

ONE - DIMENSIONAL CONSOLIDATION TEST: Specimen Calculations & Summary

Project Number: 0411-08-1686 Test Station No.: CRS-11 File Name: B-2304_UD11a
 Task No.: NA Specific Gravity, G_s : 2.720 ☒ Measured ; ☐ Assumed.
 Calculations Corrected for Salt (dissolved solids): ☒ No or, ☐ Yes, with Concentration = _____ g/kg

Cal.- Routine	ITEM	Water Content, (%)	Mass Dry Soil, (g)	Degree of Saturation, S in %		
				Height Initial	Final Height Meas.	Dial
1	Initial, Top, W1	20.62	101.62	90.2	95.1	97.6
2	" Bottom, W2	21.70	100.72	92.7	97.7	100.3
3	" Sides, W3	22.62	99.96	94.8	99.9	102.5
4	" Average, W4	21.65	100.77	92.6	97.6	100.1
5	" Back Calculated (1)	22.18	100.33 (3)	93.8	98.8	101.4
6	Final	22.19	100.33 (2)	93.8	98.8	101.4

Calculated Specific Gravity for Final Saturation = 100%:

Used Cal. Routine No. 5 to obtain the mass of dry soil
 and final height by: ☒ Measurement; ☐ Dial Change.
 Back Cal. G_s = 2.701
 Avg. G_s (measured/assumed) & Back Cal. G_s = 2.710

Calculation Constant, K

= (unit conversion) / $G_s \times \rho_w \times A_r$
 Estimated, K_e 0.11639
 Final Selected, K_f 0.11639

Calculated Mass Dry Soil for Final Saturation = 100%:

using measured/assumed G_s
 and final height by: ☒ Measurement; ☐ Dial Change.
 Back Cal. Mass Dry Soil, (g) = 99.92
 Avg. Back Calculated and Measured Mass Dry Soil (g) = 100.12

Summary of Specimen Physical Properties

Specific Gravity G _s = 2.720		☐	Assumed		To make S _r = 100% at end of test.			
		X	Measured		Avg. of measured/assumed G _s and G _s to make S _r = 100%			
Mass Dry Soil, (g)	Initial: 100.33	X	From Cal. Routine No.	5	Note: Routine #5 is based on final measurements.			
	Final (4): NA		Make S _r = 100%, or,		Avg. of measured & make S _r = 100%			
Initial Height (mm) =			19.19	X	Measured ;		Back Calculated	Back-cal. Sat. (%) = NA
Final Height (mm) =			18.76	X	Measured ;		Initial H _o & dial change during loading	
	Water Content, w (%)	Void Ratio, e	Degree of Saturation, S (%)	Total Unit Weight, γ _t (pcf)	Dry Unit Weight, γ _d (pcf)	Height of Solids, H _s (2,4) (mm)	Extruded soil loss proportioned in increasing loading increments (5) :	
Initial	22.2	0.643	93.8	126.0	103.2	11.677	From	To (ksf)
Final	22.0	0.607	98.8	128.8	105.5	NA	NA	NA

Graphical Construction	σ'_p (ksf)	ϵ_a (%)	CR	RR	OCR	Liquid Limit (LL)	77	Minus 200 (%)
Casagrande Method	33.30	NA	0.150	0.068	3.3	Plastic Limit (PL)	19	99.1
Becker Method	NA	Becker minimum σ'_p (ksf):		NA		Plasticity Index (PI)	58	

NA - Indicates not applicable

Notes:

- (1) Back Calculated based on final mass of oven-dry soil (corrected for dry mass of any excess and extruded soil).
- (2) Corrected for any excess dry soil (soil stuck to ring, filter paper, etc.).
- (3) This value is only different from the final value if there is soil extrusion during loading.
- (4) Final is only different from the initial value if there is soil extrusion during loading.
- (5) There should not be any soil loss in a CRS test, unless stress increments are applied.

Calculated By: LF Reviewed By: HP
 Date: 3/7/2008

ONE - DIMENSIONAL CONSOLIDATION TEST: CALCULATED CRS LOADING DATA

Project Number: 0411-08-1686 Test Station No.: CRS-11 File Name: B-2304_UD11a
 Task No.: NA Date; Start: 3/27/2008 Initial Height, H_o (mm): 19.19
 Project Name: Exelon (Victoria) Completed: 4/5/2008 Ring Area, A_r (cm²): 31.6439
 Test: Initial / Pressure Gauge Back Pressure, U_G (psi): 70 ☒ Undisturbed or; ☐ Reconstituted - Specimen.
 Reference Values: Back Pressure, $U_{b,BE}$ (psi): 70.21998, V : 0.023022376 Piston Uplift, P_{up} (lbf): 34.48
 Back Pressure, $U_{b,CS}$ (psi): 70.20113, V : 0.023016166 Setup DT_{ref} (V): 0.003953888
 Displacement Transducer No.: DT-099 Calib. Factor (mm/V): 387.222306 Ch. No.: 2
 Pore Press. Transducer No.: PT-122 Calib. Factor (psi/V): 3035.3833 Ref. Zero (V): -0.000111 Ch. No.: 3
 Force Cell No.: FT-410 Calib. Factor (lbf/V): -160210.65 Ref. Zero (V): -0.000058 Ch. No.: 1

Notes:

- (1) S - Seating, BS - Start of Back Pressure, BE - End of Back Pressure, SC - Stress Controlled, CS - Constant Rate of Strain
 US - Start of Uniform Strain Rate, UE - End of Uniform Strain Rate
- (2) Total Vertical Stress (σ_v) corrected to account for the force caused by the back pressure acting on the piston (Piston Uplift).
- (3) Increasing deformation value indicates: ☒ compression; or ☐ swell.
- (4) "App. Flex. Corr." values based on the apparatus calibration.

Data Management By: LF Reviewed By: HP *HP*

Remarks: _____

Load- ing Info. (1)	Julian Day (dd)	Hour (hr.:min.:s)	Elapsed Time from Start of Loading, Δt_n (min)	Total Vertical Stress, $\sigma_{v,n}$ (2) (ksf)	Excess Pore-Water Pressure, ΔU_n (ksf)	Total Specimen Deformation, ΔH_n (3) (mm)	Apparatus Flexibility Correction, $\Delta d_{afc,n}$ (mm)	Corr. Total Specimen Deformation, $\Delta H_{c,n}$ (4) (mm)	Strain Rate, between n & $n-1$, $\Delta \varepsilon_{ac,rate}$ (%/hr)
S	87	15 : 18 : 27		0.16		0.000			
BS	87	15 : 40 : 02		1.54		0.039	0.000	0.039	
BE	88	12 : 12 : 16		3.63	0.003	-0.004	0.000	-0.004	
CS	88	12 : 12 : 19	0	3.63	0.000	-0.004	0.000	-0.004	
	88	13 : 31 : 59	80	7.28	0.685	0.064	0.000	0.064	0.271
	88	15 : 22 : 00	190	10.22	0.990	0.142	0.000	0.142	0.221
US	88	17 : 12 : 01	300	13.11	0.904	0.235	0.000	0.235	0.263
	88	19 : 02 : 02	410	16.29	1.262	0.317	0.000	0.317	0.234
	88	20 : 52 : 03	520	19.98	2.124	0.398	0.000	0.398	0.229
	88	22 : 42 : 04	630	24.22	3.092	0.479	0.000	0.479	0.232
	89	00 : 32 : 05	740	28.09	2.302	0.569	0.000	0.569	0.256
	89	02 : 22 : 07	850	32.65	2.968	0.656	0.000	0.656	0.245
	89	04 : 12 : 08	960	37.51	4.320	0.741	0.000	0.741	0.242
	89	06 : 02 : 10	1070	42.79	6.614	0.823	0.000	0.823	0.233
	89	07 : 52 : 12	1180	48.52	9.654	0.905	0.000	0.905	0.232
	89	09 : 42 : 13	1290	54.52	12.761	0.987	0.000	0.987	0.235
	89	11 : 32 : 15	1400	60.28	15.263	1.069	0.000	1.069	0.234
	89	13 : 22 : 16	1510	65.90	17.363	1.151	0.000	1.151	0.233
	89	15 : 12 : 17	1620	71.37	19.192	1.230	0.000	1.230	0.225
	89	17 : 02 : 18	1730	77.09	21.065	1.314	0.000	1.314	0.237
	89	18 : 52 : 20	1840	83.07	23.161	1.396	0.000	1.396	0.235
	89	20 : 42 : 21	1950	89.14	25.227	1.478	0.000	1.478	0.232
US	89	22 : 32 : 23	2060	95.22	27.264	1.557	0.000	1.557	0.224
	90	00 : 05 : 53	2154	100.48	29.048	1.625	0.000	1.625	0.228

**ONE - DIMENSIONAL CONSOLIDATION TEST:
CALCULATED CRS LOADING DATA**

Load- ing Info. (1)	Julian Day (dd)	Hour (hr.:min.:s)	Elapsed Time from Start of Loading, Δt_n (min)	Total Vertical Stress, $\sigma_{v,n}$ (2) (ksf)	Excess Pore-Water Pressure, ΔU_n (ksf)	Total Specimen Deformation, ΔH_n (3) (mm)	Apparatus Flexibility Correction, $\Delta d_{afc,n}$ (mm)	Corr. Total Specimen Deformation, $\Delta H_{c,n}$ (4) (mm)	Strain Rate, between n & n-1, $\Delta \varepsilon_{ac,rate}$ (%/hr)
	90	00 : 12 : 23	2160	99.10	27.647	1.627	0.000	1.627	0.121
	90	05 : 12 : 27	2460	67.52	-2.981	1.607	0.000	1.607	-0.021
	90	10 : 12 : 31	2760	50.27	-7.950	1.530	0.000	1.530	-0.079
	90	15 : 12 : 35	3060	38.16	-10.033	1.443	0.000	1.443	-0.091
	90	20 : 12 : 39	3360	29.16	-10.803	1.341	0.000	1.341	-0.106
US	91	01 : 12 : 42	3660	21.89	-11.094	1.235	0.000	1.235	-0.111
	91	06 : 12 : 45	3960	16.87	-10.584	1.123	0.000	1.123	-0.116
	91	11 : 12 : 48	4260	13.08	-9.478	1.024	0.000	1.024	-0.104
	91	16 : 12 : 53	4561	9.49	-9.039	0.908	0.000	0.908	-0.121
	91	21 : 12 : 55	4861	6.33	-8.801	0.793	0.000	0.793	-0.120
UE	92	02 : 12 : 59	5161	3.77	-8.360	0.672	0.000	0.672	-0.126
	92	02 : 33 : 38	5181	3.63	-8.305	0.662	0.000	0.662	-0.148
	92	02 : 43 : 00	5191	3.99	-7.926	0.660	0.000	0.660	-0.064
	92	04 : 13 : 00	5281	10.41	-1.053	0.676	0.000	0.676	0.057
	92	05 : 43 : 02	5371	16.97	4.959	0.729	0.000	0.729	0.184
	92	07 : 13 : 03	5461	22.37	8.707	0.783	0.000	0.783	0.186
	92	08 : 43 : 03	5551	27.58	11.873	0.842	0.000	0.842	0.204
US	92	10 : 13 : 04	5641	32.76	14.753	0.903	0.000	0.903	0.213
	92	11 : 43 : 07	5731	37.88	16.940	0.972	0.000	0.972	0.240
	92	13 : 13 : 08	5821	42.86	18.980	1.041	0.000	1.041	0.242
	92	14 : 43 : 11	5911	48.03	20.966	1.107	0.000	1.107	0.230
	92	16 : 13 : 12	6001	53.19	22.765	1.173	0.000	1.173	0.228
	92	17 : 43 : 14	6091	58.41	24.425	1.237	0.000	1.237	0.221
	92	19 : 13 : 16	6181	63.79	25.907	1.301	0.000	1.301	0.223
	92	20 : 43 : 17	6271	69.39	27.306	1.366	0.000	1.366	0.226
	92	22 : 13 : 19	6361	75.14	28.582	1.430	0.000	1.430	0.222
	92	23 : 43 : 21	6451	81.11	29.879	1.493	0.000	1.493	0.219
	93	01 : 13 : 23	6541	87.16	30.984	1.556	0.000	1.556	0.217
	93	02 : 43 : 24	6631	93.36	32.074	1.619	0.000	1.619	0.219
	93	04 : 13 : 25	6721	99.54	33.074	1.681	0.000	1.681	0.216
	93	05 : 43 : 26	6811	105.79	33.643	1.743	0.000	1.743	0.214
	93	07 : 13 : 28	6901	112.22	33.643	1.802	0.000	1.802	0.206
	93	08 : 43 : 31	6991	118.62	33.643	1.863	0.000	1.863	0.213
UE	93	10 : 13 : 33	7081	124.98	40.565	1.925	0.000	1.925	0.213
	93	11 : 34 : 21	7162	130.29	42.615	1.973	0.000	1.973	0.188
	93	11 : 43 : 34	7171	128.26	40.580	1.975	0.000	1.975	0.061
	93	18 : 33 : 40	7581	84.54	-4.340	1.950	0.000	1.950	-0.019
	94	01 : 23 : 46	7991	60.03	-11.289	1.852	0.000	1.852	-0.075
	94	08 : 13 : 51	8402	43.31	-11.325	1.724	0.000	1.724	-0.097
	94	15 : 03 : 56	8812	31.49	-11.101	1.579	0.000	1.579	-0.111
	94	21 : 54 : 03	9222	24.00	-10.813	1.451	0.000	1.451	-0.098
US	95	04 : 44 : 11	9632	16.55	-10.825	1.295	0.000	1.295	-0.119

ONE - DIMENSIONAL CONSOLIDATION TEST: CALCULATED CRS LOADING DATA

[illegible]

ONE - DIMENSIONAL CONSOLIDATION TEST: CRS LOADING RESULTS (Load Time - Deformation Properties)

Project Number: 0411-08-1686 Test Station No.: CRS-11 ☒ Undisturbed or ; ☐ Reconstituted - Specimen. File Name: B-2304_UD1
 Task No.: NA Date, Start: 3/27/2008 Back Pressure, $U_{b,CS}$ (psi): 70.2 Piston Uplift, P_{up} (lbf): 34.48
 Project Name: Exelon (Victoria) Completed: 4/5/2008 Transient Time Factor, $T_v = (C_v \cdot t) / H^2 =$ 0.5
 4186-06-Summary of Methods: NA ☐ Data corrected for salt _____; in ☐ g/kg
 Final Description of Specimen: Mottled Pale Yellow and Yellow Fat CLAY (CH)
 Ring No.: 10 Area, A_r (cm²): 31.644 Solids Ht, H_s (mm): 11.677 Specific Gravity, $G_s =$ 2.720 ☒ Meas. ; ☐ Assumed
Initial: Height H_o : 19.19 Water 22.2 Void 0.643 Deg. of 93.8 Total Unit 126.0 Dry Unit 103.2
Final: (mm): H_f : 18.76 Content, w (%): 22.0 Ratio, e : 0.607 Sat., S (%): 98.8 Weight, γ_t (pcf): 128.8 Weight, γ_d (pcf): 105.5

Notes:

- (1) S - Seating, BS - Start of Back Pressure, BE - End of Back Pressure, SC - Stress Controlled, CS - Constant Rate of Strain, US - Start of Uniform Strain Rate, UE - End of Uniform Strain Rate or ΔU_n to erratic
- (2) Excess pore-water pressure measured at the base of the specimen.
- (3) Only applicable during stress controlled (SC) loading.

Data Management by: LF

Reviewed By: HP *HP*

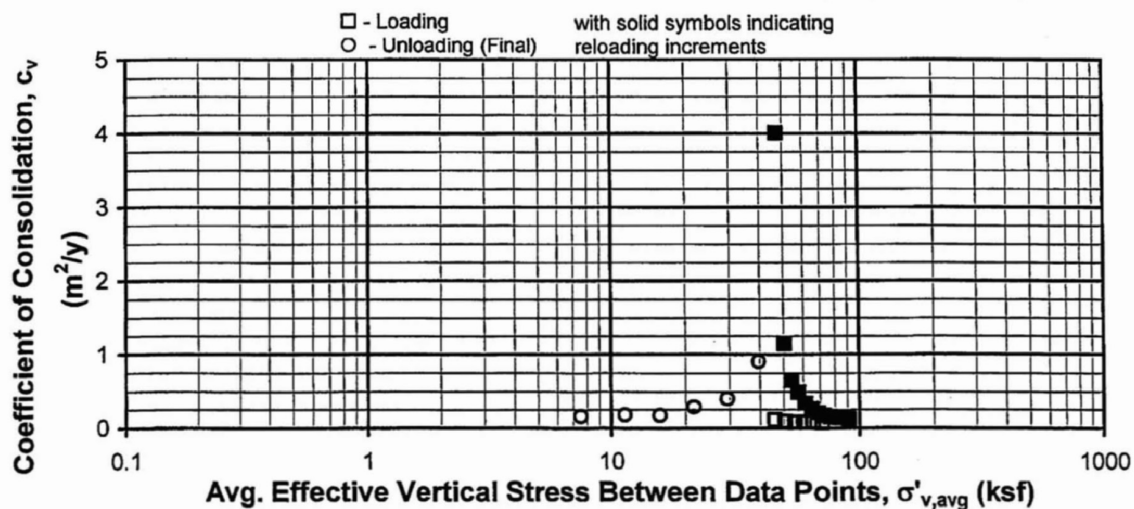
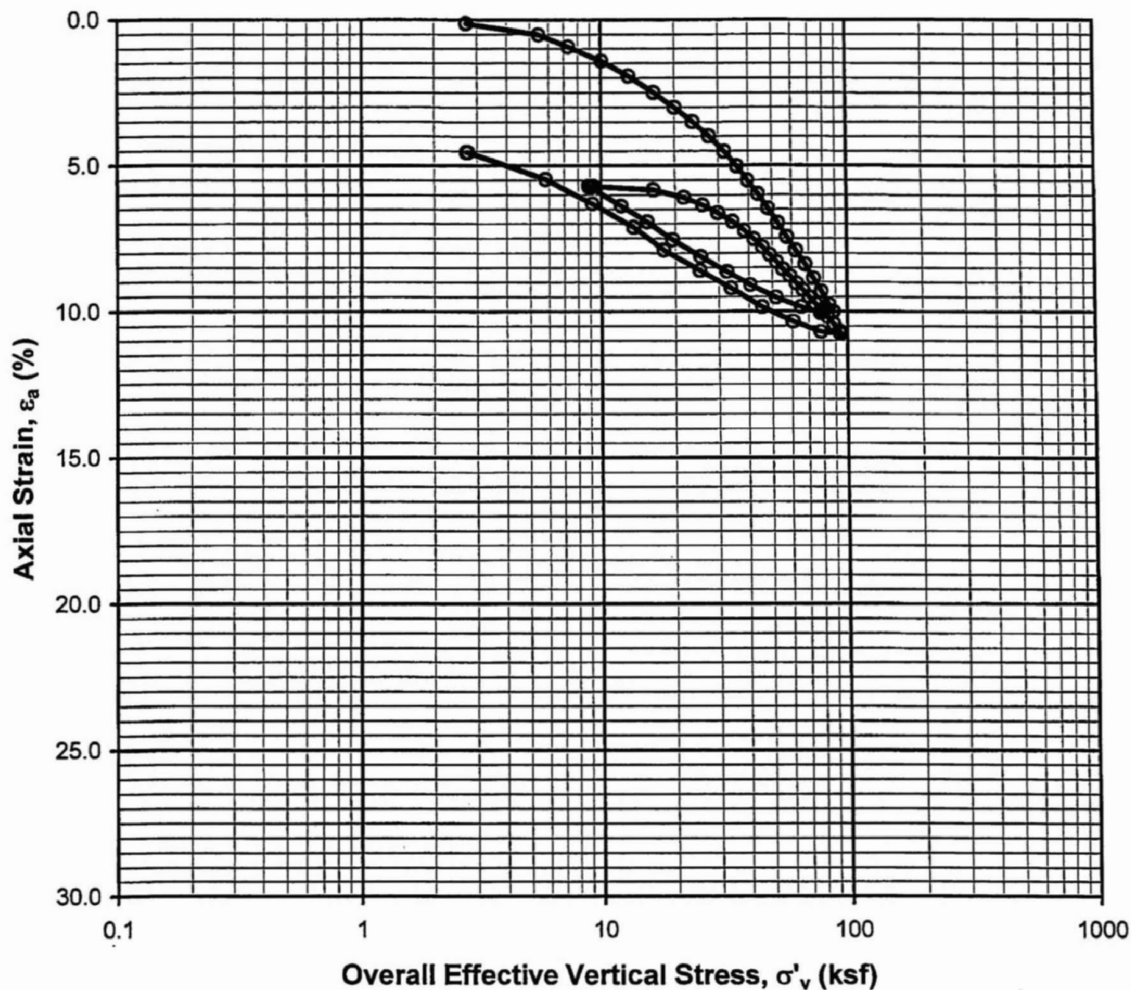
Loading Info. (1)	Elapsed Time from Start of Loading, Δt_n (min)	Overall Effective Vertical Stress, $\sigma'_{v,n}$ (ksf)	Corrected Volumetric (Axial) Strain, $\epsilon_{v,n} (\epsilon_{ac,n})$ $\Delta H_{c,n} / H_o$ (%)	Overall Void Ratio, e_n	Total Vertical Stress, $\sigma_{v,n}$ (ksf)	Excess Pore-Water Pressure, ΔU_n (2) (ksf)	Loading Pore-Water Pressure Ratio, R_u $\Delta U_n / \sigma_{v,n}$ (%)	Corrected Specimen Height, $H_{c,n}$ (mm)	Calculations Between n and n-1				Steady State Ratio, $SSR_n = C_v \cdot t_n \cdot UCF / T_v \cdot (H_{c,n})^2$	Rate of Secondary Comp. (3), $C_{\alpha} = \Delta d_{s,sc} / H_o$ ($\times 10^{-4}$)
									Average Effective Vertical Stress, $\sigma'_{v,avg}$ (ksf)	Coefficient of Consolidation, C_v (m ² /y)	Average Void Ratio, e_{avg}	Hydraulic Conductivity, k @ 20°C (m/y)		
S					0.16				Data on given line represents average conditions					
BS			0.20	0.640	1.54			19.147	between that line and the previous line of data.					
BE		3.63	-0.02	0.643	3.63	0.003	0.1	19.190			0.642			
CS	0	3.63	-0.02	0.643	3.63	0.000	0.0	19.190			0.643			
	80	6.82	0.34	0.637	7.28	0.685	9.4	19.122	5.22		0.640			
	190	9.54	0.74	0.631	10.22	0.990	9.7	19.044	8.18		0.634			
US	300	12.50	1.22	0.623	13.11	0.904	6.9	18.951	11.02		0.627			
	410	15.44	1.65	0.616	16.29	1.262	7.7	18.869	13.97	2.43	0.619	6.99E-04	2.84	
	520	18.54	2.07	0.609	19.98	2.124	10.6	18.788	16.99	1.77	0.612	4.35E-04	4.17	
	630	22.11	2.50	0.602	24.22	3.092	12.8	18.707	20.33	1.29	0.605	2.86E-04	4.59	
	740	26.53	2.97	0.594	28.09	2.302	8.2	18.617	24.32	1.13	0.598	3.02E-04	5.44	
	850	30.64	3.42	0.587	32.65	2.968	9.1	18.530	28.59	1.37	0.591	2.92E-04	8.30	
	960	34.57	3.86	0.580	37.51	4.320	11.5	18.445	32.61	1.03	0.583	2.07E-04	7.59	
	1070	38.26	4.29	0.573	42.79	6.614	15.5	18.363	36.42	0.73	0.576	1.33E-04	6.30	
	1180	41.85	4.71	0.566	48.52	9.654	19.9	18.281	40.06	0.51	0.569	8.85E-05	5.13	
	1290	45.64	5.14	0.558	54.52	12.761	23.4	18.199	43.75	0.38	0.562	6.50E-05	4.28	
	1400	49.61	5.57	0.551	60.28	15.263	25.3	18.117	47.63	0.28	0.555	5.17E-05	3.58	

ONE - DIMENSIONAL CONSOLIDATION TEST: CRS LOADING RESULTS (Load Time - Deformation Properties)

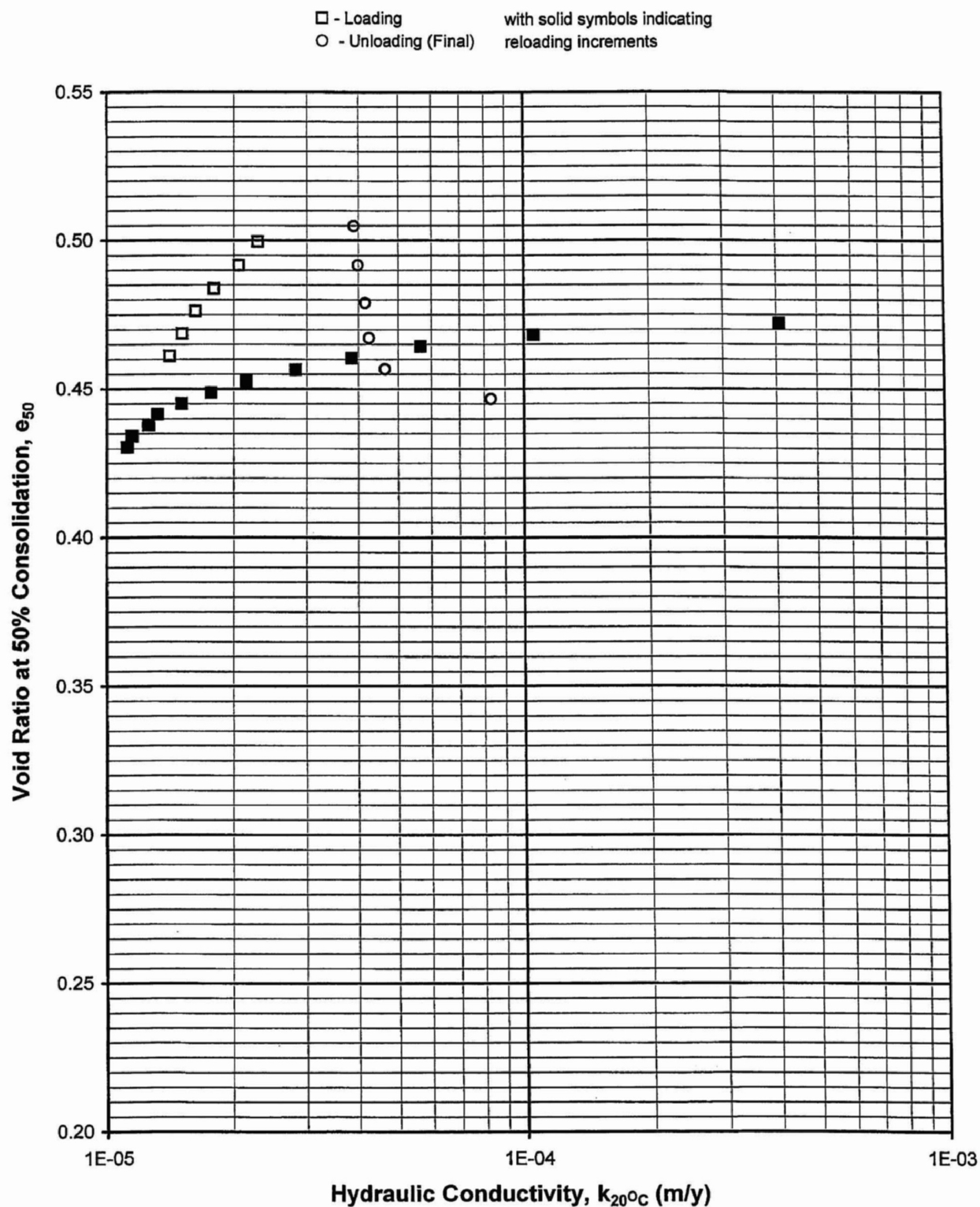
Load- ing Info. (1)	Elapsed Time from Start of Loading, Δt_n (min)	Overall Effective Vertical Stress, $\sigma'_{v,n}$ (ksf)	Corrected Volumetric (Axial) Strain, $\epsilon_{v,n} (\epsilon_{ac,n})$ $\Delta H_{c,n} / H_o$ (%)	Overall Void Ratio, e_n	Total Vertical Stress, $\sigma_{v,n}$ (ksf)	Excess Pore-Water Pressure, $\Delta U_n (2)$ (ksf)	Loading Pore-Water Pressure Ratio, R_u $\Delta U_n / \sigma_{v,n}$ (%)	Corrected Specimen Height, $H_{c,n}$ (mm)	Calculations Between n and n-1				Steady State Ratio, $SSR_n = \frac{c_v \cdot t_n \cdot UCF}{T_v \cdot (H_{c,avg})^2}$	Rate of Secondary Comp. (3), $C_\alpha = \frac{\Delta d_{a,sc}}{H_o}$ ($\times 10^{-4}$)
									Average Effective Vertical Stress, $\sigma'_{v,avg}$ (ksf)	Coefficient of Consolidation, c_v (m^2/y)	Average Void Ratio, e_{avg}	Hydraulic Conductivity, $k @ 20^\circ C$ (m/y)		
	1510	53.75	6.00	0.544	65.90	17.363	26.3	18.035	51.68	0.23	0.548	4.41E-05	3.28	
	1620	57.92	6.41	0.538	71.37	19.192	26.9	17.956	55.84	0.20	0.541	3.77E-05	3.09	
	1730	62.31	6.85	0.531	77.09	21.065	27.3	17.872	60.12	0.19	0.534	3.57E-05	3.17	
	1840	66.80	7.28	0.523	83.07	23.161	27.9	17.790	64.56	0.18	0.527	3.21E-05	3.24	
	1950	71.41	7.70	0.516	89.14	25.227	28.3	17.708	69.11	0.16	0.520	2.86E-05	3.21	
US	2060	76.04	8.11	0.510	95.22	27.264	28.6	17.629	73.73		0.513			
	2154	80.04	8.47	0.504	100.48	29.048	28.9	17.561	78.04	0.14	0.507	2.39E-05	3.14	
	2160	79.69	8.48	0.504	99.10	27.647	27.9	17.559	79.86		0.504		-11.82	
	2460	69.50	8.37	0.505	67.52	-2.981	-4.4	17.579	74.59		0.505		-17.24	
	2760	55.44	7.98	0.512	50.27	-7.950	-15.8	17.656	62.47	0.90	0.509	3.98E-05	27.26	
	3060	44.58	7.52	0.519	38.16	-10.033	-26.3	17.743	50.01	0.41	0.516	2.77E-05	13.70	
	3360	35.98	6.99	0.528	29.16	-10.803	-37.0	17.845	40.28	0.28	0.524	2.76E-05	10.17	
US	3660	28.77	6.43	0.537	21.89	-11.094	-50.7	17.951	32.37		0.533			
	3960	23.34	5.85	0.547	16.87	-10.584	-62.7	18.063	26.05	0.17	0.542	2.91E-05	7.16	
	4260	18.81	5.33	0.555	13.08	-9.478	-72.4	18.162	21.08	0.14	0.551	2.82E-05	6.54	
	4561	14.82	4.73	0.565	9.49	-9.039	-95.3	18.278	16.82	0.16	0.560	3.55E-05	7.62	
	4861	11.32	4.13	0.575	6.33	-8.801	-139.1	18.393	13.07	0.16	0.570	3.66E-05	8.14	
UE	5161	8.22	3.50	0.585	3.77	-8.360	-221.6	18.514	9.77	0.16	0.580	3.96E-05	8.44	
	5181	8.03	3.45	0.586	3.63	-8.305	-228.5	18.524	8.13		0.586			
	5191	8.27	3.44	0.586	3.99	-7.926	-198.6	18.526	8.15		0.586			
	5281	11.10	3.53	0.585	10.41	-1.053	-10.1	18.510	9.69		0.586			
	5371	13.47	3.80	0.581	16.97	4.959	29.2	18.457	12.29		0.583			
	5461	16.10	4.08	0.576	22.37	8.707	38.9	18.403	14.79		0.578			
	5551	18.95	4.39	0.571	27.58	11.873	43.0	18.344	17.53		0.573			
US	5641	21.98	4.71	0.566	32.76	14.753	45.0	18.283	20.46		0.568			
	5731	25.51	5.07	0.560	37.88	16.940	44.7	18.214	23.75		0.563		0.24	
	5821	29.02	5.43	0.554	42.86	18.980	44.3	18.145	27.27		0.557		0.42	
	5911	32.77	5.77	0.548	48.03	20.966	43.6	18.079	30.90		0.551		0.59	
	6001	36.65	6.11	0.543	53.19	22.765	42.8	18.013	34.71		0.545		0.72	
	6091	40.71	6.45	0.537	58.41	24.425	41.8	17.949	38.68		0.540		0.85	

DCN# EXE808

FUGRO CONSULTANTS, INC.



1-D CONSOLIDATION TEST: CRS
 Sample No. UD-13A - Depth 121.0 - 123.0 ft
 Boring B-2304UD



1-D CONSOLIDATION TEST: CRS
 Sample No. UD-13A - Depth 121.0 - 123.0 ft
 Boring B-2304UD

ONE - DIMENSIONAL CONSOLIDATION TEST: Specimen Setup / Take Down

Project Number: 0411-08-1686 Test Station No.: CRS-6 File Name: B-2304_UD13a
 Task No.: NA Specific Gravity, G_s : 2.710 ☒ Meas.; ☐ Assumed Ring No.: 16
 Project Name: Exelon (Victoria) Assig. Remarks: Ring Area, A_r (cm²) = 31.661
 TEST TYPE: ☒ CRS (D 4186-06); ☐ Method A; ☐ Method B; ☐ Method C; ☐ Method D; Ring Height (mm) = NA
☐ Method E; ☐ Method F; ☐ Method G; ☐ Method H; ☐ Method I; ☐ Method J; Summary of Methods: NA

☒ Tube	☐ Field Extruded	☐ Liner	☐ Remolded	☐ Tamping	☐ Constant Effort:	Blows/Tamps per Layer =
Boring No.: B-2304UD	☐ LPC Core			Impact/Rammer	Rammer Wgt.(lb)=	No. Layers =
Sample No.: UD-13	Compostite No.:			Pluviated:	Tamper Force (lb)=	Drop (in.) =
Depth (ft): 121.0 - 123.0	Specimen No.: A			Kneading	Undercompaction: U_{nt} (%) =	Dia. (in.) =
☐ Spec. Selection by X-ray;	☐ Geomarine Sample			Ref. Effort=	% Comp. =	± Opt.=

Water Content (W);	Initial - Trimming Location			Final, W _{at} (see below)	Soil and Ring Masses	Initial	Final	
	Top (W1)	Bottom (W2)	Sides (W3)		Mass Moist Soil + Ring (g)	340.05	339.57	
Container No.	907	2038	2044	752	Mass Ring (g)	215.06		
Mass Moist Soil + Container (g)	139.25	117.16	111.77	73.89	Mass Moist Soil, M _{t,o} or M _{t,at} (g)	124.99	124.51	
Mass Dry Soil + Container (g)	121.99	103.39	99.53	67.17	EXCESS DRY SOIL (soil not incl. in final mass above)			
Mass Container (g)	31.93	30.51	30.85	31.99	Container No.		2041	
WATER CONTENT (%)	19.17	18.89	17.82	19.10	Mass Dry Soil + Container (g)		30.85	
Avg. Initial Water Content, W ₄ (%)	18.63	Final W _{at} :	X	Slice ;	Whole Spec.	Mass Container (g)		30.79
See attached data sheet(s) for additional water contents					Mass Excess Dry Soil, M _{d,es} (g)		0.06	

Soil Height: Measurements (mm)				Soil Height: Calculations, (mm)		Initial	Final
Initial		Final		Height of Gauge Block, H_{gb} (1)		0.000	19.060
with Spec.	without Spec.	with Spec.	without Spec.	Reading on Gauge Block, d_{gb}		0.000	0.000
19.300	0.000	12.450	12.990	Avg. Reading on Soil, d_{soil}		19.244	12.430
19.210	0.000	12.340	12.910	Avg. Reading on Apparatus without Specimen, d_{app}		0.000	12.940
19.220	0.000	12.470	12.960	Soil Height, $H = d_{soil} - d_{app} + H_{gb} - d_{gb}$		19.244	18.550
19.270	0.000	12.510	12.940	Soil Height: Final by Dial Change During Test (mm)			
19.220	0.000	12.380	12.900	Initial Height, H_o		19.244	
☐ Yes ; ☒ No	☒ Yes ; ☐ No	☒ Yes ; ☐ No	☐ Yes ; ☒ No	Require H_{gb} & d_{gb} (1)		Final (end of test) Corr. Total Spec. Deformation, $\Delta H_{c,r}$	
☐ Yes ; ☒ No	☒ Yes ; ☐ No	☒ Yes ; ☐ No	☐ Yes ; ☒ No	Filter Paper Included:		Final Calculated Height, $H_{f,c} = H_o - \Delta H_{c,r}$	
(1) Req. block ht. to set bench comparator so the final soil ht. can be determined directly by the diff. between the reading with and without spec. : ~ 12.7 mm; CRS ~ 25 mm						Final Soil Height Measurement, $H_{f,m}$	
Enter value of H_{gb} & d_{gb} only when that value has to be included in the determination of the soil height.						Normalized Difference in %, $(H_{f,c} - H_{f,m})/H_o$	
						-0.94	

Estimated Initial Unit Weight		Soil Extruded During Loading	
Total, $\gamma_{t,o}$ (pcf)= 128.07	Dry, $\gamma_{d,o}$ (pcf)= 107.96	Container No.	
Filter Paper Used: ☒ Whatman No. 54; ☐ Other		Mass Dry Soil + Cont. (g)	NA
Incremental Test: Top & Bottom: ☐ Yes ; ☐ No		Mass Cont. (g)	NA
CRS Test: Top Only: ☒ Yes ; ☐ No		Dry Mass - Soil Extruded During Loading, $M_{d,el}$ (g)	0.00

Photo taken of Sliced Test Specimen: ☐ Yes ; ☒ No

Final Visual Description: Mottled Pale Yellow and Yellow Fat CLAY (CH)

Trimming/Etc. Remarks:

Method of trimming periphery: ☒ "Casagrande" Lathe ; ☐ Cutting Shoe ; ☐ Wire Saw ; ☐ Other
 Method of trimming ends: ☐ Wire Saw & Sharp (knife) Straight Edge ; ☒ Wire Saw & Straight Edge ; ☐ Wire Saw

Trim./Recon. By: JTG Setup By: JTG Prelim. Calc. By: LF Take Down By: JTG
 Date: 3/25/2008 Date: 3/25/2008 Final Calc. By: LF Date: 4/3/2008
 Reviewed By: HP 4P

Note: NA - Not Applicable

KAW 7/16/08

ONE - DIMENSIONAL CONSOLIDATION TEST: Specimen Calculations & Summary

Project Number: 0411-08-1686 Test Station No.: CRS-6 File Name: B-2304_UD13a
 Task No.: NA Specific Gravity, G_s : 2.710 ☒ Measured ; ☐ Assumed.
 Calculations Corrected for Salt (dissolved solids): ☒ No or, ☐ Yes, with Concentration = _____ g/kg

Cal.- Routine	ITEM	Water Content, (%)	Mass Dry Soil, (g)	Degree of Saturation, S in %		
				Height Initial	Final Height Meas.	Dial
1	Initial, Top, W1	19.17	104.89	90.9	98.5	101.4
2	" Bottom, W2	18.89	105.13	90.2	97.7	100.6
3	" Sides, W3	17.82	106.08	87.2	94.6	97.4
4	" Average, W4	18.63	105.36	89.5	97.0	99.8
5	" Back Calculated (1)	19.49	104.60 (3)	91.8	99.4	102.3
6	Final	19.10	104.60 (2)	91.8	99.4	102.3

Calculated Specific Gravity for Final Saturation = 100%:
 Used Cal. Routine No. 5 to obtain the mass of dry soil
 and final height by: ☒ Measurement; ☐ Dial Change.
 Back Cal. G_s = 2.702
 Avg. G_s (measured/assumed) & Back Cal. G_s = 2.706

Calculation Constant, K
 = (unit conversion) / $G_s \times \rho_w \times A_r$
 Estimated, K_e 0.11676
 Final Selected, K_f 0.11676

Calculated Mass Dry Soil for Final Saturation = 100%: using measured/assumed G_s
 and final height by: ☒ Measurement; ☐ Dial Change.
 Back Cal. Mass Dry Soil, (g) = 104.41
 Avg. Back Calculated and Measured Mass Dry Soil (g) = 104.51

Summary of Specimen Physical Properties									
Specific Gravity		Assumed		To make S_r = 100% at end of test.					
G_s = 2.710		☒ Measured		Avg. of measured/assumed G_s and G_s to make S_r = 100%					
Mass Dry Soil, (g)	Initial:	104.60	☒ From Cal. Routine No. 5		Note: Routine #5 is based on final measurements.				
	Final (4):	NA	☐ Make S_r = 100%, or;		Avg. of measured & make S_r = 100%				
Initial Height (mm) =			19.24	☒ Measured ;	Back Calculated Back-cal. Sat. (%) = NA				
Final Height (mm) =			18.55	☒ Measured ;	Initial H_o & dial change during loading				
	Water Content, w (%)	Void Ratio, e	Degree of Saturation, S (%)	Total Unit Weight, γ_t (pcf)	Dry Unit Weight, γ_d (pcf)	Height of Solids, H_s (2,4) (mm)	Extruded soil loss proportioned in increasing loading increments (5) :		
Initial	19.5	0.576	91.8	128.1	107.2	12.213	From	To (ksf)	
Final	19.0	0.519	99.4	132.3	111.2	NA	NA	NA	

Graphical Construction	σ'_p (ksf)	ϵ_a (%)	CR	RR	OCR	Liquid Limit (LL)	62	Minus 200 (%)
Casagrande Method	28.20	NA	0.145	0.045	2.6	Plastic Limit (PL)	18	92.9
Becker Method	NA	Becker minimum σ'_p (ksf):			NA	Plasticity Index (PI)	44	

NA - Indicates not applicable

Notes:

- (1) Back Calculated based on final mass of oven-dry soil (corrected for dry mass of any excess and extruded soil).
- (2) Corrected for any excess dry soil (soil stuck to ring, filter paper, etc.).
- (3) This value is only different from the final value if there is soil extrusion during loading.
- (4) Final is only different from the initial value if there is soil extrusion during loading.
- (5) There should not be any soil loss in a CRS test, unless stress increments are applied.

Calculated By: LF Reviewed By: HP **UP**
 Date: 4/4/2008

ONE - DIMENSIONAL CONSOLIDATION TEST: CALCULATED CRS LOADING DATA

Project Number: 0411-08-1686 Test Station No.: CRS-6 File Name: B-2304_UD13a
 Task No.: NA Date: Start: 3/25/2008 Initial Height, H_0 (mm): 19.24
 Project Name: Exelon (Victoria) Completed: 4/3/2008 Ring Area, A_r (cm²): 31.6608
 Test: Initial / Pressure Gauge Back Pressure, U_G (psi): 70 ☒ Undisturbed or ; ☐ Reconstituted - Specimen.
 Reference Values: Back Pressure, $U_{b,BE}$ (psi): 70.06105 ,V: 0.022486534 Piston Uplift, P_{up} (lbf): 34.40
 Back Pressure, $U_{b,CS}$ (psi): 70.05501 ,V: 0.022484538 Setup DT_{ref} (V): 0.001549332
 Displacement Transducer No.: DT-025 Calib. Factor (mm/V): 228.61978 Ch. No.: 2
 Pore Press. Transducer No.: PT-112 Calib. Factor (psi/V): 3029.91431 Ref. Zero (V): -0.000637 Ch. No.: 3
 Force Cell No.: FT-100 Calib. Factor (lbf/V): -468015.73 Ref. Zero (V): -0.000484 Ch. No.: 1

Notes:

- (1) S - Seating, BS - Start of Back Pressure, BE - End of Back Pressure, SC - Stress Controlled, CS - Constant Rate of Strain
 US - Start of Uniform Strain Rate, UE - End of Uniform Strain Rate
- (2) Total Vertical Stress (σ_v) corrected to account for the force caused by the back pressure acting on the piston (Piston Uplift).
- (3) Increasing deformation value indicates: ☒ compression; or ☐ swell.
- (4) "App. Flex. Corr." values based on the apparatus calibration.

Data Management By: LF Reviewed By: HP 

Remarks:

Load- ing Info. (1)	Julian Day (dd)	Hour (hr.:min.:s)	Elapsed Time from Start of Loading, Δt_n (min)	Total Vertical Stress, $\sigma_{v,n}$ (2) (ksf)	Excess Pore-Water Pressure, ΔU_n (ksf)	Total Specimen Deformation, ΔH_n (3) (mm)	Apparatus Flexibility Correction, $\Delta d_{afc,n}$ (mm)	Corr. Total Specimen Deformation, $\Delta H_{c,n}$ (4) (mm)	Strain Rate, between n & n-1, $\Delta \epsilon_{ac,rate}$ (%/hr)
S	85	14 : 55 : 21		0.10		0.000			
BS	85	15 : 20 : 58		1.42		0.039	0.000	0.039	
BE	86	09 : 17 : 23		2.72	0.001	0.026	0.000	0.026	
CS	86	09 : 17 : 27	0	2.72	0.000	0.026	0.000	0.026	
	86	10 : 09 : 23	52	6.47	1.452	0.098	0.000	0.098	0.432
	86	11 : 28 : 08	131	9.47	3.040	0.178	0.000	0.178	0.318
	86	13 : 21 : 11	244	12.05	2.835	0.273	0.000	0.273	0.259
	86	15 : 31 : 13	374	17.12	5.710	0.373	0.000	0.373	0.241
	86	17 : 41 : 14	504	23.27	9.397	0.480	0.000	0.480	0.255
US	86	19 : 51 : 16	634	29.22	12.633	0.579	0.000	0.579	0.238
	86	22 : 01 : 17	764	34.86	15.312	0.674	0.000	0.674	0.228
	87	00 : 11 : 19	894	40.91	18.236	0.768	0.000	0.768	0.226
	87	02 : 21 : 21	1024	47.77	21.879	0.868	0.000	0.868	0.240
	87	04 : 31 : 22	1154	54.18	25.064	0.966	0.000	0.966	0.234
	87	06 : 41 : 24	1284	60.04	27.684	1.058	0.000	1.058	0.221
	87	08 : 51 : 25	1414	66.57	31.007	1.148	0.000	1.148	0.214
	87	11 : 01 : 27	1544	74.15	35.290	1.243	0.000	1.243	0.230
	87	13 : 11 : 29	1674	81.03	38.398	1.340	0.000	1.340	0.233
	87	15 : 21 : 31	1804	87.62	41.029	1.432	0.000	1.432	0.220
	87	17 : 31 : 33	1934	94.64	44.029	1.522	0.000	1.522	0.215
	87	19 : 41 : 35	2064	103.17	48.073	1.613	0.000	1.613	0.219
UE	87	21 : 51 : 38	2194	111.24	51.567	1.707	0.000	1.707	0.224
	88	00 : 01 : 39	2324	118.64	54.243	1.793	0.000	1.793	0.207
	88	02 : 11 : 41	2454	126.78	57.351	1.879	0.000	1.879	0.205

**ONE - DIMENSIONAL CONSOLIDATION TEST:
CALCULATED CRS LOADING DATA**

Load- ing Info. (1)	Julian Day (dd)	Hour (hr.:min.:s)	Elapsed Time from Start of Loading, Δt_n (min)	Total Vertical Stress, $\sigma_{v,n}$ (2) (ksf)	Excess Pore-Water Pressure, ΔU_n (ksf)	Total Specimen Deformation, ΔH_n (3) (mm)	Apparatus Flexibility Correction, $\Delta d_{afc,n}$ (mm)	Corr. Total Specimen Deformation, $\Delta H_{c,n}$ (4) (mm)	Strain Rate, between n & n-1, $\Delta \epsilon_{ac,rate}$ (%/hr)
	88	03 : 19 : 00	2522	131.90	59.745	1.925	0.000	1.925	0.214
	88	03 : 21 : 41	2524	131.52	59.602	1.926	0.000	1.926	0.109
	88	08 : 21 : 46	2824	92.97	21.070	1.936	0.000	1.936	0.011
	88	13 : 21 : 49	3124	70.38	7.529	1.895	0.000	1.895	-0.043
	88	18 : 21 : 53	3424	52.77	1.447	1.833	0.000	1.833	-0.065
	88	23 : 21 : 57	3725	39.19	-2.101	1.751	0.000	1.751	-0.085
	89	04 : 22 : 02	4025	29.68	-4.206	1.663	0.000	1.663	-0.092
US	89	09 : 22 : 06	4325	21.79	-5.626	1.564	0.000	1.564	-0.103
	89	14 : 22 : 11	4625	15.41	-6.664	1.452	0.000	1.452	-0.116
	89	19 : 22 : 14	4925	10.92	-7.409	1.333	0.000	1.333	-0.123
	90	00 : 22 : 17	5225	7.54	-7.813	1.228	0.000	1.228	-0.110
UE	90	05 : 22 : 20	5525	4.58	-8.145	1.104	0.000	1.104	-0.129
	90	05 : 34 : 16	5537	4.40	-8.156	1.099	0.000	1.099	-0.128
	90	05 : 42 : 20	5545	4.81	-8.157	1.097	0.000	1.097	-0.064
	90	07 : 02 : 22	5625	11.51	-7.988	1.122	0.000	1.122	0.095
	90	08 : 22 : 23	5705	16.93	-7.629	1.172	0.000	1.172	0.195
US	90	09 : 42 : 23	5785	21.31	-7.144	1.222	0.000	1.222	0.197
	90	11 : 02 : 24	5865	25.66	-6.498	1.275	0.000	1.275	0.206
	90	12 : 22 : 26	5945	30.55	-5.603	1.332	0.000	1.332	0.221
	90	13 : 42 : 26	6025	35.52	-4.341	1.390	0.000	1.390	0.227
	90	15 : 02 : 27	6105	40.40	-2.594	1.447	0.000	1.447	0.221
	90	16 : 22 : 29	6185	45.60	-0.220	1.500	0.000	1.500	0.208
	90	17 : 42 : 30	6265	50.97	2.950	1.551	0.000	1.551	0.197
	90	19 : 02 : 31	6345	56.77	6.923	1.598	0.000	1.598	0.183
	90	20 : 22 : 32	6425	63.07	11.347	1.644	0.000	1.644	0.181
	90	21 : 42 : 33	6505	70.53	16.403	1.692	0.000	1.692	0.185
	90	23 : 02 : 33	6585	77.86	21.641	1.739	0.000	1.739	0.185
	91	00 : 22 : 34	6665	85.36	26.731	1.785	0.000	1.785	0.178
	91	01 : 42 : 35	6745	92.62	31.322	1.830	0.000	1.830	0.175
	91	03 : 02 : 36	6825	99.55	35.182	1.874	0.000	1.874	0.170
	91	04 : 22 : 37	6905	106.49	38.674	1.916	0.000	1.916	0.165
	91	05 : 42 : 39	6985	113.94	42.475	1.961	0.000	1.961	0.174
	91	07 : 02 : 40	7065	121.93	46.716	2.006	0.000	2.006	0.175
UE	91	08 : 22 : 41	7145	129.56	50.642	2.053	0.000	2.053	0.187
	91	08 : 47 : 37	7170	131.86	51.815	2.069	0.000	2.069	0.196
	91	08 : 52 : 41	7175	131.18	51.623	2.071	0.000	2.071	0.112
	91	15 : 12 : 45	7555	87.70	13.521	2.057	0.000	2.057	-0.012
	91	21 : 32 : 50	7935	62.64	2.989	1.991	0.000	1.991	-0.054
US	92	03 : 52 : 55	8315	44.13	-1.915	1.896	0.000	1.896	-0.078
	92	10 : 13 : 01	8696	30.57	-4.697	1.771	0.000	1.771	-0.103
	92	16 : 33 : 06	9076	21.12	-6.381	1.654	0.000	1.654	-0.096
	92	22 : 53 : 12	9456	13.43	-7.420	1.519	0.000	1.519	-0.111

ONE - DIMENSIONAL CONSOLIDATION TEST: CALCULATED CRS LOADING DATA

[illegible]

ONE - DIMENSIONAL CONSOLIDATION TEST: CRS LOADING RESULTS (Load Time - Deformation Properties)

Project Number: 0411-08-1686 Test Station No.: CRS-6 ☒ Undisturbed or; ☐ Reconstituted - Specimen. File Name: B-2304_UD1:
 Task No.: NA Date; Start: 3/25/2008 Back Pressure, $U_{b,CS}$ (psi): 70.1 Piston Uplift, P_{up} (lbf): 34.40
 Project Name: Exelon (Victoria) Completed: 4/3/2008 Transient Time Factor, $T_v = (C_v \cdot t) / H^2 = 0.5$
 4186-06-Summary of Methods: NA ☐ Data corrected for salt _____; in ☐ g/kg

Final Description of Specimen: Mottled Pale Yellow and Yellow Fat CLAY (CH)

Ring No.: 16 Area, A_r (cm²): 31.661 Solids Ht., H_s (mm): 12.213 Specific Gravity, $G_s = 2.710$ ☒ Meas.; ☐ Assumed
Initial: Height H_o : 19.24 Water 19.5 Void 0.576 Deg. of 91.8 Total Unit 128.1 Dry Unit 107.2
Final: (mm): H_f : 18.55 Content, w (%): 19.0 Ratio, e : 0.519 Sat., S (%): 99.4 Weight, γ_t (pcf): 132.3 Weight, γ_d (pcf): 111.2

Notes:

- (1) S - Seating, BS - Start of Back Pressure, BE - End of Back Pressure, SC - Stress Controlled, CS - Constant Rate of Strain, US - Start of Uniform Strain Rate, UE - End of Uniform Strain Rate or ΔU_n to erratic
- (2) Excess pore-water pressure measured at the base of the specimen.
- (3) Only applicable during stress controlled (SC) loading.

Data Management by: LF

Reviewed By: HP

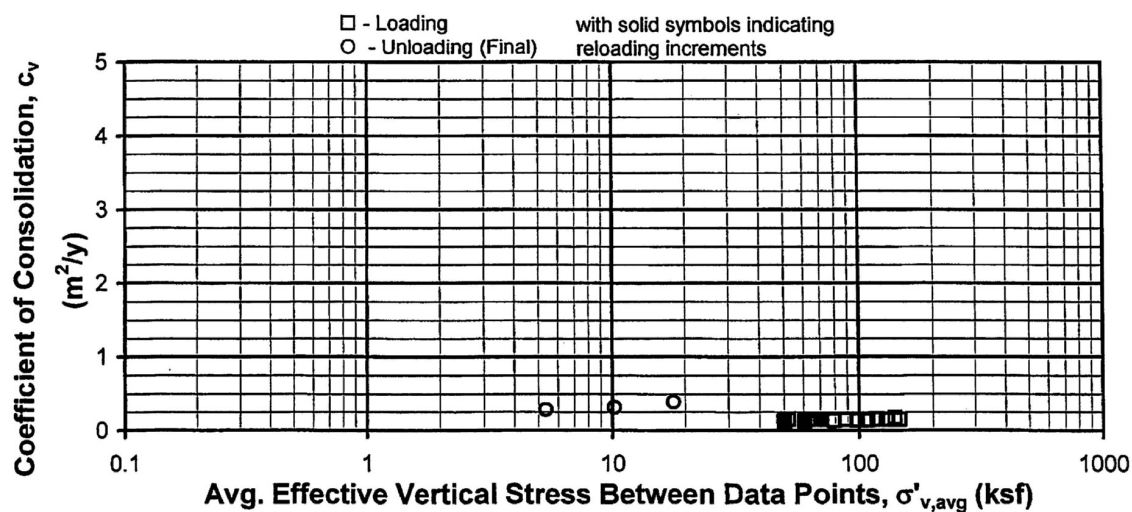
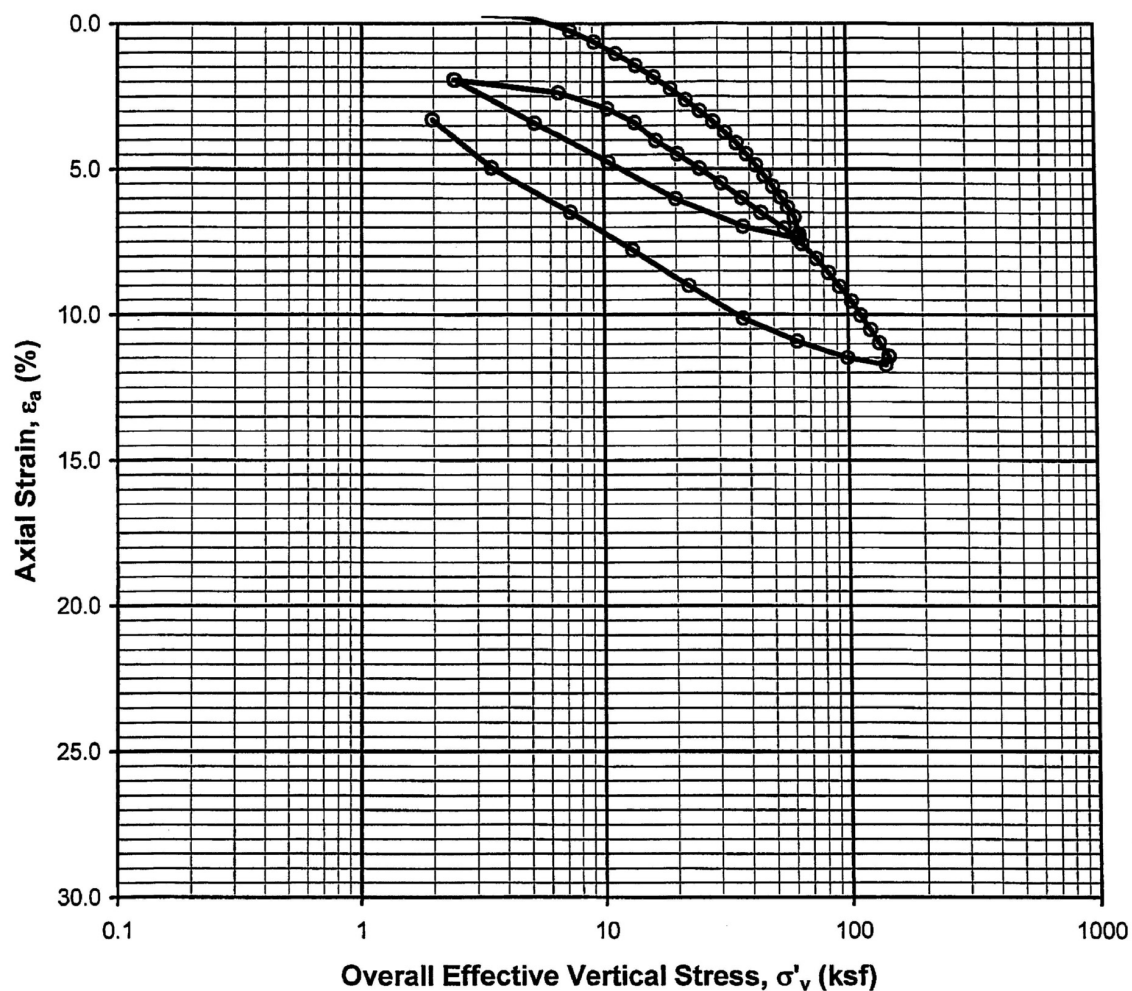
Loading Info. (1)	Elapsed Time from Start of Loading, Δt_n (min)	Overall Effective Vertical Stress, $\sigma'_{v,n}$ (ksf)	Corrected Volumetric (Axial) Strain, $\epsilon_{v,n}$ ($\epsilon_{ac,n}$) $\Delta H_{c,n} / H_o$ (%)	Overall Void Ratio, e_n	Total Vertical Stress, $\sigma_{v,n}$ (ksf)	Excess Pore-Water Pressure, ΔU_n (2) (ksf)	Loading Pore-Water Pressure Ratio, R_u $\Delta U_n / \sigma_{v,n}$ (%)	Corrected Specimen Height, $H_{c,n}$ (mm)	Calculations Between n and n-1				Steady State Ratio, $SSR_n = \frac{C_v \cdot t_n \cdot UCF}{T_v \cdot (H_{c,avg})^2}$	Rate of Secondary Comp. (3), $C_\alpha = \frac{\Delta d_{a,sc}}{H_o}$ ($\times 10^{-4}$)
									Average Effective Vertical Stress, $\sigma'_{v,avg}$ (ksf)	Coefficient of Consolidation, C_v (m ² /y)	Average Void Ratio, e_{avg}	Hydraulic Conductivity, k @ 20°C (m/y)		
S					0.10				Data on given line represents average conditions					
BS			0.20	0.572	1.42			19.205	between that line and the previous line of data.					
BE		2.72	0.14	0.574	2.72	0.001	0.0	19.218			0.573			
CS	0	2.72	0.14	0.574	2.72	0.000	0.0	19.218			0.574			
	52	5.46	0.51	0.568	6.47	1.452	22.4	19.146	4.09		0.571			
	131	7.31	0.93	0.561	9.47	3.040	32.1	19.066	6.39		0.564			
	244	10.08	1.42	0.553	12.05	2.835	23.5	18.971	8.70		0.557			
	374	13.06	1.94	0.545	17.12	5.710	33.4	18.871	11.57		0.549			
	504	16.49	2.49	0.536	23.27	9.397	40.4	18.764	14.77		0.541			
US	634	20.03	3.01	0.528	29.22	12.633	43.2	18.665	18.26		0.532			
	764	23.70	3.50	0.521	34.86	15.312	43.9	18.570	21.87		0.524		0.31	
	894	27.61	3.99	0.513	40.91	18.236	44.6	18.476	25.66		0.517		0.55	
	1024	31.76	4.51	0.505	47.77	21.879	45.8	18.376	29.68		0.509		0.77	
	1154	35.81	5.02	0.497	54.18	25.064	46.3	18.278	33.79		0.501		0.82	
	1284	39.76	5.50	0.489	60.04	27.684	46.1	18.186	37.79		0.493		0.83	
	1414	43.83	5.96	0.482	66.57	31.007	46.6	18.096	41.79		0.485		1.00	
	1544	48.20	6.46	0.474	74.15	35.290	47.6	18.001	46.02	0.11	0.478	2.29E-05	1.19	

ONE - DIMENSIONAL CONSOLIDATION TEST: CRS LOADING RESULTS (Load Time - Deformation Properties)

Loading Info. (1)	Elapsed Time from Start of Loading, Δt_n (min)	Overall Effective Vertical Stress, $\sigma'_{v,n}$ (ksf)	Corrected Volumetric (Axial) Strain, $\varepsilon_{v,n}$ ($\varepsilon_{ac,n}$) $\Delta H_{c,n} / H_o$ (%)	Overall Void Ratio, e_n	Total Vertical Stress, $\sigma_{v,n}$ (ksf)	Excess Pore-Water Pressure, ΔU_n (2) (ksf)	Loading Pore-Water Pressure Ratio, R_u $\Delta U_n / \sigma_{v,n}$ (%)	Corrected Specimen Height, $H_{c,n}$ (mm)	Calculations Between n and n-1				Steady State Ratio, $SSR_n = \frac{c_v \cdot t_n \cdot UCF}{T_v \cdot (H_{c,avg})^2}$	Rate of Secondary Comp. (3), $C_\alpha = \Delta d_{s,sc} / H_o$ ($\times 10^{-4}$)
									Average Effective Vertical Stress, $\sigma'_{v,avg}$ (ksf)	Coefficient of Consolidation, c_v (m^2/y)	Average Void Ratio, e_{avg}	Hydraulic Conductivity, k @ 20°C (m/y)		
	1674	52.81	6.97	0.466	81.03	38.398	47.4	17.904	50.51	0.09	0.470	2.06E-05	1.10	
	1804	57.51	7.44	0.458	87.62	41.029	46.8	17.812	55.16	0.08	0.462	1.79E-05	1.10	
	1934	62.35	7.91	0.451	94.64	44.029	46.5	17.722	59.93	0.08	0.455	1.61E-05	1.23	
	2064	67.91	8.38	0.444	103.17	48.073	46.6	17.631	65.13	0.09	0.447	1.50E-05	1.52	
UE	2194	73.44	8.87	0.436	111.24	51.567	46.4	17.537	70.67	0.08	0.440	1.40E-05	1.45	
	2324	78.95	9.32	0.429	118.64	54.243	45.7	17.451	76.19		0.432			
	2454	84.86	9.76	0.422	126.78	57.351	45.2	17.365	81.91		0.425			
	2522	88.22	10.00	0.418	131.90	59.745	45.3	17.319	86.54		0.420			
	2524	87.95	10.01	0.418	131.52	59.602	45.3	17.318	88.09		0.418			
	2824	78.34	10.06	0.417	92.97	21.070	22.7	17.308	83.14		0.418			
	3124	65.27	9.85	0.421	70.38	7.529	10.7	17.349	71.80		0.419			
	3424	51.80	9.53	0.426	52.77	1.447	2.7	17.411	58.54		0.423			
	3725	40.58	9.10	0.432	39.19	-2.101	-5.4	17.493	46.19		0.429			
	4025	32.42	8.64	0.440	29.68	-4.206	-14.2	17.581	36.50		0.436			
US	4325	25.40	8.13	0.448	21.79	-5.626	-25.8	17.680	28.91		0.444			
	4625	19.58	7.55	0.457	15.41	-6.664	-43.2	17.792	22.49	0.33	0.452	5.09E-05	1.21	
	4925	15.42	6.93	0.467	10.92	-7.409	-67.9	17.911	17.50	0.22	0.462	4.70E-05	1.61	
	5225	12.11	6.38	0.475	7.54	-7.813	-103.6	18.016	13.77	0.17	0.471	3.82E-05	1.85	
UE	5525	9.06	5.74	0.485	4.58	-8.145	-177.7	18.140	10.58	0.17	0.480	4.24E-05	2.37	
	5537	8.86	5.71	0.486	4.40	-8.156	-185.2	18.145	8.96		0.485			
	5545	9.31	5.70	0.486	4.81	-8.157	-169.7	18.147	9.08		0.486			
	5625	16.35	5.83	0.484	11.51	-7.988	-69.4	18.122	12.83		0.485			
	5705	21.70	6.09	0.480	16.93	-7.629	-45.1	18.072	19.02		0.482			
US	5785	25.84	6.35	0.476	21.31	-7.144	-33.5	18.022	23.77		0.478			
	5865	29.83	6.63	0.471	25.66	-6.498	-25.3	17.969	27.84		0.473		-0.73	
	5945	34.18	6.92	0.467	30.55	-5.603	-18.3	17.912	32.00		0.469		-1.79	
	6025	38.36	7.22	0.462	35.52	-4.341	-12.2	17.854	36.27		0.464		-3.23	
	6105	42.12	7.52	0.457	40.40	-2.594	-6.4	17.797	40.24		0.460		-5.90	
	6185	45.74	7.80	0.453	45.60	-0.220	-0.5	17.744	43.93		0.455		-18.77	
	6265	48.99	8.06	0.449	50.97	2.950	5.8	17.693	47.36	4.01	0.451	4.06E-04	23.32	

DCN# EXE808

FUGRO CONSULTANTS, INC.



1-D CONSOLIDATION TEST: CRS
 Sample No. UD-4A - Depth 25.0 - 27.0 ft
 Boring B-2319UD