er1
12.53	432	10.43	Er2
7.41	415	10.04	Er3
12.17	432	10.43	Er4
14.97	470	11.29	
16.51	508	12.17	
17.89	547	13.05	
19.13	586	13.92	
20.16	625	14.79	
21.24	664	15.65	
22.09	703	16.51	
22.91	742	17.36	
23.71	782	18.21	
24.43	821	19.05	
25.03	861	19.89	
25.72	900	20.72	
26.31	939	21.55	
26.90	979	22.37	
27.43	1018	23.19	
27.90	1058	24.00	
28.37	1098	24.81	
28.88	1137	25.61	
29.33	1177	26.41	Eu1
21.70	1162	26.11	Eu2
28.19	1178	26.43	Eu3
20.60	1163	26.13	Eu4
16.75	1147	25.81	
11.82	1111	25.08	

Interpreted Pressuremeter Parameters		
P_o	4.2	bar
P_L	38.0	bar
P_L^*	33.8	bar
E_o	364	bar
E_{r1}	1655	bar
E_{r2}	1787	bar
E_o/P_L^*	10.8	
E_{u1}	4261	bar
E_{r3}	3394	bar
E_{u2}	4233	bar



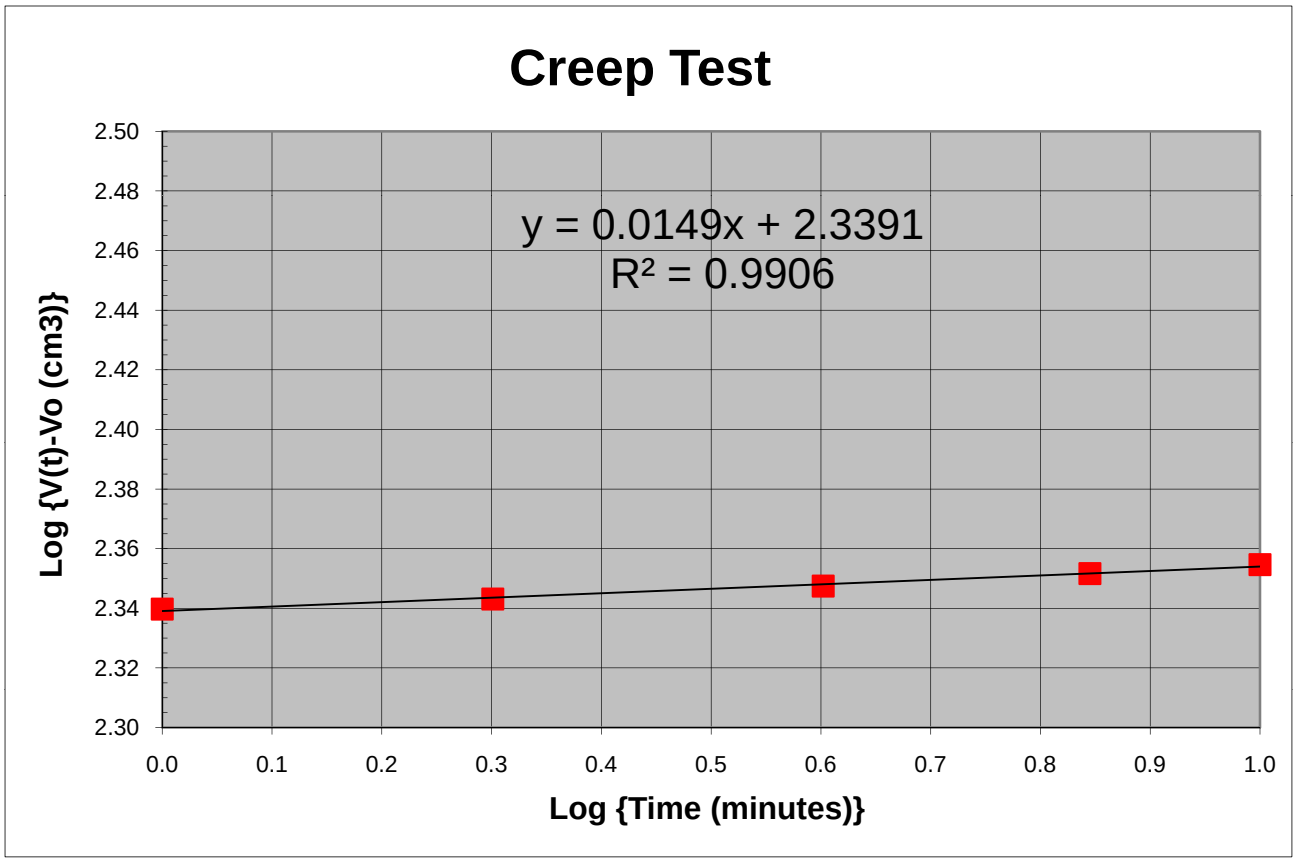
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 99 feet

Holding Gauge Pressure =	11.73	bars
Corrected Pressure =	14.97	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2232	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	482.74	2450.45	218.62	2.340
2	0.301	484.45	2452.16	220.33	2.343
4	0.602	486.67	2454.38	222.55	2.347
7	0.845	488.83	2456.54	224.71	2.352
10	1.000	490.38	2458.09	226.26	2.355

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0149

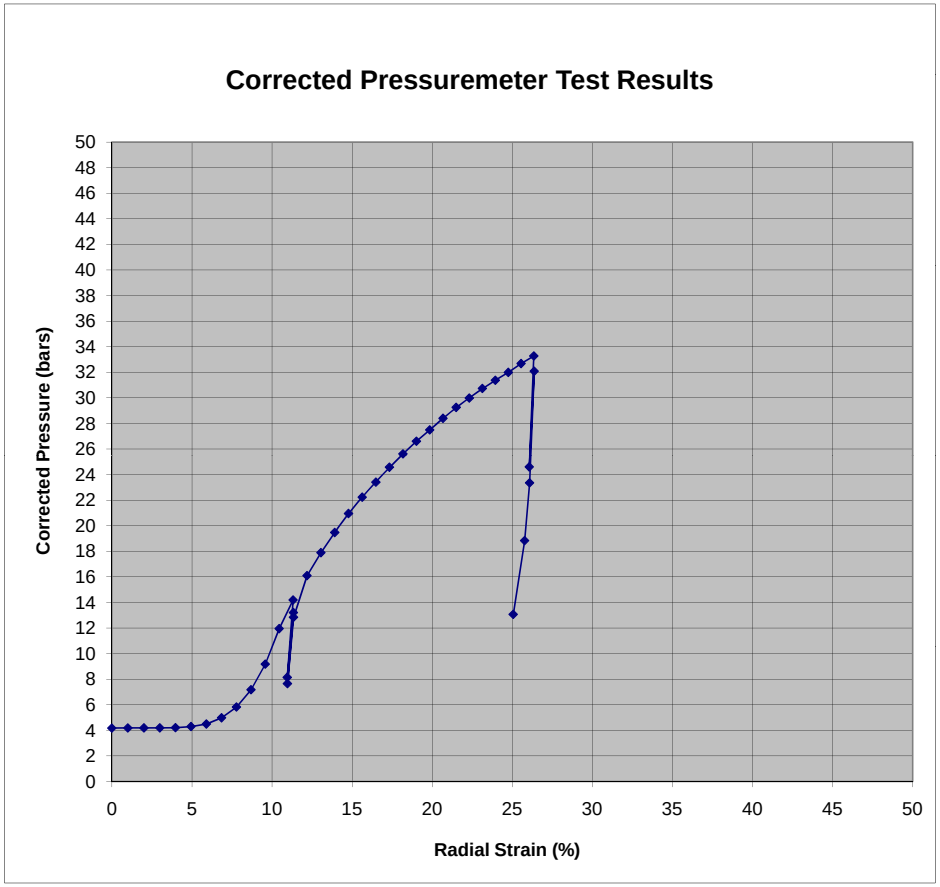


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	11
IN-SITU SOIL TESTING, L.C.		DEPTH:	108.7 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/7/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
4.18	0	0.00	
4.19	40	1.00	
4.19	80	2.00	
4.19	120	2.99	
4.21	159	3.97	
4.30	199	4.94	
4.49	239	5.90	
4.98	279	6.85	
5.82	318	7.78	
7.17	357	8.69	Eo1
9.18	395	9.58	
11.95	433	10.44	
14.19	470	11.32	Eo2
8.14	455	10.95	Er1
13.21	471	11.34	Er2
7.65	455	10.96	Er3
12.84	472	11.34	Er4
16.09	509	12.19	
17.89	547	13.05	
19.47	586	13.92	
20.95	624	14.78	
22.23	663	15.63	
23.40	702	16.49	
24.57	741	17.33	
25.62	780	18.18	
26.60	819	19.01	
27.49	859	19.85	
28.39	898	20.68	
29.25	937	21.50	
29.98	976	22.32	
30.73	1016	23.13	
31.37	1055	23.94	
31.99	1095	24.75	
32.68	1134	25.55	
33.27	1173	26.35	Eu1
24.60	1159	26.06	Eu2
32.08	1174	26.37	Eu3
23.35	1160	26.08	Eu4
18.84	1145	25.77	
13.07	1110	25.06	

Interpreted Pressuremeter Parameters		
P_o	4.3	bar
P_L	45.0	bar
P_L^*	40.7	bar
E_o	391	bar
E_{r1}	1942	bar
E_{r2}	2015	bar
E_o/P_L^*	9.6	
E_{u1}	5072	bar
E_{r3}	4073	bar
E_{u2}	5123	bar



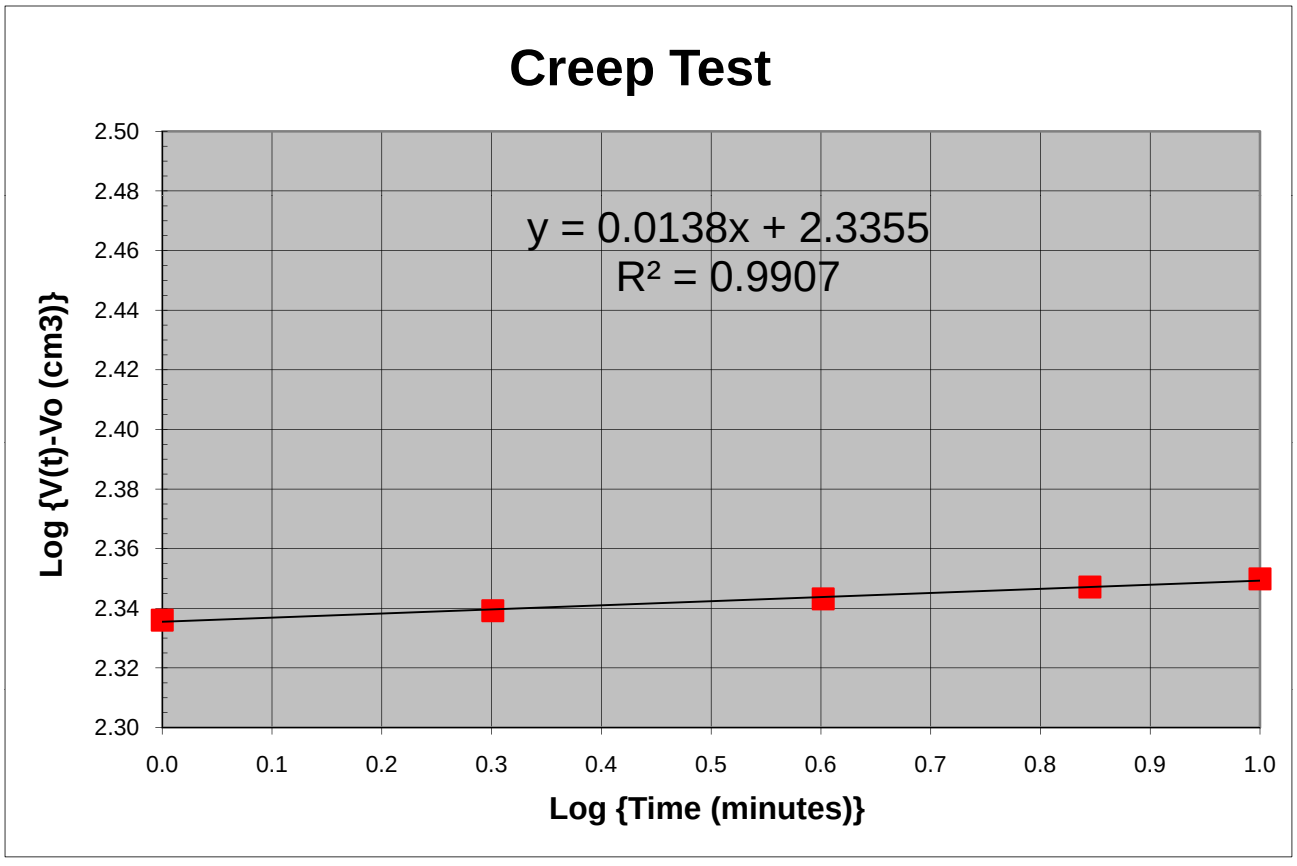
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 108.7 feet

Holding Gauge Pressure =	12.57	bars
Corrected Pressure =	16.09	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.97	cm
Initial Borehole Volume, Vo =	2274	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	523.00	2490.71	216.78	2.336
2	0.301	524.60	2492.31	218.38	2.339
4	0.602	526.60	2494.31	220.38	2.343
7	0.845	528.61	2496.32	222.39	2.347
10	1.000	530.02	2497.73	223.80	2.350

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0138

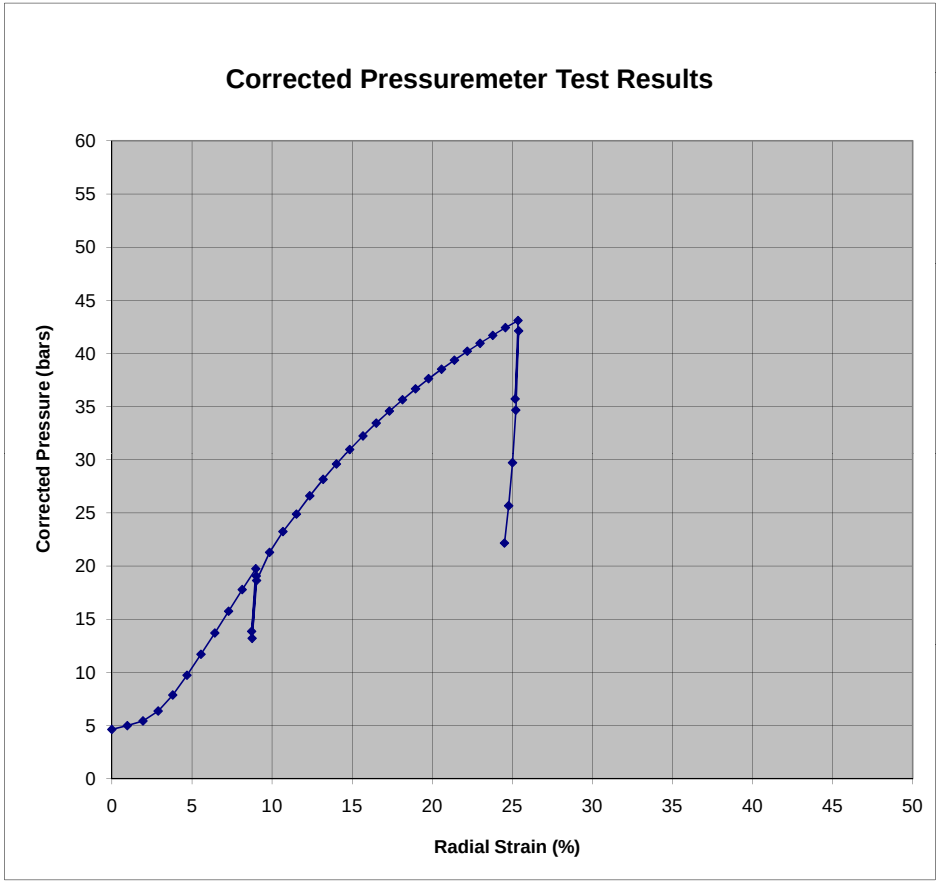


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	12
IN-SITU SOIL TESTING, L.C.		DEPTH:	117.8 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	08/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.63	-1	0.00	
4.99	38	0.97	
5.43	77	1.94	
6.37	115	2.89	
7.87	153	3.80	Eo1
9.73	189	4.69	
11.70	225	5.57	
13.70	261	6.43	
15.75	297	7.29	
17.79	333	8.14	
19.74	370	8.99	Eo2
13.86	358	8.73	Er1
19.06	371	9.02	Er2
13.20	360	8.76	Er3
18.64	372	9.04	Er4
21.29	407	9.85	
23.24	443	10.68	
24.88	480	11.52	
26.60	516	12.36	
28.15	553	13.19	
29.60	591	14.02	
30.96	628	14.85	
32.23	665	15.68	
33.44	703	16.51	
34.57	741	17.33	
35.64	779	18.15	
36.67	817	18.96	
37.62	855	19.77	
38.51	893	20.58	
39.35	932	21.39	
40.20	970	22.19	
40.95	1009	22.99	
41.69	1047	23.78	
42.42	1086	24.57	
43.08	1125	25.36	Eu1
35.72	1116	25.18	Eu2
42.11	1126	25.40	Eu3
34.66	1118	25.22	Eu4
29.72	1108	25.01	
25.67	1096	24.77	
22.16	1083	24.51	

Interpreted Pressuremeter Parameters		
P_o	5.7	bar
P_L	58.0	bar
P_L^*	52.3	bar
E_o	324	bar
E_{r1}	2602	bar
E_{r2}	2831	bar
E_o/P_L^*	6.2	
E_{u1}	6827	bar
E_{r3}	4901	bar
E_{u2}	7022	bar



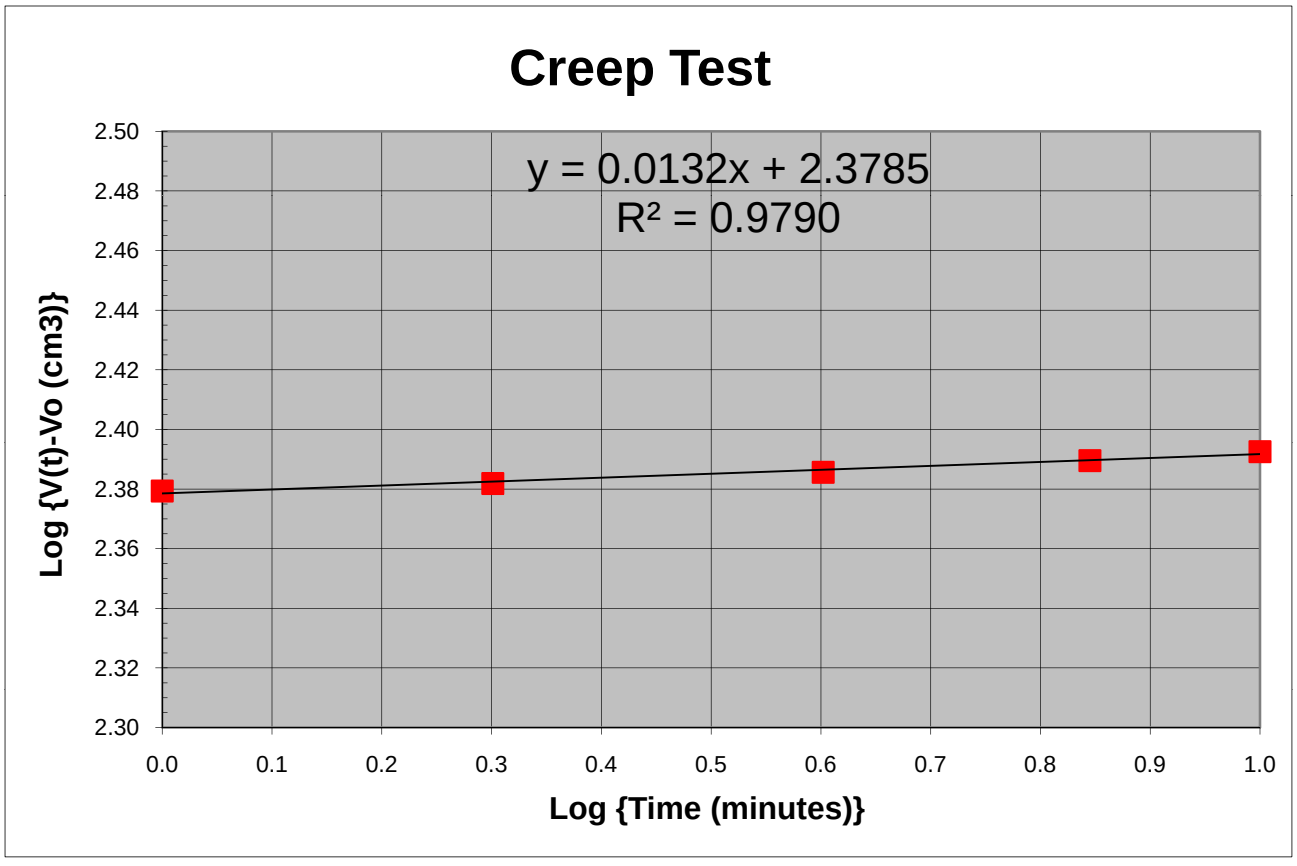
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 117.8 feet

Holding Gauge Pressure =	17.40	bars
Corrected Pressure =	21.29	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.87	cm
Initial Borehole Volume, Vo =	2169	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	441.20	2408.91	239.51	2.379
2	0.301	442.60	2410.31	240.91	2.382
4	0.602	444.70	2412.41	243.01	2.386
7	0.845	446.90	2414.61	245.21	2.390
10	1.000	448.60	2416.31	246.91	2.393

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0150

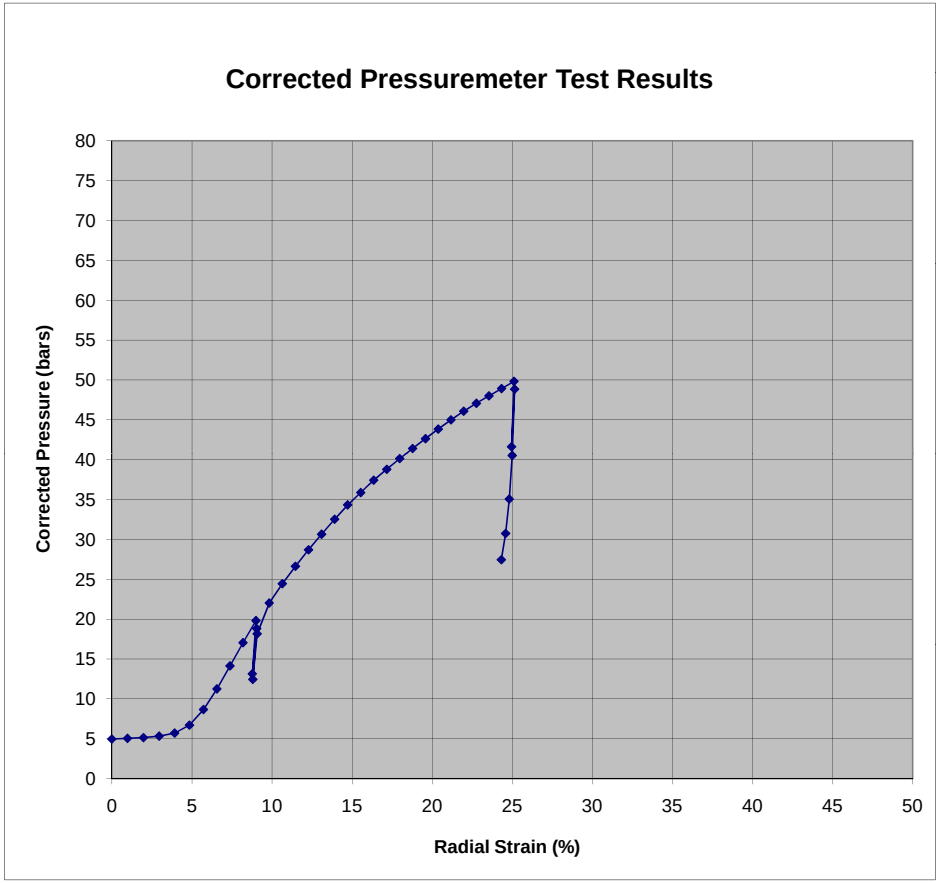


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	13
IN-SITU SOIL TESTING, L.C.		DEPTH:	128.7 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	08/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.97	-1	0.00	
5.05	39	0.98	
5.15	78	1.97	
5.33	118	2.96	
5.72	157	3.92	
6.71	195	4.85	
8.67	232	5.72	Eo1
11.26	267	6.56	
14.14	301	7.38	
17.05	335	8.19	Eo2
19.82	370	9.00	Er1
13.15	360	8.77	Er2
18.82	372	9.04	Er3
12.46	362	8.80	Er4
18.16	373	9.07	
22.03	406	9.83	
24.45	441	10.64	
26.64	477	11.46	
28.71	513	12.28	
30.66	549	13.10	
32.54	586	13.91	
34.33	622	14.72	
35.88	659	15.54	
37.43	696	16.35	
38.80	733	17.16	
40.15	771	17.97	
41.41	808	18.78	
42.64	846	19.58	
43.84	884	20.38	
45.00	922	21.17	
46.09	959	21.97	
47.07	998	22.76	
48.01	1036	23.55	
48.92	1074	24.33	
49.83	1112	25.11	Eu1
41.62	1105	24.96	Eu2
48.85	1114	25.15	Eu3
40.53	1107	25.00	Eu4
35.06	1098	24.81	
30.76	1086	24.59	
27.46	1073	24.32	

Interpreted Pressuremeter Parameters		
P_o	5.9	bar
P_L	70.0	bar
P_L^*	64.1	bar
E_o	483	bar
E_{r1}	4180	bar
E_{r2}	3809	bar
E_o/P_L^*	7.5	
E_{u1}	8843	bar
E_{r3}	6243	bar
E_{u2}	9167	bar



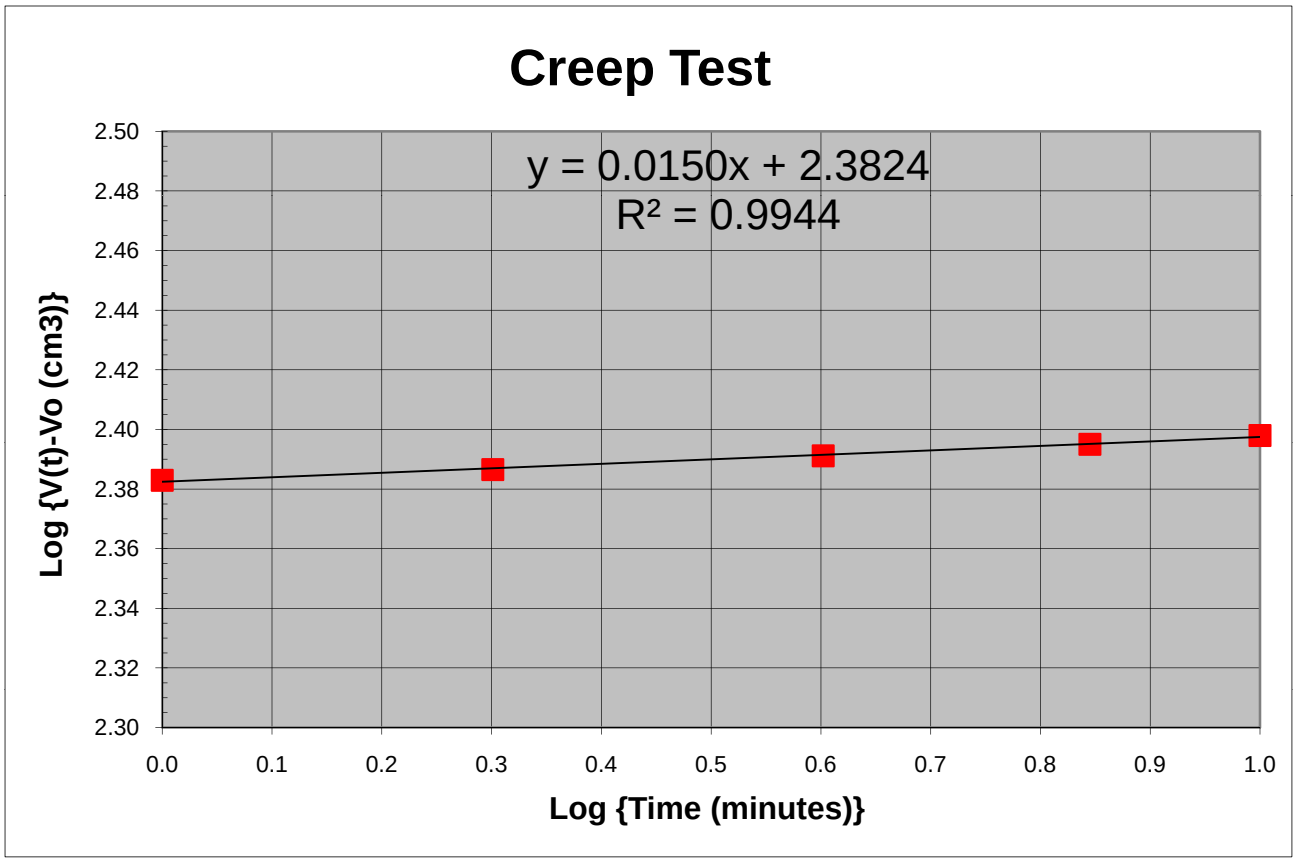
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 128.7 feet

Holding Gauge Pressure =	17.82	bars
Corrected Pressure =	22.08	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.87	cm
Initial Borehole Volume, Vo =	2169	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	443.20	2410.91	241.51	2.383
2	0.301	445.20	2412.91	243.51	2.387
4	0.602	447.80	2415.51	246.11	2.391
7	0.845	450.00	2417.71	248.31	2.395
10	1.000	451.70	2419.41	250.01	2.398

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0150

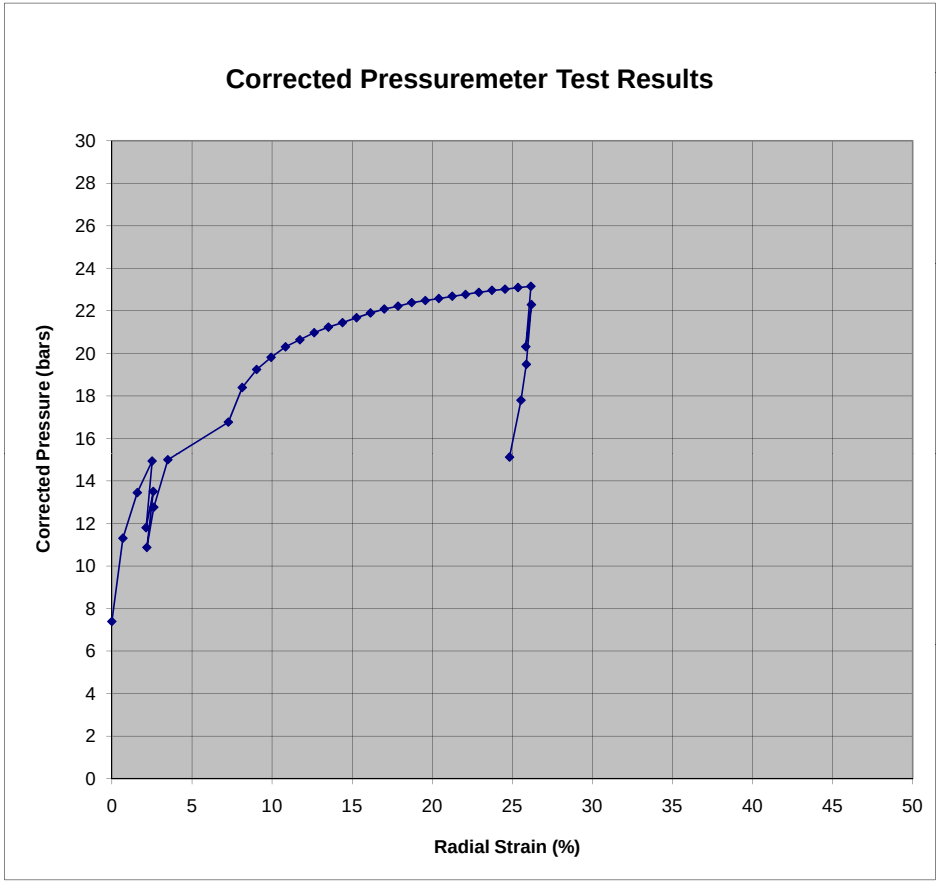


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	14
IN-SITU SOIL TESTING, L.C.		DEPTH:	140.4 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/8/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
7.39	-5	0.00	Eo1
11.31	27	0.69	
13.45	63	1.59	
14.93	100	2.51	Eo2
11.80	85	2.14	Er1
13.50	103	2.58	Er2
10.87	87	2.18	Er3
12.76	104	2.62	Er4
15.00	140	3.50	
16.77	297	7.27	
18.39	333	8.14	
19.24	372	9.04	
19.81	411	9.94	
20.31	450	10.84	
20.64	489	11.74	
20.97	528	12.63	
21.23	568	13.52	
21.44	607	14.40	
21.68	647	15.27	
21.90	687	16.14	
22.09	726	17.01	
22.22	766	17.87	
22.39	806	18.72	
22.48	845	19.57	
22.58	885	20.41	
22.69	925	21.25	
22.77	965	22.08	
22.87	1005	22.90	
22.96	1044	23.72	
23.02	1084	24.54	
23.10	1124	25.35	
23.15	1164	26.16	
20.31	1148	25.84	Eu1
22.29	1166	26.19	Eu2
19.48	1150	25.87	Eu3
17.80	1133	25.54	Eu4
15.12	1098	24.82	

Interpreted Pressuremeter Parameters		
P_o	N/A	bar
P_L	24.0	bar
P_L^*	#VALUE!	bar
E_o	404	bar
E_{r1}	519	bar
E_{r2}	596	bar
E_o/P_L^*	#VALUE!	
E_{u1}	947	bar
E_{r3}	1482	bar
E_{u2}	844	bar



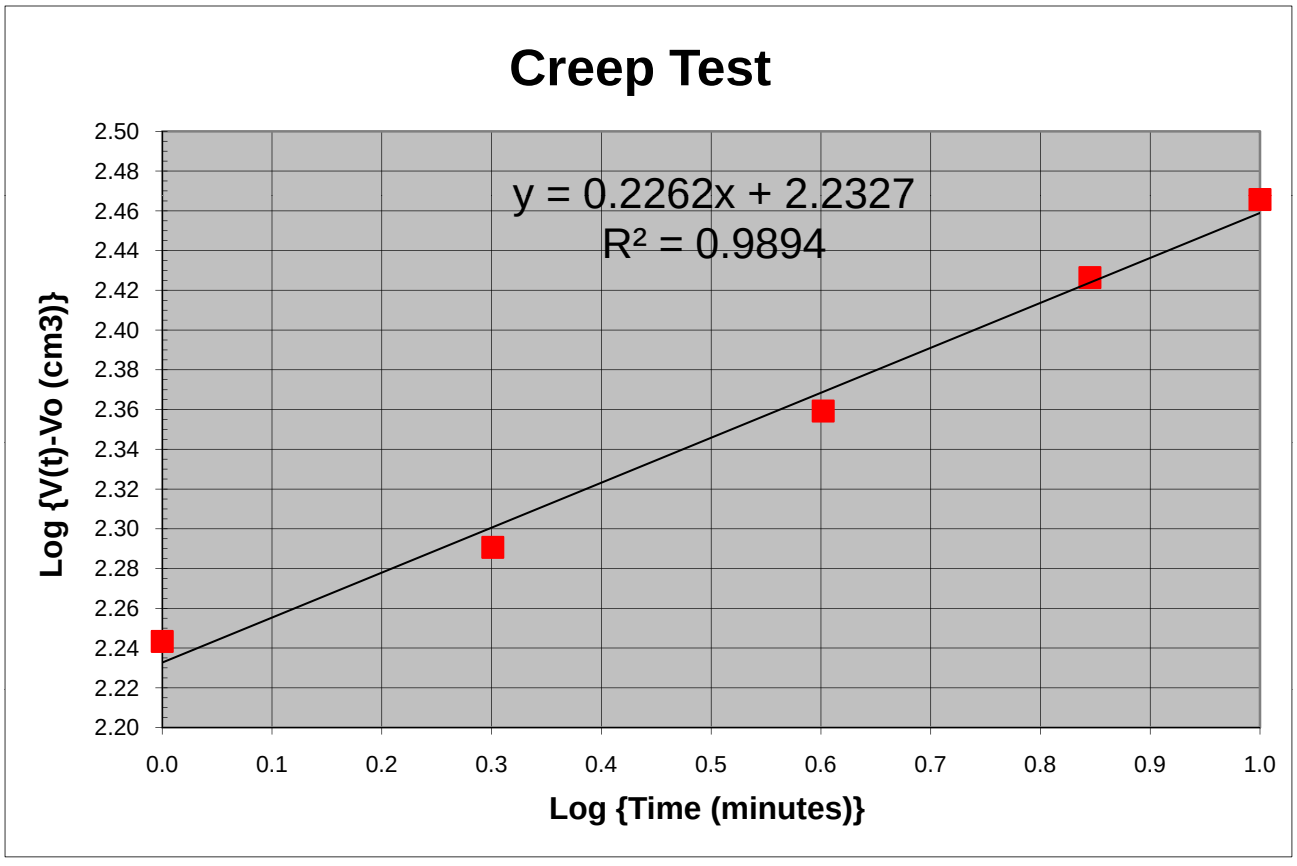
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 140.4 feet

Holding Gauge Pressure =	10.40	bars
Corrected Pressure =	15.00	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.69	cm
Initial Borehole Volume, Vo =	1968	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	175.10	2142.81	175.10	2.243
2	0.301	195.28	2162.99	195.28	2.291
4	0.602	228.70	2196.41	228.70	2.359
7	0.845	266.92	2234.63	266.92	2.426
10	1.000	292.23	2259.94	292.23	2.466

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.2262

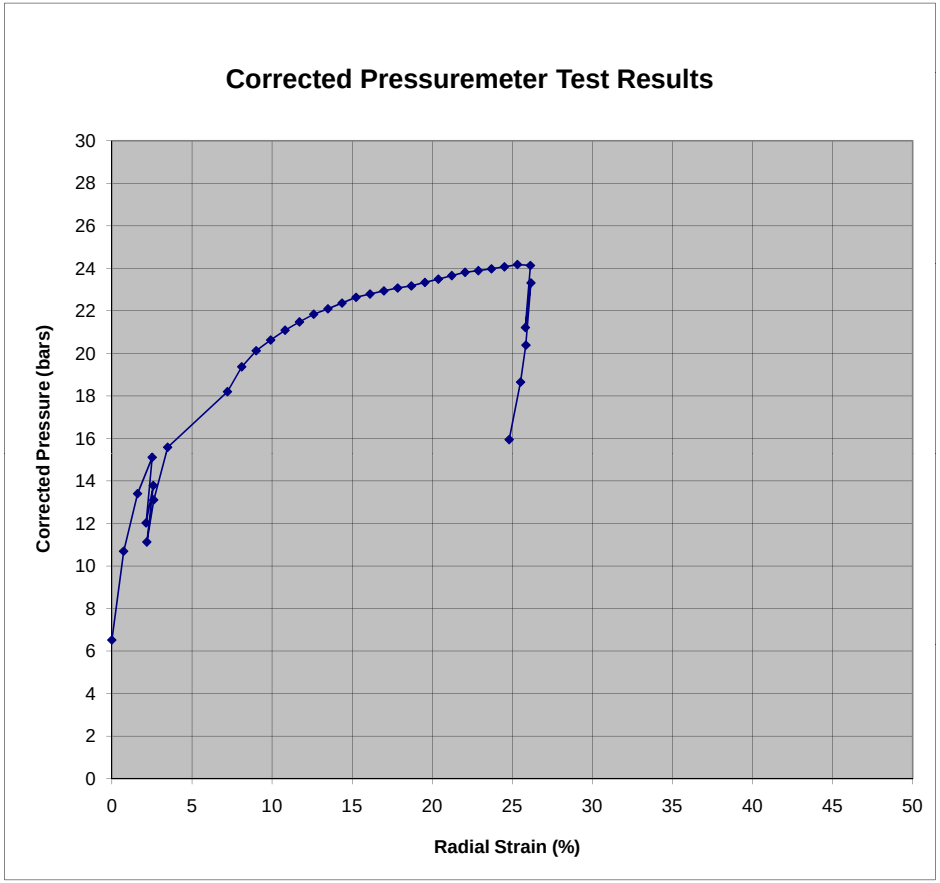


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	15
IN-SITU SOIL TESTING, L.C.		DEPTH:	149.6 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/8/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.52	-3	0.00	Eo1
10.69	29	0.73	
13.41	64	1.61	
15.11	100	2.52	Eo2
12.03	85	2.14	Er1
13.79	103	2.58	Er2
11.13	87	2.19	Er3
13.11	104	2.61	Er4
15.58	139	3.48	
18.20	294	7.22	
19.37	332	8.11	
20.13	371	9.01	
20.63	410	9.92	
21.09	449	10.82	
21.48	488	11.71	
21.85	527	12.60	
22.10	567	13.49	
22.37	606	14.37	
22.64	646	15.24	
22.80	685	16.12	
22.94	725	16.98	
23.08	765	17.84	
23.17	805	18.70	
23.34	844	19.54	
23.50	884	20.38	
23.66	924	21.22	
23.82	963	22.05	
23.89	1003	22.87	
23.98	1043	23.70	
24.08	1083	24.51	
24.18	1123	25.32	
24.14	1163	26.13	
21.22	1147	25.82	Eu1
23.32	1164	26.16	Eu2
20.39	1149	25.85	Eu3
18.65	1132	25.52	Eu4
15.95	1097	24.80	

Interpreted Pressuremeter Parameters		
P_o	N/A	bar
P_L	25.0	bar
P_L^*	#VALUE!	bar
E_o	459	bar
E_{r1}	541	bar
E_{r2}	630	bar
E_o/P_L^*	#VALUE!	
E_{u1}	1015	bar
E_{r3}	1562	bar
E_{u2}	875	bar



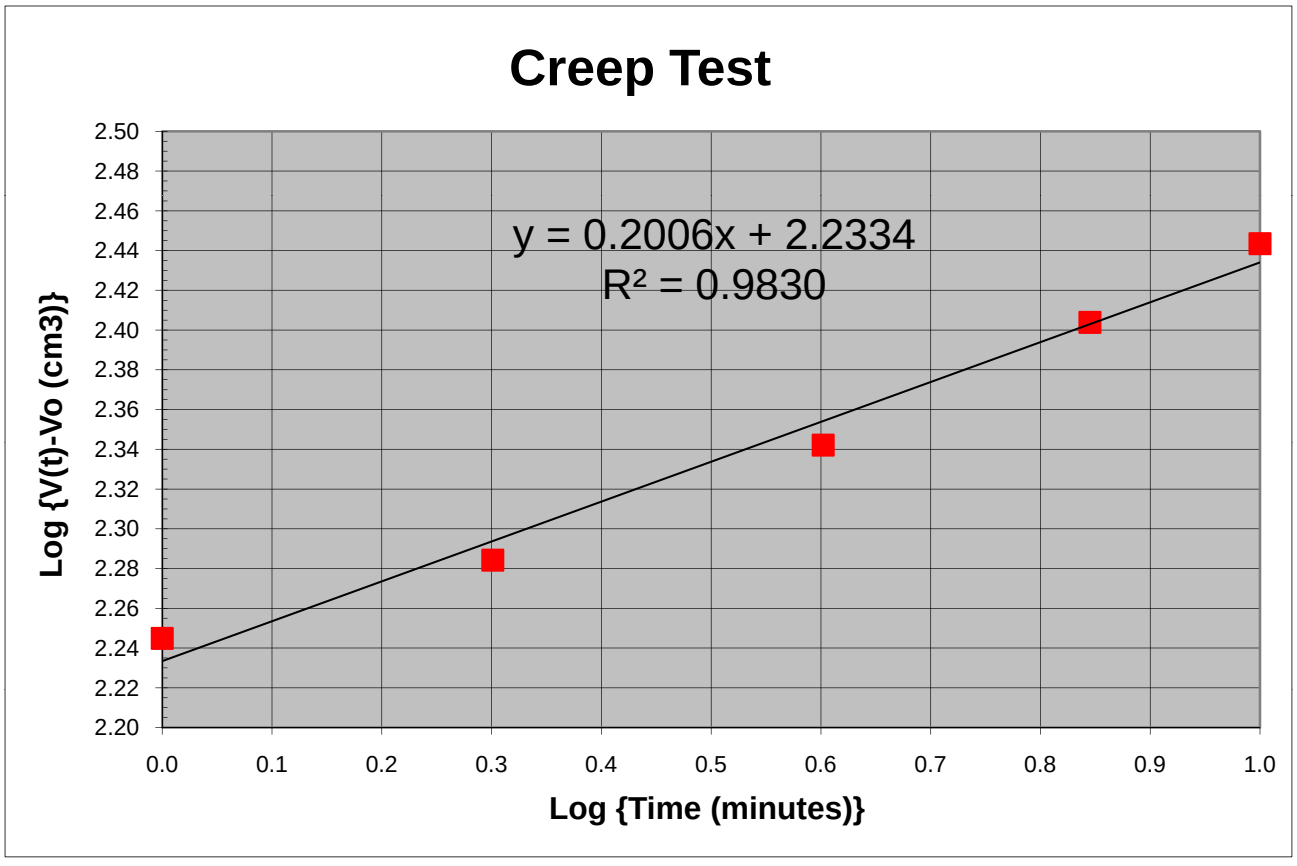
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 149.6 feet

Holding Gauge Pressure =	10.71	bars
Corrected Pressure =	15.58	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.69	cm
Initial Borehole Volume, Vo =	1968	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	175.73	2143.44	175.73	2.245
2	0.301	192.40	2160.11	192.40	2.284
4	0.602	219.85	2187.56	219.85	2.342
7	0.845	253.45	2221.16	253.45	2.404
10	1.000	277.61	2245.32	277.61	2.443

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.2006

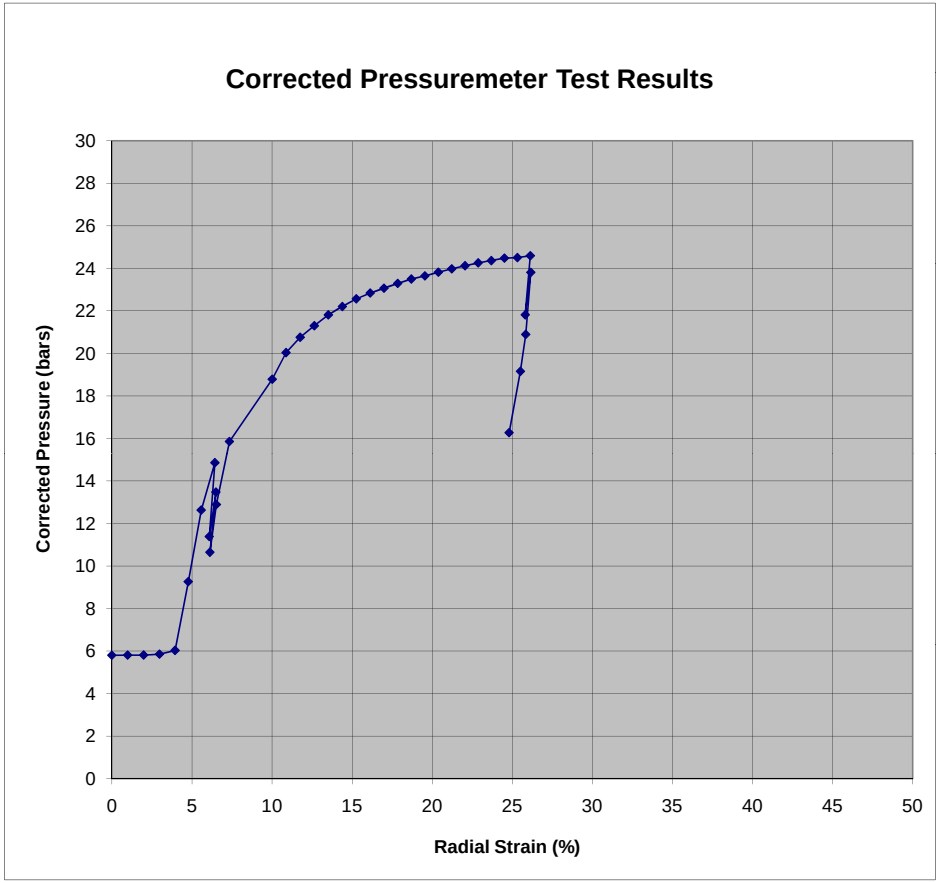


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	16
IN-SITU SOIL TESTING, L.C.		DEPTH:	159.8 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/8/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.80	-1	0.00	
5.81	39	0.98	
5.81	79	1.98	
5.85	119	2.97	
6.03	158	3.95	Eo1
9.26	192	4.77	
12.63	226	5.58	
14.86	261	6.43	Eo2
11.38	247	6.08	Er1
13.48	264	6.50	Er2
10.64	248	6.12	Er3
12.89	265	6.52	Er4
15.86	299	7.34	
18.78	414	10.01	
20.04	451	10.88	
20.76	490	11.76	
21.30	529	12.64	
21.81	568	13.52	
22.20	607	14.39	
22.57	646	15.26	
22.84	686	16.13	
23.07	725	16.99	
23.29	765	17.85	
23.50	805	18.70	
23.64	844	19.54	
23.82	884	20.38	
23.98	924	21.22	
24.12	963	22.05	
24.26	1003	22.87	
24.36	1043	23.69	
24.48	1083	24.51	
24.51	1123	25.32	
24.59	1162	26.12	Eu1
21.81	1147	25.81	Eu2
23.81	1164	26.15	Eu3
20.89	1148	25.84	Eu4
19.16	1132	25.51	
16.27	1097	24.80	

Interpreted Pressuremeter Parameters		
P_o	5.9	bar
P_L	26.0	bar
P_L^*	20.1	bar
E_o	497	bar
E_{r1}	712	bar
E_{r2}	788	bar
E_o/P_L^*	24.7	
E_{u1}	1460	bar
E_{r3}	960	bar
E_{u2}	1555	bar



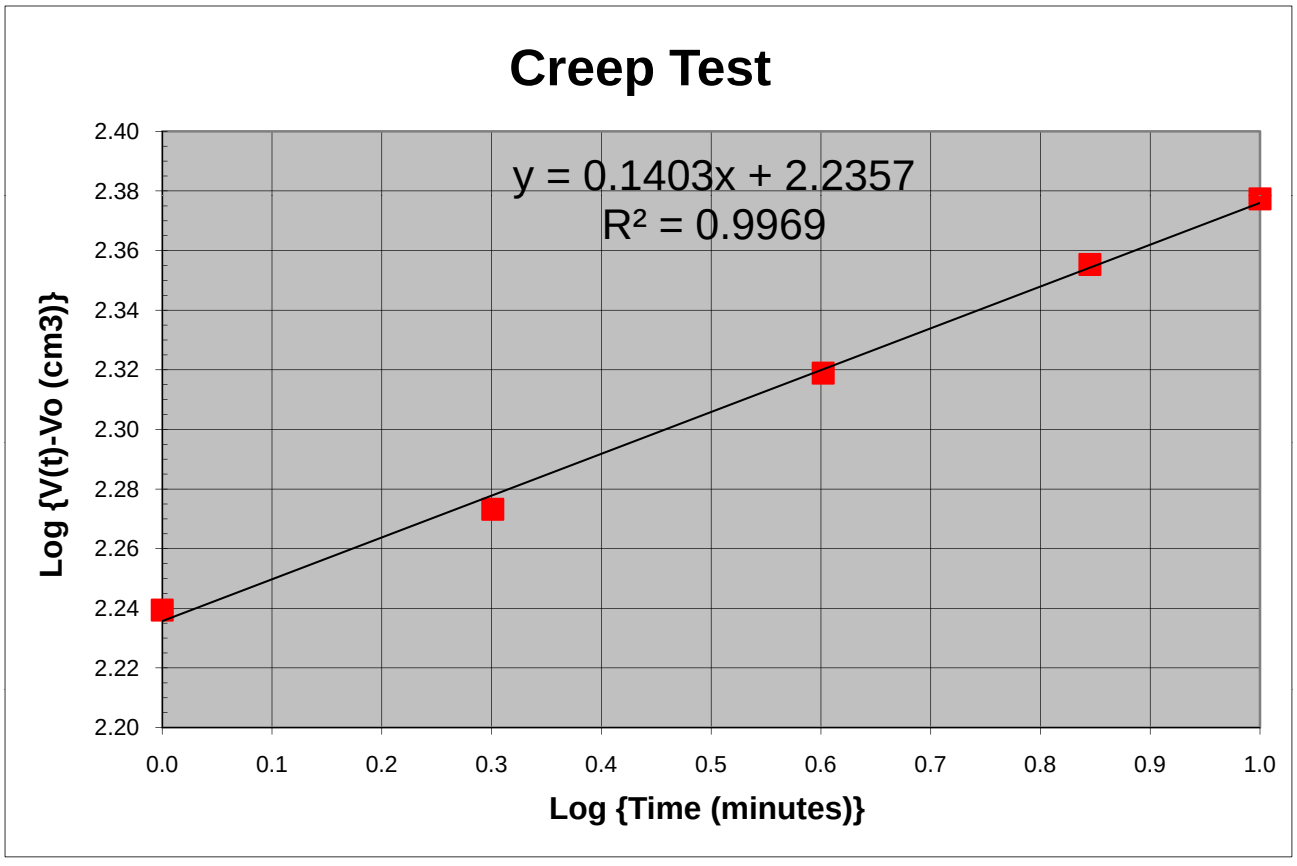
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 159.8 feet

Holding Gauge Pressure =	10.73	bars
Corrected Pressure =	15.86	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.84	cm
Initial Borehole Volume, Vo =	2128	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	334.10	2301.81	173.54	2.239
2	0.301	348.15	2315.86	187.59	2.273
4	0.602	368.97	2336.68	208.41	2.319
7	0.845	387.20	2354.91	226.64	2.355
10	1.000	398.98	2366.69	238.42	2.377

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1403

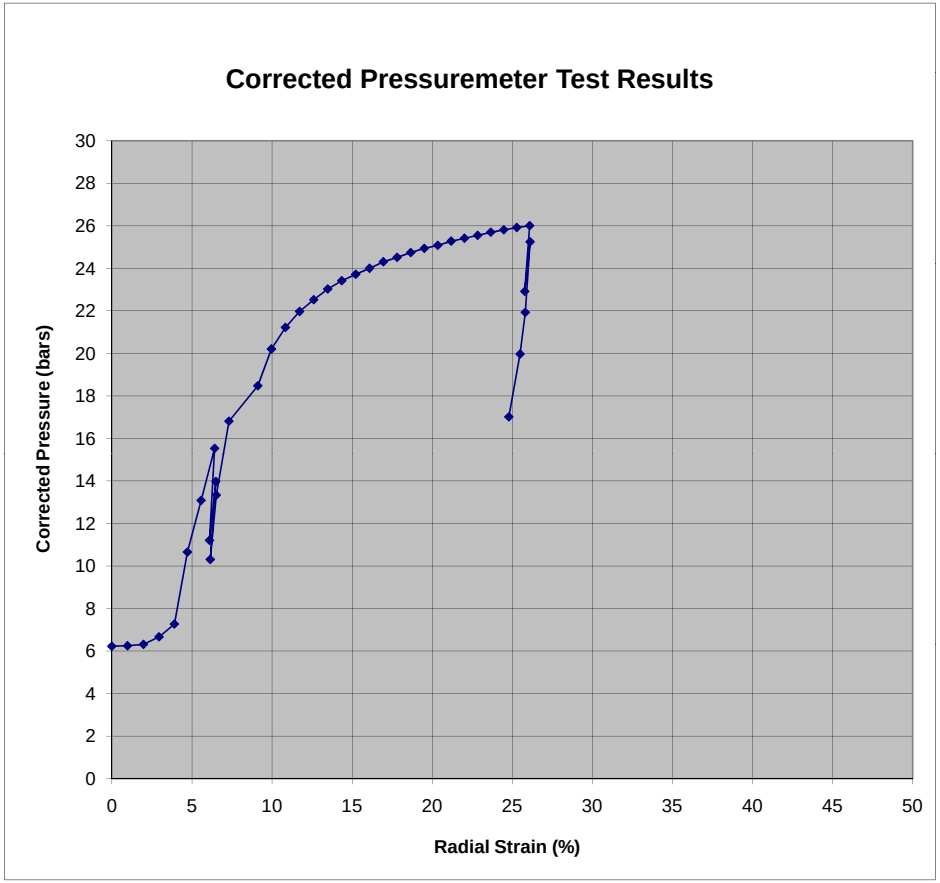


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	17
IN-SITU SOIL TESTING, L.C.		DEPTH:	169.6 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/8/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.23	-1	0.00	
6.25	39	0.98	
6.31	78	1.97	
6.67	118	2.95	
7.27	157	3.90	Eo1
10.66	190	4.72	
13.08	225	5.57	
15.53	261	6.42	Eo2
11.21	247	6.09	Er1
13.97	264	6.49	Er2
10.31	249	6.14	Er3
13.33	265	6.52	Er4
16.81	298	7.31	
18.48	375	9.11	
20.21	412	9.96	
21.22	450	10.84	
21.97	488	11.72	
22.52	527	12.60	
23.03	566	13.48	
23.42	605	14.35	
23.72	645	15.22	
24.00	684	16.09	
24.31	724	16.95	
24.52	763	17.81	
24.74	803	18.66	
24.94	842	19.50	
25.08	882	20.34	
25.28	922	21.18	
25.42	961	22.01	
25.55	1001	22.83	
25.70	1041	23.65	
25.81	1081	24.47	
25.92	1120	25.28	
26.01	1160	26.08	Eu1
22.92	1145	25.77	Eu2
25.25	1162	26.11	Eu3
21.93	1147	25.81	Eu4
19.97	1131	25.48	
17.01	1096	24.78	

Interpreted Pressuremeter Parameters		
P_o	6.3	bar
P_L	28.0	bar
P_L^*	21.7	bar
E_o	459	bar
E_{r1}	993	bar
E_{r2}	1141	bar
E_o/P_L^*	21.2	
E_{u1}	1672	bar
E_{r3}	1151	bar
E_{u2}	1839	bar



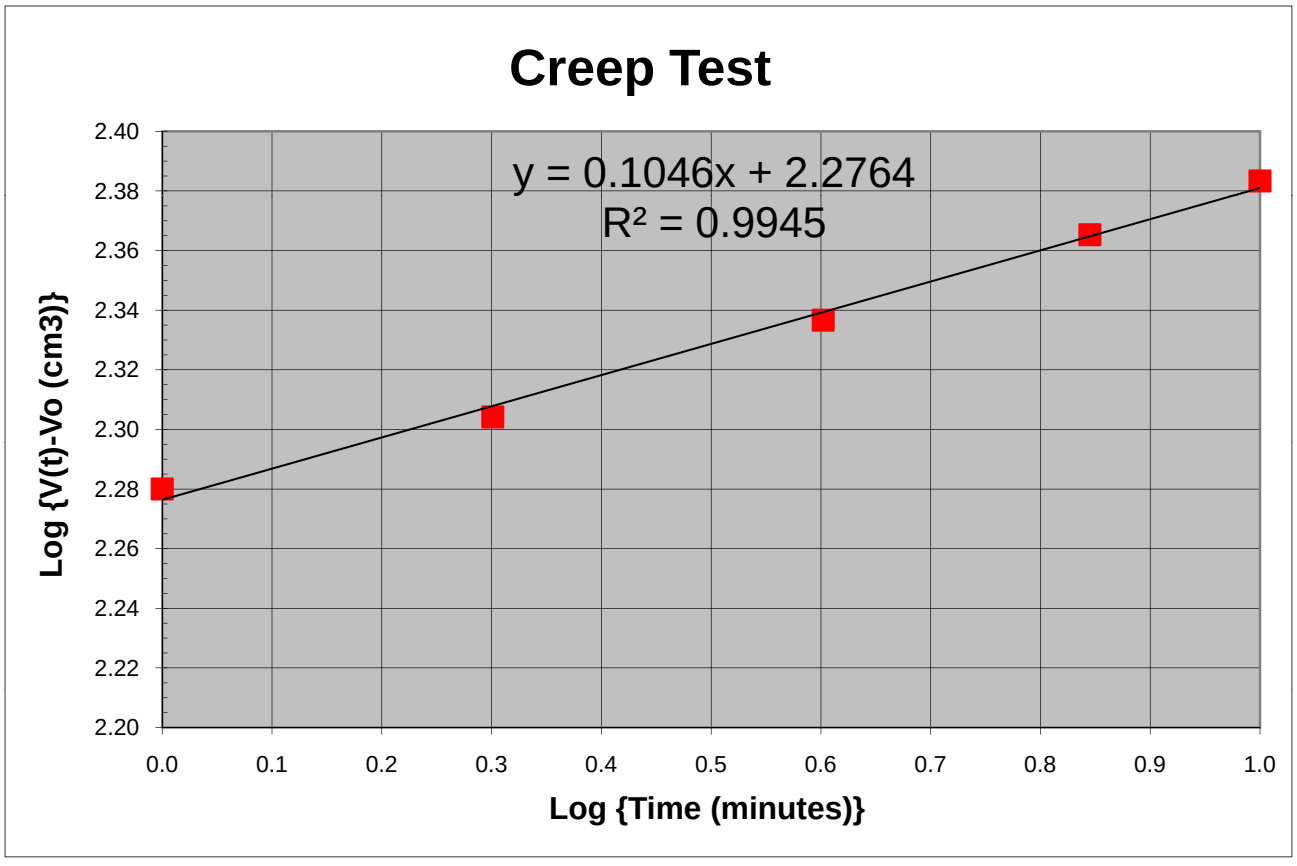
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 169.6 feet

Holding Gauge Pressure =	11.39	bars
Corrected Pressure =	16.81	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.82	cm
Initial Borehole Volume, Vo =	2108	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	330.70	2298.41	190.55	2.280
2	0.301	341.60	2309.31	201.45	2.304
4	0.602	357.25	2324.96	217.10	2.337
7	0.845	372.06	2339.77	231.91	2.365
10	1.000	381.89	2349.60	241.74	2.383

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1046

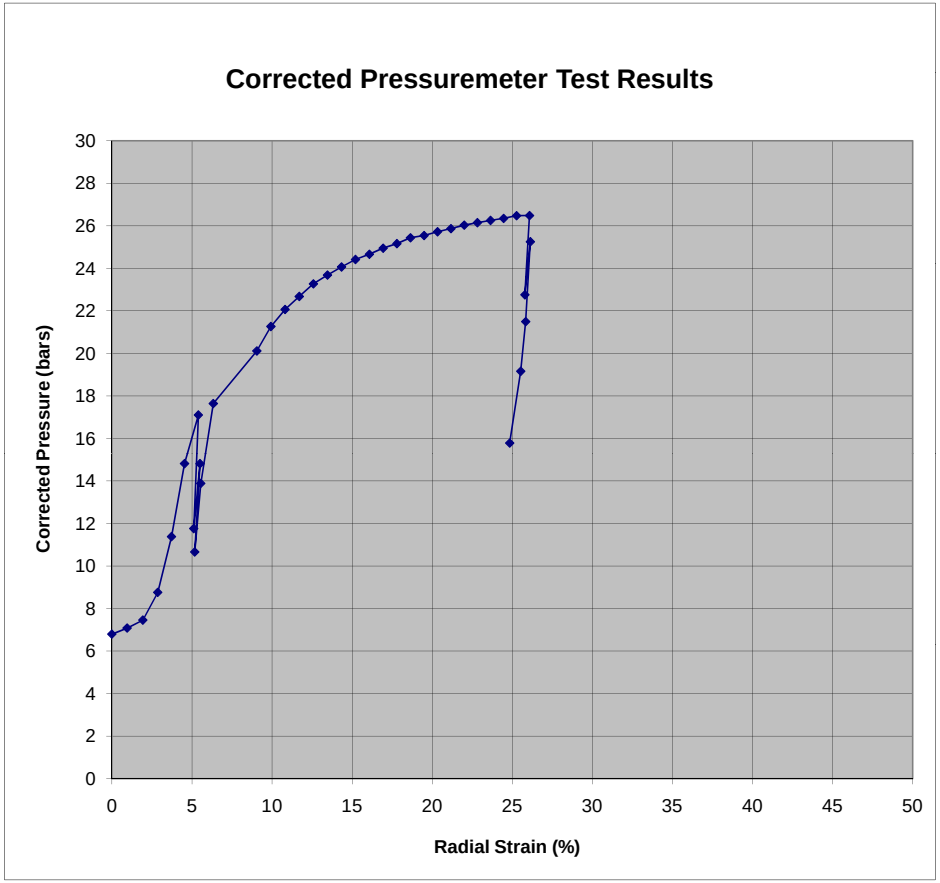


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-58
LOCATION:	Wanchese, NC	TEST #:	18
IN-SITU SOIL TESTING, L.C.		DEPTH:	180 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/8/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
6.80	-2	0.00	
7.08	38	0.95	
7.45	77	1.93	
8.76	114	2.86	Eo1
11.38	149	3.72	
14.82	183	4.54	
17.10	218	5.40	Eo2
11.76	206	5.11	Er1
14.81	223	5.50	Er2
10.66	209	5.17	Er3
13.88	224	5.55	Er4
17.64	257	6.33	
20.12	372	9.05	
21.27	410	9.93	
22.07	449	10.81	
22.68	487	11.70	
23.27	526	12.58	
23.69	565	13.46	
24.07	605	14.34	
24.42	644	15.21	
24.66	683	16.08	
24.95	723	16.94	
25.17	763	17.79	
25.44	802	18.64	
25.55	842	19.49	
25.72	881	20.33	
25.87	921	21.17	
26.04	961	22.00	
26.15	1001	22.82	
26.26	1040	23.64	
26.35	1080	24.46	
26.48	1120	25.27	
26.49	1160	26.07	Eu1
22.76	1146	25.78	Eu2
25.26	1162	26.12	Eu3
21.50	1148	25.83	Eu4
19.16	1133	25.52	
15.78	1099	24.84	

Interpreted Pressuremeter Parameters		
P_o	7.6	bar
P_L	28.0	bar
P_L^*	20.4	bar
E_o	456	bar
E_{r1}	1087	bar
E_{r2}	1209	bar
E_o/P_L^*	22.4	
E_{u1}	2154	bar
E_{r3}	1240	bar
E_{u2}	2180	bar



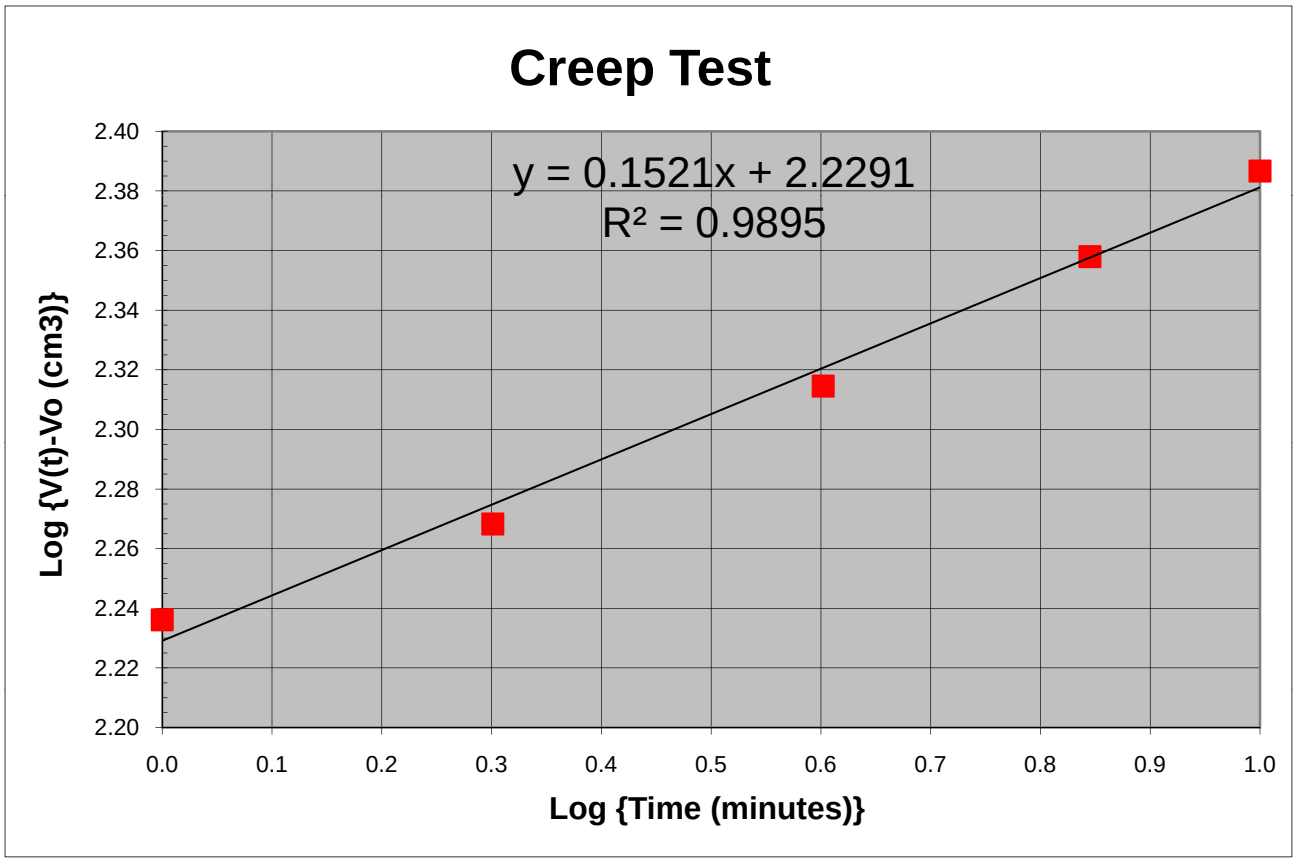
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-58
Test Depth: 180 feet

Holding Gauge Pressure =	11.90	bars
Corrected Pressure =	17.64	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.80	cm
Initial Borehole Volume, Vo =	2088	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	292.08	2259.79	172.25	2.236
2	0.301	305.30	2273.01	185.47	2.268
4	0.602	326.15	2293.86	206.32	2.315
7	0.845	347.85	2315.56	228.02	2.358
10	1.000	363.43	2331.14	243.60	2.387

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1521

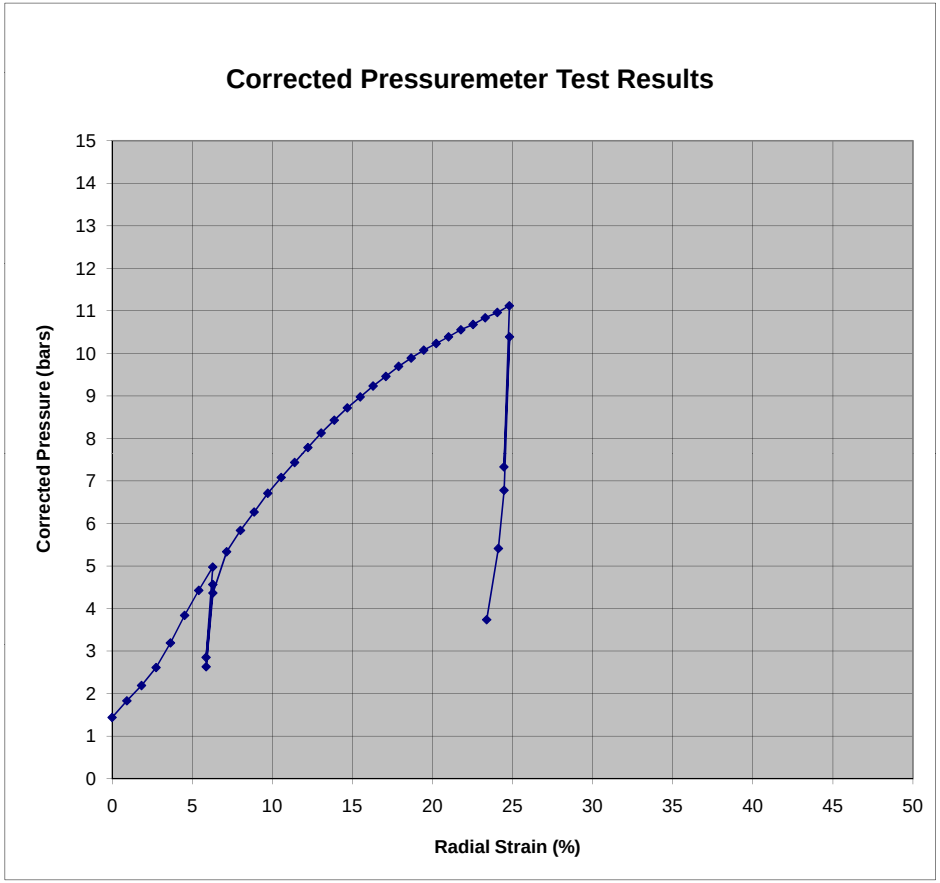


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	1
IN-SITU SOIL	TESTING, L.C.	DEPTH:	11.8 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/2/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.44	0	0.00	
1.83	40	0.92	
2.19	79	1.84	
2.61	119	2.74	
3.19	159	3.64	Eo1
3.84	198	4.53	
4.43	238	5.41	
4.98	277	6.28	Eo2
2.85	258	5.86	Er1
4.57	277	6.29	Er2
2.63	258	5.87	Er3
4.37	278	6.29	Er4
5.34	317	7.15	
5.84	356	8.01	
6.27	396	8.87	
6.71	436	9.72	
7.08	476	10.56	
7.44	515	11.40	
7.79	555	12.23	
8.13	595	13.05	
8.43	634	13.87	
8.72	674	14.68	
8.98	714	15.49	
9.23	754	16.30	
9.46	794	17.09	
9.70	833	17.89	
9.89	873	18.67	
10.08	913	19.46	
10.23	953	20.23	
10.39	993	21.01	
10.56	1033	21.77	
10.68	1073	22.54	
10.84	1113	23.30	
10.96	1153	24.05	
11.12	1192	24.80	Eu1
7.33	1174	24.46	Eu2
10.39	1193	24.81	Eu3
6.78	1175	24.47	Eu4
5.41	1156	24.12	
3.74	1117	23.39	

Interpreted Pressuremeter Parameters		
P_o	N/A	bar
P_L	13.0	bar
P_l^*	#VALUE!	bar
E_o	94	bar
E_{r1}	571	bar
E_{r2}	579	bar
E_o/P_L^*	#VALUE!	
E_{u1}	1853	bar
E_{r3}	1451	bar
E_{u2}	1756	bar



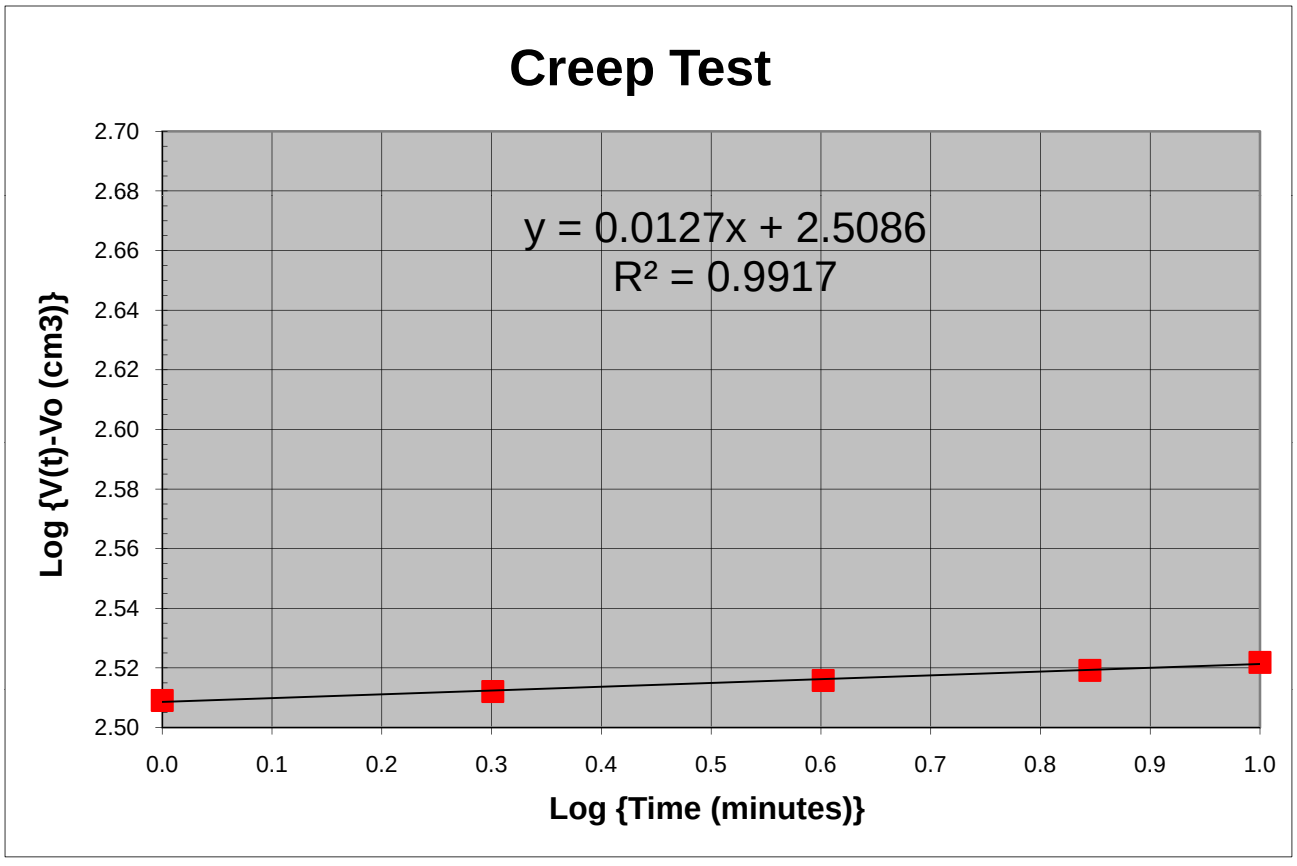
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 11.8 feet

Holding Gauge Pressure =	4.12	bars
Corrected Pressure =	5.34	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.69	cm
Initial Borehole Volume, Vo =	2139	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	322.90	2461.71	322.90	2.509
2	0.301	325.13	2463.94	325.13	2.512
4	0.602	327.95	2466.76	327.95	2.516
7	0.845	330.50	2469.31	330.50	2.519
10	1.000	332.56	2471.37	332.56	2.522

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0127

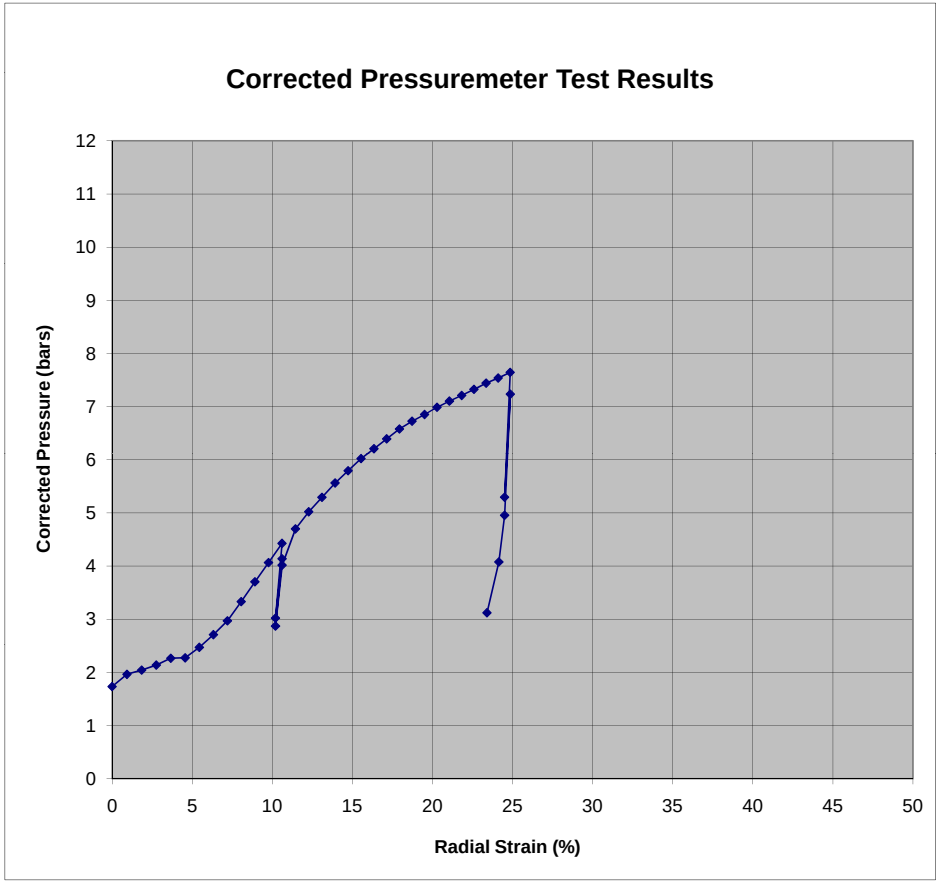


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	2
IN-SITU SOIL TESTING, L.C.		DEPTH:	23.6 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/2/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.73	0	0.00	
1.96	40	0.93	
2.04	80	1.85	
2.14	120	2.76	
2.27	160	3.66	
2.27	199	4.56	
2.47	239	5.45	
2.71	279	6.33	
2.97	319	7.20	
3.33	359	8.06	Eo1
3.70	398	8.92	
4.07	438	9.76	
4.43	478	10.61	Eo2
3.02	459	10.20	Er1
4.14	478	10.61	Er2
2.87	459	10.20	Er3
4.02	478	10.61	Er4
4.70	518	11.44	
5.02	557	12.28	
5.29	597	13.10	
5.56	637	13.92	
5.79	677	14.73	
6.02	717	15.54	
6.21	756	16.35	
6.39	796	17.15	
6.58	836	17.94	
6.73	876	18.73	
6.85	916	19.51	
6.99	956	20.29	
7.10	996	21.06	
7.21	1036	21.83	
7.33	1076	22.59	
7.44	1115	23.35	
7.54	1155	24.10	
7.64	1195	24.85	Eu1
5.30	1176	24.50	Eu2
7.23	1196	24.86	Eu3
4.96	1177	24.51	Eu4
4.08	1158	24.15	
3.12	1118	23.41	

Interpreted Pressuremeter Parameters		
P_o	2.3	bar
P_L	10.0	bar
P_L^*	7.7	bar
E_o	63	bar
E_{r1}	397	bar
E_{r2}	409	bar
E_o/P_L^*	8.1	
E_{u1}	1104	bar
E_{r3}	897	bar
E_{u2}	1070	bar



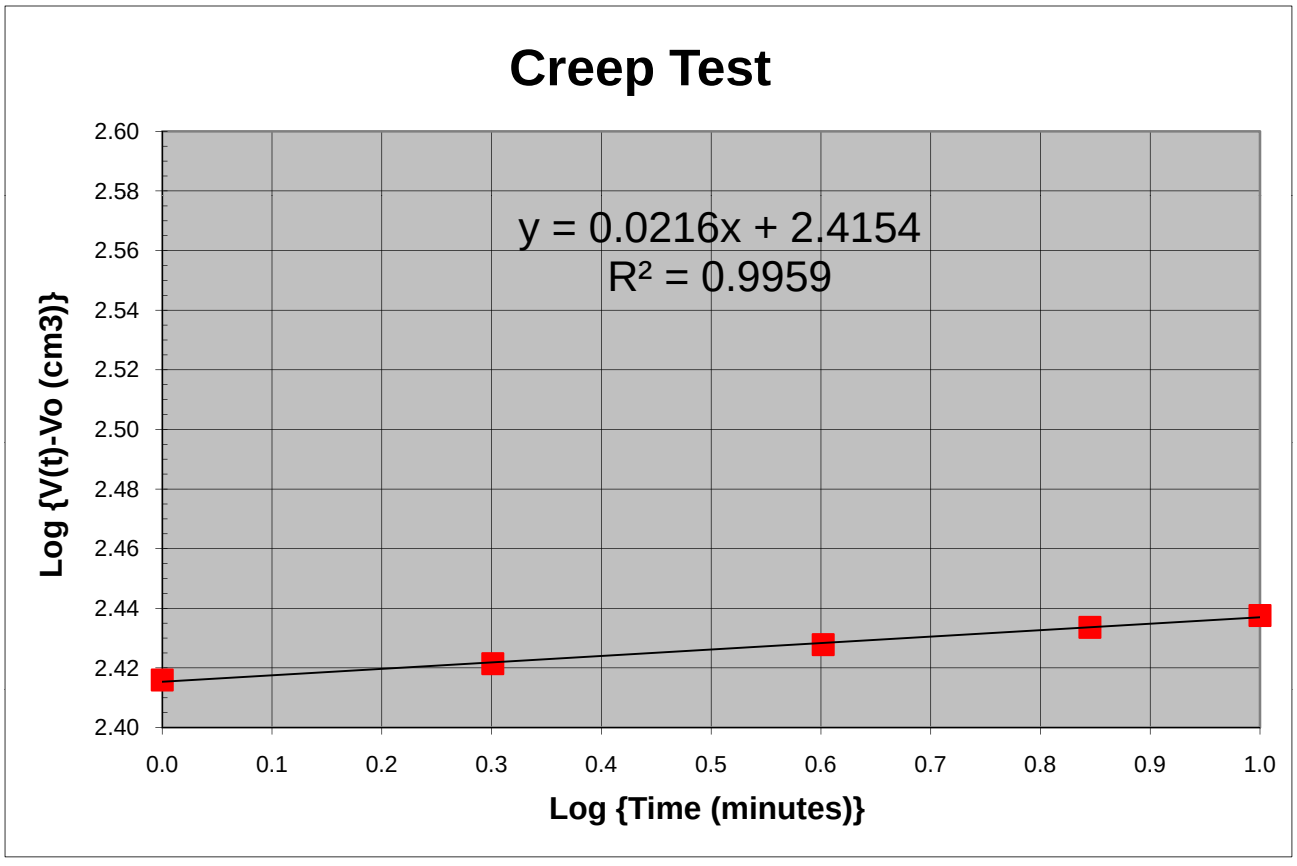
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 23.6 feet

Holding Gauge Pressure =	3.17	bars
Corrected Pressure =	4.70	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2403	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	524.95	2663.76	260.59	2.416
2	0.301	528.23	2667.04	263.87	2.421
4	0.602	532.15	2670.96	267.79	2.428
7	0.845	535.75	2674.56	271.39	2.434
10	1.000	538.24	2677.05	273.88	2.438

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0216

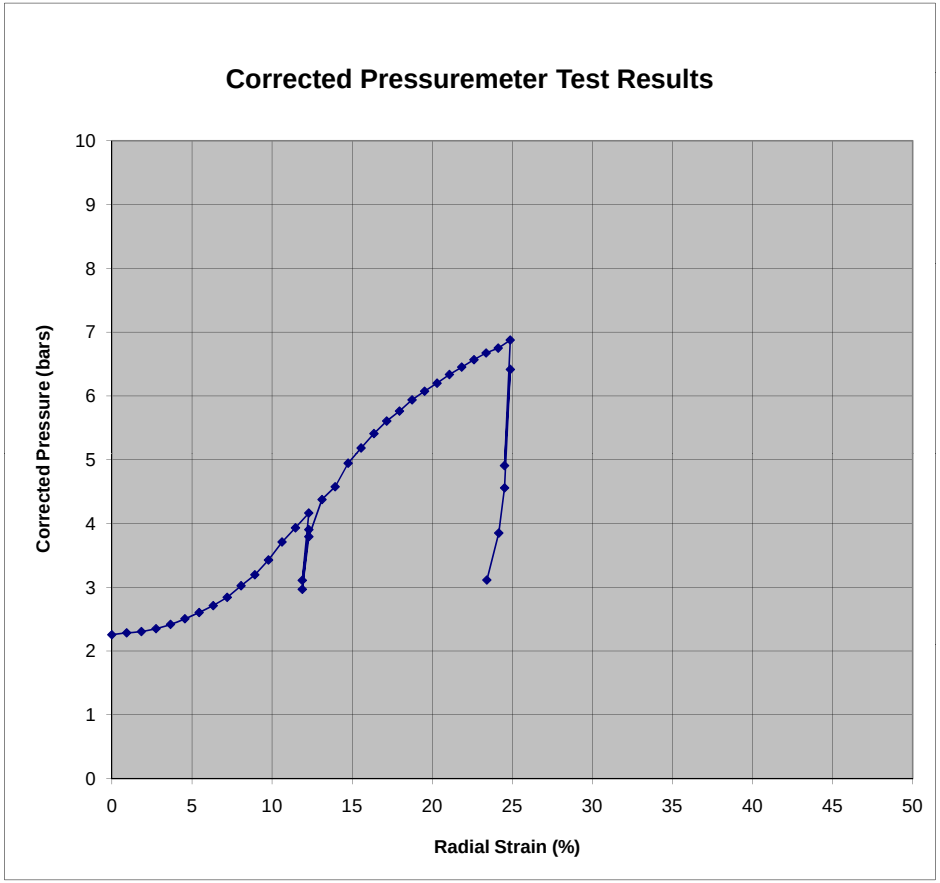


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	3
IN-SITU SOIL TESTING, L.C.		DEPTH:	32.4 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/2/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.26	0	0.00	
2.29	40	0.92	
2.31	80	1.85	
2.35	120	2.76	
2.42	160	3.66	
2.51	200	4.56	
2.60	239	5.45	
2.71	279	6.33	
2.84	319	7.20	
3.02	359	8.07	
3.20	399	8.93	
3.43	439	9.78	Eo1
3.71	479	10.62	
3.93	518	11.46	
4.16	558	12.29	Eo2
3.11	539	11.89	Er1
3.90	558	12.30	Er2
2.97	539	11.89	Er3
3.79	558	12.30	Er4
4.38	598	13.12	
4.58	638	13.94	
4.95	678	14.75	
5.18	717	15.56	
5.41	757	16.36	
5.61	797	17.16	
5.76	837	17.95	
5.94	877	18.74	
6.07	917	19.52	
6.20	957	20.30	
6.34	997	21.08	
6.45	1036	21.84	
6.57	1076	22.61	
6.67	1116	23.37	
6.75	1156	24.12	
6.88	1196	24.87	Eu1
4.91	1177	24.51	Eu2
6.42	1196	24.88	Eu3
4.56	1177	24.52	Eu4
3.85	1158	24.16	
3.11	1119	23.41	

Interpreted Pressuremeter Parameters		
P_o	2.4	bar
P_L	9.0	bar
P_l^*	6.6	bar
E_o	43	bar
E_{r1}	289	bar
E_{r2}	301	bar
E_o/P_L^*	6.6	
E_{u1}	916	bar
E_{r3}	690	bar
E_{u2}	863	bar



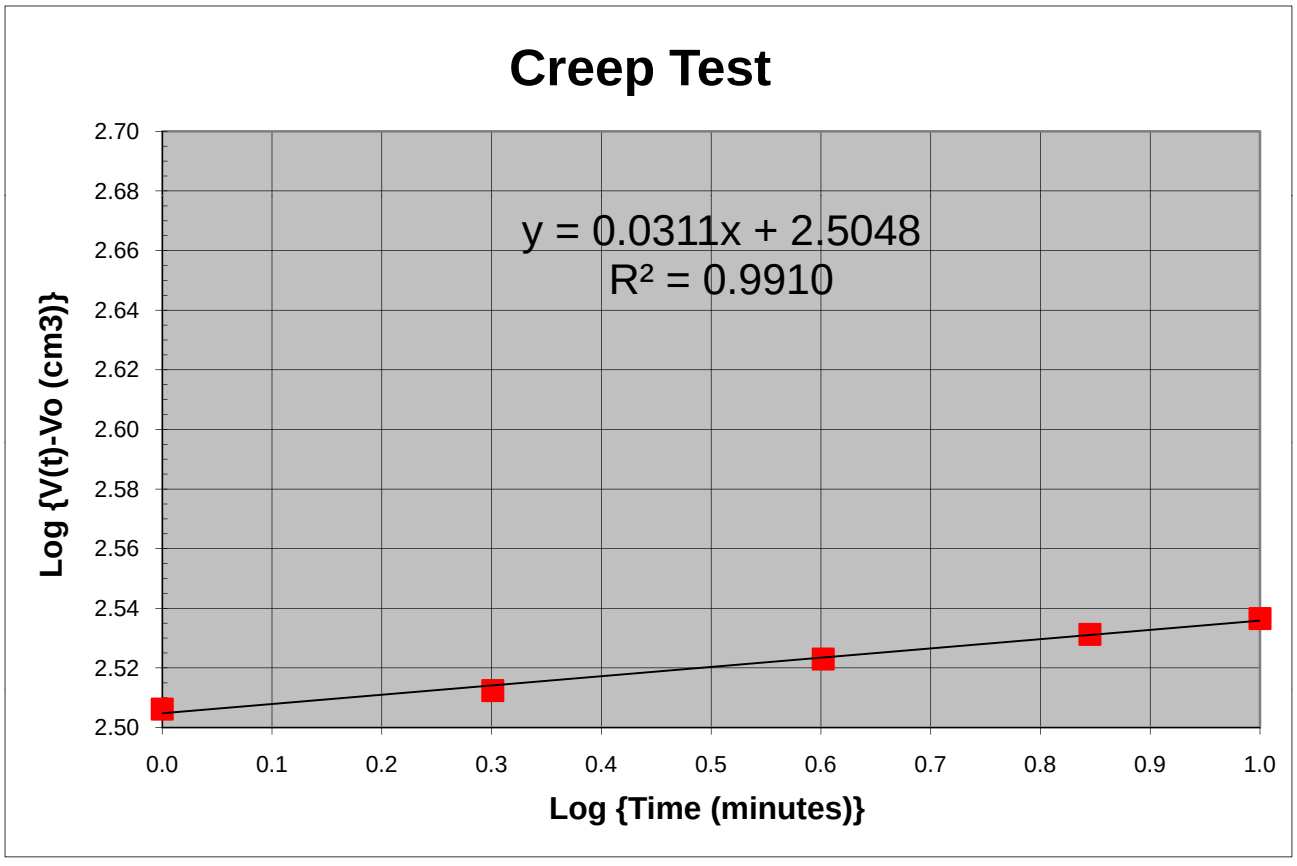
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 32.4 feet

Holding Gauge Pressure =	2.60	bars
Corrected Pressure =	4.38	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2426	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	607.85	2746.66	320.77	2.506
2	0.301	612.48	2751.29	325.40	2.512
4	0.602	620.50	2759.31	333.42	2.523
7	0.845	626.90	2765.71	339.82	2.531
10	1.000	631.09	2769.90	344.01	2.537

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0311

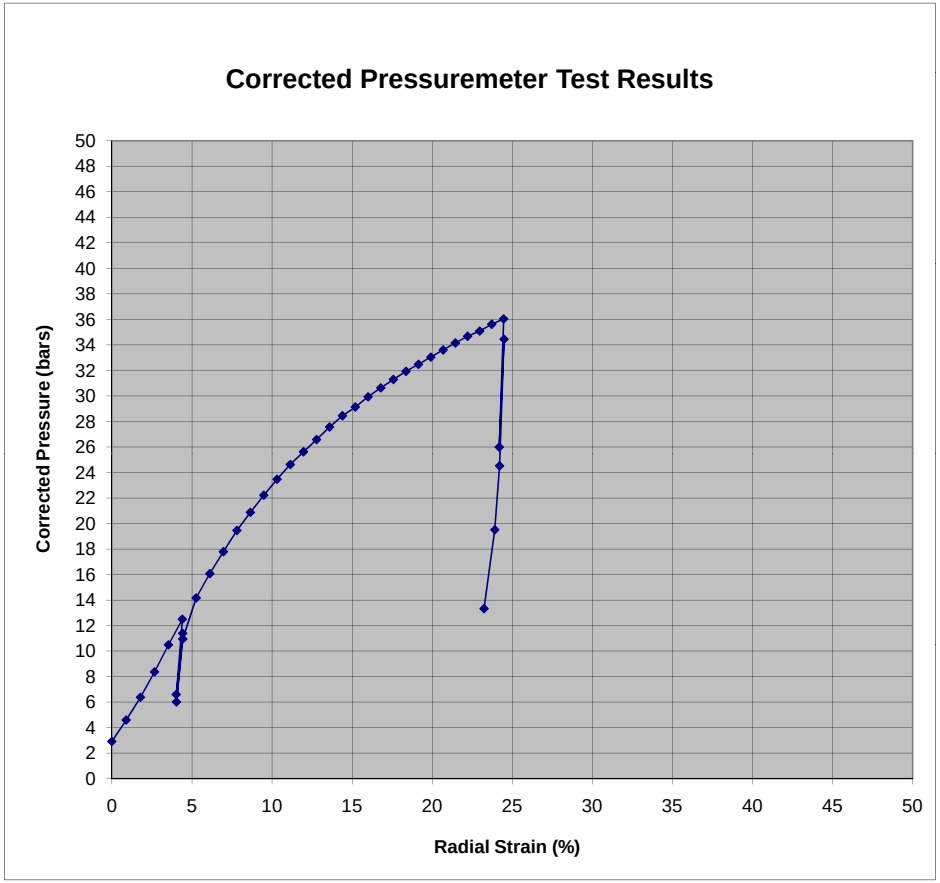


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	4
IN-SITU SOIL TESTING, L.C.		DEPTH:	49.3 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/13/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
2.92	0	0.00	
4.60	38	0.89	
6.38	77	1.79	Eo1
8.37	116	2.67	
10.49	154	3.54	
12.50	192	4.40	Eo2
6.61	175	4.02	Er1
11.39	193	4.42	Er2
6.02	176	4.03	Er3
10.95	194	4.43	Er4
14.17	231	5.26	
16.08	270	6.12	
17.80	308	6.97	
19.46	347	7.81	
20.88	386	8.65	
22.22	425	9.48	
23.47	464	10.31	
24.63	503	11.14	
25.63	542	11.96	
26.58	582	12.78	
27.57	621	13.59	
28.45	660	14.40	
29.14	700	15.20	
29.93	739	16.00	
30.64	778	16.79	
31.30	818	17.58	
31.93	858	18.36	
32.48	897	19.14	
33.04	937	19.91	
33.61	976	20.68	
34.16	1016	21.45	
34.68	1055	22.21	
35.09	1095	22.96	
35.62	1135	23.71	
36.04	1174	24.46	Eu1
25.99	1159	24.18	Eu2
34.45	1176	24.48	Eu3
24.52	1161	24.20	Eu4
19.51	1145	23.91	
13.33	1109	23.24	

Interpreted Pressuremeter Parameters		
P_o	N/A	bar
P_L	44.0	bar
P_L^*	#VALUE!	bar
E_o	321	bar
E_{r1}	1657	bar
E_{r2}	1734	bar
E_o/P_L^*	#VALUE!	
E_{u1}	5939	bar
E_{r3}	4624	bar
E_{u2}	5847	bar



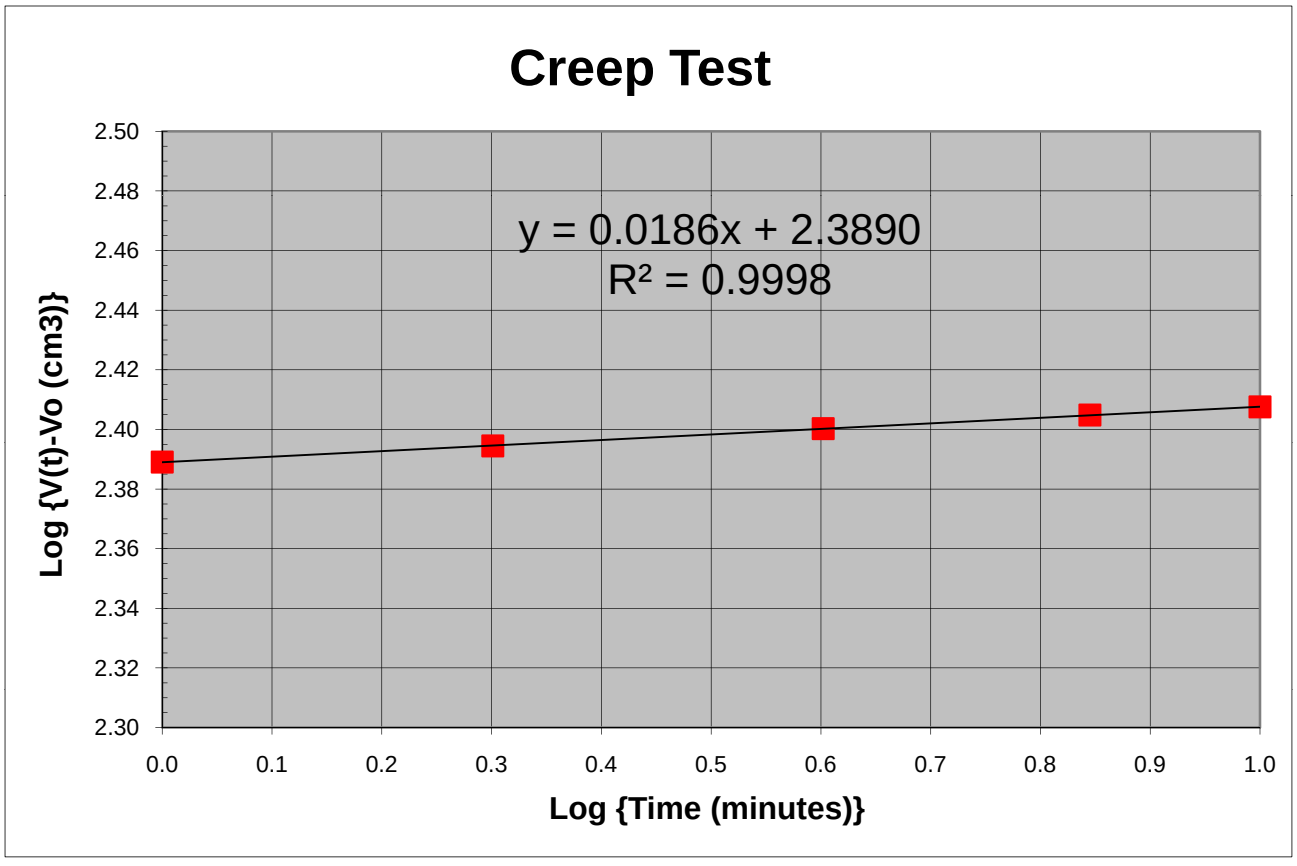
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 49.3 feet

Holding Gauge Pressure =	11.70	bars
Corrected Pressure =	14.17	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.69	cm
Initial Borehole Volume, Vo =	2139	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	244.94	2383.75	244.94	2.389
2	0.301	248.00	2386.81	248.00	2.394
4	0.602	251.35	2390.16	251.35	2.400
7	0.845	254.01	2392.82	254.01	2.405
10	1.000	255.60	2394.41	255.60	2.408

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0186

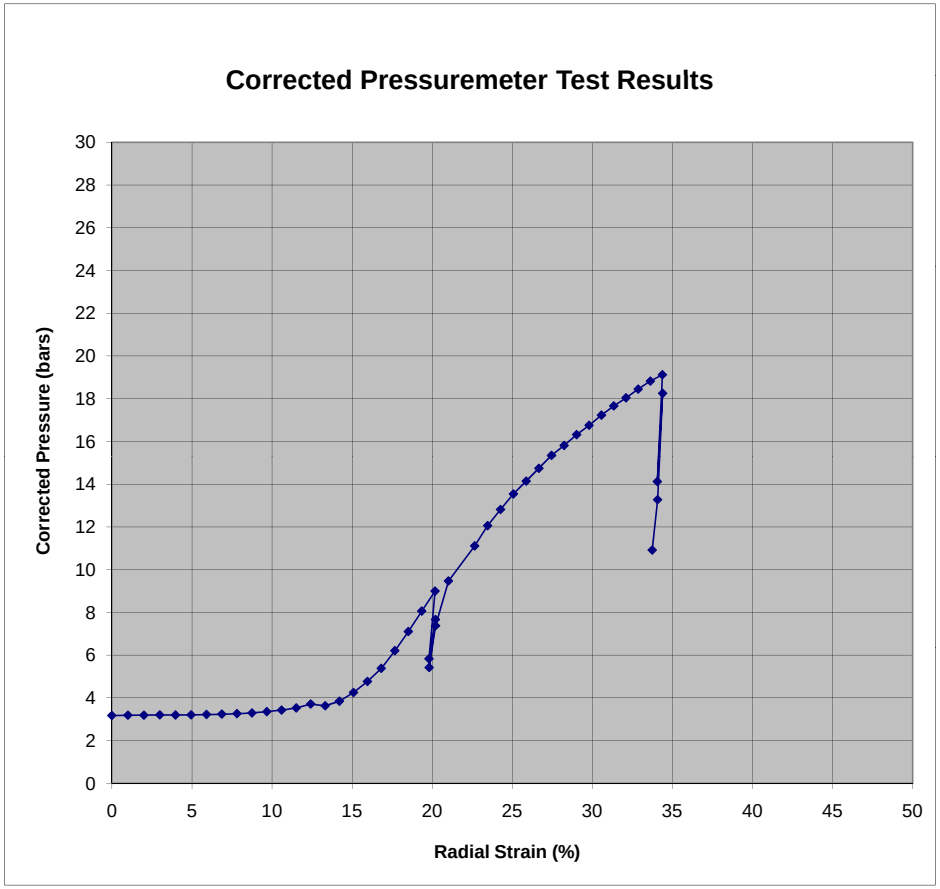


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	5
IN-SITU SOIL TESTING, L.C.		DEPTH:	57.8 ft
ENGINEER:	Roger A. Failmezger, P.E., F. ASCE	TEST DATE:	6/13/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.17	0	0.00	
3.18	40	1.00	
3.19	80	2.00	
3.20	120	2.99	
3.20	160	3.98	
3.20	200	4.95	
3.22	239	5.91	
3.24	279	6.87	
3.26	319	7.81	
3.29	359	8.75	
3.35	399	9.68	
3.42	439	10.60	
3.53	479	11.51	
3.71	519	12.42	
3.63	559	13.32	
3.84	599	14.21	
4.25	639	15.09	
4.76	678	15.96	
5.38	717	16.82	
6.21	757	17.67	Eo1
7.10	796	18.51	
8.06	835	19.35	
8.99	874	20.18	Eo2
5.83	856	19.80	Er1
7.66	875	20.20	Er2
5.42	857	19.81	Er3
7.37	876	20.21	Er4
9.47	914	21.01	
11.11	992	22.65	
12.06	1032	23.46	
12.81	1071	24.27	
13.54	1110	25.07	
14.14	1150	25.87	
14.74	1189	26.66	
15.35	1229	27.45	
15.81	1268	28.24	
16.32	1308	29.02	
16.76	1347	29.80	
17.23	1387	30.57	
17.66	1426	31.34	
18.04	1466	32.10	
18.45	1506	32.86	
18.83	1545	33.62	
19.12	1585	34.37	Eu1
14.12	1568	34.06	Eu2
18.25	1586	34.39	Eu3
13.27	1569	34.07	Eu4
10.92	1552	33.74	
7.95	1514	33.02	

Interpreted Pressuremeter Parameters		
P_o	3.3	bar
P_L	28.0	bar
P_L^*	24.7	bar
E_o	176	bar
E_{r1}	726	bar
E_{r2}	787	bar
E_o/P_L^*	7.1	
E_{u1}	2824	bar
E_{r3}	2229	bar
E_{u2}	2811	bar



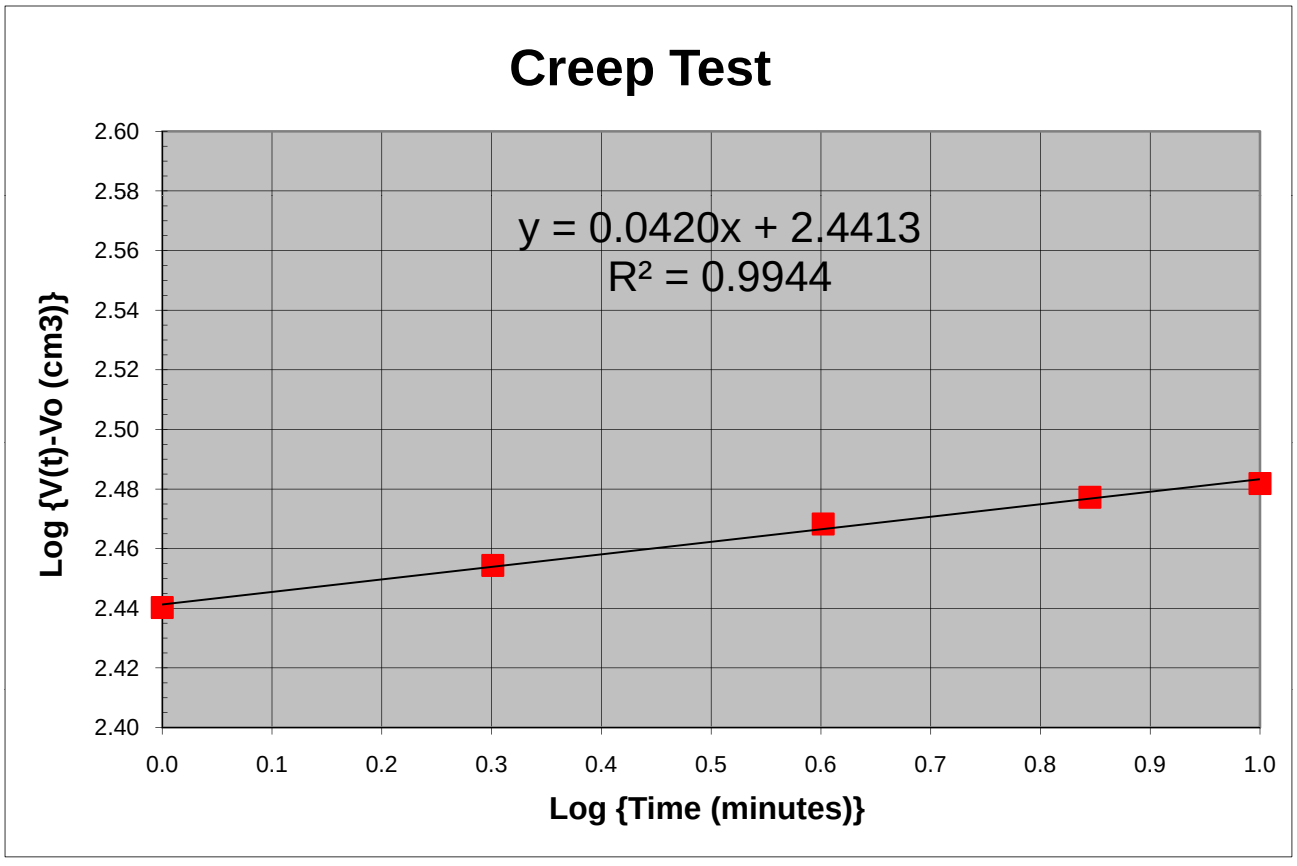
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 57.8 feet

Holding Gauge Pressure =	6.92	bars
Corrected Pressure =	9.47	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	4.26	cm
Initial Borehole Volume, Vo =	2625	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	932.84	2900.55	275.58	2.440
2	0.301	941.95	2909.66	284.69	2.454
4	0.602	951.23	2918.94	293.97	2.468
7	0.845	957.33	2925.04	300.07	2.477
10	1.000	960.54	2928.25	303.28	2.482

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0420

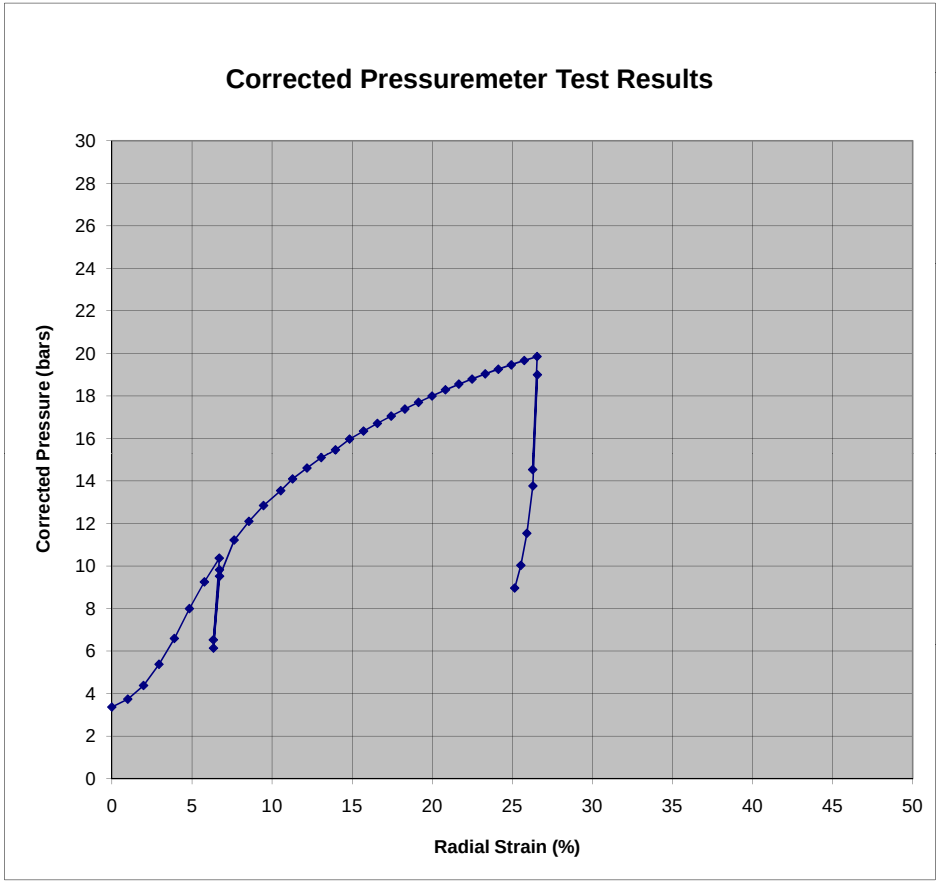


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	6
IN-SITU SOIL TESTING, L.C.		DEPTH:	67.9 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	14/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.36	0	0.00	
3.74	39	0.99	
4.38	79	1.98	
5.38	118	2.95	Eo1
6.59	156	3.90	
7.99	195	4.84	
9.25	234	5.78	
10.37	273	6.71	Eo2
6.53	257	6.34	Er1
9.82	273	6.72	Er2
6.14	258	6.35	Er3
9.52	274	6.73	Er4
11.22	312	7.64	
12.10	351	8.56	
12.84	390	9.47	
13.55	437	10.54	
14.10	469	11.29	
14.61	509	12.18	
15.10	548	13.08	
15.46	588	13.96	
15.97	627	14.84	
16.35	667	15.71	
16.71	707	16.58	
17.05	746	17.44	
17.38	786	18.30	
17.70	826	19.15	
18.00	865	19.99	
18.29	905	20.83	
18.56	945	21.66	
18.79	985	22.49	
19.04	1024	23.31	
19.26	1064	24.13	
19.46	1104	24.94	
19.67	1144	25.75	
19.85	1184	26.55	Eu1
14.54	1170	26.27	Eu2
18.99	1184	26.57	Eu3
13.77	1170	26.29	Eu4
11.54	1152	25.91	
10.03	1133	25.54	
8.96	1114	25.15	

Interpreted Pressuremeter Parameters		
P_o	n/a	bar
P_L	23.5	bar
P_L^*	#VALUE!	bar
E_o	185	bar
E_{r1}	1220	bar
E_{r2}	1258	bar
E_o/P_L^*	#VALUE!	
E_{u1}	3225	bar
E_{r3}	2551	bar
E_{u2}	3147	bar



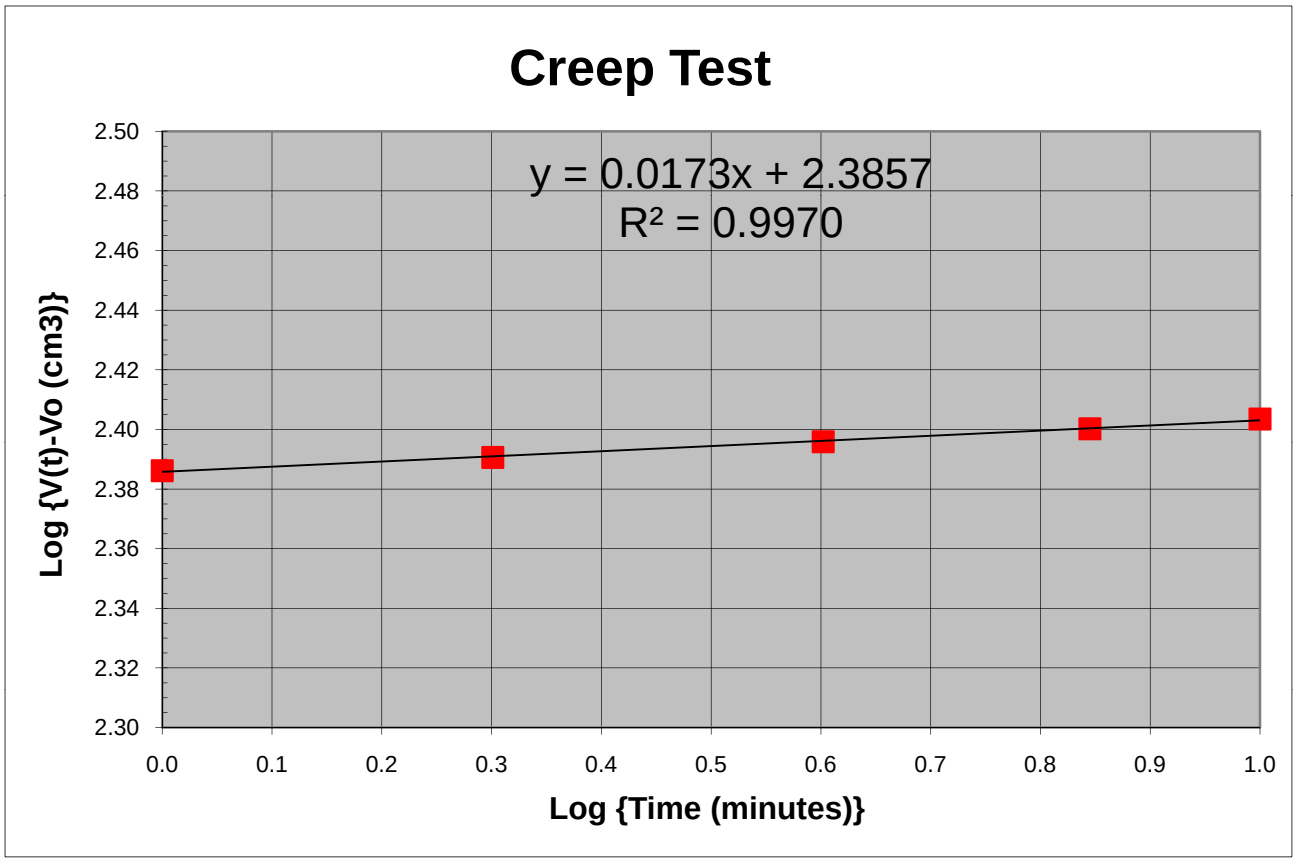
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 67.9 feet

Holding Gauge Pressure =	8.31	bars
Corrected Pressure =	11.22	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.76	cm
Initial Borehole Volume, Vo =	2047	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	322.80	2290.51	243.30	2.386
2	0.301	325.30	2293.01	245.80	2.391
4	0.602	328.30	2296.01	248.80	2.396
7	0.845	330.80	2298.51	251.30	2.400
10	1.000	332.70	2300.41	253.20	2.403

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0173

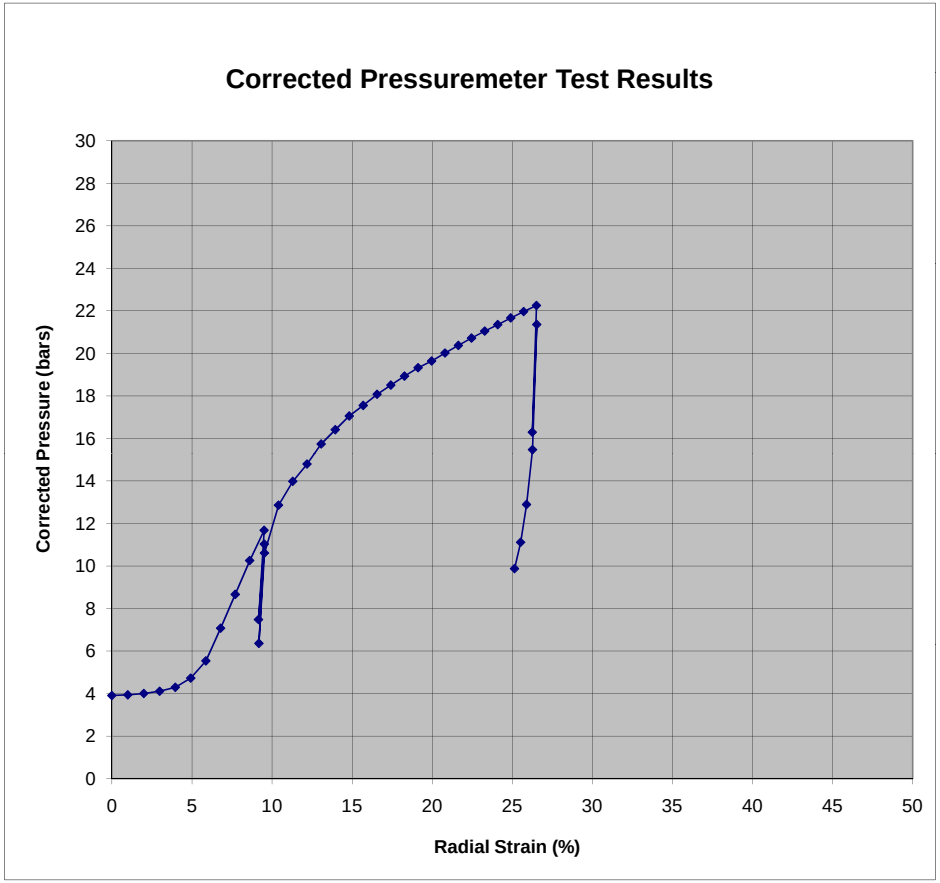


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	7
IN-SITU SOIL TESTING, L.C.		DEPTH:	78.1 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	14/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.91	0	0.00	
3.94	39	1.00	
4.00	79	2.00	
4.11	119	2.99	
4.30	159	3.96	
4.73	199	4.93	
5.54	238	5.87	
7.08	276	6.79	Eo1
8.67	315	7.70	
10.26	353	8.61	
11.68	392	9.51	Eo2
7.48	377	9.15	Er1
11.03	392	9.52	Er2
6.36	378	9.18	Er3
10.61	393	9.53	Er4
12.86	431	10.40	
13.98	470	11.30	
14.80	509	12.19	
15.74	548	13.07	
16.41	587	13.95	
17.06	627	14.82	
17.55	666	15.70	
18.08	706	16.56	
18.51	745	17.42	
18.93	785	18.27	
19.33	824	19.12	
19.64	864	19.96	
20.02	904	20.80	
20.37	943	21.63	
20.72	983	22.46	
21.05	1023	23.28	
21.35	1062	24.09	
21.67	1102	24.90	
21.96	1142	25.71	
22.25	1182	26.51	Eu1
16.29	1169	26.25	Eu2
21.36	1182	26.53	Eu3
15.47	1169	26.26	Eu4
12.89	1151	25.89	
11.12	1133	25.52	
9.88	1114	25.14	

Interpreted Pressuremeter Parameters		
P_o	4.2	bar
P_L	29.0	bar
P_L^*	24.8	bar
E_o	244	bar
E_{r1}	1411	bar
E_{r2}	1777	bar
E_o/P_L^*	9.8	
E_{u1}	3818	bar
E_{r3}	3048	bar
E_{u2}	3751	bar



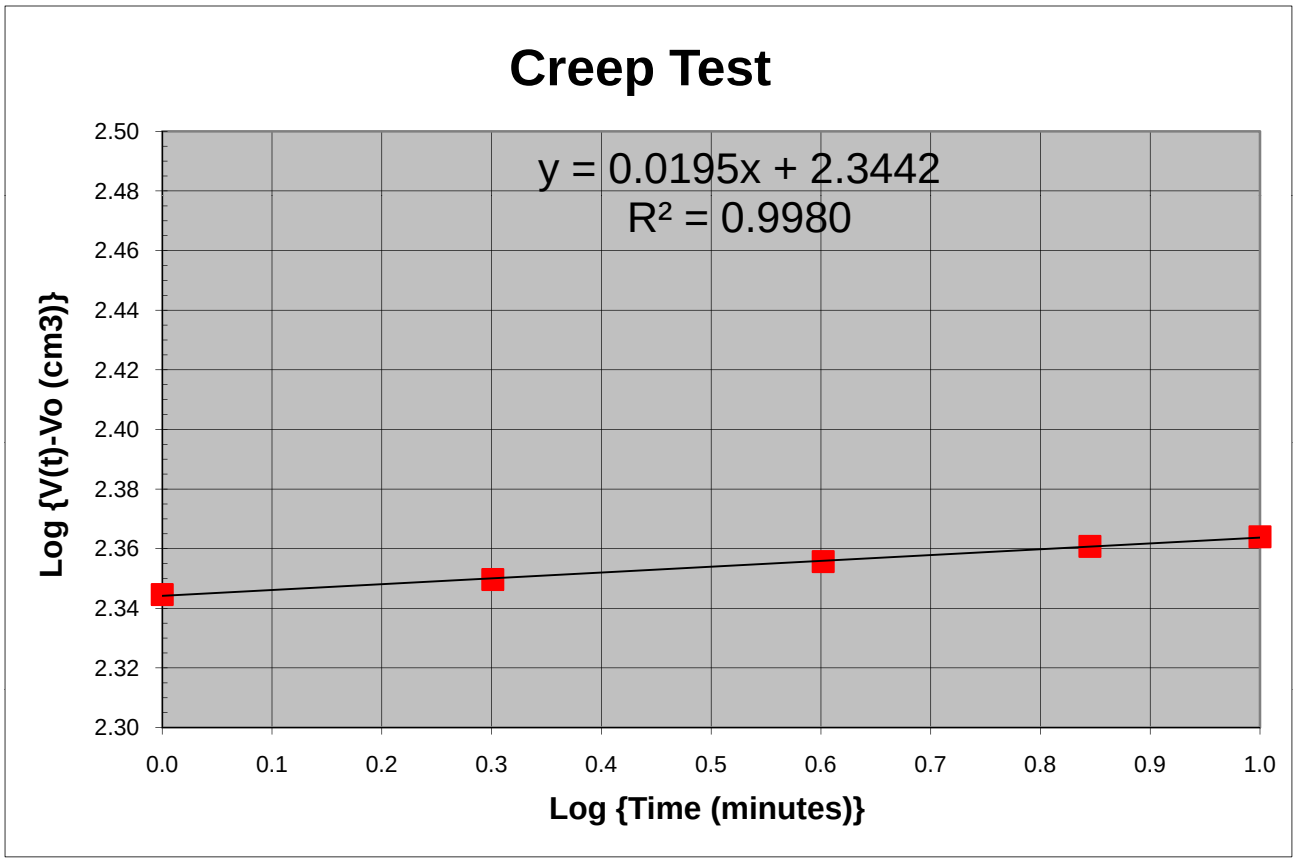
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 78.1 feet

Holding Gauge Pressure =	9.62	bars
Corrected Pressure =	12.86	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.89	cm
Initial Borehole Volume, Vo =	2190	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	443.50	2411.21	221.10	2.345
2	0.301	446.10	2413.81	223.70	2.350
4	0.602	449.20	2416.91	226.80	2.356
7	0.845	451.90	2419.61	229.50	2.361
10	1.000	453.60	2421.31	231.20	2.364

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0195

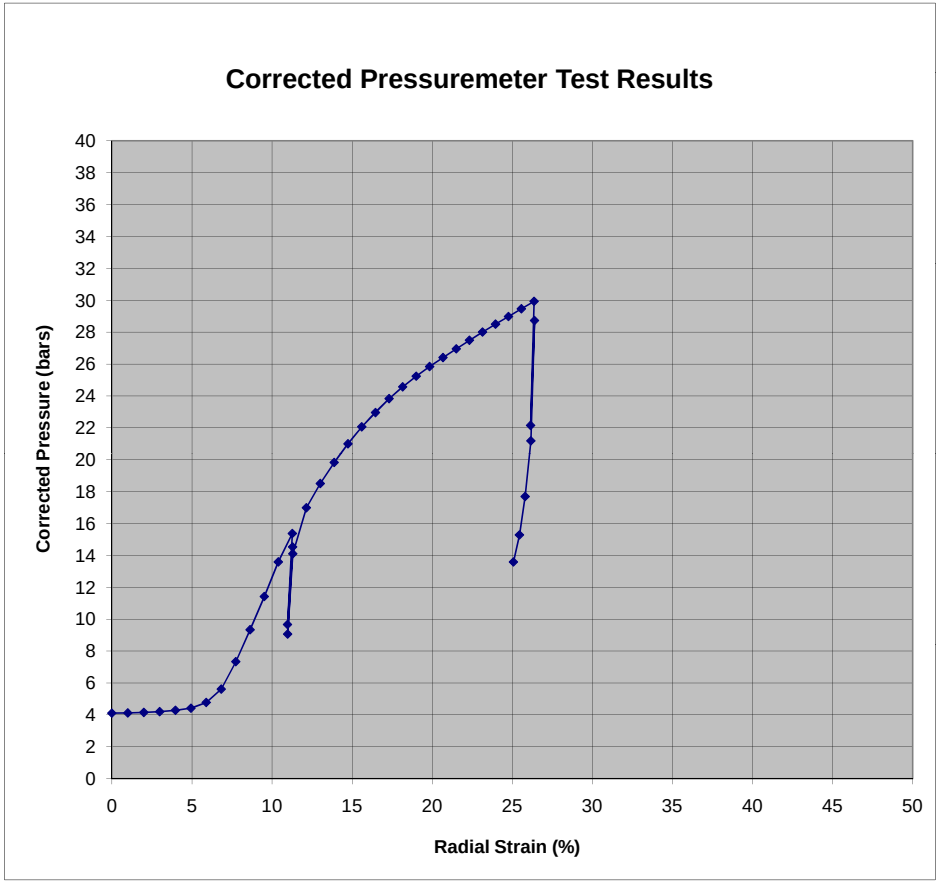


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	8
IN-SITU SOIL TESTING, L.C.		DEPTH:	86 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	14/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.11	0	0.00	
4.12	40	1.00	
4.15	79	2.00	
4.20	119	2.99	
4.29	159	3.97	
4.42	199	4.94	
4.78	239	5.89	
5.62	278	6.83	
7.34	316	7.74	Eo1
9.34	354	8.63	
11.42	392	9.52	
13.59	430	10.39	
15.37	469	11.27	Eo2
9.67	455	10.97	Er1
14.53	469	11.29	Er2
9.07	456	10.98	Er3
14.10	470	11.30	Er4
16.99	507	12.14	
18.51	545	13.01	
19.83	584	13.88	
21.00	623	14.75	
22.06	662	15.61	
22.96	701	16.46	
23.83	740	17.31	
24.57	780	18.16	
25.24	819	19.00	
25.84	858	19.84	
26.41	898	20.68	
26.95	937	21.50	
27.49	977	22.33	
28.01	1016	23.15	
28.50	1056	23.96	
28.98	1095	24.77	
29.46	1135	25.57	
29.93	1174	26.37	Eu1
22.15	1163	26.15	Eu2
28.73	1176	26.39	Eu3
21.18	1164	26.16	Eu4
17.69	1147	25.81	
15.29	1129	25.45	
13.59	1110	25.07	

Interpreted Pressuremeter Parameters		
P_o	4.5	bar
P_L	39.0	bar
P_l^*	34.5	bar
E_o	332	bar
E_{r1}	2223	bar
E_{r2}	2320	bar
E_o/P_L^*	9.6	
E_{u1}	5943	bar
E_{r3}	4545	bar
E_{u2}	5630	bar



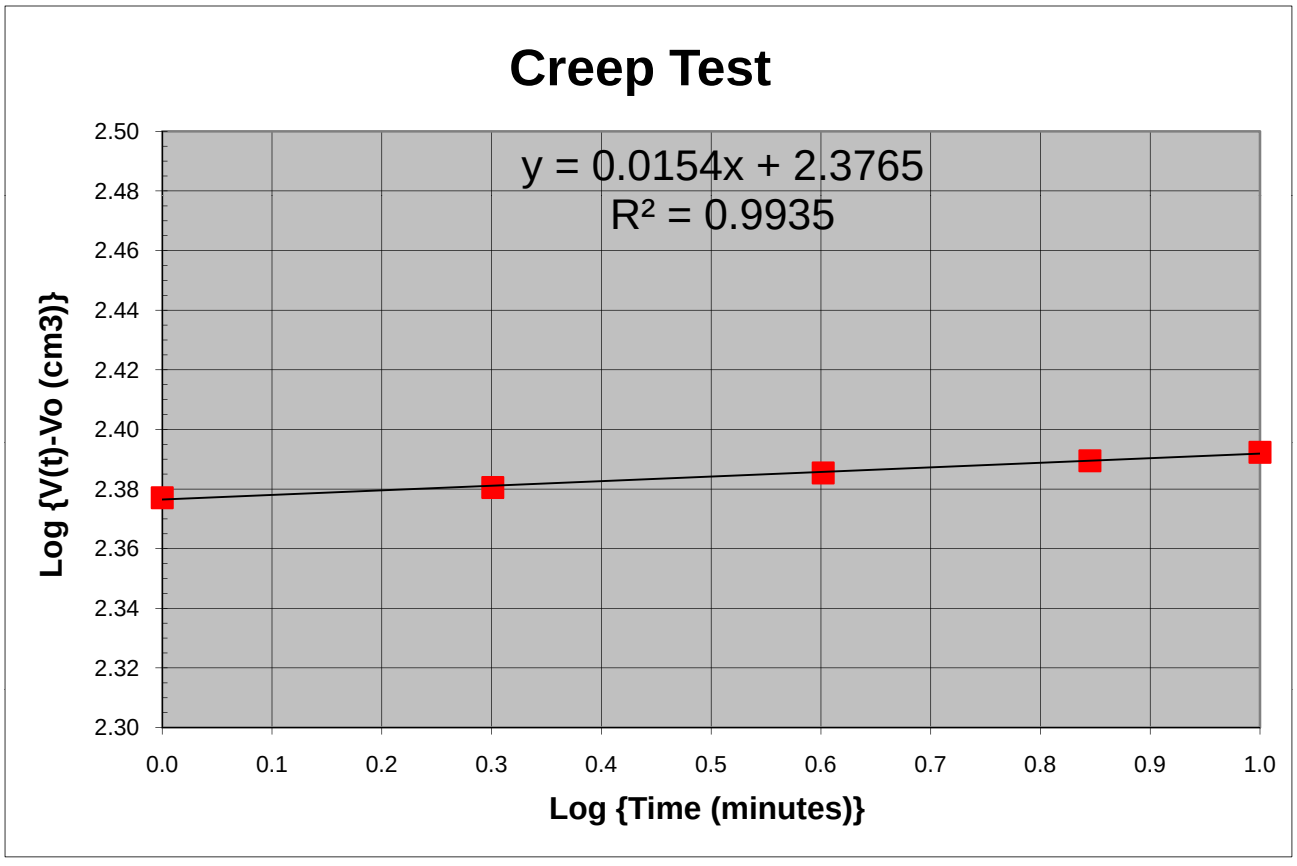
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 86 feet

Holding Gauge Pressure =	13.52	bars
Corrected Pressure =	16.99	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	523.40	2491.11	238.28	2.377
2	0.301	525.30	2493.01	240.18	2.381
4	0.602	528.00	2495.71	242.88	2.385
7	0.845	530.30	2498.01	245.18	2.389
10	1.000	531.90	2499.61	246.78	2.392

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0154

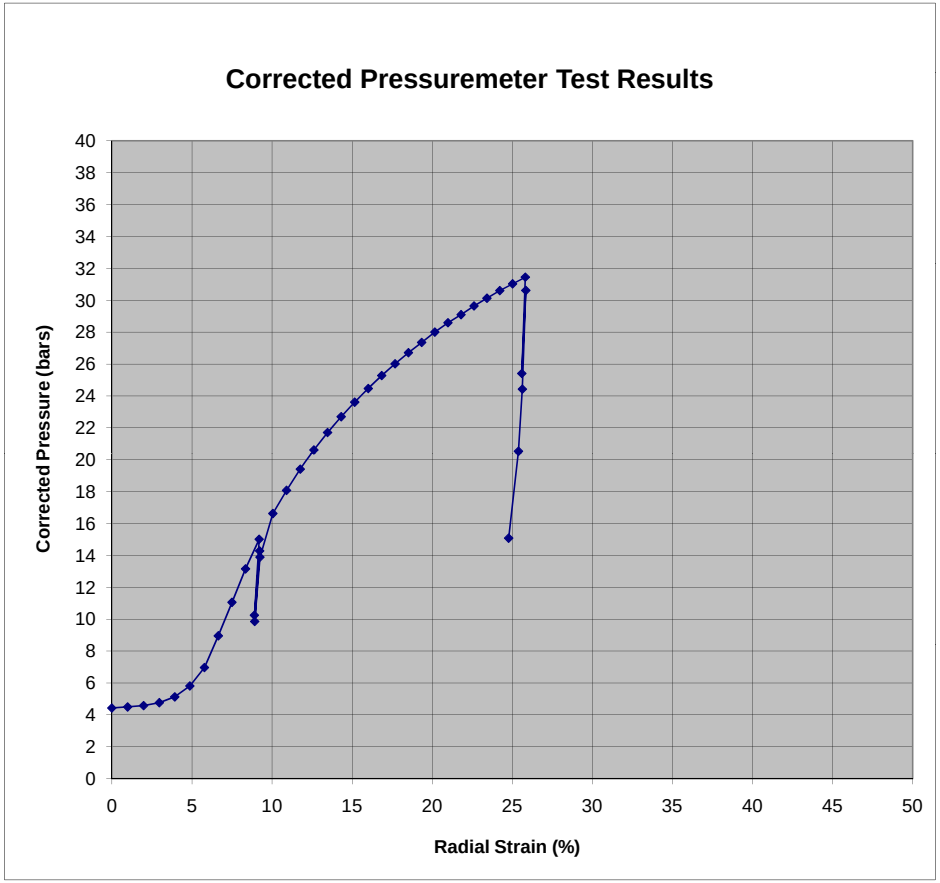


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	9
IN-SITU SOIL TESTING, L.C.		DEPTH:	96.0 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/14/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.43	-1	0.00	
4.50	39	0.99	
4.58	79	1.98	
4.77	118	2.96	
5.13	158	3.93	
5.81	196	4.87	
6.97	234	5.78	
8.96	270	6.64	Eo1
11.06	306	7.50	
13.16	342	8.34	
15.01	378	9.20	Eo2
10.25	366	8.90	Er1
14.28	380	9.23	Er2
9.86	367	8.92	Er3
13.89	381	9.25	Er4
16.63	415	10.05	
18.08	453	10.91	
19.41	490	11.76	
20.61	528	12.61	
21.70	566	13.47	
22.70	604	14.31	
23.61	642	15.16	
24.46	680	16.00	
25.28	719	16.84	
26.01	757	17.68	
26.71	796	18.51	
27.36	835	19.34	
28.00	873	20.16	
28.59	912	20.98	
29.09	951	21.80	
29.64	990	22.61	
30.13	1029	23.41	
30.60	1068	24.22	
31.03	1108	25.01	
31.44	1147	25.81	Eu1
25.41	1136	25.59	Eu2
30.61	1148	25.84	Eu3
24.43	1138	25.63	Eu4
20.53	1126	25.38	
15.08	1095	24.77	

Interpreted Pressuremeter Parameters		
P_o	4.8	bar
P_L	40.0	bar
P_L^*	35.2	bar
E_o	341	bar
E_{r1}	1769	bar
E_{r2}	1787	bar
E_o/P_L^*	9.7	
E_{u1}	4592	bar
E_{r3}	3456	bar
E_{u2}	4809	bar



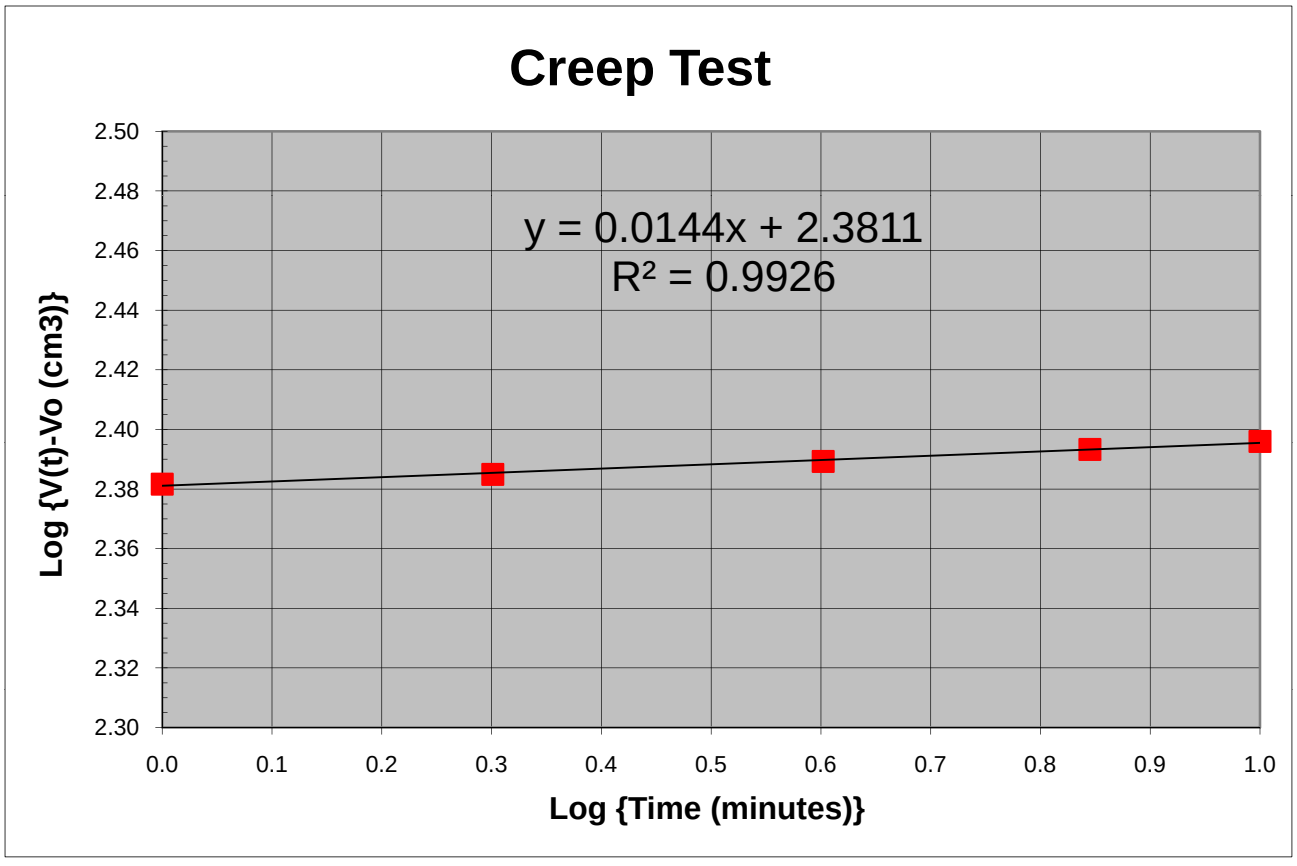
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 96 feet

Holding Gauge Pressure =	12.82	bars
Corrected Pressure =	16.63	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.87	cm
Initial Borehole Volume, Vo =	2169	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	442.49	2410.20	240.80	2.382
2	0.301	444.31	2412.02	242.62	2.385
4	0.602	446.75	2414.46	245.06	2.389
7	0.845	449.02	2416.73	247.33	2.393
10	1.000	450.55	2418.26	248.86	2.396

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0144

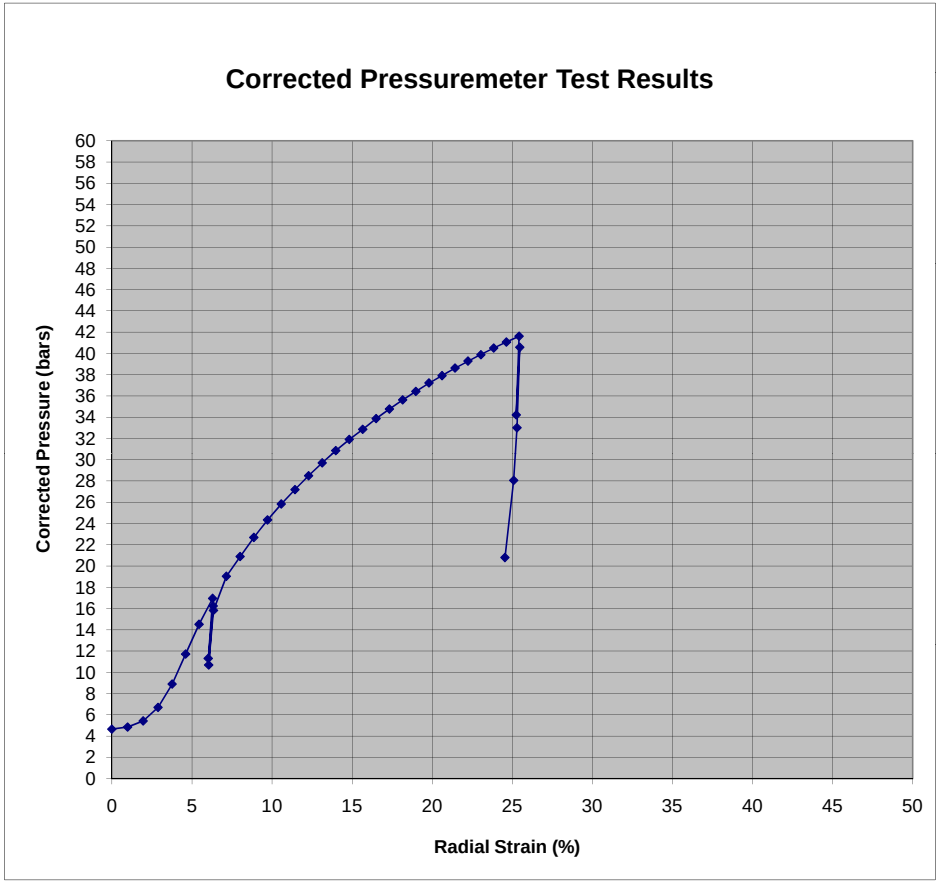


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	10
IN-SITU SOIL TESTING, L.C.		DEPTH:	105.6 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/14/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.66	-1	0.00	
4.85	39	0.98	
5.43	78	1.95	
6.70	115	2.89	
8.90	151	3.76	Eo1
11.72	185	4.61	
14.52	220	5.44	
16.96	255	6.29	Eo2
11.31	244	6.02	Er1
16.24	257	6.32	Er2
10.69	245	6.05	Er3
15.83	258	6.34	Er4
19.03	291	7.15	
20.89	328	8.01	
22.69	364	8.86	
24.33	401	9.72	
25.83	438	10.58	
27.19	476	11.43	
28.49	513	12.28	
29.70	551	13.13	
30.85	589	13.98	
31.90	627	14.82	
32.86	665	15.66	
33.86	703	16.50	
34.76	741	17.33	
35.63	779	18.16	
36.42	818	18.98	
37.22	856	19.80	
37.90	895	20.62	
38.62	934	21.43	
39.28	972	22.23	
39.87	1011	23.04	
40.50	1050	23.84	
41.06	1089	24.63	
41.61	1128	25.43	Eu1
34.21	1119	25.25	Eu2
40.57	1130	25.47	Eu3
33.00	1121	25.29	Eu4
28.05	1111	25.09	
20.80	1084	24.54	

Interpreted Pressuremeter Parameters		
P_o	5.0	bar
P_L	53.0	bar
P_L^*	48.0	bar
E_o	446	bar
E_{r1}	2262	bar
E_{r2}	2444	bar
E_o/P_L^*	9.3	
E_{u1}	6897	bar
E_{r3}	4835	bar
E_{u2}	7272	bar



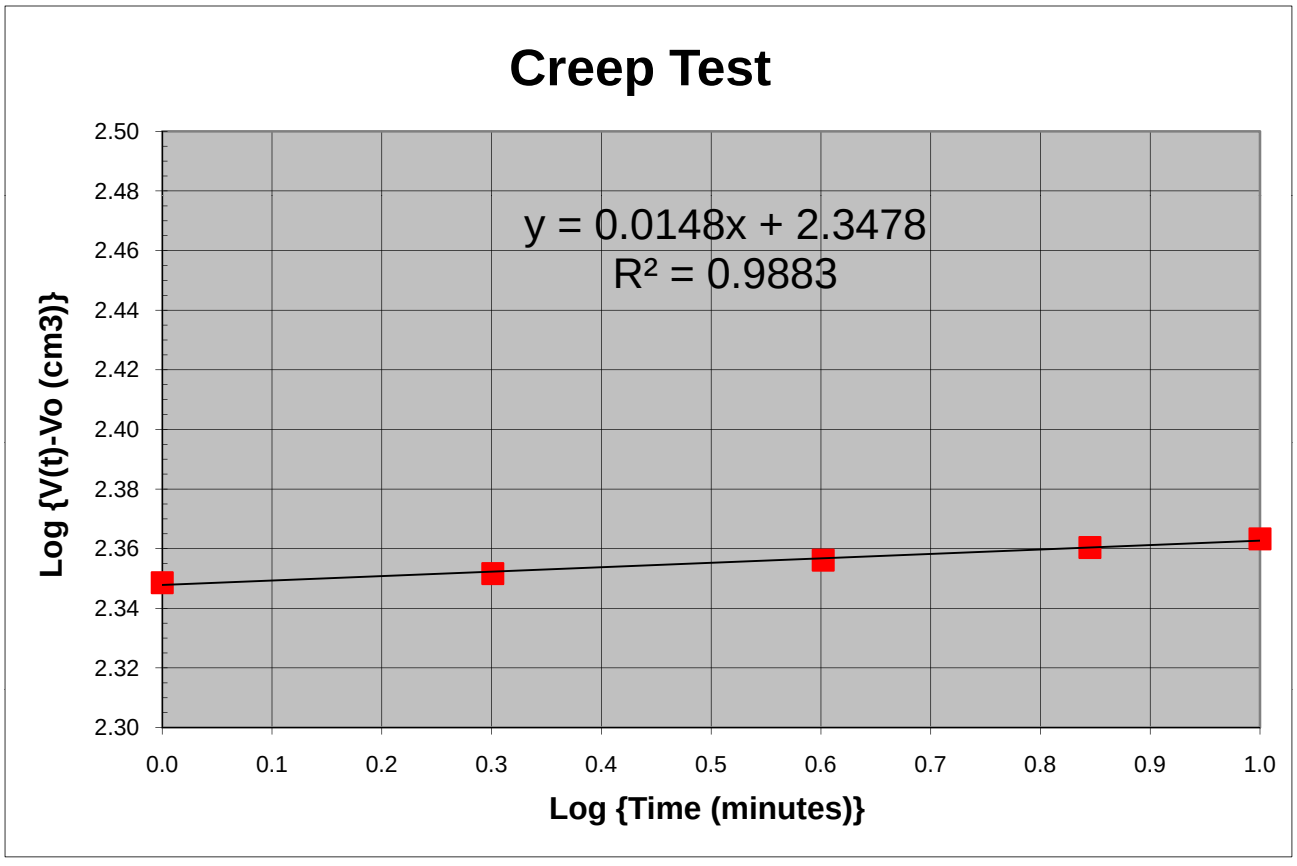
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 105.6 feet

Holding Gauge Pressure =	14.91	bars
Corrected Pressure =	19.03	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.78	cm
Initial Borehole Volume, Vo =	2067	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	322.75	2290.46	223.13	2.349
2	0.301	324.34	2292.05	224.72	2.352
4	0.602	326.67	2294.38	227.05	2.356
7	0.845	328.90	2296.61	229.28	2.360
10	1.000	330.43	2298.14	230.81	2.363

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0148

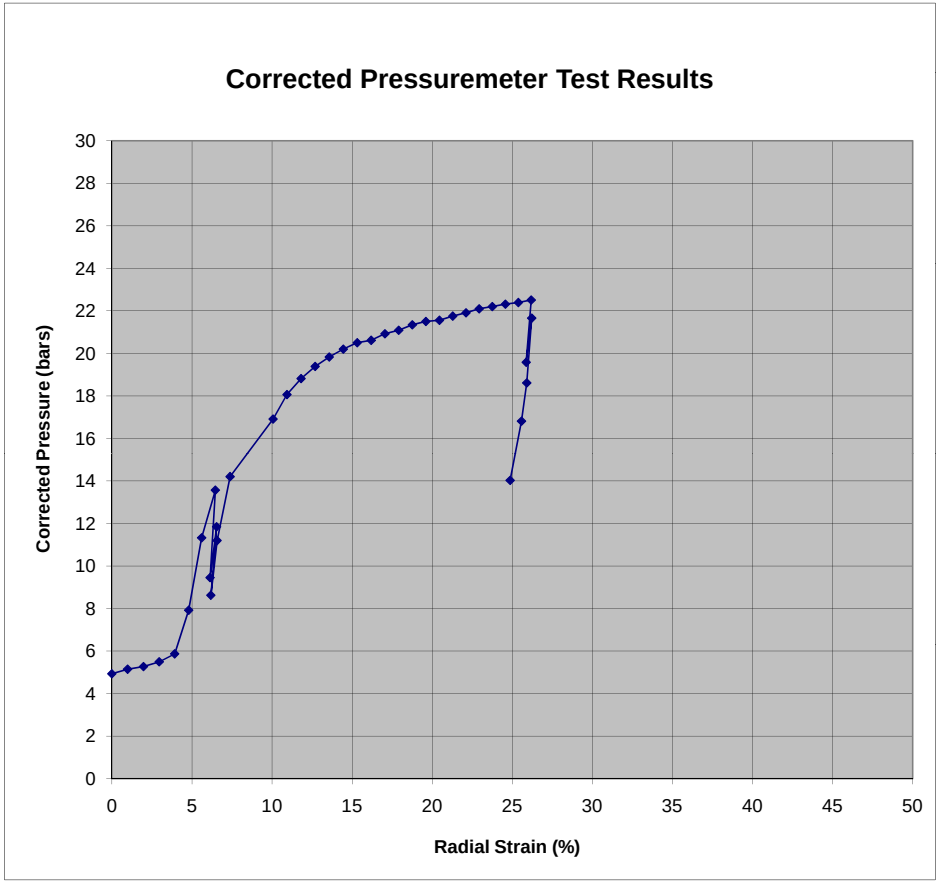


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	11
IN-SITU SOIL TESTING, L.C.		DEPTH:	115.7 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/14/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.93	-1	0.00	
5.15	39	0.98	
5.27	79	1.98	
5.49	118	2.96	
5.87	157	3.92	Eo1
7.92	193	4.80	
11.33	227	5.61	
13.57	262	6.46	Eo2
9.45	249	6.13	Er1
11.85	266	6.54	Er2
8.62	251	6.18	Er3
11.20	267	6.57	Er4
14.21	301	7.38	
16.91	416	10.06	
18.07	454	10.93	
18.82	492	11.81	
19.39	531	12.69	
19.83	570	13.57	
20.20	610	14.45	
20.51	649	15.32	
20.62	689	16.19	
20.93	728	17.05	
21.09	768	17.91	
21.35	807	18.76	
21.50	847	19.60	
21.56	887	20.45	
21.76	927	21.28	
21.91	966	22.11	
22.10	1006	22.93	
22.20	1046	23.75	
22.32	1085	24.56	
22.40	1125	25.37	
22.51	1165	26.18	Eu1
19.58	1149	25.86	Eu2
21.66	1167	26.21	Eu3
18.61	1151	25.90	Eu4
16.82	1135	25.57	
14.03	1100	24.86	

Interpreted Pressuremeter Parameters		
P_o	5.8	bar
P_L	24.0	bar
P_L^*	18.2	bar
E_o	424	bar
E_{r1}	830	bar
E_{r2}	931	bar
E_o/P_L^*	23.3	
E_{u1}	1563	bar
E_{r3}	1004	bar
E_{u2}	1647	bar



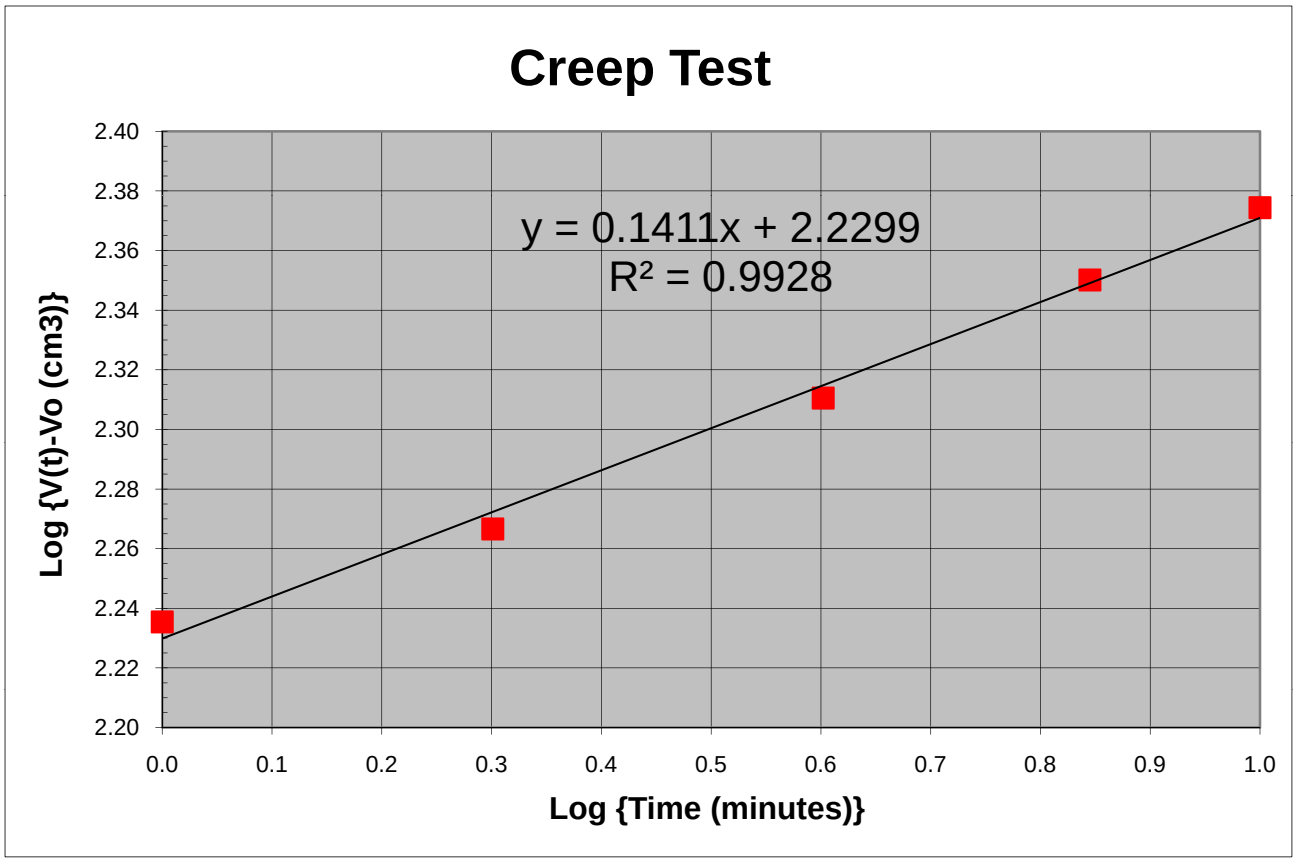
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 115.7 feet

Holding Gauge Pressure =	9.78	bars
Corrected Pressure =	14.21	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.84	cm
Initial Borehole Volume, Vo =	2128	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	332.52	2300.23	171.96	2.235
2	0.301	345.32	2313.03	184.76	2.267
4	0.602	364.99	2332.70	204.43	2.311
7	0.845	384.50	2352.21	223.94	2.350
10	1.000	397.37	2365.08	236.81	2.374

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1411

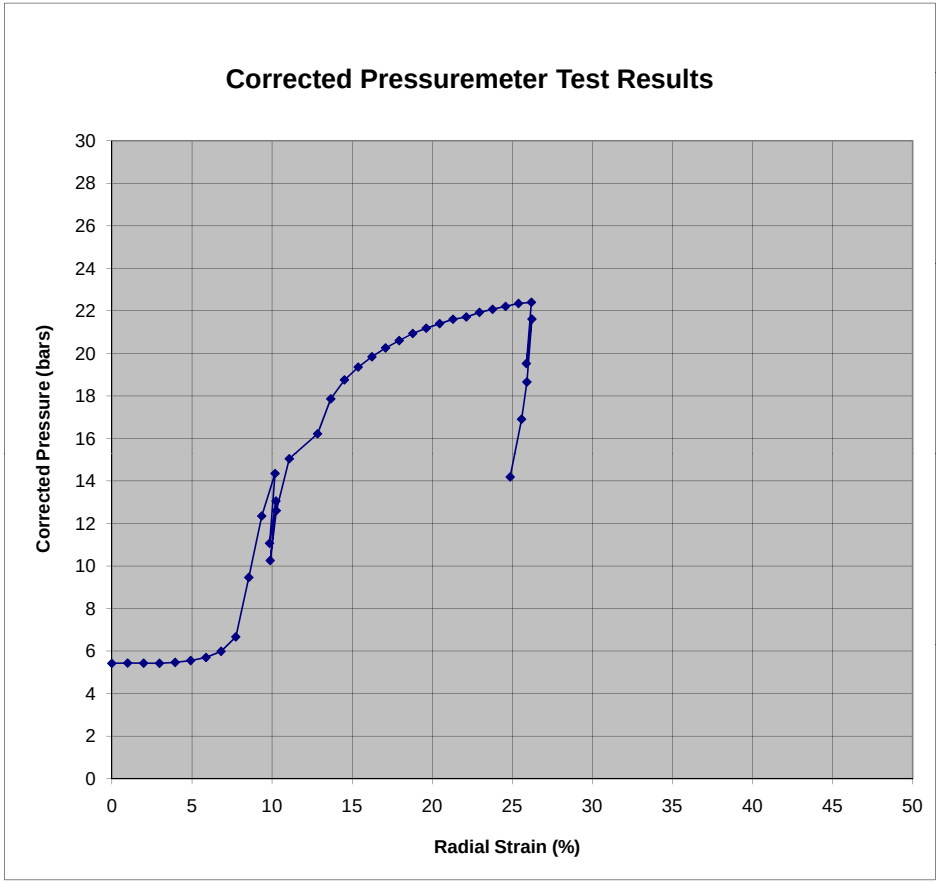


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	12
IN-SITU SOIL TESTING, L.C.		DEPTH:	126.1 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/14/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.42	-1	0.00	
5.44	39	0.98	
5.43	79	1.98	
5.43	119	2.97	
5.47	159	3.95	
5.55	199	4.92	
5.70	238	5.88	
5.99	278	6.82	
6.67	316	7.74	Eo1
9.47	351	8.55	
12.35	385	9.35	
14.36	421	10.19	Eo2
11.07	406	9.84	Er1
13.06	424	10.25	Er2
10.26	408	9.88	Er3
12.61	425	10.27	Er4
15.05	460	11.08	
16.22	538	12.84	
17.86	575	13.67	
18.76	613	14.52	
19.36	652	15.38	
19.84	691	16.24	
20.26	730	17.09	
20.60	769	17.94	
20.94	809	18.79	
21.19	848	19.63	
21.40	888	20.47	
21.61	927	21.30	
21.71	967	22.13	
21.93	1007	22.95	
22.08	1046	23.77	
22.21	1086	24.58	
22.35	1126	25.39	
22.40	1166	26.19	Eu1
19.53	1150	25.88	Eu2
21.61	1167	26.22	Eu3
18.66	1152	25.91	Eu4
16.91	1135	25.58	
14.19	1100	24.87	

Interpreted Pressuremeter Parameters		
P_o	5.4	bar
P_L	25.0	bar
P_L^*	19.6	bar
E_o	454	bar
E_{r1}	718	bar
E_{r2}	894	bar
E_o/P_L^*	23.2	
E_{u1}	1529	bar
E_{r3}	1012	bar
E_{u2}	1585	bar



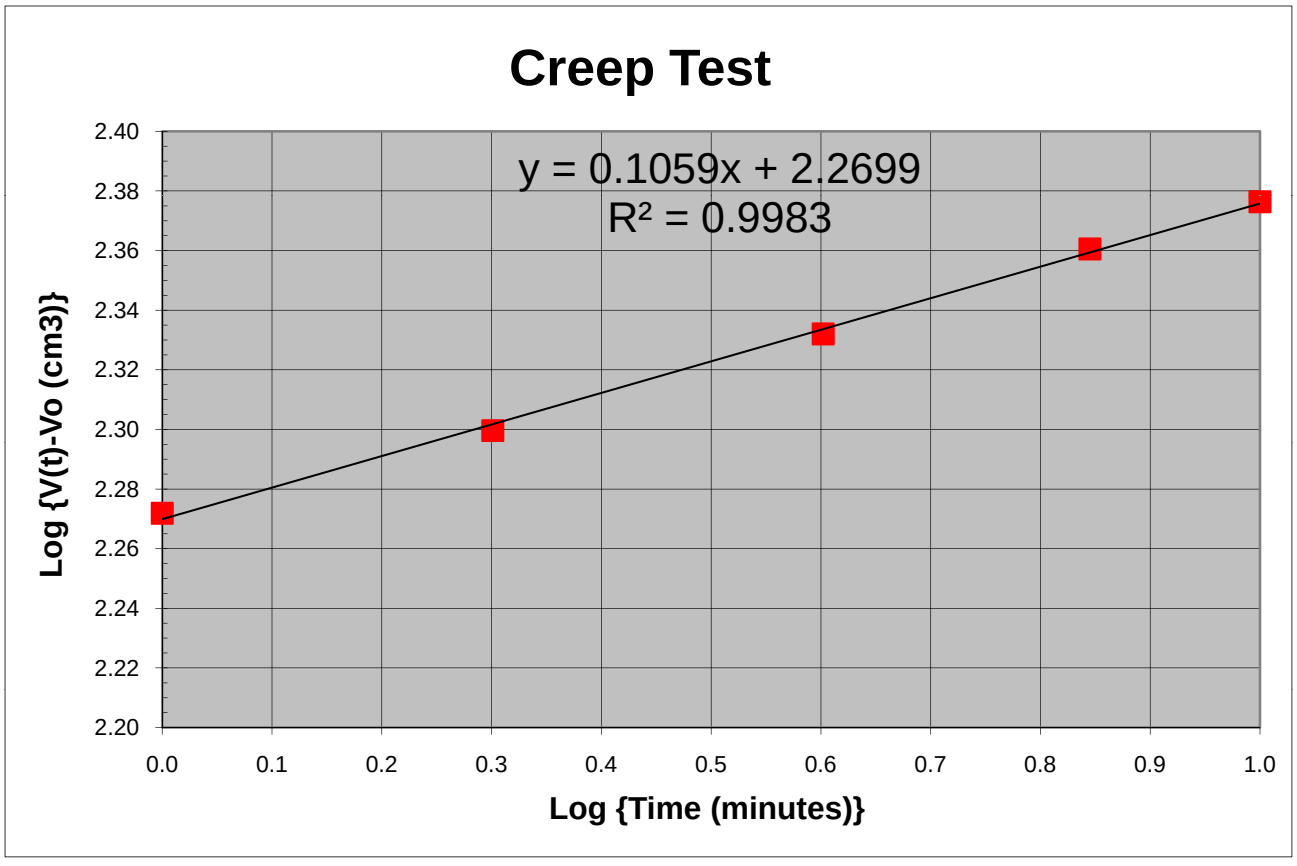
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 126.1 feet

Holding Gauge Pressure =	10.35	bars
Corrected Pressure =	15.05	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.97	cm
Initial Borehole Volume, Vo =	2274	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	493.23	2460.94	187.01	2.272
2	0.301	505.56	2473.27	199.34	2.300
4	0.602	521.04	2488.75	214.82	2.332
7	0.845	535.61	2503.32	229.39	2.361
10	1.000	544.10	2511.81	237.88	2.376

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1059

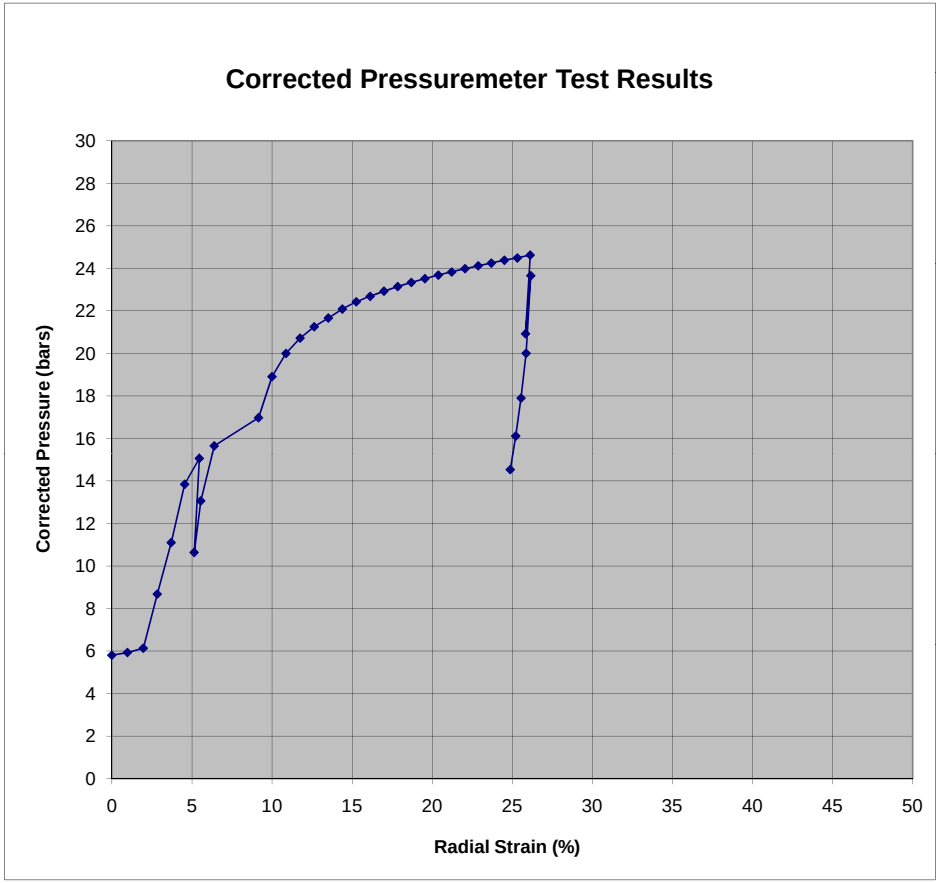


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	13
IN-SITU SOIL TESTING, L.C.		DEPTH:	137 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	14/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.81	-1	0.00	
5.93	38	0.97	
6.14	78	1.96	Eo1
8.68	113	2.83	
11.10	148	3.70	
13.85	183	4.55	Eo2
15.07	221	5.46	
10.64	207	5.14	Er1
13.07	225	5.55	Er2
15.65	260	6.39	
16.98	377	9.16	
18.91	413	10.00	
20.00	451	10.87	
20.72	490	11.75	
21.26	529	12.64	
21.67	568	13.52	
22.09	607	14.39	
22.43	646	15.26	
22.69	686	16.13	
22.93	725	16.99	
23.15	765	17.85	
23.34	805	18.70	
23.52	844	19.54	
23.69	884	20.38	
23.83	924	21.22	
23.99	963	22.05	
24.12	1003	22.87	
24.25	1043	23.69	
24.39	1083	24.50	
24.49	1122	25.31	
24.63	1162	26.12	Eu1
20.93	1148	25.83	Eu2
23.66	1164	26.15	Eu3
20.01	1149	25.86	Eu4
17.90	1134	25.55	
16.11	1117	25.21	
14.54	1101	24.87	

Interpreted Pressuremeter Parameters		
P_o	6.0	bar
P_L	27.0	bar
P_l^*	21.0	bar
E_o	410	bar
E_{r1}	821	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	19.5	
E_{u1}	2132	bar
E_{r3}	1393	bar
E_{u2}	2093	bar



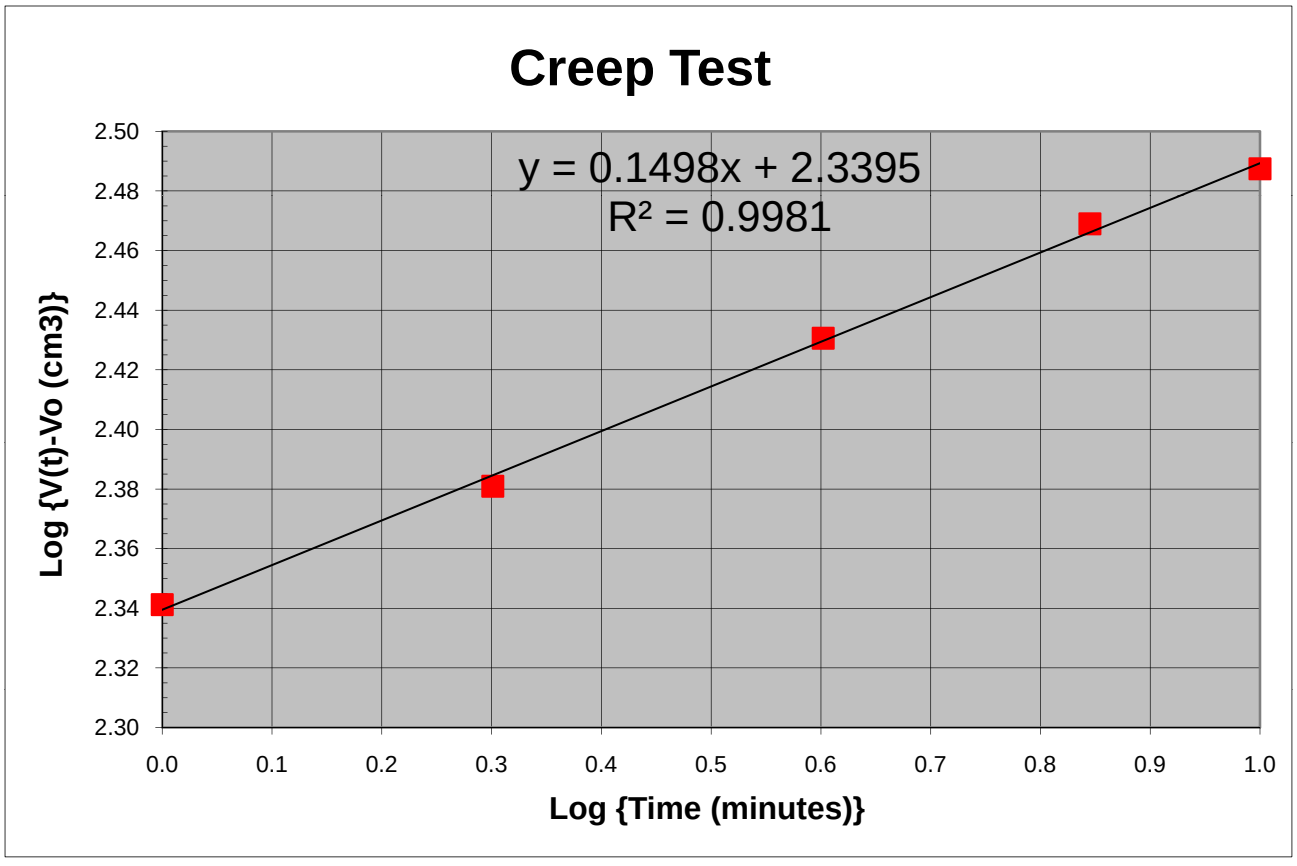
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 137 feet

Holding Gauge Pressure =	10.65	bars
Corrected Pressure =	15.65	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.76	cm
Initial Borehole Volume, Vo =	2047	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	298.90	2266.61	219.40	2.341
2	0.301	319.90	2287.61	240.40	2.381
4	0.602	349.00	2316.71	269.50	2.431
7	0.845	373.90	2341.61	294.40	2.469
10	1.000	386.70	2354.41	307.20	2.487

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1498

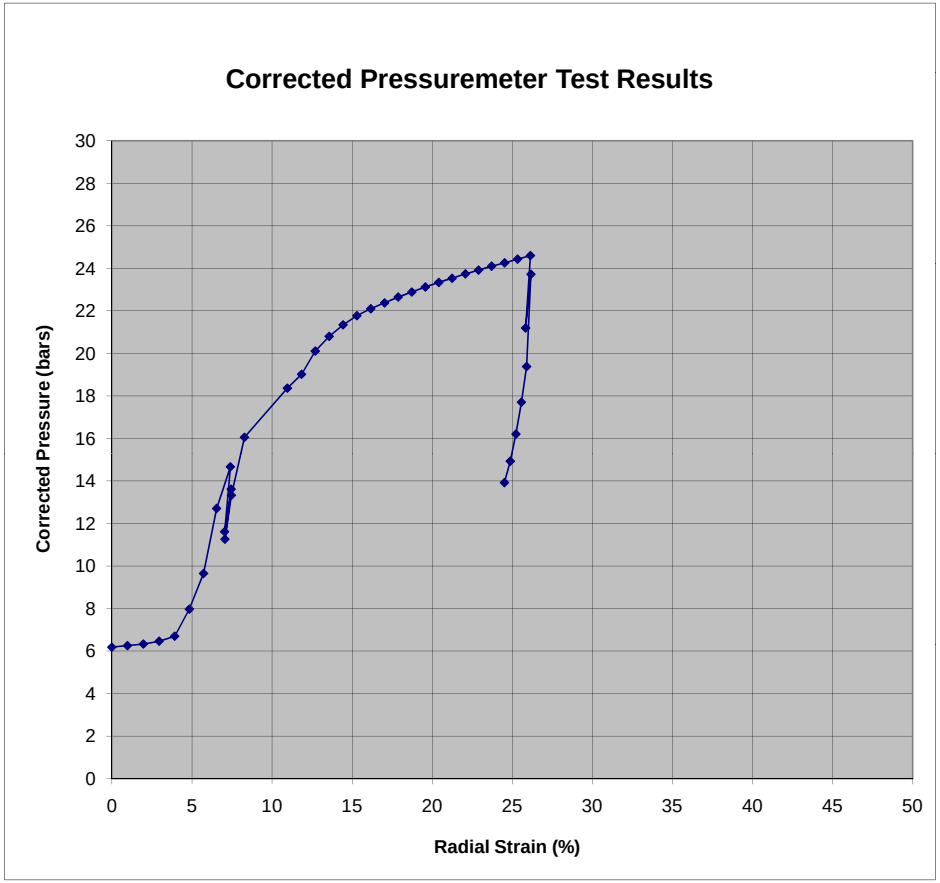


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	14
IN-SITU SOIL TESTING, L.C.		DEPTH:	147.3 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	15/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.18	-1	0.00	
6.26	38	0.97	
6.33	78	1.97	
6.46	118	2.95	
6.70	157	3.92	
7.97	195	4.84	Eo1
9.65	232	5.72	
12.71	266	6.54	
14.67	302	7.40	Eo2
11.61	287	7.04	Er1
13.62	304	7.45	Er2
11.26	288	7.06	Er3
13.33	305	7.46	Er4
16.05	339	8.28	
18.37	455	10.96	
19.02	494	11.84	
20.11	531	12.70	
20.80	570	13.57	
21.34	609	14.44	
21.78	648	15.30	
22.10	688	16.17	
22.38	727	17.03	
22.65	767	17.88	
22.89	806	18.73	
23.12	846	19.57	
23.34	885	20.41	
23.54	925	21.24	
23.74	964	22.07	
23.92	1004	22.89	
24.10	1044	23.71	
24.26	1083	24.52	
24.44	1123	25.33	
24.60	1163	26.13	Eu1
21.19	1148	25.83	Eu2
23.72	1164	26.16	Eu3
19.38	1151	25.89	Eu4
17.71	1135	25.57	
16.21	1118	25.23	
14.93	1101	24.87	
13.92	1083	24.51	

Interpreted Pressuremeter Parameters		
P_o	6.7	bar
P_L	28.0	bar
P_l^*	21.3	bar
E_o	369	bar
E_{r1}	694	bar
E_{r2}	732	bar
E_o/P_L^*	17.3	
E_{u1}	1907	bar
E_{r3}	1270	bar
E_{u2}	2683	bar



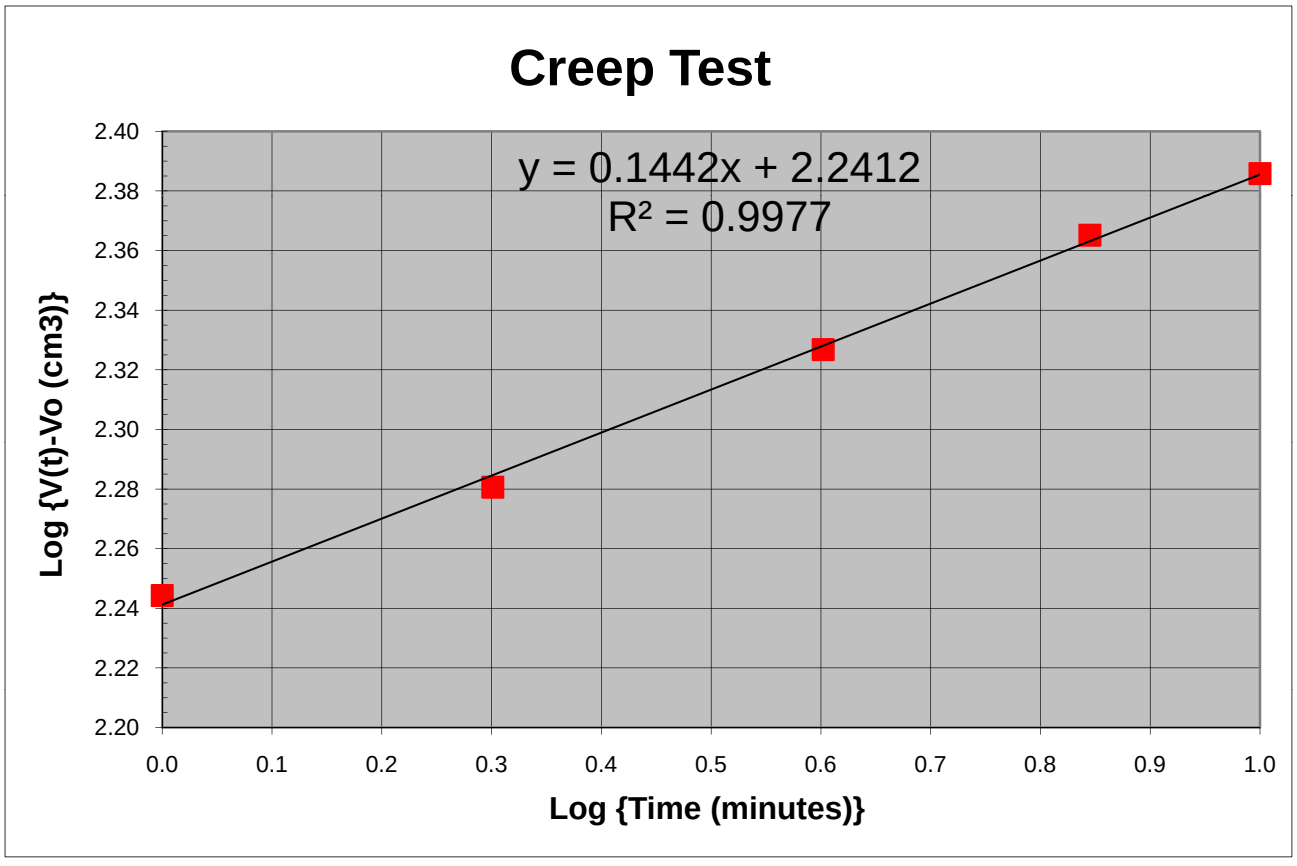
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 147.3 feet

Holding Gauge Pressure =	10.75	bars
Corrected Pressure =	16.05	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.87	cm
Initial Borehole Volume, Vo =	2169	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	377.20	2344.91	175.51	2.244
2	0.301	392.50	2360.21	190.81	2.281
4	0.602	413.90	2381.61	212.21	2.327
7	0.845	433.50	2401.21	231.81	2.365
10	1.000	444.80	2412.51	243.11	2.386

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1442

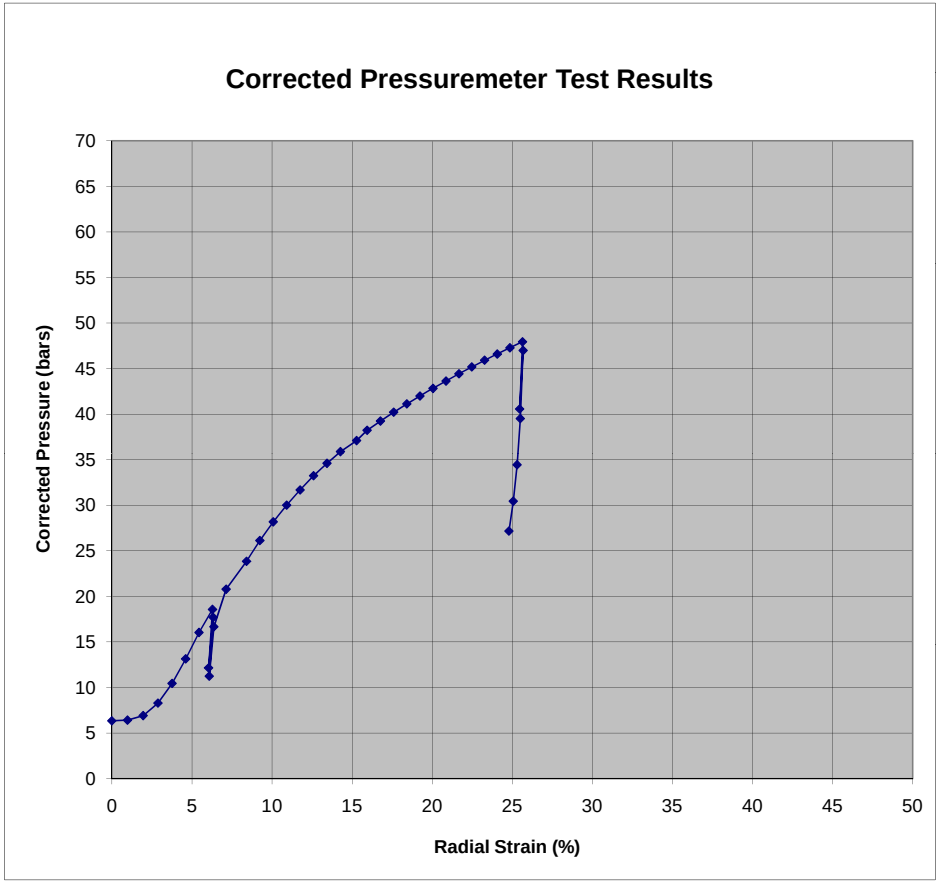


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	15
IN-SITU SOIL TESTING, L.C.		DEPTH:	156.8 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	15/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.35	-1	0.00	
6.42	39	0.98	
6.91	78	1.95	
8.29	115	2.88	
10.45	151	3.76	Eo1
13.15	186	4.61	
16.04	220	5.44	
18.57	255	6.28	Eo2
12.16	245	6.04	Er1
17.70	257	6.32	Er2
11.25	247	6.08	Er3
16.67	259	6.37	Er4
20.79	291	7.14	
23.85	345	8.41	
26.13	381	9.24	
28.18	417	10.08	
30.02	453	10.92	
31.69	490	11.76	
33.25	527	12.59	
34.61	564	13.43	
35.89	602	14.27	
37.11	647	15.28	
38.23	677	15.94	
39.25	715	16.77	
40.22	753	17.59	
41.13	792	18.42	
42.00	830	19.24	
42.83	868	20.05	
43.64	907	20.86	
44.43	945	21.67	
45.19	984	22.47	
45.93	1022	23.27	
46.60	1061	24.07	
47.29	1100	24.85	
47.94	1138	25.64	Eu1
40.58	1130	25.46	Eu2
46.99	1140	25.68	Eu3
39.53	1132	25.50	Eu4
34.45	1122	25.30	
30.45	1110	25.06	
27.17	1097	24.79	

Interpreted Pressuremeter Parameters		
P_o	6.8	bar
P_L	58.0	bar
P_l^*	51.2	bar
E_o	449	bar
E_{r1}	2733	bar
E_{r2}	2622	bar
E_o/P_L^*	8.8	
E_{u1}	6858	bar
E_{r3}	4956	bar
E_{u2}	7076	bar



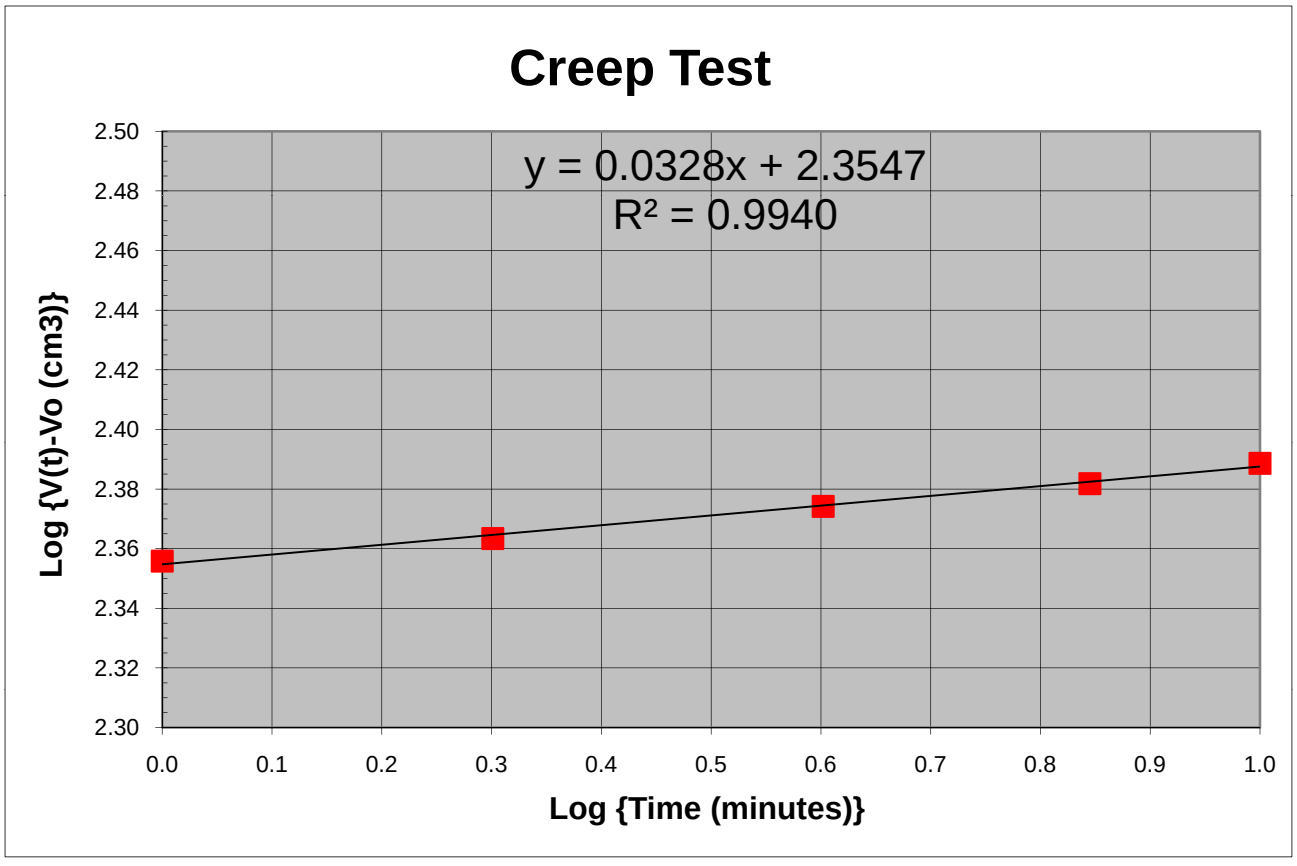
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 156.8 feet

Holding Gauge Pressure =	15.20	bars
Corrected Pressure =	20.79	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.78	cm
Initial Borehole Volume, Vo =	2067	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	326.50	2294.21	226.88	2.356
2	0.301	330.50	2298.21	230.88	2.363
4	0.602	336.30	2304.01	236.68	2.374
7	0.845	340.50	2308.21	240.88	2.382
10	1.000	344.30	2312.01	244.68	2.389

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0328

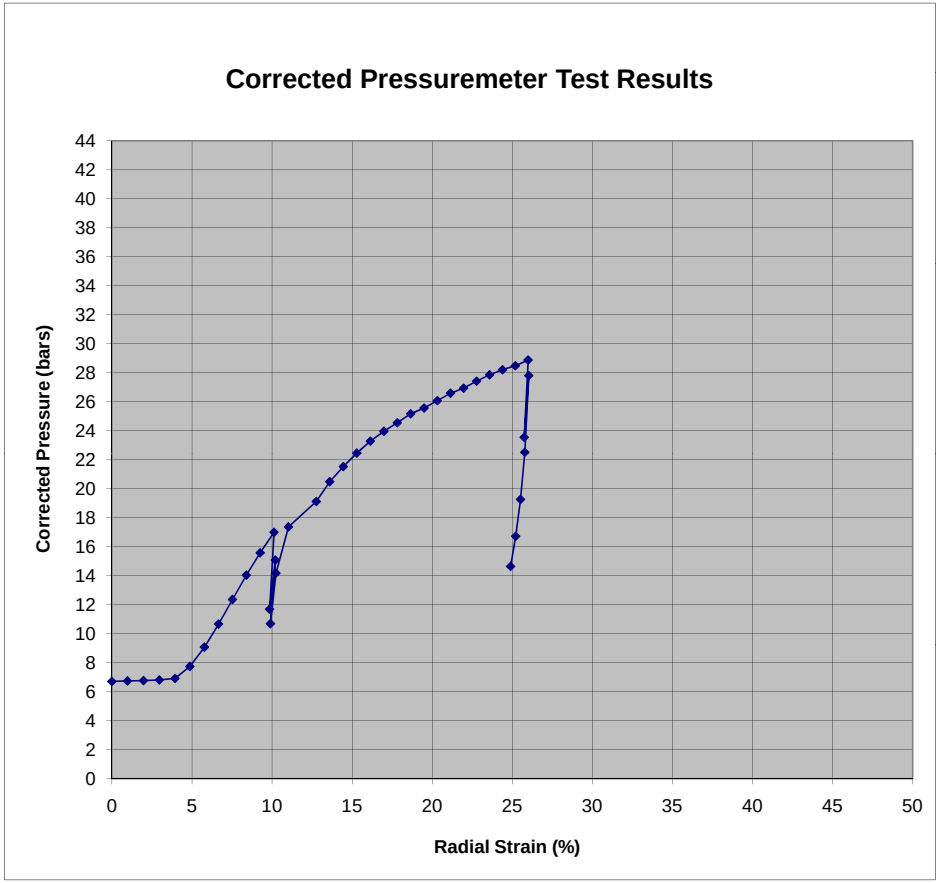


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-60
LOCATION:	Wanchese, NC	TEST #:	16
IN-SITU SOIL TESTING, L.C.		DEPTH:	166.7 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	15/06/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.71	-1	0.00	
6.74	39	0.98	
6.76	79	1.98	
6.81	118	2.96	
6.91	158	3.94	
7.75	197	4.87	Eo1
9.07	234	5.78	
10.66	271	6.66	
12.36	308	7.53	
14.04	344	8.40	
15.58	381	9.26	Eo2
17.00	419	10.13	
11.69	407	9.85	Er1
15.08	422	10.21	Er2
10.69	409	9.90	Er3
14.18	424	10.25	Er4
17.37	458	11.03	
19.12	535	12.77	
20.49	572	13.61	
21.53	610	14.45	
22.46	648	15.30	
23.28	686	16.14	
23.96	725	16.98	
24.56	764	17.82	
25.17	803	18.66	
25.57	842	19.50	
26.07	881	20.32	
26.59	920	21.14	
26.94	959	21.97	
27.42	998	22.78	
27.86	1038	23.58	
28.20	1077	24.39	
28.48	1116	25.19	
28.88	1156	25.99	Eu1
23.55	1144	25.75	Eu2
27.81	1158	26.03	Eu3
22.52	1146	25.79	Eu4
19.26	1132	25.52	
16.72	1118	25.22	
14.64	1102	24.90	

Interpreted Pressuremeter Parameters		
P_o	7.0	bar
P_L	37.0	bar
P_L^*	30.0	bar
E_o	254	bar
E_{r1}	1370	bar
E_{r2}	1465	bar
E_o/P_L^*	8.5	
E_{u1}	3698	bar
E_{r3}	2523	bar
E_{u2}	3654	bar



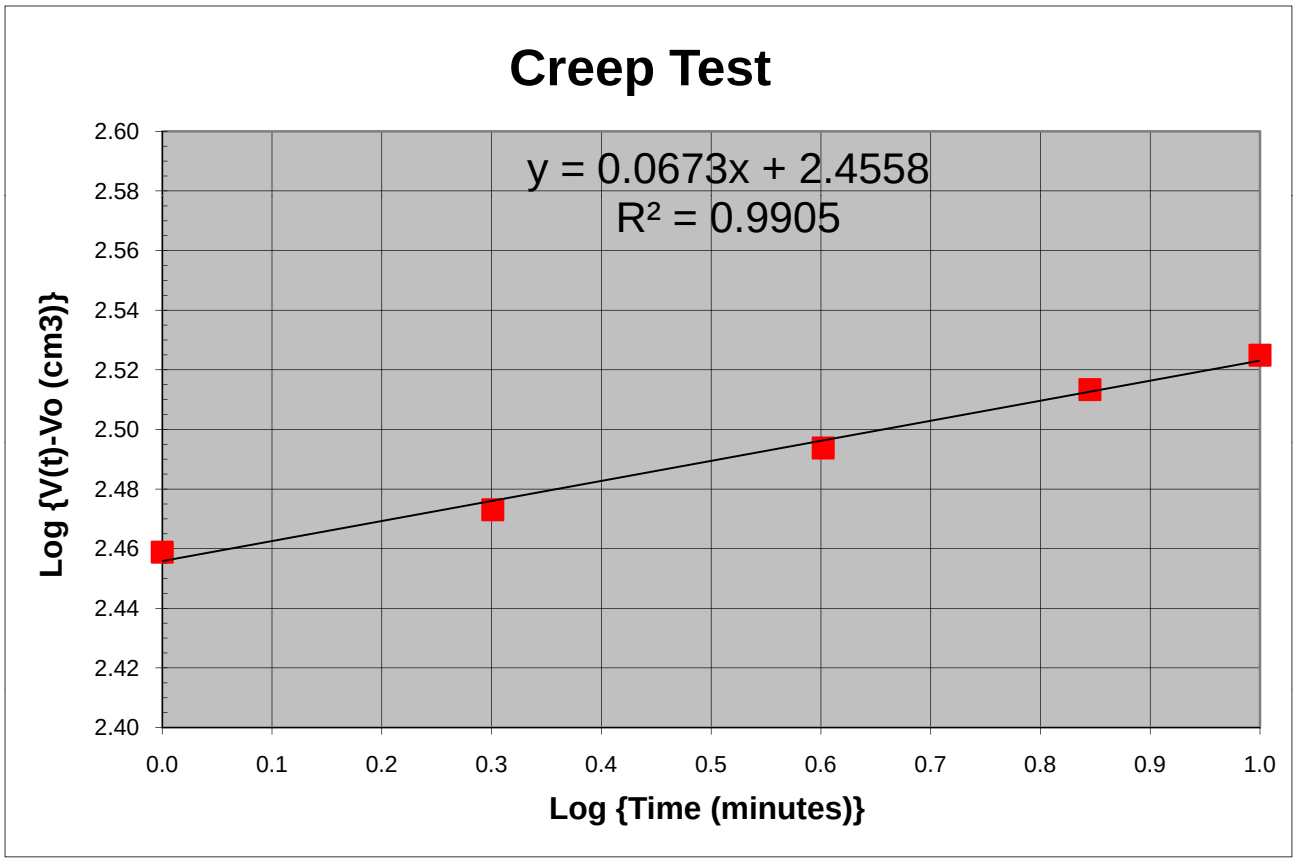
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-60
Test Depth: 166.7 feet

Holding Gauge Pressure =	11.51	bars
Corrected Pressure =	17.37	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.87	cm
Initial Borehole Volume, Vo =	2169	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	489.30	2457.01	287.61	2.459
2	0.301	498.90	2466.61	297.21	2.473
4	0.602	513.40	2481.11	311.71	2.494
7	0.845	527.80	2495.51	326.11	2.513
10	1.000	536.60	2504.31	334.91	2.525

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0673

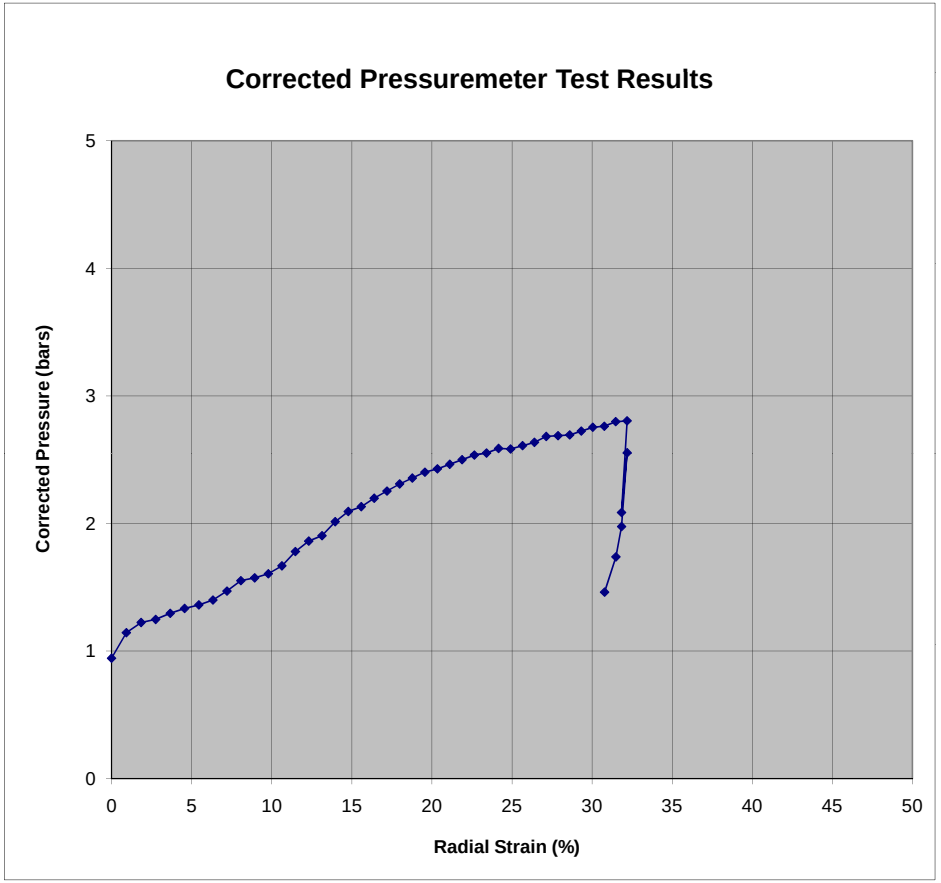


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	1
IN-SITU SOIL	TESTING, L.C.	DEPTH:	13.8 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	5/31/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
0.94	0	0.00	
1.14	40	0.92	
1.22	80	1.84	
1.25	120	2.76	
1.30	159	3.66	
1.33	199	4.56	
1.36	239	5.45	
1.40	279	6.33	
1.47	319	7.21	
1.55	359	8.07	
1.57	399	8.93	
1.61	439	9.79	
1.67	479	10.64	Eo1
1.78	519	11.48	
1.86	559	12.31	
1.90	599	13.14	
2.01	639	13.96	Eo2
2.09	679	14.78	
2.13	719	15.59	
2.20	759	16.39	
2.25	799	17.19	
2.31	839	17.99	
2.36	879	18.78	
2.40	919	19.56	
2.43	959	20.34	
2.46	999	21.11	
2.50	1038	21.88	
2.54	1078	22.65	
2.55	1118	23.41	
2.59	1158	24.16	
2.58	1198	24.91	
2.61	1238	25.66	
2.64	1278	26.40	
2.68	1318	27.14	
2.69	1358	27.87	
2.69	1398	28.60	
2.72	1438	29.32	
2.75	1478	30.04	
2.76	1518	30.76	
2.80	1558	31.47	
2.80	1598	32.18	Eu1
2.09	1579	31.84	Eu2
2.55	1598	32.19	Eu3
1.98	1579	31.84	Eu4
1.74	1559	31.49	
1.46	1519	30.78	

Interpreted Pressuremeter Parameters		
P_o	1.5	bar
P_L	3.2	bar
P_l^*	1.7	bar
E_o	16	bar
E_{r1}	#DIV/0!	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	9.1	
E_{u1}	363	bar
E_{r3}	234	bar
E_{u2}	291	bar

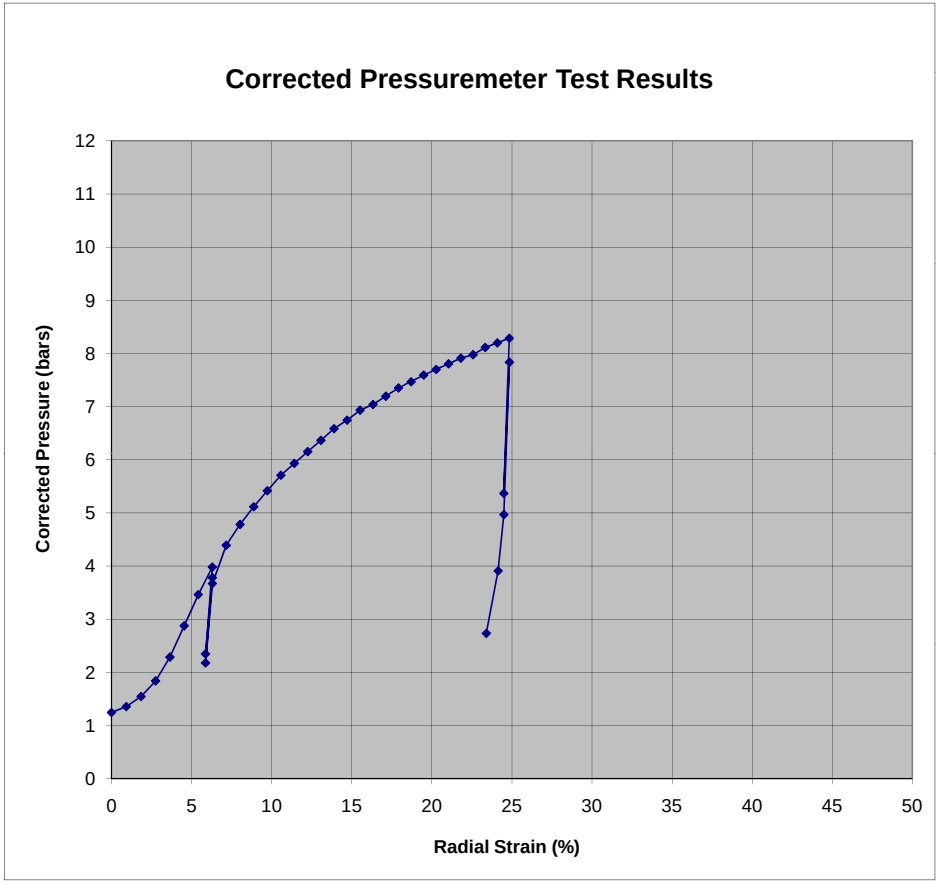


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	2
IN-SITU SOIL TESTING, L.C.		DEPTH:	23.2 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	5/31/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.25	0	0.00	
1.36	40	0.92	
1.55	80	1.84	
1.84	119	2.75	
2.29	159	3.65	Eo1
2.88	199	4.54	
3.46	238	5.42	
3.98	278	6.29	Eo2
2.35	258	5.87	Er1
3.78	278	6.30	Er2
2.18	259	5.87	Er3
3.67	278	6.30	Er4
4.39	317	7.16	
4.78	357	8.02	
5.12	397	8.88	
5.42	437	9.73	
5.71	476	10.58	
5.93	516	11.41	
6.15	556	12.25	
6.37	596	13.07	
6.59	636	13.89	
6.75	675	14.71	
6.93	715	15.52	
7.04	755	16.32	
7.20	795	17.12	
7.35	835	17.92	
7.47	875	18.70	
7.59	915	19.49	
7.70	955	20.27	
7.81	995	21.04	
7.91	1035	21.81	
7.98	1075	22.57	
8.11	1114	23.33	
8.20	1154	24.09	
8.29	1194	24.84	Eu1
5.37	1176	24.49	Eu2
7.84	1195	24.84	Eu3
4.97	1176	24.49	Eu4
3.91	1157	24.14	
2.73	1118	23.40	

Interpreted Pressuremeter Parameters		
P_o	1.6	bar
P_L	10.0	bar
P_L^*	8.4	bar
E_o	89	bar
E_{r1}	475	bar
E_{r2}	497	bar
E_o/P_L^*	10.7	
E_{u1}	1394	bar
E_{r3}	1157	bar
E_{u2}	1368	bar



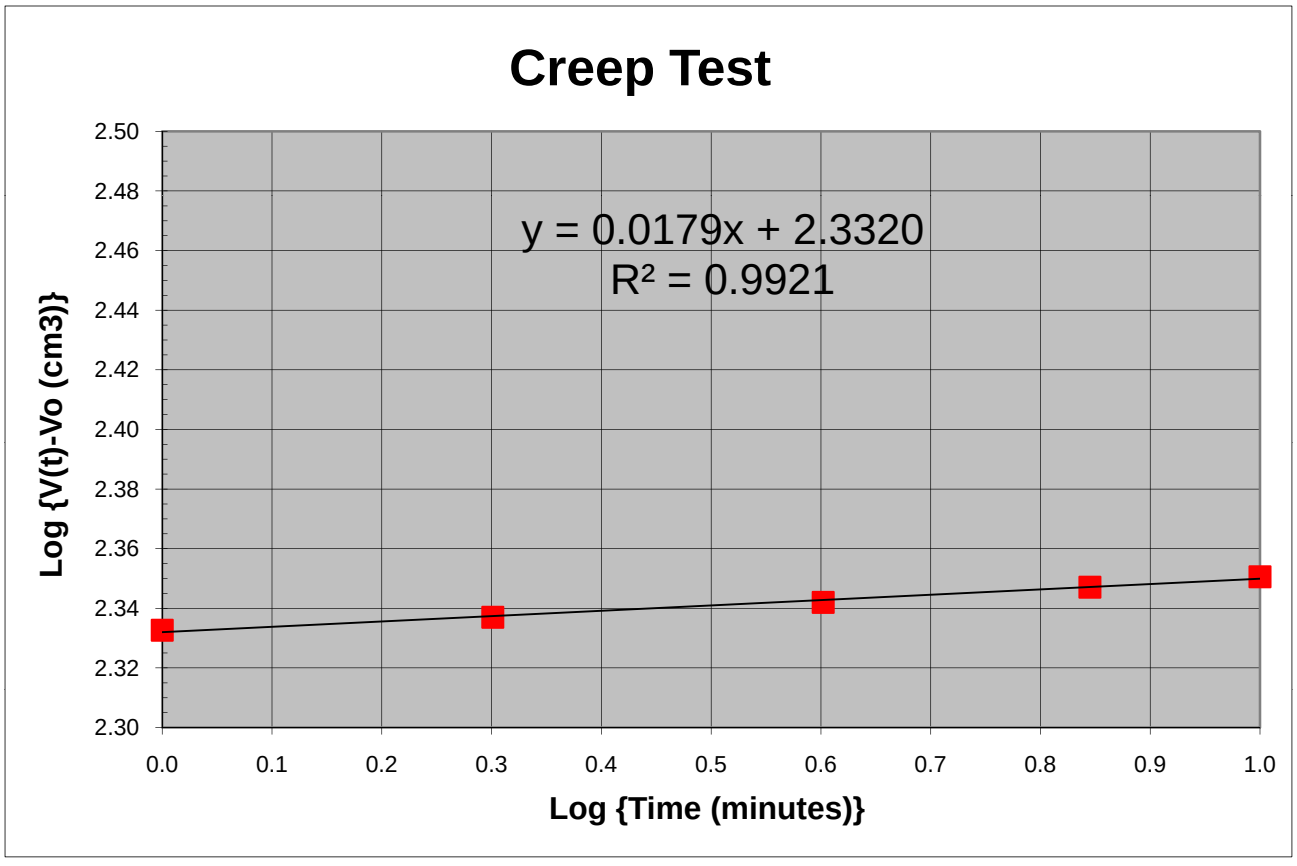
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 23.2 feet

Holding Gauge Pressure =	3.52	bars
Corrected Pressure =	14.39	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.78	cm
Initial Borehole Volume, Vo =	2247	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	323.37	2462.18	215.09	2.333
2	0.301	325.53	2464.34	217.25	2.337
4	0.602	328.05	2466.86	219.77	2.342
7	0.845	330.66	2469.47	222.38	2.347
10	1.000	332.45	2471.26	224.17	2.351

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0179

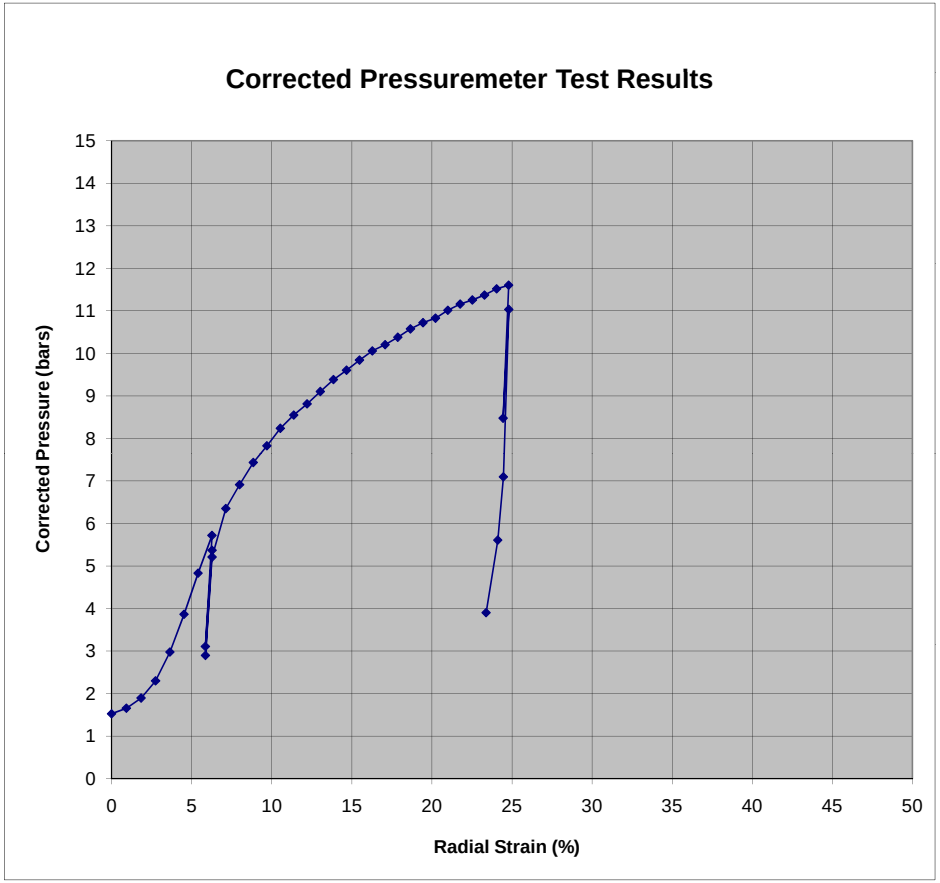


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	3
IN-SITU SOIL TESTING, L.C.		DEPTH:	32.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	5/31/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.53	0	0.00	
1.66	40	0.92	
1.90	79	1.84	
2.30	119	2.75	
2.98	159	3.64	Eo1
3.87	198	4.53	
4.83	237	5.40	
5.72	277	6.27	Eo2
3.11	258	5.86	Er1
5.37	277	6.27	Er2
2.90	258	5.86	Er3
5.21	277	6.28	Er4
6.35	316	7.13	
6.91	356	7.99	
7.44	395	8.85	
7.83	435	9.70	
8.24	475	10.54	
8.55	514	11.38	
8.81	554	12.21	
9.11	594	13.03	
9.39	634	13.85	
9.61	674	14.67	
9.84	713	15.48	
10.06	753	16.28	
10.21	793	17.08	
10.38	833	17.87	
10.58	873	18.66	
10.72	913	19.45	
10.83	953	20.22	
11.02	992	21.00	
11.16	1032	21.76	
11.26	1072	22.53	
11.37	1112	23.29	
11.52	1152	24.04	
11.61	1192	24.79	Eu1
8.48	1174	24.45	Eu2
11.04	1192	24.80	Eu3
7.10	1174	24.46	Eu4
5.61	1156	24.11	
3.90	1117	23.38	

Interpreted Pressuremeter Parameters		
P_o	1.8	bar
P_L	14.0	bar
P_L^*	12.2	bar
E_o	146	bar
E_{r1}	765	bar
E_{r2}	785	bar
E_o/P_L^*	12.0	
E_{u1}	1502	bar
E_{r3}	1200	bar
E_{u2}	1934	bar



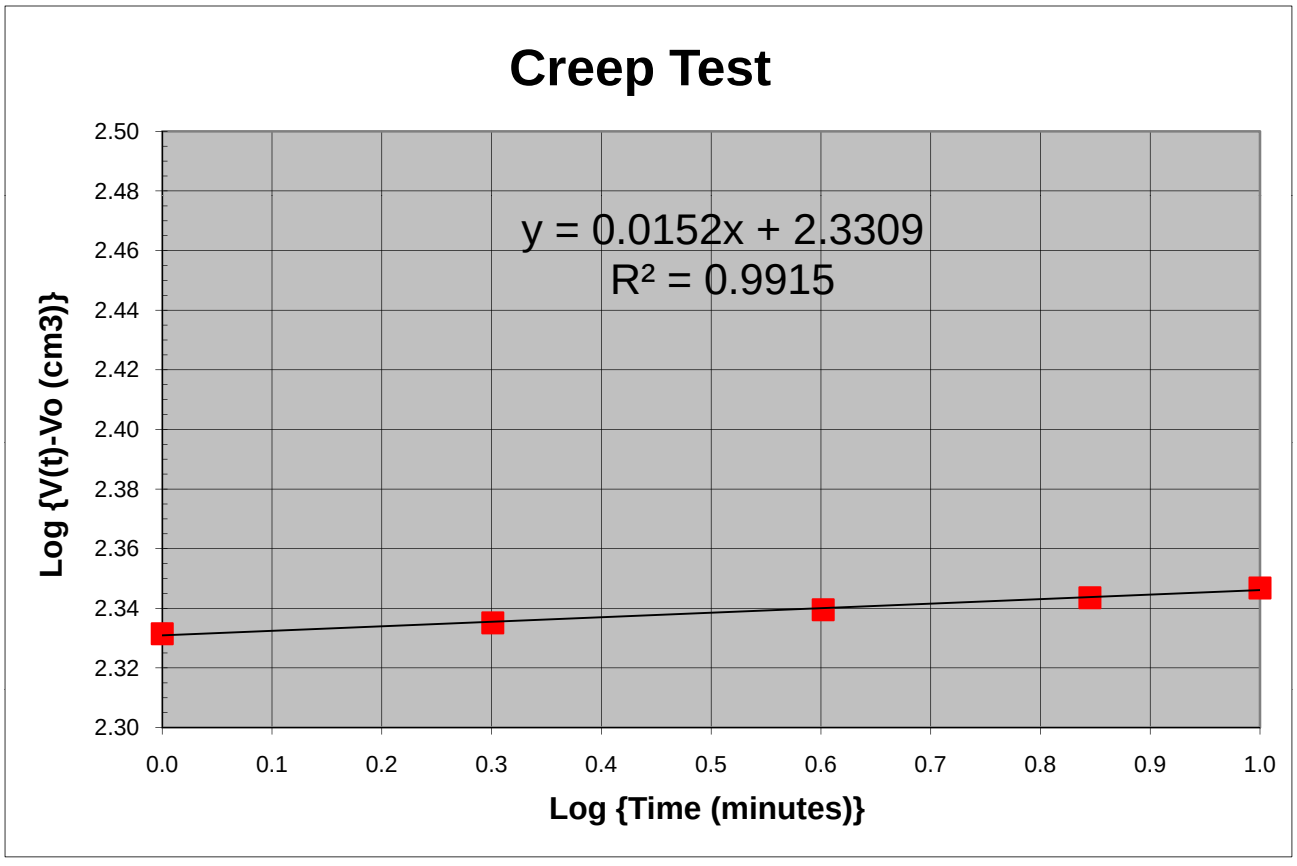
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 32.9 feet

Holding Gauge Pressure =	5.19	bars
Corrected Pressure =	6.35	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.78	cm
Initial Borehole Volume, Vo =	2247	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	322.80	2461.61	214.52	2.331
2	0.301	324.59	2463.40	216.31	2.335
4	0.602	326.80	2465.61	218.52	2.339
7	0.845	328.85	2467.66	220.57	2.344
10	1.000	330.50	2469.31	222.22	2.347

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0152

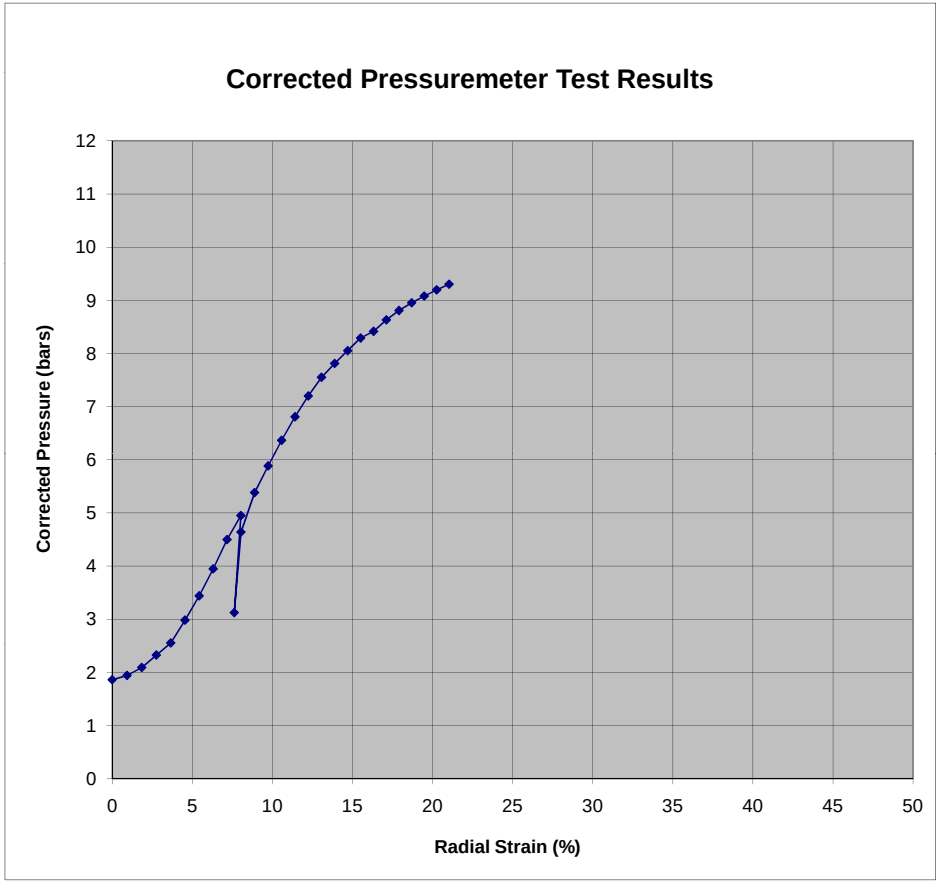


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	4
IN-SITU SOIL TESTING, L.C.		DEPTH:	41.9 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	5/31/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
1.86	0	0.00	
1.94	40	0.92	
2.09	80	1.84	
2.32	119	2.75	
2.55	159	3.65	
2.98	199	4.55	
3.44	239	5.43	Eo1
3.95	278	6.30	
4.50	318	7.17	
4.95	357	8.03	Eo2
3.12	338	7.62	Er1
4.64	358	8.04	Er2
5.38	397	8.89	
5.88	437	9.73	
6.36	476	10.57	
6.81	516	11.41	
7.20	556	12.24	
7.55	595	13.06	
7.81	635	13.88	
8.05	675	14.70	
8.29	715	15.51	
8.41	755	16.31	
8.63	794	17.11	
8.81	834	17.90	
8.95	874	18.69	
9.08	914	19.47	
9.19	954	20.25	
9.30	994	21.03	

Interpreted Pressuremeter Parameters		
P_o	2.3	bar
P_L	12.0	bar
P_L^*	9.7	bar
E_o	82	bar
E_{r1}	520	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	8.5	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



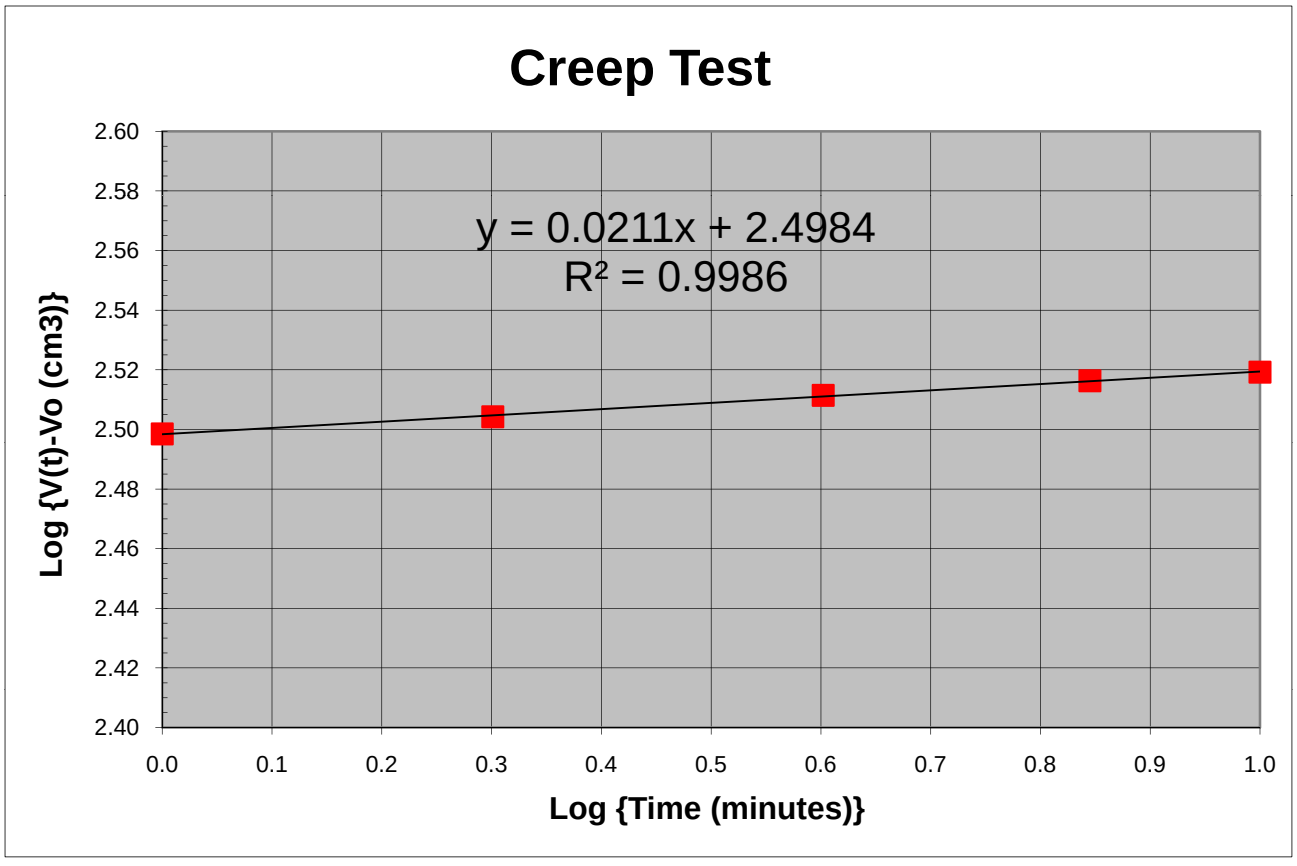
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 41.9 feet

Holding Gauge Pressure =	4.46	bars
Corrected Pressure =	5.87	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.80	cm
Initial Borehole Volume, Vo =	2269	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	445.40	2584.21	315.15	2.499
2	0.301	449.60	2588.41	319.35	2.504
4	0.602	454.90	2593.71	324.65	2.511
7	0.845	458.60	2597.41	328.35	2.516
10	1.000	460.80	2599.61	330.55	2.519

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0211

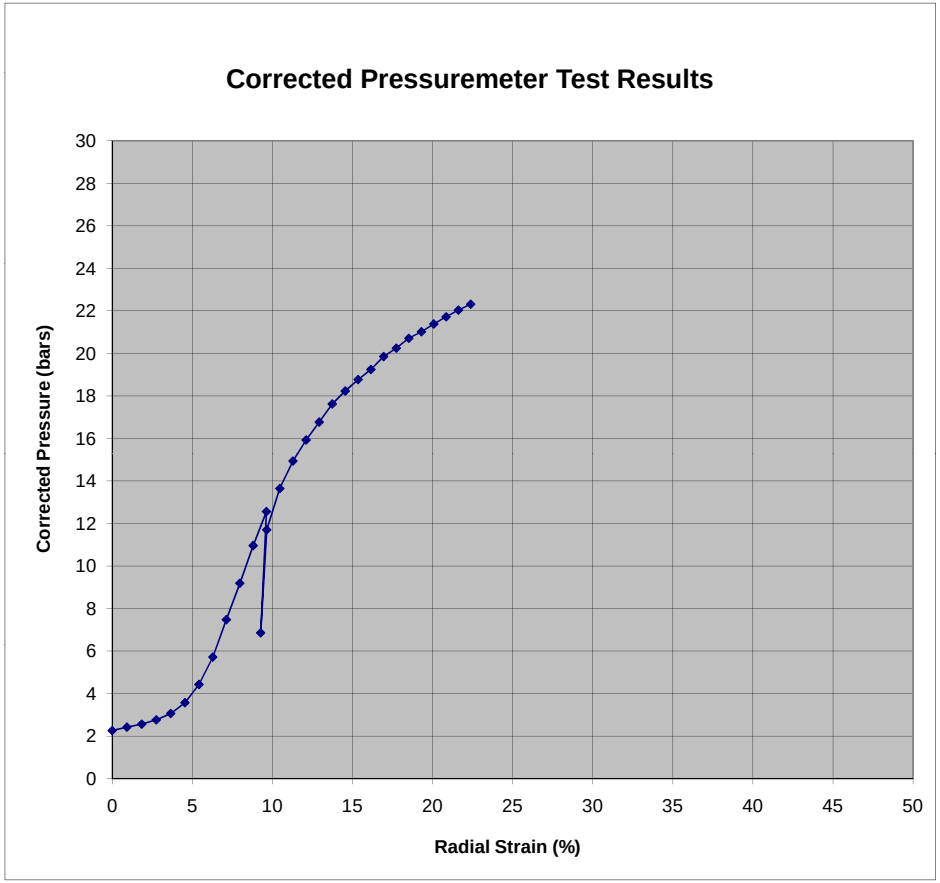


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	5
IN-SITU SOIL TESTING, L.C.		DEPTH:	53.7 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	5/31/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.26	0	0.00	
2.42	40	0.92	
2.56	79	1.84	
2.77	119	2.75	
3.06	159	3.65	
3.57	**199**	**4.54**	
4.43	238	5.42	
5.72	277	6.28	Eo1
7.48	316	7.13	
9.19	354	7.97	
10.96	393	8.80	
12.56	432	9.63	Eo2
6.86	415	9.27	Er1
11.70	432	9.64	Er2
13.65	471	10.46	
14.94	510	11.28	
15.93	549	12.11	
16.77	589	12.92	
17.62	628	13.74	
18.23	667	14.55	
18.77	707	15.35	
19.25	747	16.15	
19.85	786	16.94	
20.25	826	17.73	
20.71	866	18.52	
21.02	905	19.30	
21.39	945	20.08	
21.72	985	20.85	
22.04	1025	21.61	
22.31	1064	22.38	

Interpreted Pressuremeter Parameters		
P_o	3.1	bar
P_L	28.0	bar
P_L^*	24.9	bar
E_o	293	bar
E_{r1}	1862	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	11.8	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



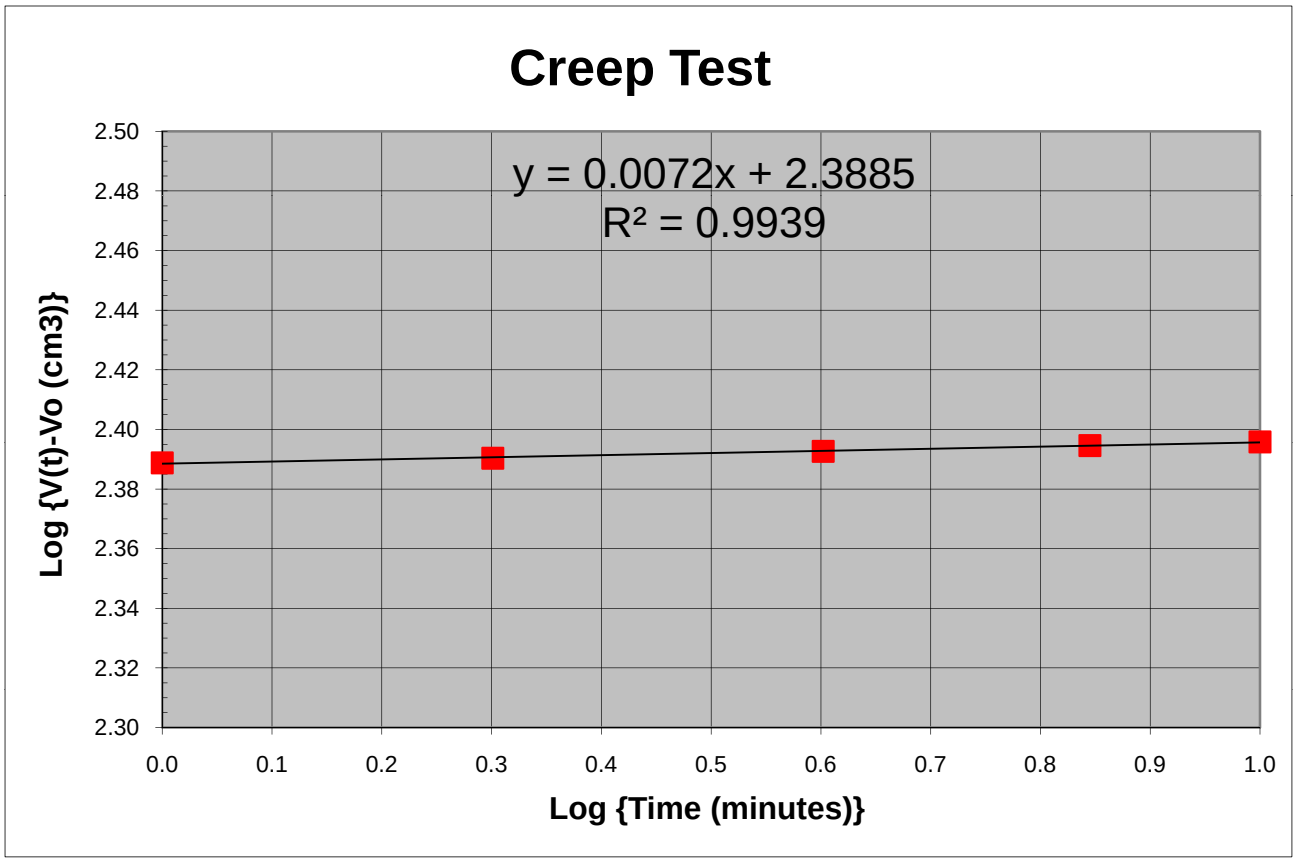
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 53.7 feet

Holding Gauge Pressure =	9.40	bars
Corrected Pressure =	11.16	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.86	cm
Initial Borehole Volume, Vo =	2336	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	441.60	2580.41	244.78	2.389
2	0.301	442.50	2581.31	245.68	2.390
4	0.602	443.80	2582.61	246.98	2.393
7	0.845	444.90	2583.71	248.08	2.395
10	1.000	445.60	2584.41	248.78	2.396

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0072

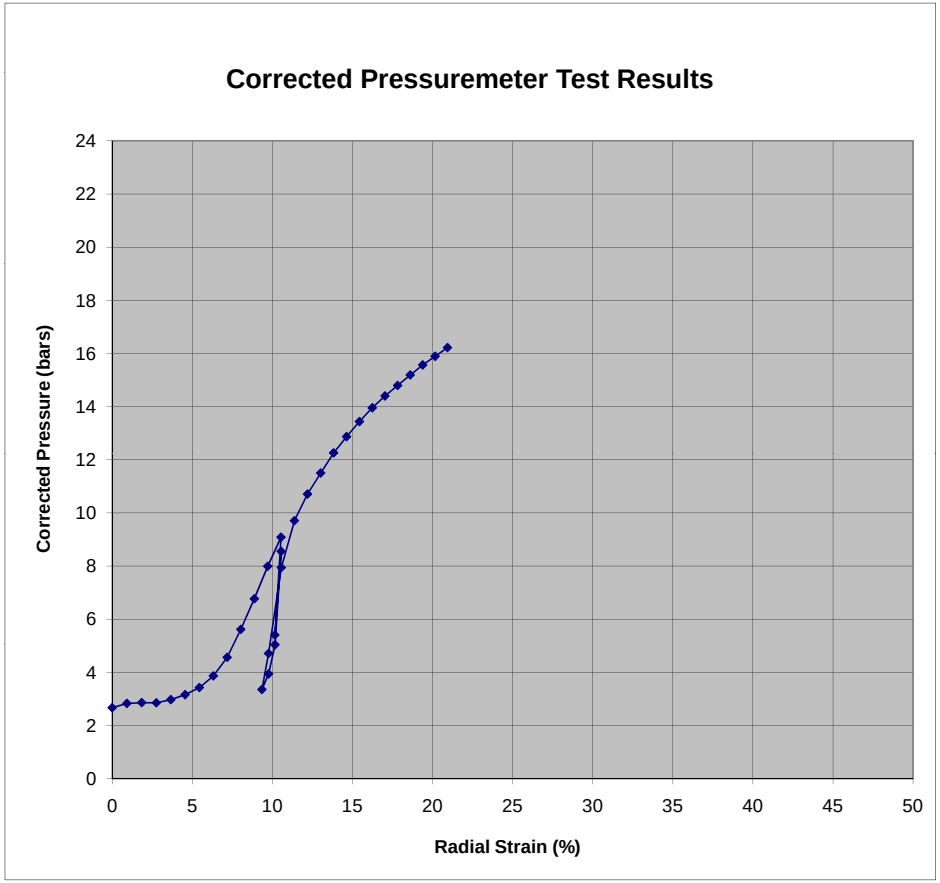


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	6
IN-SITU SOIL TESTING, L.C.		DEPTH:	65 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.67	0	0.00	
2.83	40	0.92	
2.86	79	1.84	
2.85	119	2.75	
2.97	159	3.66	
3.16	**199**	**4.55**	
3.43	239	5.44	
3.86	279	6.31	
4.56	318	7.18	Eo1
5.62	357	8.03	
6.77	396	8.87	
7.99	435	9.71	
9.08	475	10.54	Eo2
5.41	457	10.16	Er1
8.55	475	10.55	Er2
5.04	457	10.16	
3.94	438	9.76	
3.35	419	9.35	Er3
4.71	438	9.76	Er4
7.94	476	10.56	
9.70	514	11.37	
10.71	553	12.19	
11.50	593	13.01	
12.26	632	13.82	
12.87	672	14.63	
13.44	711	15.44	
13.95	751	16.24	
14.40	791	17.03	
14.79	830	17.82	
15.19	870	18.61	
15.57	910	19.39	
15.89	949	20.16	
16.22	989	20.93	

Interpreted Pressuremeter Parameters		
P_o	**3.3**	**bar**
P_L	**24.0**	**bar**
P_L^*	**20.7**	**bar**
E_o	**195**	**bar**
E_{r1}	**1176**	**bar**
E_{r2}	**480**	**bar**
E_o/P_L^*	**9.5**	
E_{u1}	**#DIV/0!**	**bar**
E_{r3}	**#DIV/0!**	**bar**
E_{u2}	**#DIV/0!**	**bar**



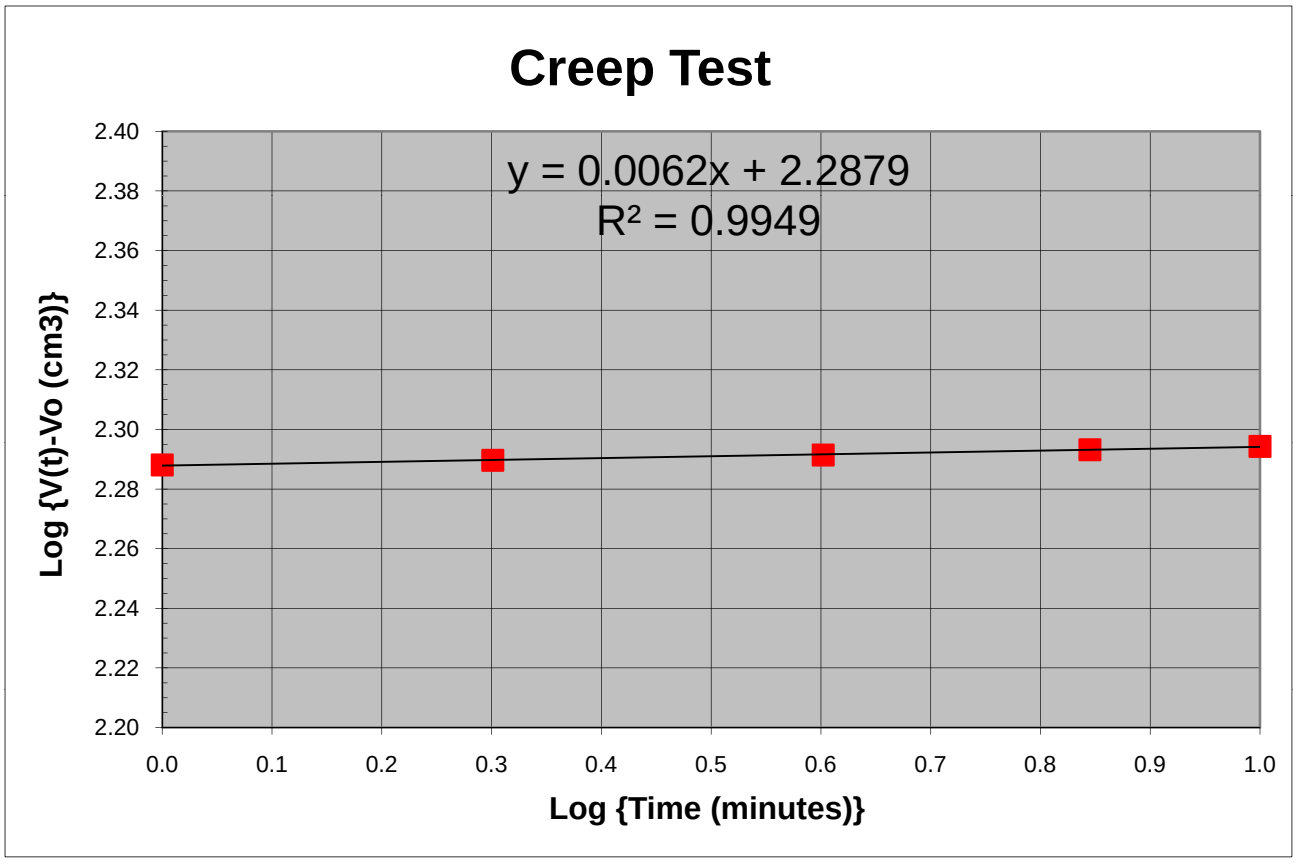
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 65 feet

Holding Gauge Pressure =	5.88	bars
Corrected Pressure =	7.97	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2426	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	481.20	2620.01	194.12	2.288
2	0.301	481.90	2620.71	194.82	2.290
4	0.602	482.70	2621.51	195.62	2.291
7	0.845	483.50	2622.31	196.42	2.293
10	1.000	484.00	2622.81	196.92	2.294

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0062

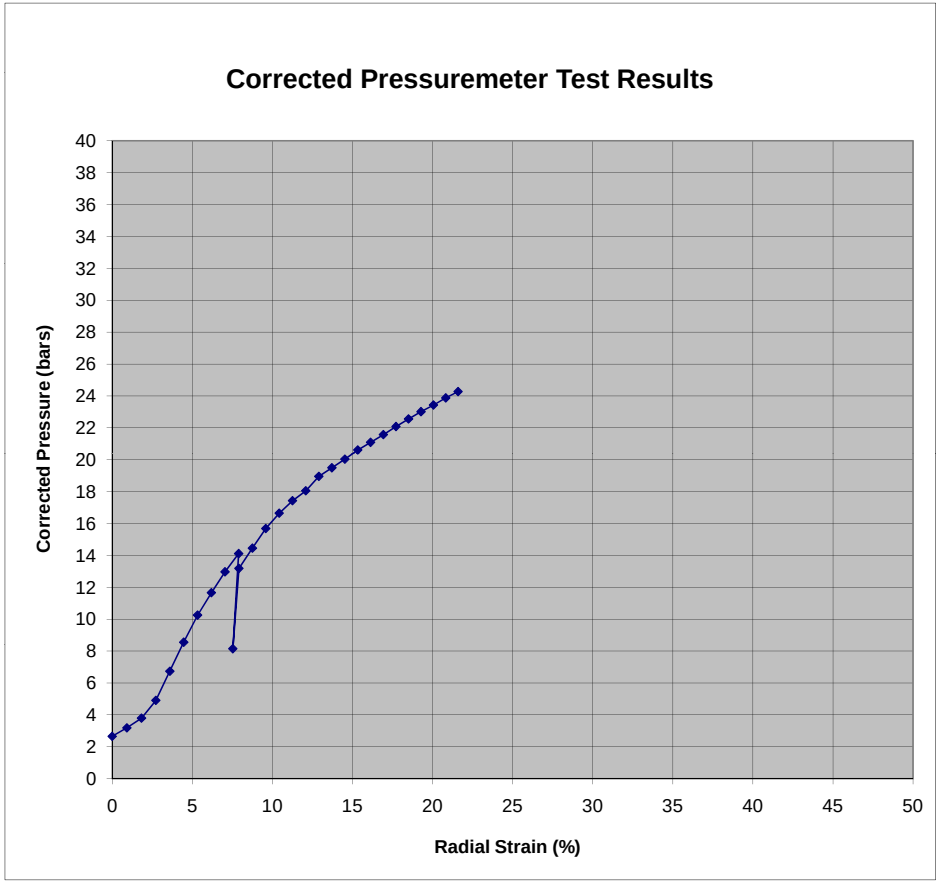


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	7
IN-SITU SOIL TESTING, L.C.		DEPTH:	74.4 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
2.65	0	0.00	
3.18	39	0.92	
3.79	79	1.83	
4.91	118	2.72	Eo1
6.74	157	3.60	
8.55	195	4.47	
10.25	234	5.33	
11.66	273	6.19	
12.97	312	7.04	
14.11	351	7.90	Eo2
8.15	334	7.53	Er1
13.18	352	7.91	Er2
14.45	391	8.75	
15.69	430	9.59	
16.65	469	10.42	
17.43	509	11.25	
18.05	548	12.08	
18.95	587	12.90	
19.49	627	13.72	
20.03	667	14.53	
20.61	706	15.33	
21.09	746	16.13	
21.57	785	16.93	
22.08	825	17.72	
22.56	865	18.50	
23.01	904	19.28	
23.43	944	20.06	
23.87	984	20.82	
24.27	1023	21.59	

Interpreted Pressuremeter Parameters		
P_o	3.9	bar
P_L	33.0	bar
P_L^*	29.1	bar
E_o	249	bar
E_{r1}	1882	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	8.6	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



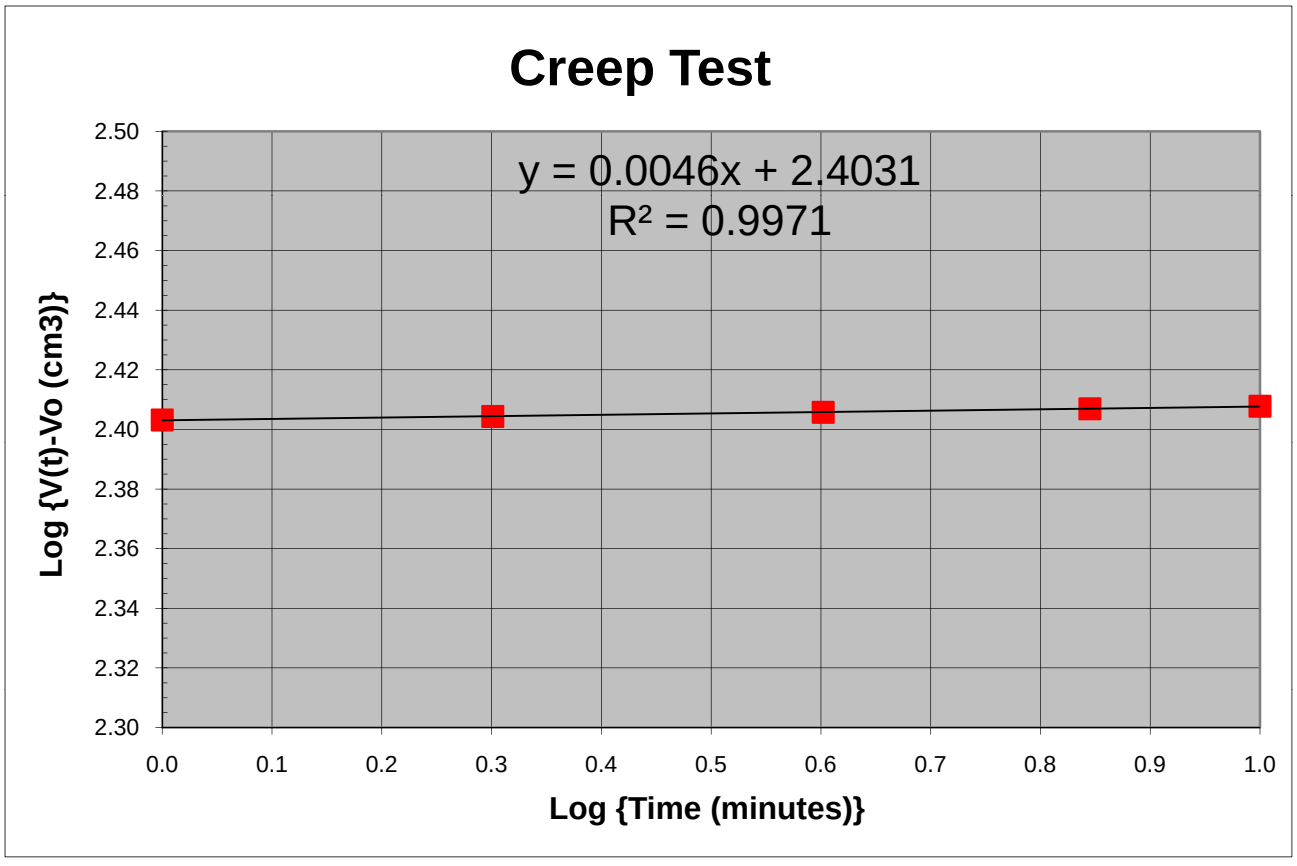
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 74.4 feet

Holding Gauge Pressure =	9.88	bars
Corrected Pressure =	12.27	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	50	cm
Initial Volume of Probe =	2139	cm^3
Probe Radius Contacting Borehole =	3.78	cm
Initial Borehole Volume, Vo =	2247	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	361.30	2500.11	253.02	2.403
2	0.301	362.00	2500.81	253.72	2.404
4	0.602	362.80	2501.61	254.52	2.406
7	0.845	363.50	2502.31	255.22	2.407
10	1.000	364.00	2502.81	255.72	2.408

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0046

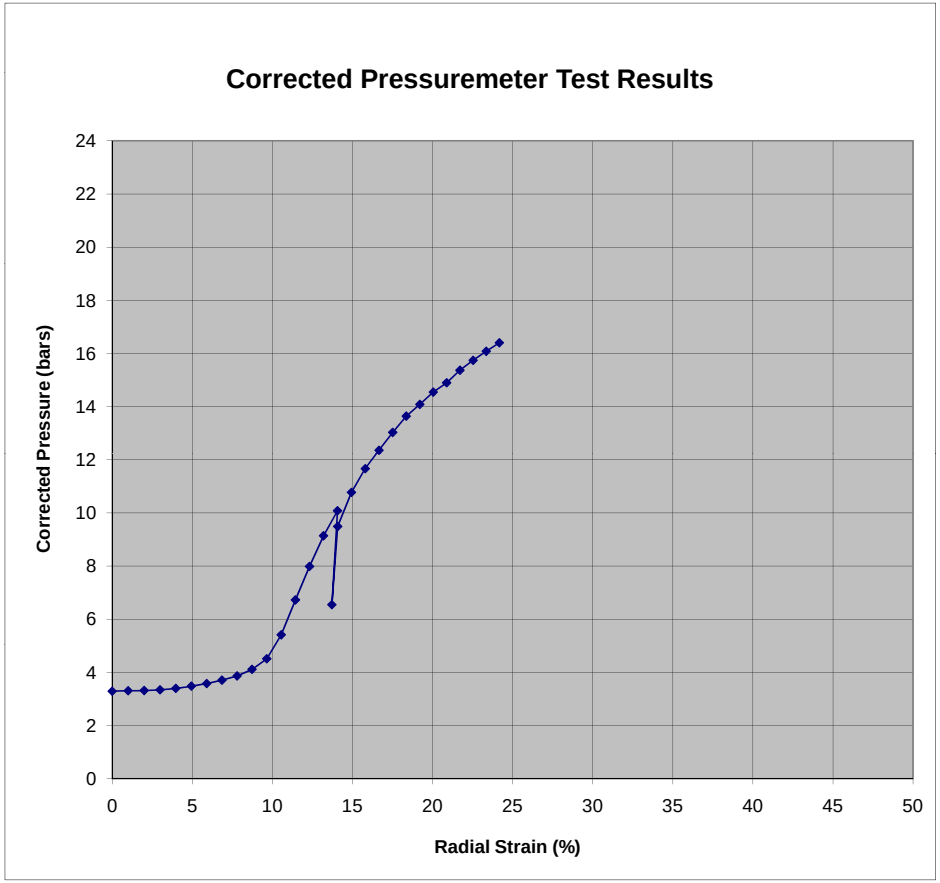


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	8
IN-SITU SOIL TESTING, L.C.		DEPTH:	82.2 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.29	-1	0.00	
3.31	39	1.00	
3.32	79	2.00	
3.34	119	2.99	
3.40	159	3.97	
3.48	199	4.94	
3.58	239	5.90	
3.71	279	6.85	
3.86	319	7.80	
4.11	358	8.73	
4.51	398	9.65	
5.41	437	10.55	Eo1
6.72	476	11.44	
7.99	515	12.32	
9.14	553	13.19	
10.08	592	14.06	Eo2
6.54	577	13.71	Er1
9.49	593	14.08	Er2
10.77	632	14.93	
11.66	671	15.80	
12.36	710	16.65	Er3
13.03	749	17.51	Er4
13.64	789	18.36	
14.08	828	19.20	
14.54	868	20.04	
14.90	907	20.88	
15.37	947	21.71	
15.74	987	22.53	
16.08	1026	23.35	
16.40	1066	24.16	

Interpreted Pressuremeter Parameters		
P_o	4.2	bar
P_L	22.5	bar
P_L^*	18.3	bar
E_o	199	bar
E_{r1}	1225	bar
E_{r2}	123	bar
E_o/P_L^*	10.9	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



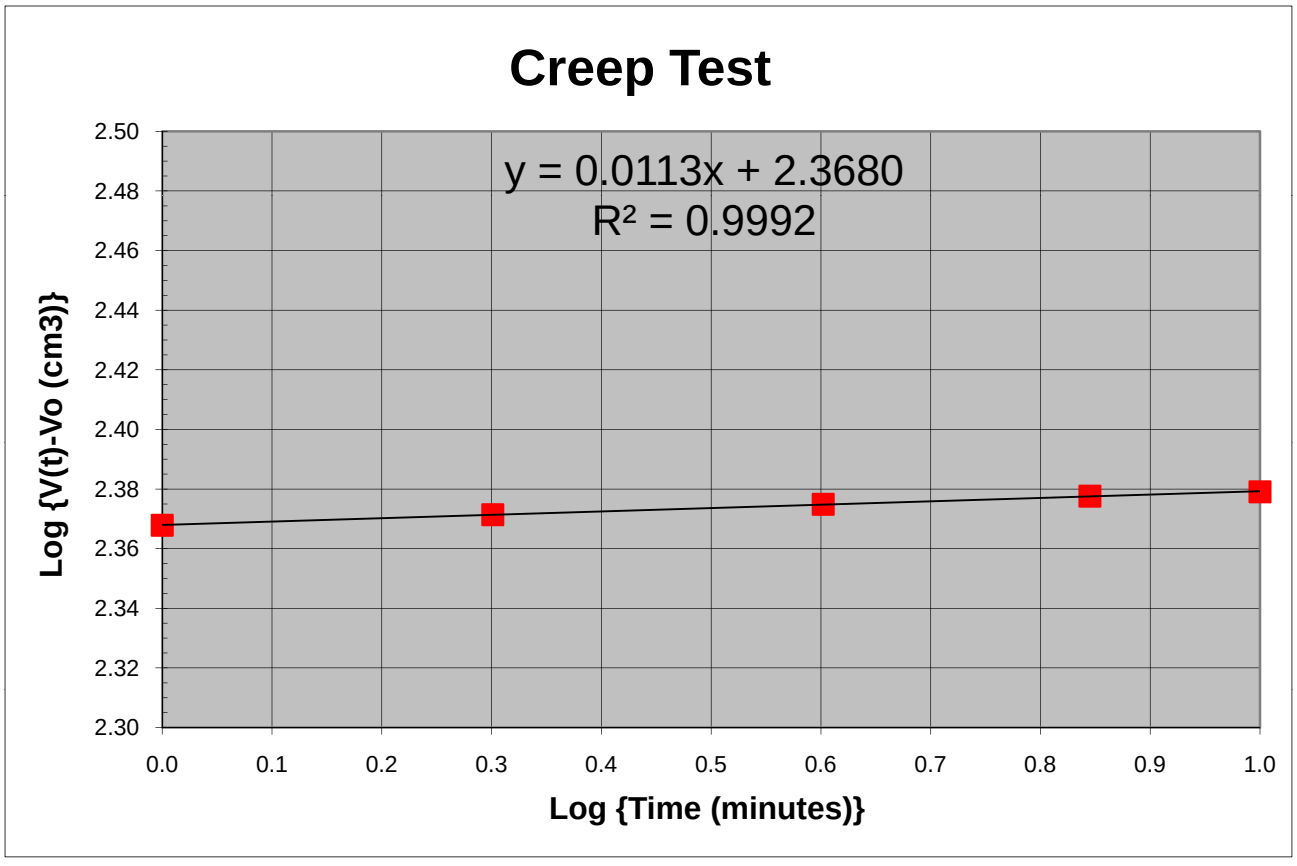
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 82.2 feet

Holding Gauge Pressure =	6.62	bars
Corrected Pressure =	9.18	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	4.02	cm
Initial Borehole Volume, Vo =	2338	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	603.40	2571.11	233.27	2.368
2	0.301	605.30	2573.01	235.17	2.371
4	0.602	607.20	2574.91	237.07	2.375
7	0.845	608.70	2576.41	238.57	2.378
10	1.000	609.50	2577.21	239.37	2.379

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0113

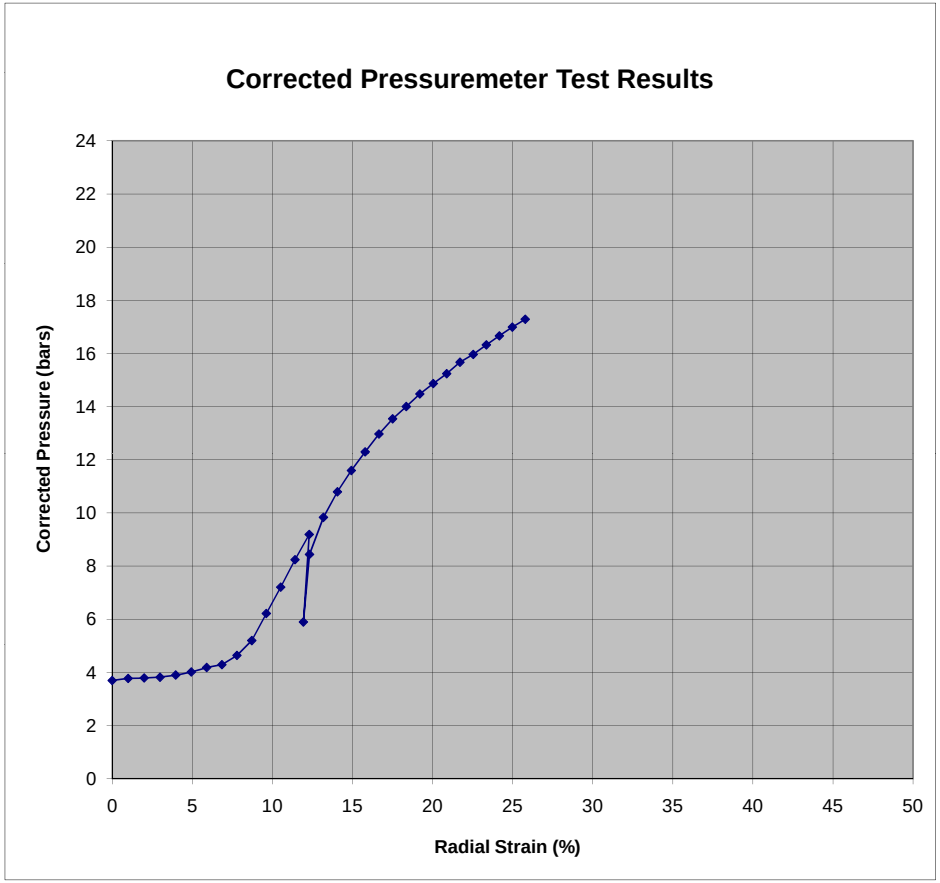


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	9
IN-SITU SOIL TESTING, L.C.		DEPTH:	95.5 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
3.69	-1	0.00	
3.77	39	1.00	
3.79	79	2.00	
3.81	119	2.99	
3.90	159	3.97	
4.01	199	4.94	
4.18	239	5.90	
4.29	279	6.85	
4.64	318	7.79	
5.19	358	8.71	Eo1
6.21	397	9.62	
7.20	436	10.52	
8.24	475	11.41	
9.19	514	12.30	Eo2
5.89	498	11.93	Er1
8.44	514	12.31	Er2
9.83	553	13.18	
10.79	592	14.06	
11.59	631	14.93	
12.30	671	15.79	
12.97	710	16.65	
13.54	749	17.51	
14.00	789	18.36	
14.47	828	19.20	
14.87	868	20.04	
15.24	907	20.88	
15.67	947	21.71	
15.96	987	22.53	
16.32	1026	23.35	
16.66	1066	24.17	
16.99	1106	24.98	
17.29	1145	25.78	

Interpreted Pressuremeter Parameters		
P_o	4.4	bar
P_L	23.5	bar
P_L^*	19.1	bar
E_o	164	bar
E_{r1}	999	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	8.6	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



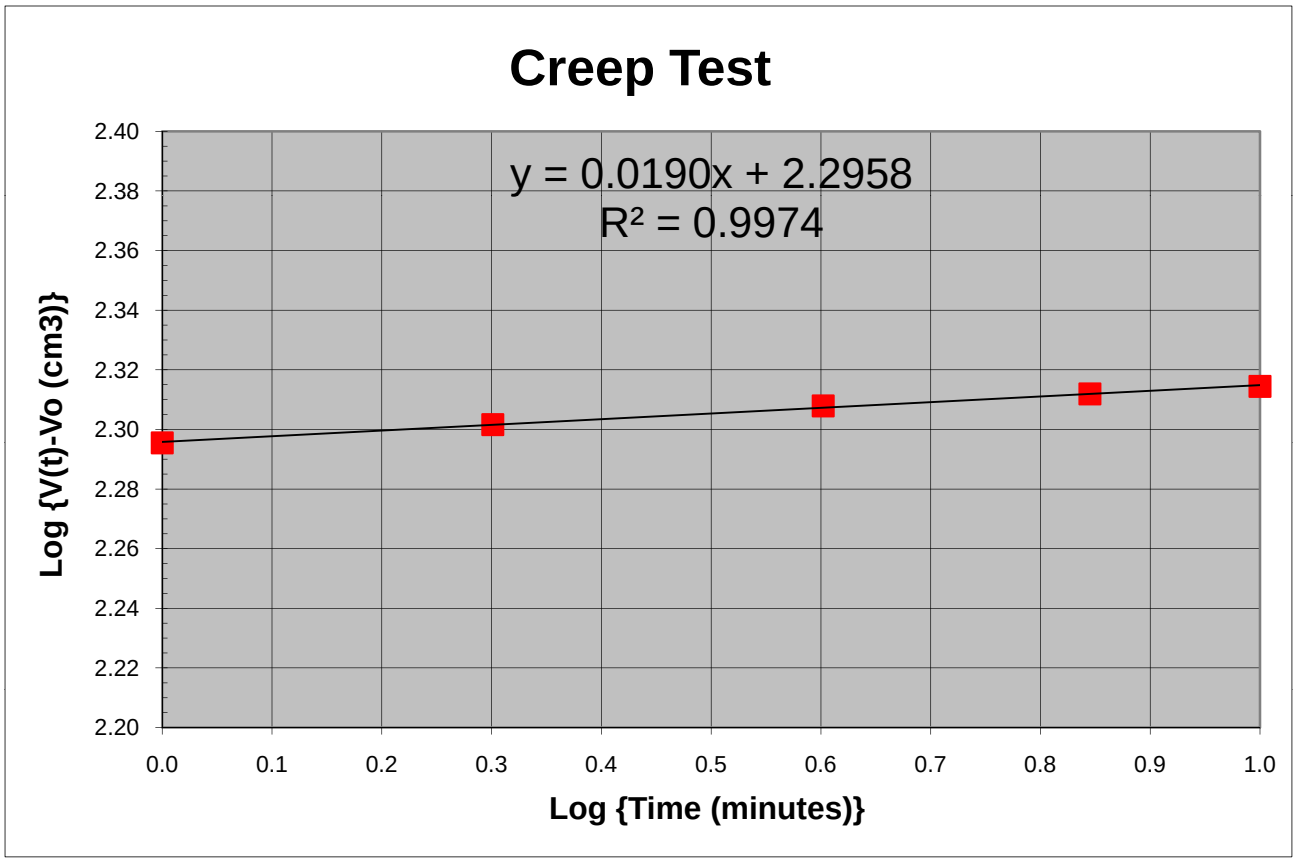
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 95.5 feet

Holding Gauge Pressure =	5.35	bars
Corrected Pressure =	8.34	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.99	cm
Initial Borehole Volume, Vo =	2295	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	524.90	2492.61	197.47	2.296
2	0.301	527.70	2495.41	200.27	2.302
4	0.602	530.60	2498.31	203.17	2.308
7	0.845	532.50	2500.21	205.07	2.312
10	1.000	533.70	2501.41	206.27	2.314

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0190

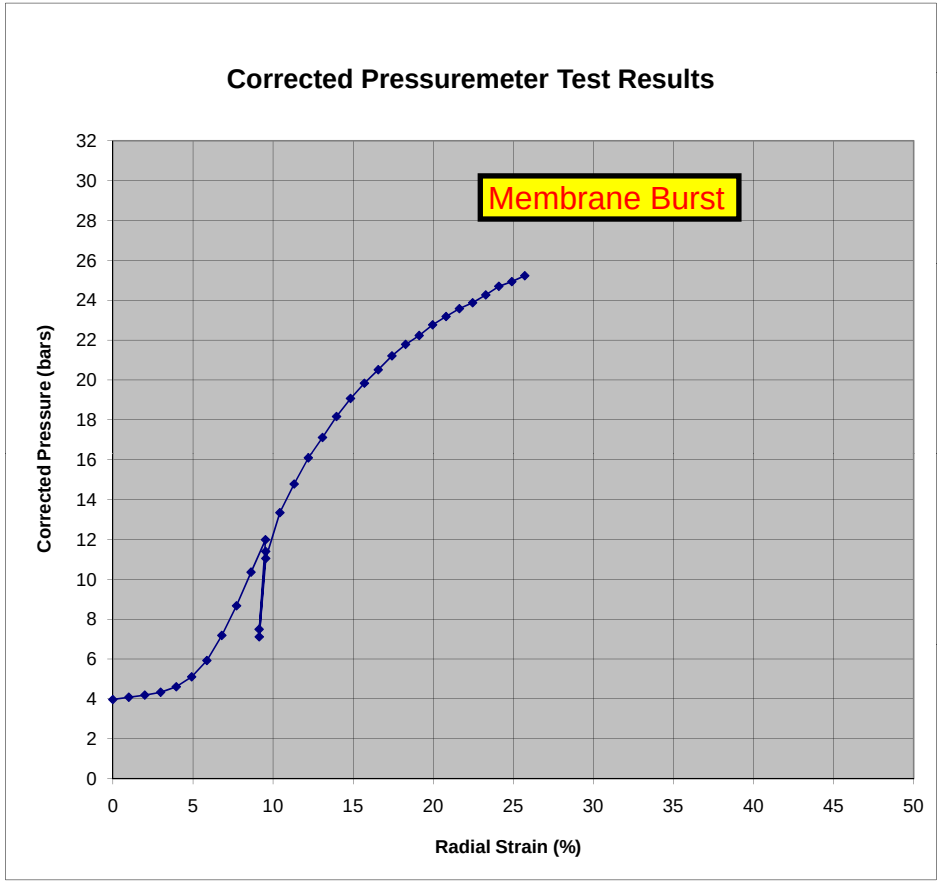


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	10
IN-SITU SOIL TESTING, L.C.		DEPTH:	100.6 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/1/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
3.97	0	0.00	
4.08	39	1.00	
4.19	79	2.00	
4.33	119	2.98	
4.61	159	3.96	
5.11	199	4.92	
5.93	238	5.87	
7.18	277	6.80	Eo1
8.67	316	7.72	
10.36	354	8.63	
11.99	393	9.53	Eo2
7.49	376	9.13	Er1
11.40	393	9.54	Er2
7.11	376	9.14	Er3
11.05	394	9.55	Er4
13.34	432	10.43	
14.78	471	11.32	
16.09	510	12.21	
17.12	549	13.09	
18.17	588	13.97	
19.07	627	14.84	
19.84	667	15.71	
20.52	706	16.57	
21.21	746	17.43	
21.79	785	18.28	
22.23	825	19.13	
22.77	864	19.97	
23.19	904	20.81	
23.58	944	21.64	
23.88	983	22.47	
24.27	1023	23.29	
24.70	1063	24.10	
24.94	1103	24.91	
25.23	1142	25.72	

Interpreted Pressuremeter Parameters		
P_o	4.6	bar
P_L	31.0	bar
P_L^*	26.4	bar
E_o	253	bar
E_{r1}	1392	bar
E_{r2}	1407	bar
E_o/P_L^*	9.6	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



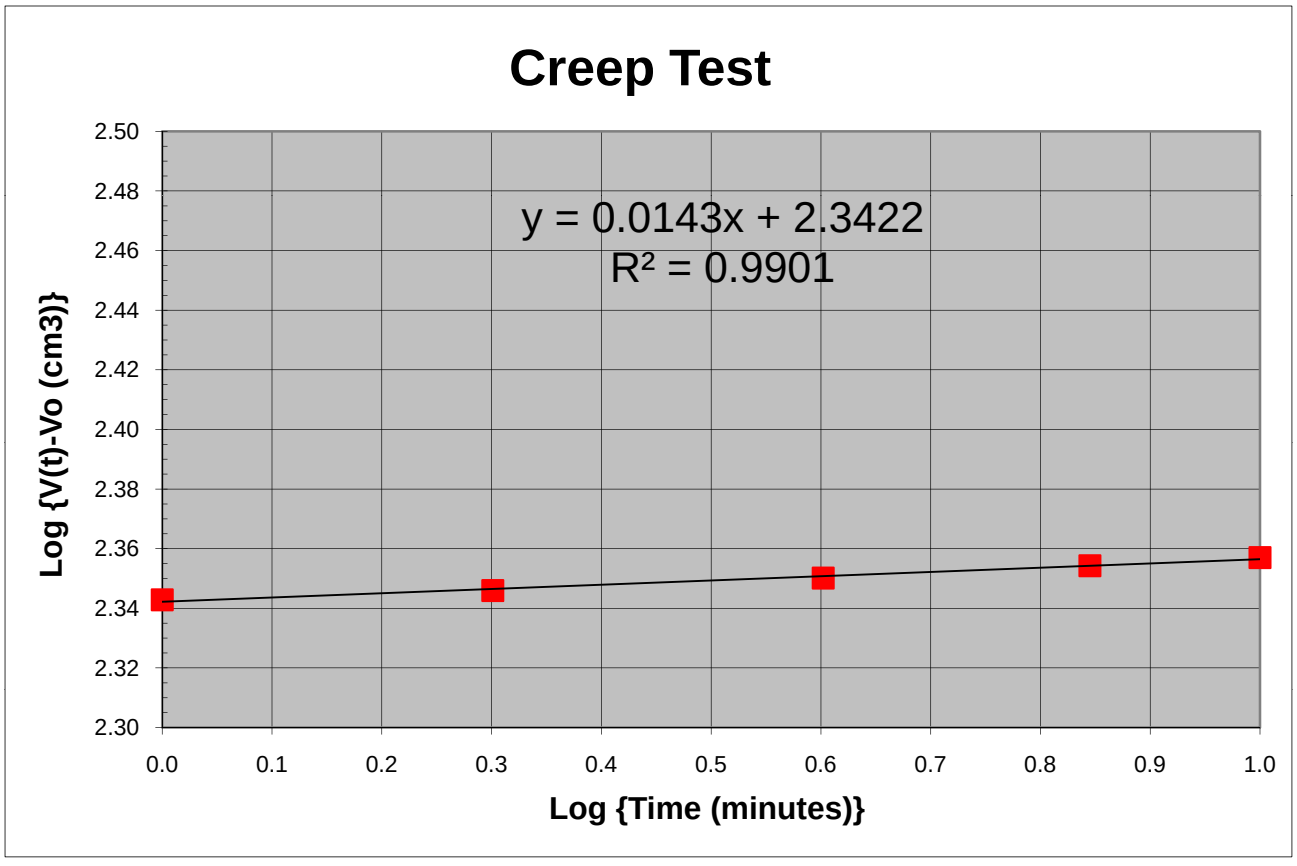
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 100.6 feet

Holding Gauge Pressure =	10.12	bars
Corrected Pressure =	13.34	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.89	cm
Initial Borehole Volume, Vo =	2190	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	442.60	2410.31	220.20	2.343
2	0.301	444.20	2411.91	221.80	2.346
4	0.602	446.35	2414.06	223.95	2.350
7	0.845	448.48	2416.19	226.08	2.354
10	1.000	449.90	2417.61	227.50	2.357

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0143

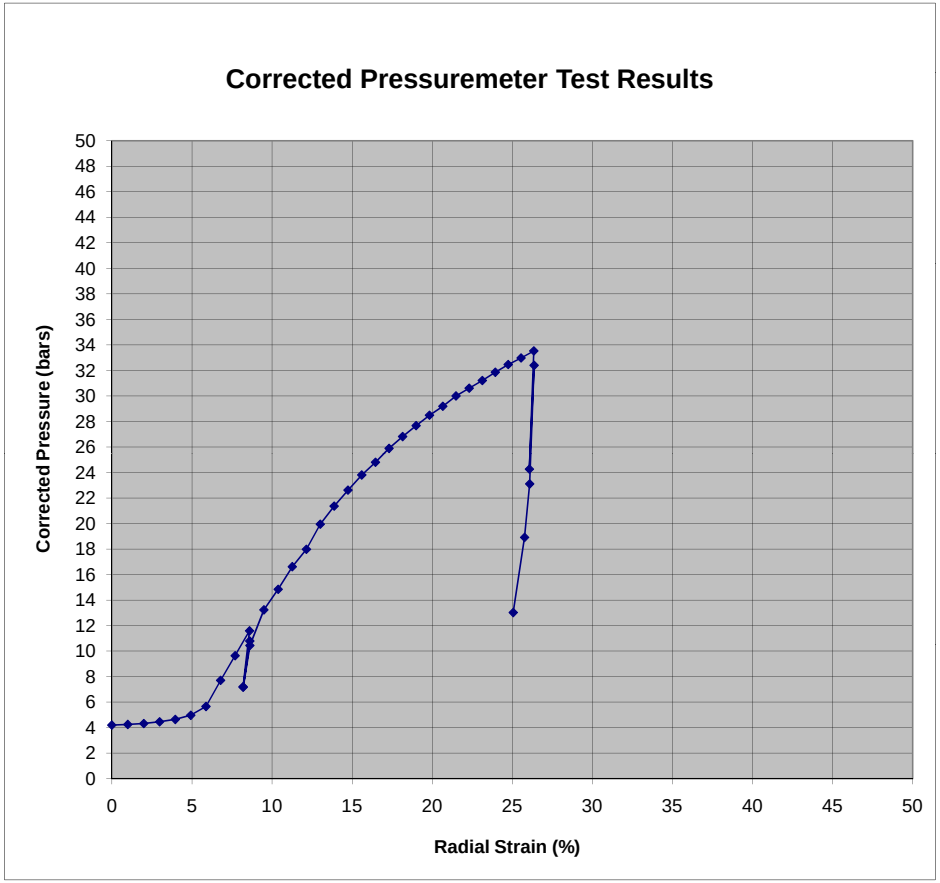


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	11
IN-SITU SOIL TESTING, L.C.		DEPTH:	112.4 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
4.20	-1	0.00	
4.25	39	1.00	
4.32	79	2.00	
4.46	119	2.98	
4.64	159	3.96	
4.97	199	4.93	
5.66	238	5.88	Eo1
7.71	276	6.79	
9.64	314	7.69	
11.59	353	8.59	Eo2
7.20	336	8.19	Er1
10.79	353	8.61	Er2
7.17	336	8.20	Er3
10.44	354	8.62	Er4
13.23	391	9.49	
14.84	430	10.38	
16.61	468	11.26	
17.98	507	12.15	
19.94	545	13.01	
21.36	584	13.88	
22.62	623	14.74	
23.80	662	15.60	
24.80	701	16.46	
25.88	740	17.30	
26.81	779	18.15	
27.67	818	18.99	
28.48	858	19.83	
29.19	897	20.66	
29.99	936	21.48	
30.60	976	22.31	
31.21	1015	23.12	
31.85	1055	23.93	
32.46	1094	24.74	
32.97	1134	25.54	
33.52	1173	26.34	Eu1
24.26	1159	26.06	Eu2
32.39	1174	26.36	Eu3
23.10	1160	26.08	Eu4
18.91	1145	25.77	
13.02	1110	25.06	

Interpreted Pressuremeter Parameters		
P_o	4.8	bar
P_L	44.0	bar
P_L^*	39.2	bar
E_o	311	bar
E_{r1}	1239	bar
E_{r2}	1122	bar
E_o/P_L^*	7.9	
E_{u1}	5569	bar
E_{r3}	4559	bar
E_{u2}	5597	bar



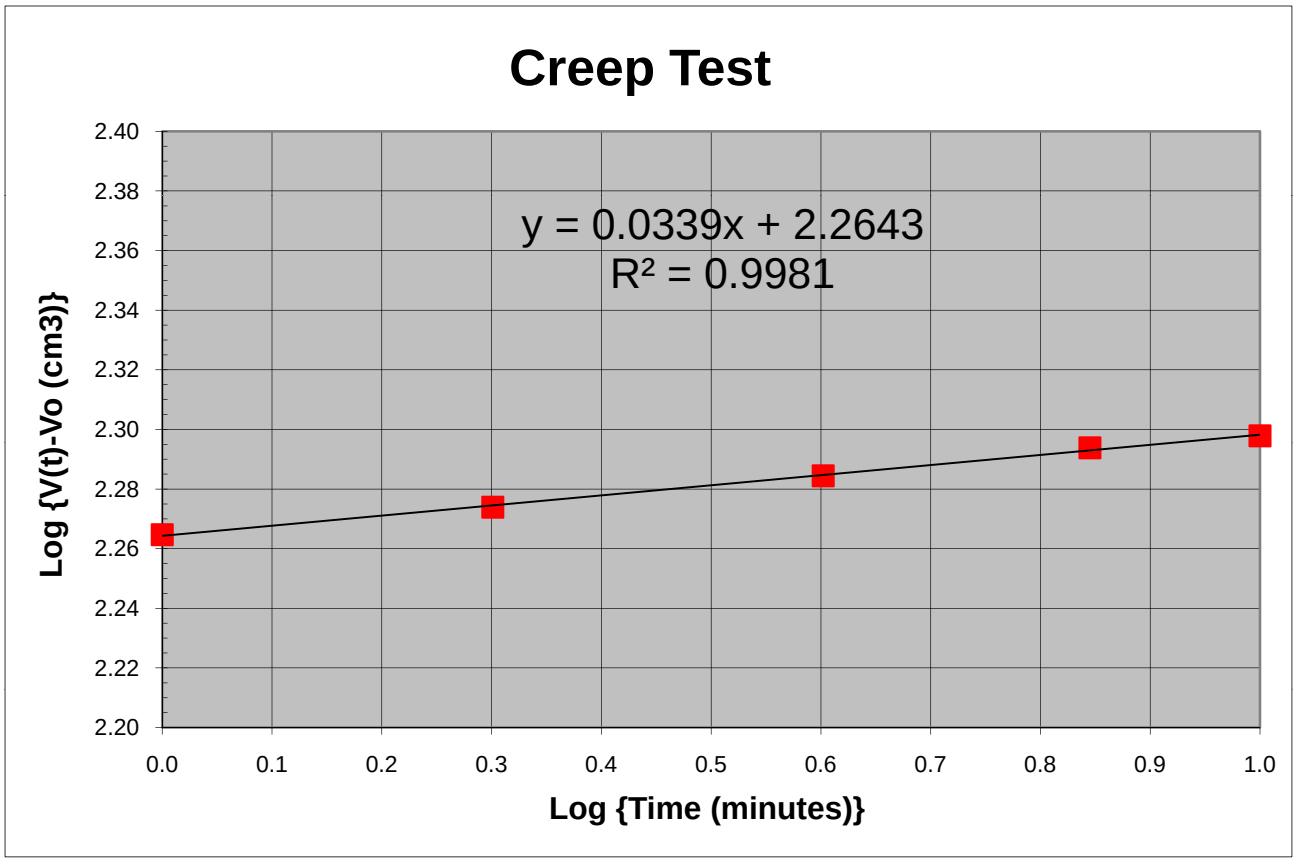
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 112.4 feet

Holding Gauge Pressure =	9.81	bars
Corrected Pressure =	13.23	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.89	cm
Initial Borehole Volume, Vo =	2190	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	406.35	2374.06	183.95	2.265
2	0.301	410.30	2378.01	187.90	2.274
4	0.602	414.90	2382.61	192.50	2.284
7	0.845	419.10	2386.81	196.70	2.294
10	1.000	420.94	2388.65	198.54	2.298

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0339

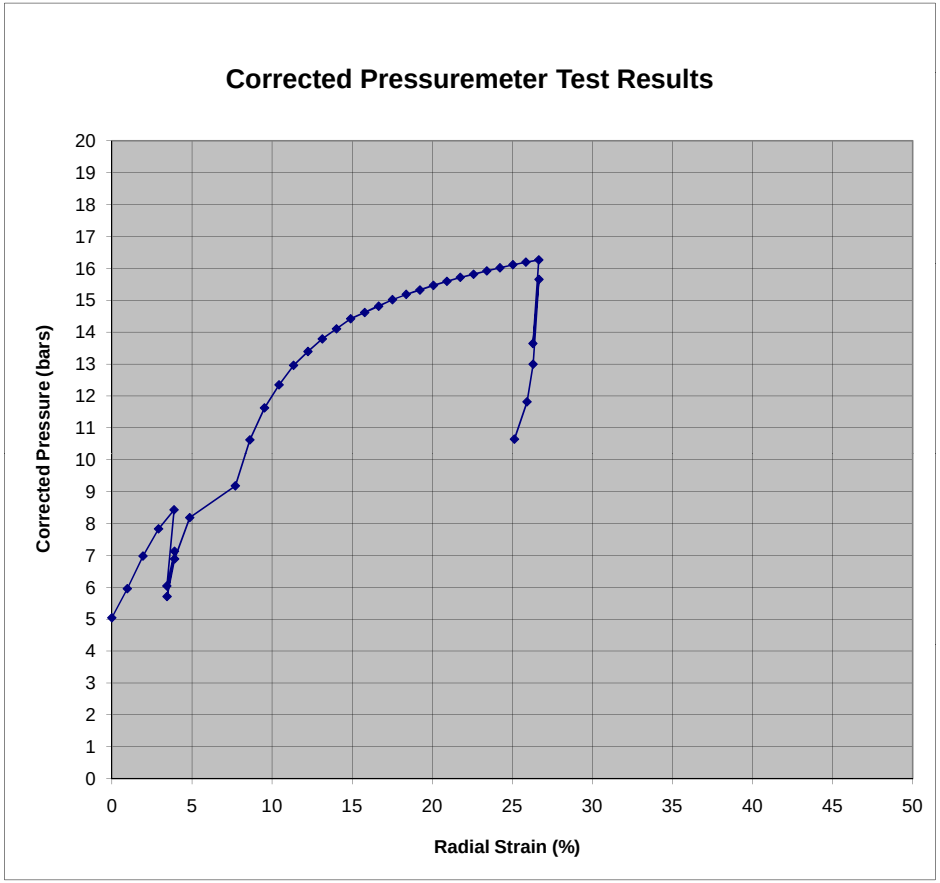


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	12
IN-SITU SOIL TESTING, L.C.		DEPTH:	122.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.04	-1	0.00	
5.96	38	0.96	Eo1
6.98	77	1.94	
7.83	116	2.92	
8.43	156	3.89	Eo2
6.04	137	3.43	Er1
7.13	157	3.91	Er2
5.71	138	3.45	Er3
6.89	157	3.92	Er4
8.18	196	4.86	
9.18	315	7.71	
10.62	354	8.62	
11.62	393	9.53	
12.35	432	10.44	
12.96	472	11.34	
13.39	511	12.24	
13.79	551	13.14	
14.10	591	14.03	
14.42	630	14.91	
14.62	670	15.79	
14.81	710	16.66	
15.02	750	17.52	
15.18	790	18.38	
15.32	830	19.23	
15.47	869	20.08	
15.59	909	20.92	
15.72	949	21.75	
15.81	989	22.58	
15.92	1029	23.41	
16.02	1069	24.23	
16.11	1109	25.04	
16.19	1149	25.85	
16.26	1189	26.65	Eu1
13.64	1170	26.29	Eu2
15.65	1189	26.67	Eu3
12.99	1171	26.30	Eu4
11.81	1152	25.92	
10.64	1113	25.13	

Interpreted Pressuremeter Parameters		
P_o	N/A	bar
P_L	17.0	bar
P_L^*	#VALUE!	bar
E_o	115	bar
E_{r1}	313	bar
E_{r2}	344	bar
E_o/P_L^*	#VALUE!	
E_{u1}	1201	bar
E_{r3}	895	bar
E_{u2}	1221	bar



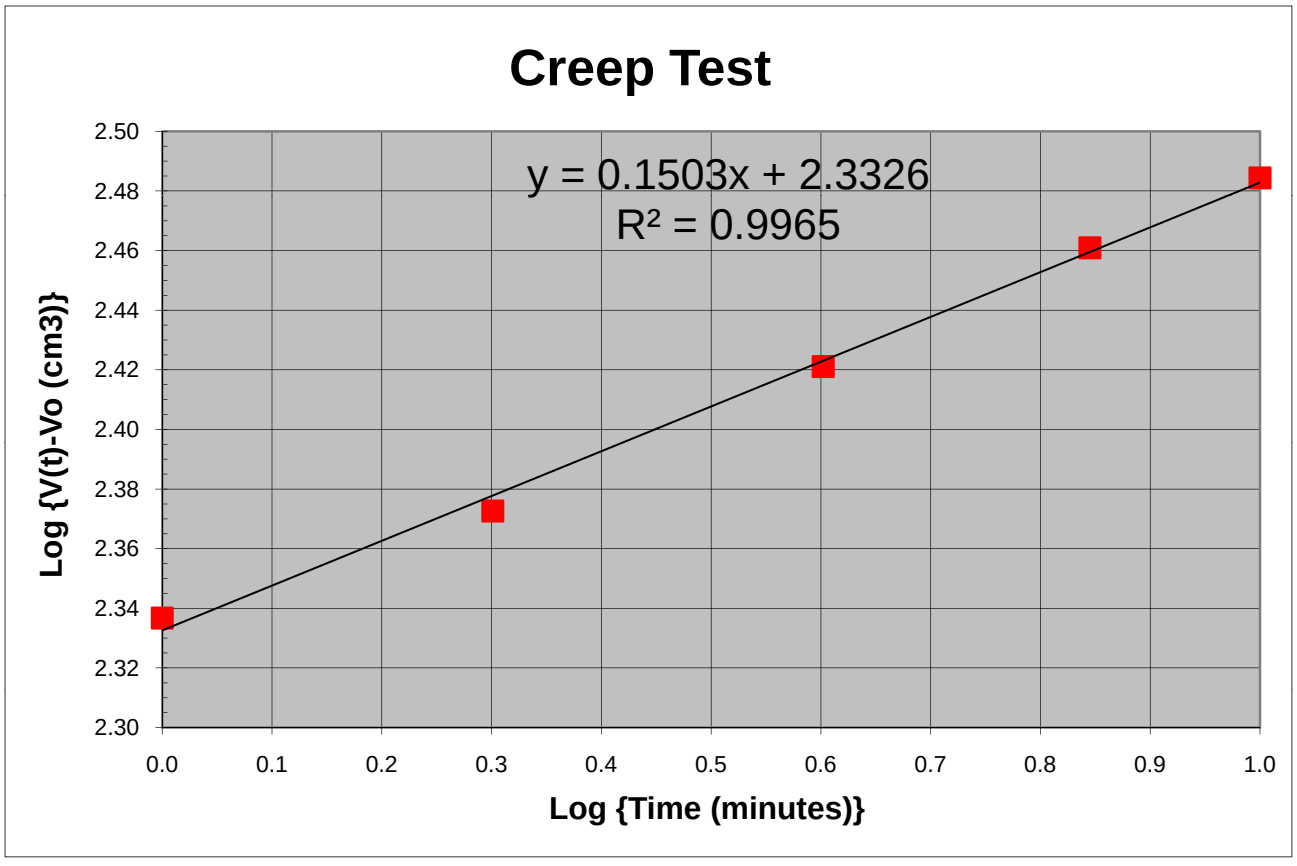
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 122.9 feet

Holding Gauge Pressure =	4.40	bars
Corrected Pressure =	8.18	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.69	cm
Initial Borehole Volume, Vo =	1968	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	217.13	2184.84	217.13	2.337
2	0.301	235.85	2203.56	235.85	2.373
4	0.602	263.70	2231.41	263.70	2.421
7	0.845	289.00	2256.71	289.00	2.461
10	1.000	305.05	2272.76	305.05	2.484

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.1503

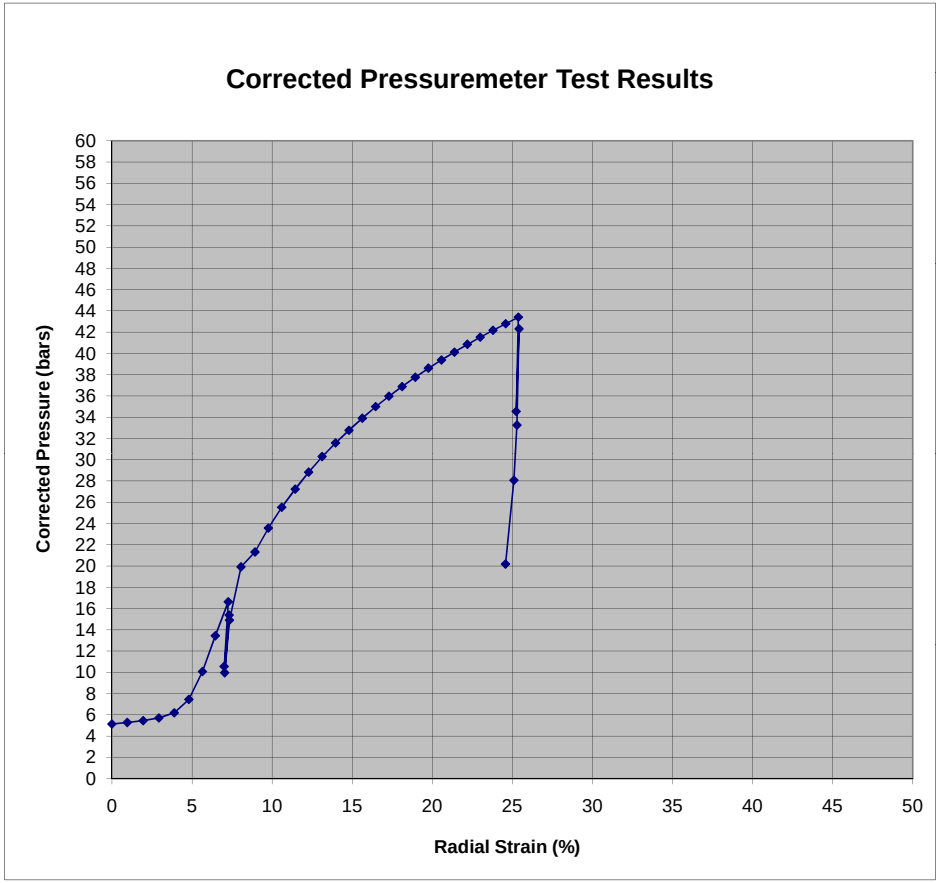


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	13
IN-SITU SOIL TESTING, L.C.		DEPTH:	132.9 ft
ENGINEER:	Roger Failmezger, P.E., F. ASCE	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.14	-2	0.00	
5.29	38	0.96	
5.46	78	1.95	
5.71	117	2.93	
6.19	156	3.89	
7.45	194	4.81	Eo1
10.07	229	5.65	
13.44	262	6.46	
16.64	296	7.26	Eo2
10.55	285	7.01	Er1
15.39	299	7.32	Er2
9.96	287	7.04	Er3
14.91	299	7.34	Er4
19.92	330	8.06	
21.32	367	8.93	
23.57	403	9.76	
25.53	439	10.60	
27.23	476	11.44	
28.83	513	12.28	
30.29	550	13.12	
31.58	588	13.96	
32.77	625	14.80	
33.90	663	15.63	
34.99	701	16.46	
35.97	739	17.29	
36.88	778	18.12	
37.76	816	18.94	
38.61	854	19.76	
39.38	893	20.57	
40.11	932	21.38	
40.85	970	22.19	
41.52	1009	22.99	
42.17	1048	23.79	
42.79	1086	24.58	
43.40	1125	25.37	Eu1
34.55	1119	25.24	Eu2
42.30	1127	25.42	Eu3
33.26	1121	25.29	Eu4
28.07	1112	25.10	
20.18	1086	24.57	

Interpreted Pressuremeter Parameters		
P_o	5.8	bar
P_L	56.0	bar
P_L^*	50.2	bar
E_o	527	bar
E_{r1}	2207	bar
E_{r2}	2341	bar
E_o/P_L^*	10.5	
E_{u1}	11012	bar
E_{r3}	7333	bar
E_{u2}	11767	bar



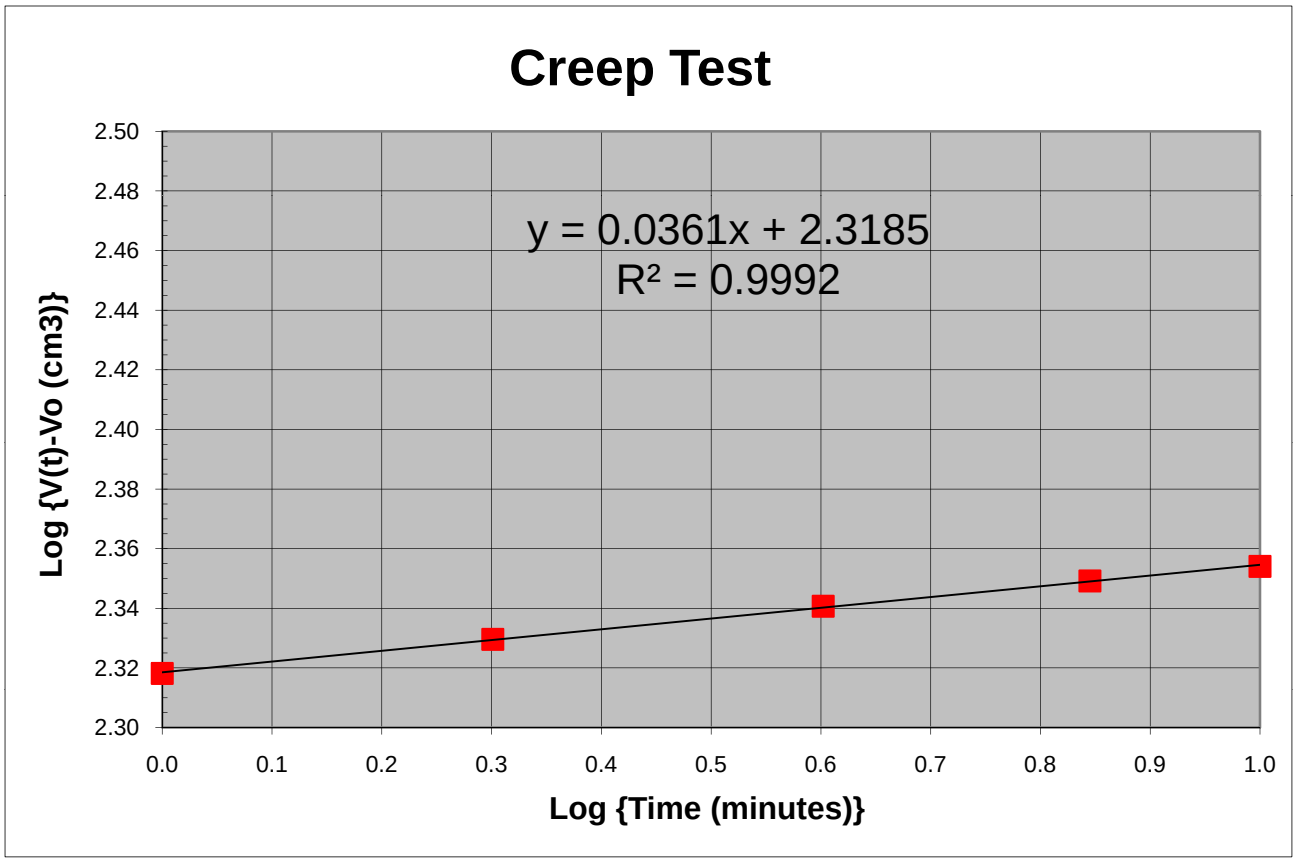
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 132.9 feet

Holding Gauge Pressure =	15.84	bars
Corrected Pressure =	19.92	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.84	cm
Initial Borehole Volume, Vo =	2128	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	368.60	2336.31	208.04	2.318
2	0.301	374.15	2341.86	213.59	2.330
4	0.602	379.70	2347.41	219.14	2.341
7	0.845	384.00	2351.71	223.44	2.349
10	1.000	386.54	2354.25	225.98	2.354

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0361

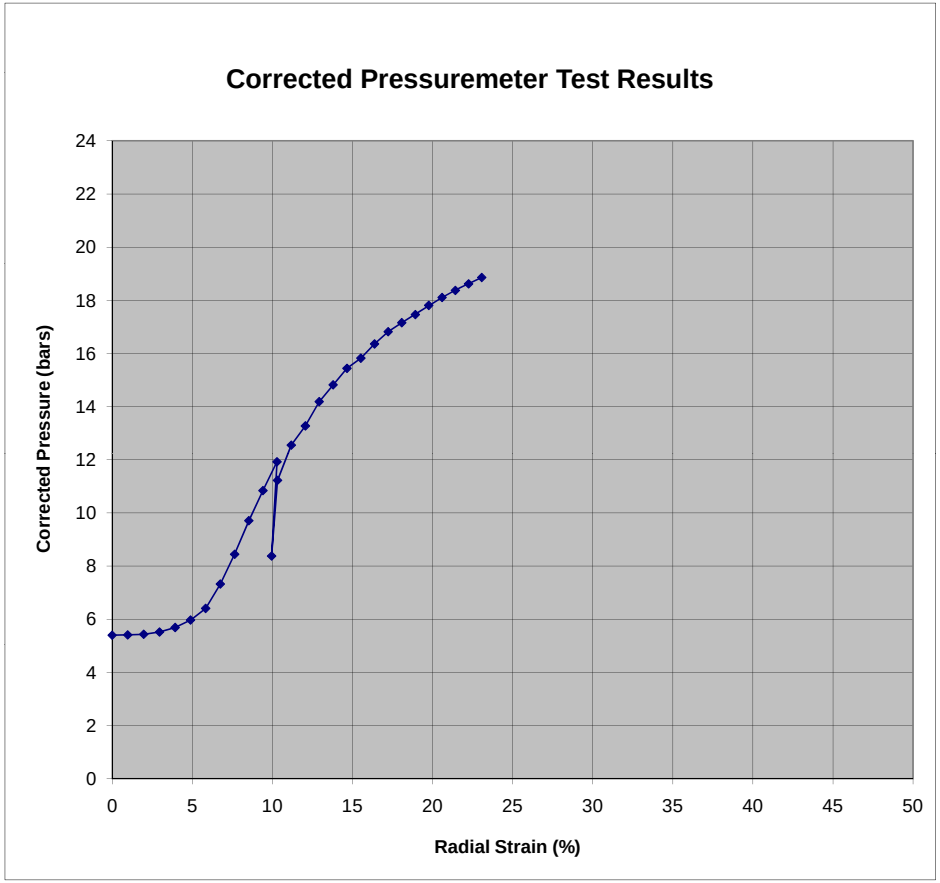


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	14
IN-SITU SOIL TESTING, L.C.		DEPTH:	142.5 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.40	-2	0.00	
5.41	38	0.97	
5.43	78	1.97	
5.52	118	2.96	
5.69	158	3.93	
5.97	**197**	**4.89**	
6.41	236	5.83	
7.32	274	6.75	Eo1
8.44	312	7.64	
9.71	350	8.53	
10.84	388	9.41	
11.92	426	10.29	Eo2
8.38	411	9.95	Er1
11.22	427	10.32	Er2
12.55	465	11.18	
13.27	503	12.06	
14.19	541	12.92	
14.82	580	13.79	
15.44	619	14.65	
15.82	658	15.52	
16.36	697	16.38	
16.82	736	17.23	
17.16	776	18.08	
17.46	815	18.92	
17.81	854	19.76	
18.11	894	20.59	
18.37	933	21.42	
18.62	973	22.25	
18.86	1012	23.07	

Interpreted Pressuremeter Parameters		
P_o	6.1	bar
P_L	23.5	bar
P_L^*	17.4	bar
E_o	188	bar
E_{r1}	1133	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	10.7	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



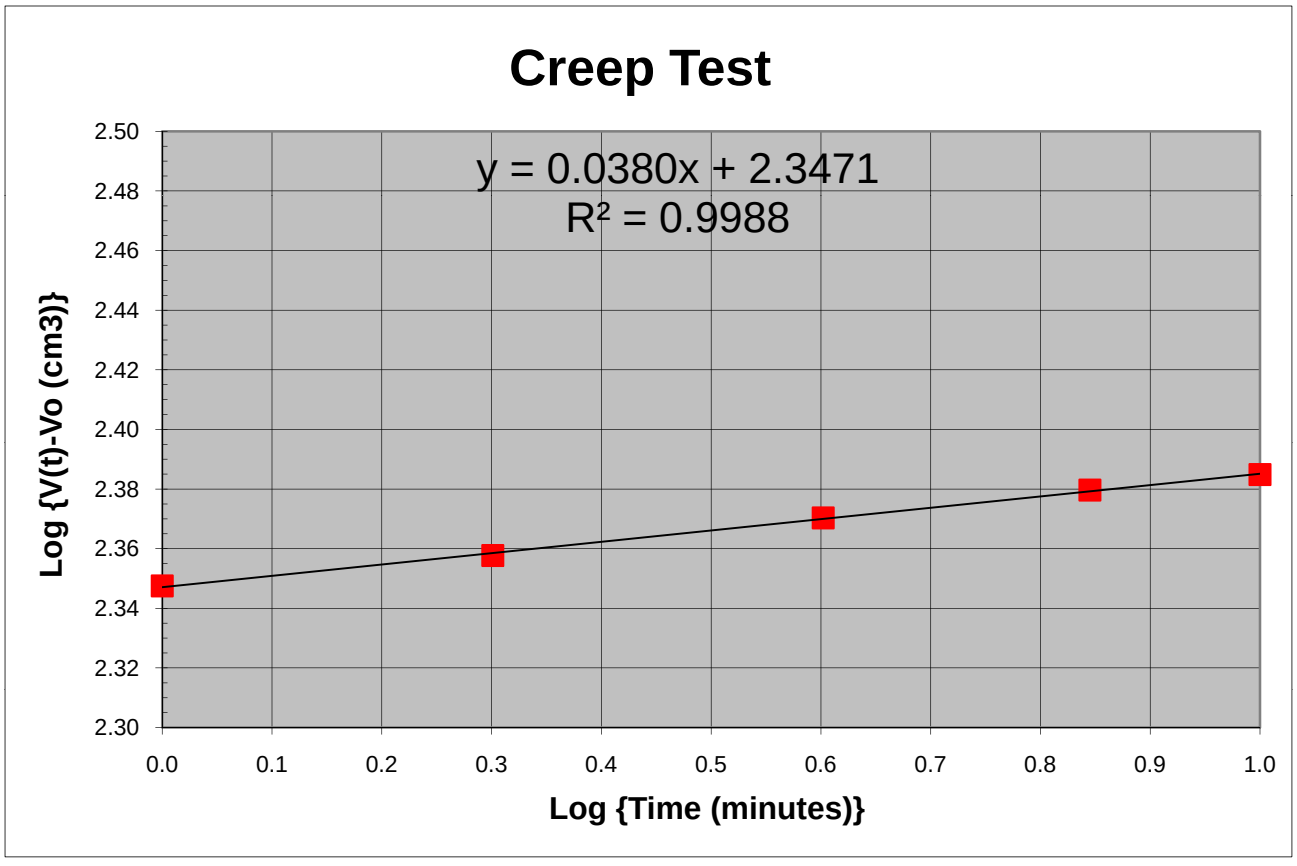
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 142.5 feet

Holding Gauge Pressure =	8.16	bars
Corrected Pressure =	12.55	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.93	cm
Initial Borehole Volume, Vo =	2232	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	486.70	2454.41	222.58	2.347
2	0.301	492.00	2459.71	227.88	2.358
4	0.602	498.70	2466.41	234.58	2.370
7	0.845	503.80	2471.51	239.68	2.380
10	1.000	506.70	2474.41	242.58	2.385

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0380

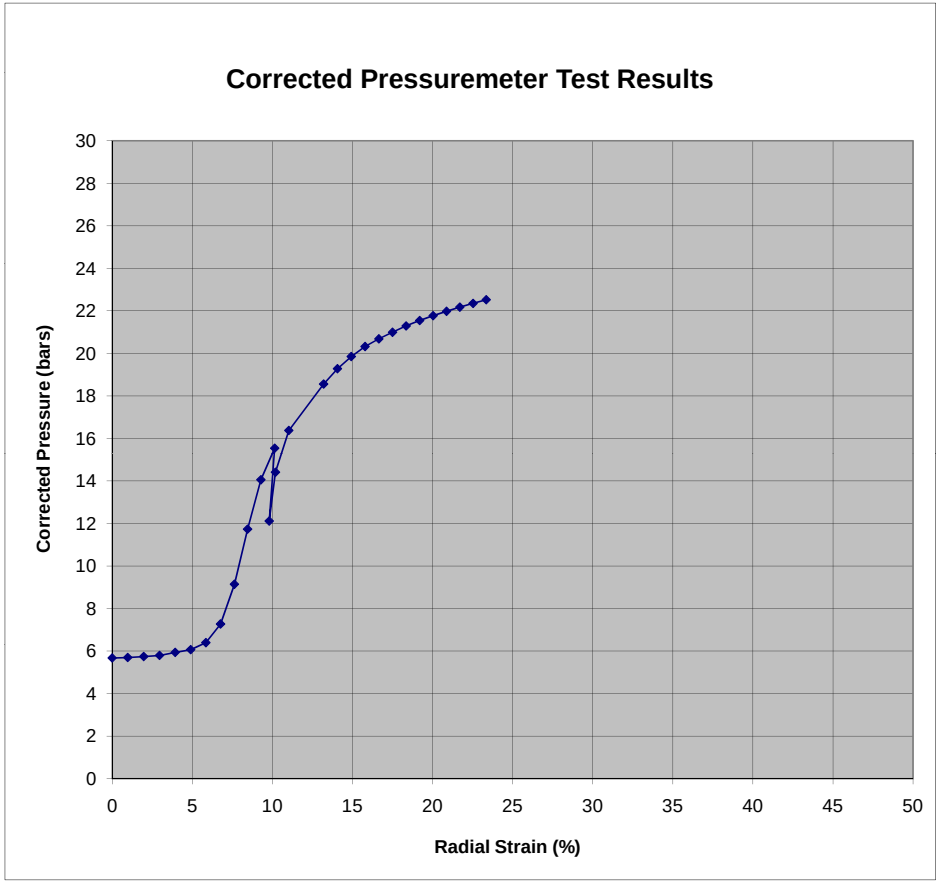


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	15
IN-SITU SOIL TESTING, L.C.		DEPTH:	152.8 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/1/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
5.67	-2	0.00	
5.70	38	0.97	
5.74	78	1.97	
5.79	118	2.96	
5.93	158	3.93	
6.06	197	4.90	
6.39	237	5.85	
7.27	275	6.76	
9.14	312	7.63	Eo1
11.73	347	8.45	
14.05	382	9.28	Eo2
15.54	419	10.14	
12.11	405	9.80	Er1
14.41	422	10.19	Er2
16.38	458	11.03	
18.56	554	13.20	
19.28	592	14.06	
19.85	631	14.92	
20.32	670	15.79	
20.68	710	16.64	
20.99	749	17.50	
21.29	788	18.35	
21.55	828	19.20	
21.77	867	20.04	
21.98	907	20.87	
22.18	947	21.70	
22.35	986	22.53	
22.52	1026	23.35	

Interpreted Pressuremeter Parameters		
P_o	6.3	bar
P_L	25.0	bar
P_L^*	18.7	bar
E_o	428	bar
E_{r1}	858	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	22.9	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



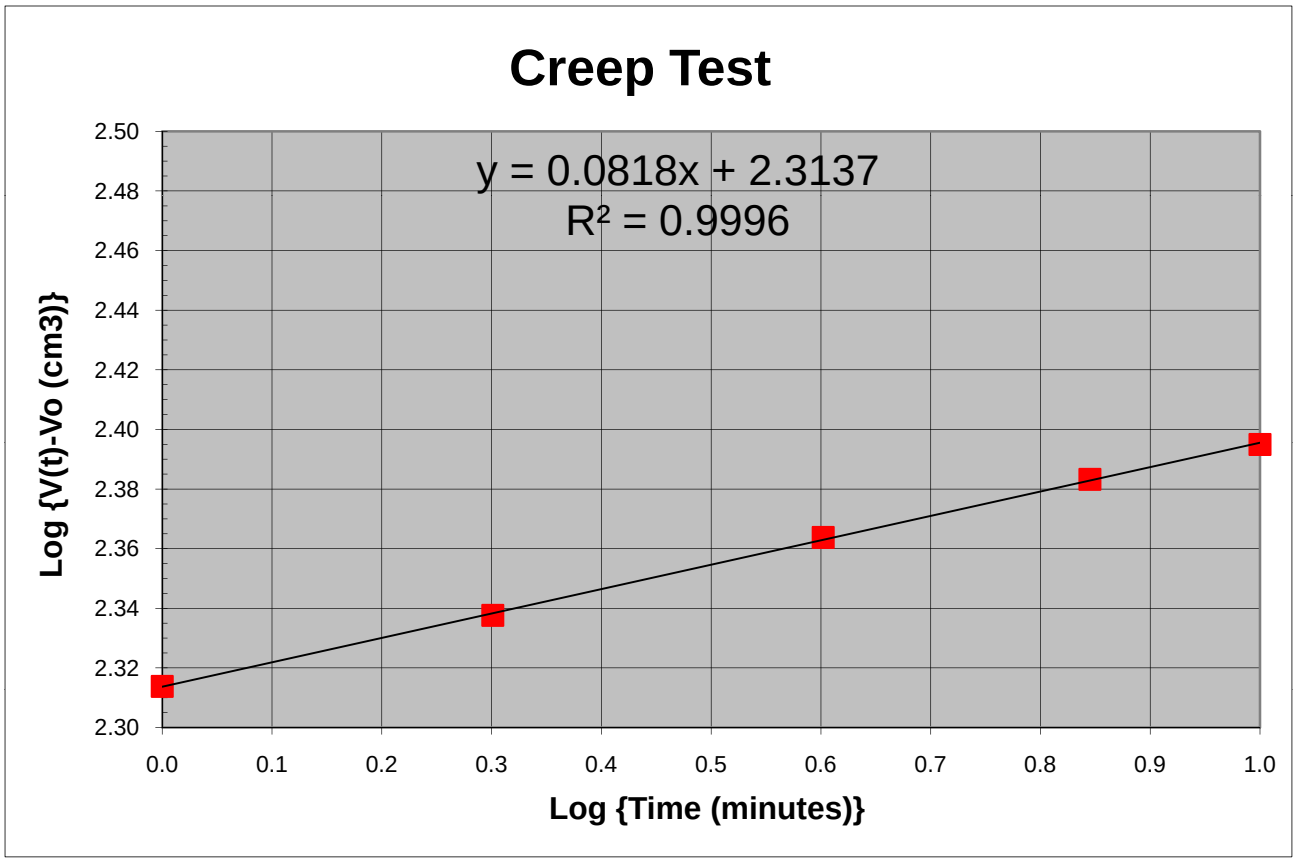
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 152.8 feet

Holding Gauge Pressure =	11.70	bars
Corrected Pressure =	16.38	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.95	cm
Initial Borehole Volume, Vo =	2253	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	491.10	2458.81	205.98	2.314
2	0.301	502.70	2470.41	217.58	2.338
4	0.602	516.20	2483.91	231.08	2.364
7	0.845	526.80	2494.51	241.68	2.383
10	1.000	533.40	2501.11	248.28	2.395

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0818

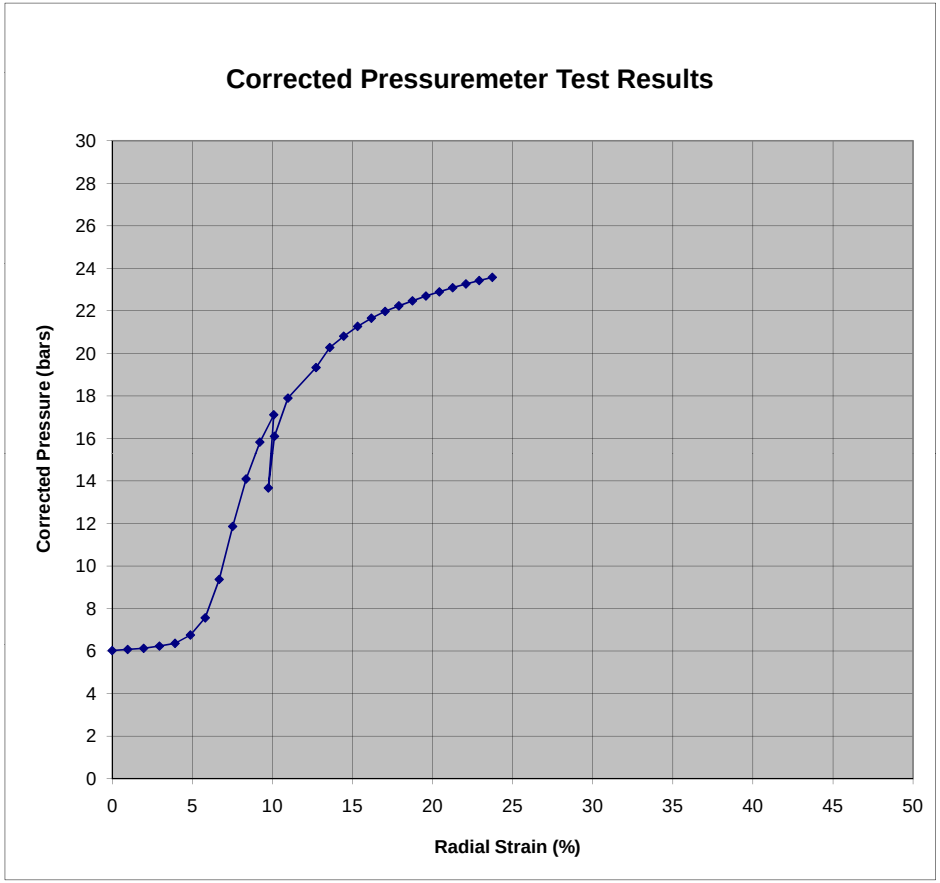


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	16
IN-SITU SOIL TESTING, L.C.		DEPTH:	163.1 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/2/2011

Pressure Bar	Volume cm^3	$\Delta R/R_0$ %	Selected points
6.03	-2	0.00	
6.08	38	0.97	
6.13	78	1.96	
6.24	118	2.95	
6.37	157	3.92	
6.76	**197**	**4.88**	
7.57	235	5.81	
9.37	272	6.68	Eo1
11.86	307	7.52	
14.10	343	8.36	Eo2
15.83	379	9.22	
17.11	417	10.09	
13.68	402	9.74	Er1
16.10	419	10.13	Er2
17.90	455	10.97	
19.34	533	12.73	
20.28	571	13.58	
20.81	610	14.45	
21.27	649	15.32	
21.66	688	16.18	
21.98	728	17.04	
22.24	767	17.89	
22.47	807	18.74	
22.70	846	19.59	
22.90	886	20.42	
23.09	926	21.26	
23.27	965	22.09	
23.43	1005	22.91	
23.58	1045	23.73	

Interpreted Pressuremeter Parameters		
P_o	6.6	bar
P_L	25.5	bar
P_L^*	18.9	bar
E_o	402	bar
E_{r1}	919	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	21.2	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



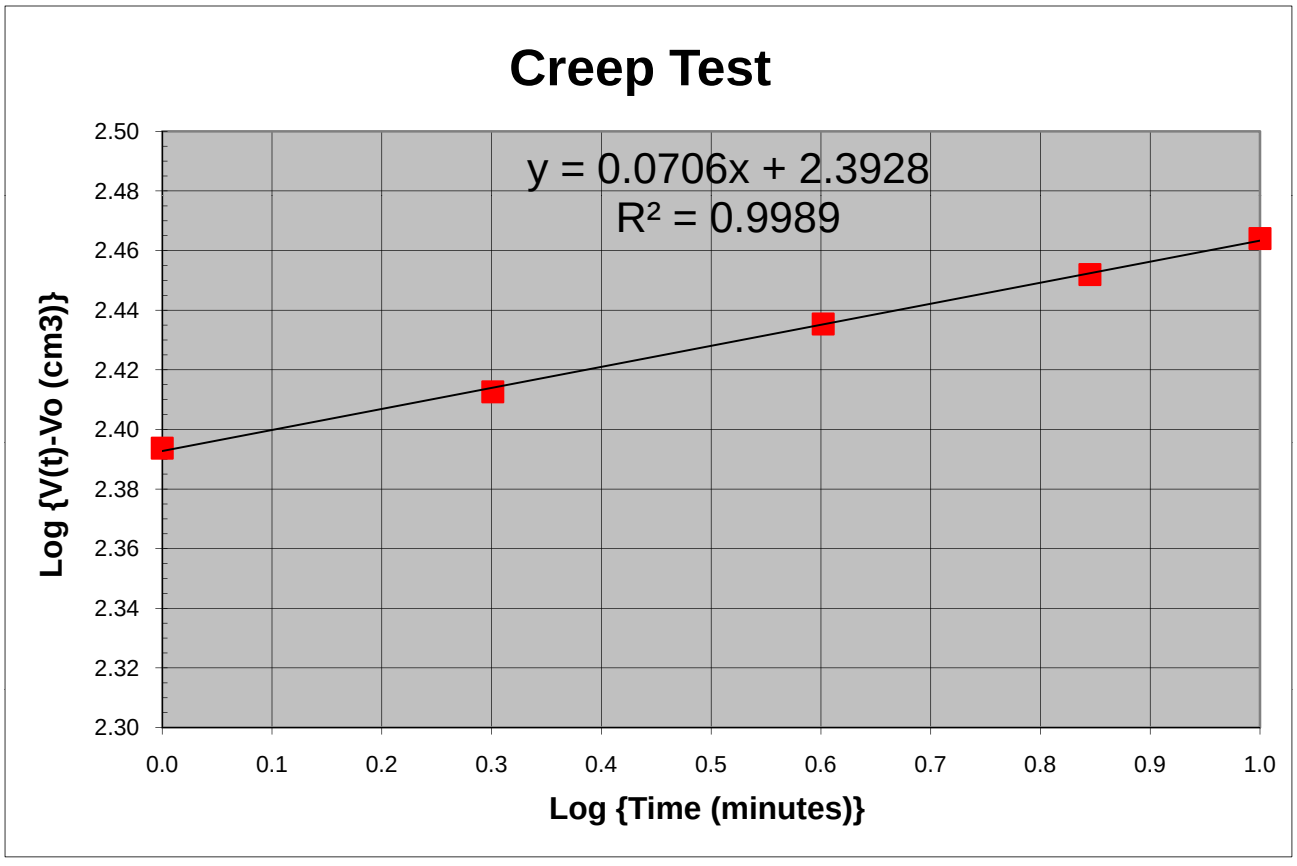
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 163.1 feet

Holding Gauge Pressure =	12.93	bars
Corrected Pressure =	17.90	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2211	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	490.80	2458.51	247.59	2.394
2	0.301	501.80	2469.51	258.59	2.413
4	0.602	515.70	2483.41	272.49	2.435
7	0.845	526.30	2494.01	283.09	2.452
10	1.000	534.30	2502.01	291.09	2.464

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0706

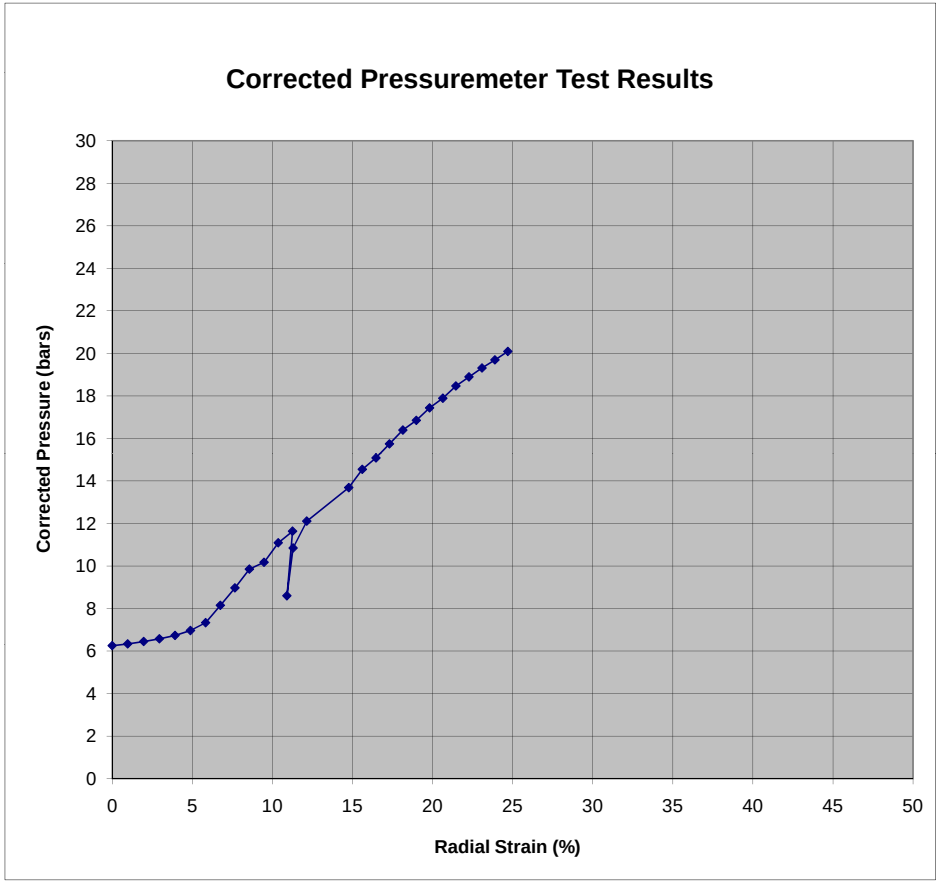


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	17
IN-SITU SOIL TESTING, L.C.		DEPTH:	173.7 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/2/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.25	-1	0.00	
6.34	38	0.97	
6.45	78	1.96	
6.57	118	2.95	
6.73	157	3.92	
6.96	197	4.88	
7.33	236	5.83	
8.15	275	6.75	Eo1
8.97	313	7.66	
9.85	351	8.56	
10.17	391	9.48	
11.09	429	10.36	
11.64	468	11.26	Eo2
8.60	453	10.90	Er1
10.85	469	11.29	Er2
12.11	507	12.15	
13.69	624	14.77	
14.55	662	15.61	
15.08	701	16.47	
15.74	740	17.31	
16.39	779	18.14	
16.85	818	18.98	
17.44	857	19.81	
17.89	896	20.64	
18.47	935	21.45	
18.89	974	22.27	
19.31	1013	23.08	
19.69	1053	23.89	
20.09	1092	24.69	

Interpreted Pressuremeter Parameters		
P_o	7.0	bar
P_L	29.0	bar
P_L^*	22.0	bar
E_o	112	bar
E_{r1}	859	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	5.1	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



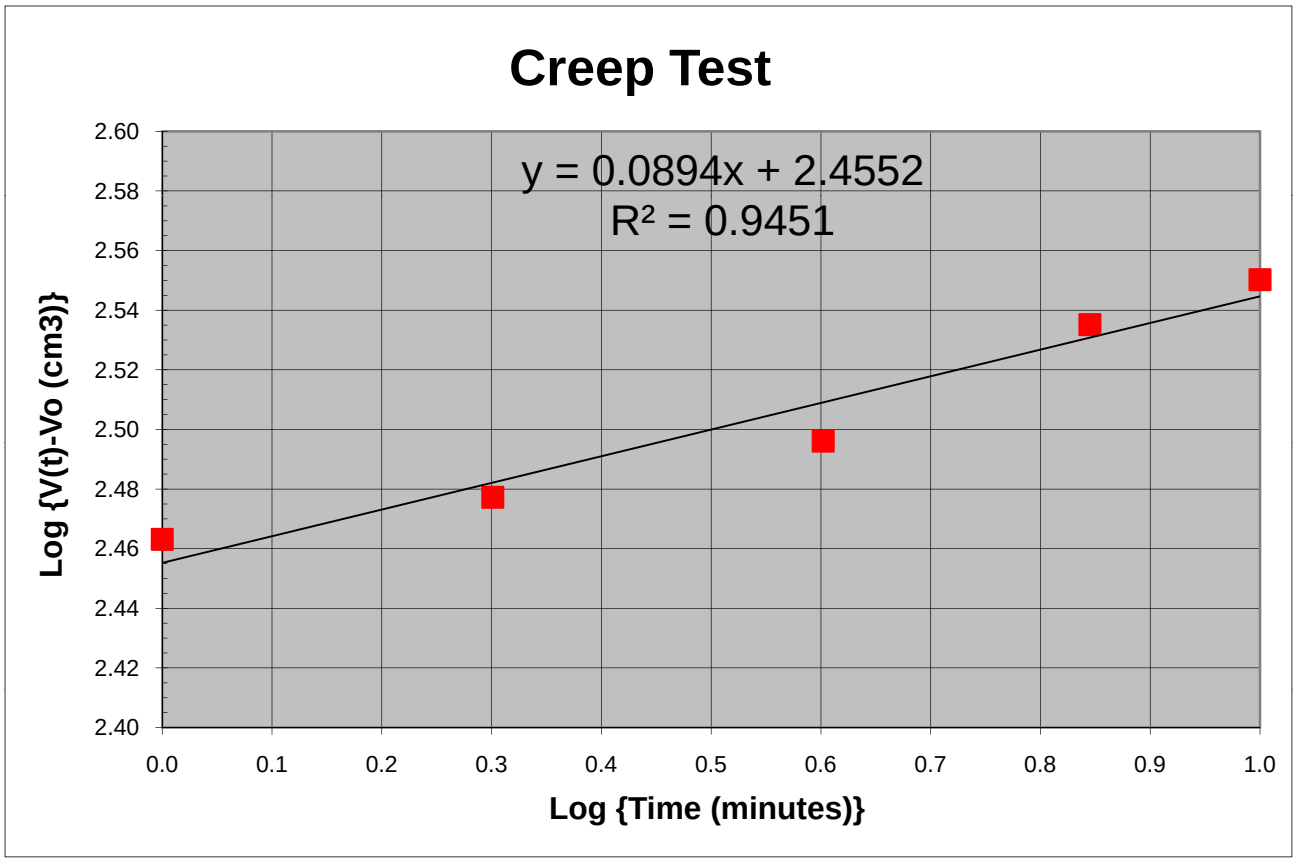
Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 173.7 feet

Holding Gauge Pressure =	6.83	bars
Corrected Pressure =	12.11	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.91	cm
Initial Borehole Volume, Vo =	2211	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	533.70	2501.41	290.49	2.463
2	0.301	543.30	2511.01	300.09	2.477
4	0.602	556.60	2524.31	313.39	2.496
7	0.845	586.10	2553.81	342.89	2.535
10	1.000	598.20	2565.91	354.99	2.550

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0894

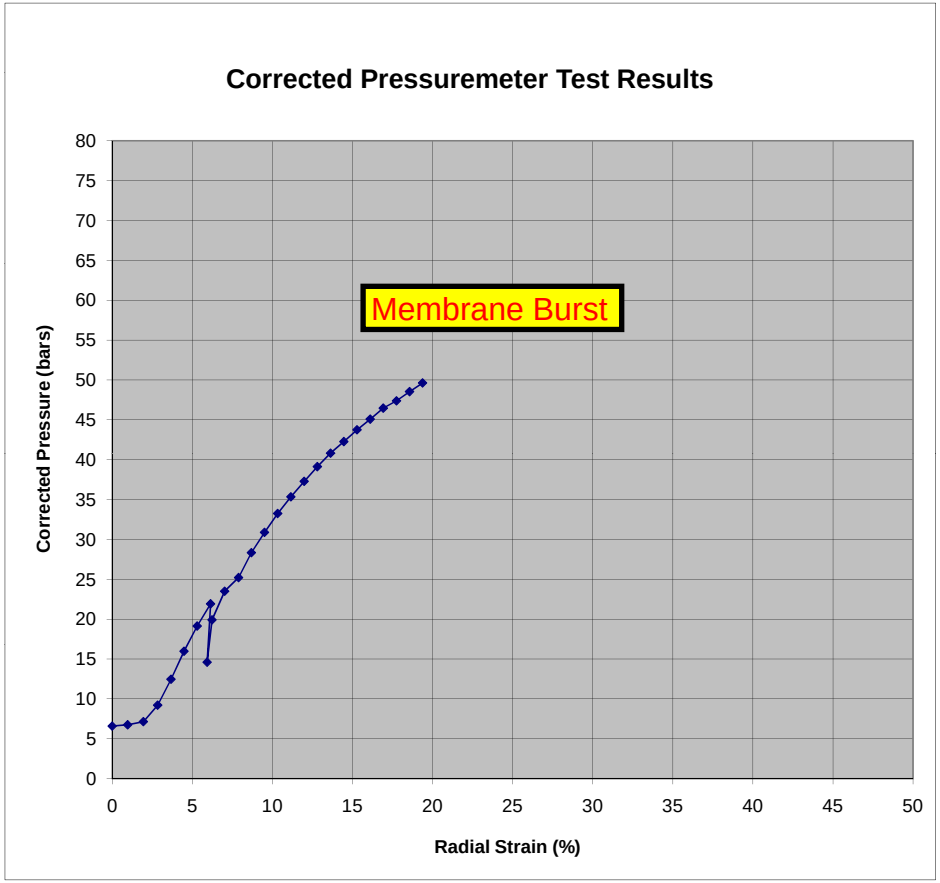


PRESSUREMETER TEST REPORT

PROJECT:	Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet	BORING:	B-64
LOCATION:	Wanchese, NC	TEST #:	18
IN-SITU SOIL TESTING, L.C.		DEPTH:	183.8 ft
ENGINEER:	Gabriel Sedran, Ph.D., P.Eng.	TEST DATE:	6/2/2011

Pressure Bar	Volume cm³	$\Delta R/R_0$ %	Selected points
6.59	-2	0.00	
6.75	38	0.96	
7.15	77	1.94	
9.21	113	2.84	Eo1
12.47	147	3.67	
15.98	180	4.48	
19.14	214	5.31	
21.93	249	6.14	Eo2
14.60	240	5.93	Er1
19.92	253	6.23	Er2
23.51	286	7.02	
25.22	323	7.89	
28.34	357	8.69	
30.89	392	9.51	
33.25	428	10.33	
35.35	464	11.16	
37.29	500	11.98	
39.13	536	12.81	
40.82	573	13.63	
42.28	610	14.46	
43.75	648	15.29	
45.09	685	16.11	
46.47	722	16.92	
47.39	761	17.75	
48.54	798	18.56	
49.63	836	19.37	

Interpreted Pressuremeter Parameters		
P_o	7.2	bar
P_L	74.0	bar
P_L^*	66.8	bar
E_o	535	bar
E_{r1}	2458	bar
E_{r2}	#DIV/0!	bar
E_o/P_L^*	8.0	
E_{u1}	#DIV/0!	bar
E_{r3}	#DIV/0!	bar
E_{u2}	#DIV/0!	bar



Pressuremeter Creep Test

Project: Bridge No. 11 (Bonner Bridge) on NC 12 over Oregon Inlet
Sounding No.: B-64
Test Depth: 183.8 feet

Holding Gauge Pressure =	17.90	bars
Corrected Pressure =	23.51	bars
Initial Probe Radius =	3.69	cm
Initial Probe Length =	46	cm
Initial Volume of Probe =	1968	cm^3
Probe Radius Contacting Borehole =	3.80	cm
Initial Borehole Volume, Vo =	2088	cm^3

Time (minutes)	Log (Time) (minutes)	Volume Increase (cm^3)	Total Probe Volume (cm^3)	$V(t)-V_0$ (cm^3)	Log $[V(t)-V_0]$ (cm^3)
1	0.000	326.10	2293.81	206.27	2.314
2	0.301	331.80	2299.51	211.97	2.326
4	0.602	339.00	2306.71	219.17	2.341
7	0.845	345.60	2313.31	225.77	2.354
10	1.000	349.50	2317.21	229.67	2.361

$E_0(t)/E_0(t=1\ min) = \{t/1\}^{-n}$
n = 0.0473