

APPENDIX II: CQA Data

Bulk density, moisture content and dry density from in-situ tests. Permeability from lab tests

Location	Bulk density (mg/m ³)	Moisture content (%)	Dry density (mg/m ³)	Permeability (m/s) under constant head conditions
Linc Labs 1995 ground ground investigation				8.70E-11 6.20E-10 1.30E-10 1.00E-09 2.90E-11
Cell 5 upper side seals	2.006 2.021 2.03 1.969 2.074 2.031 2.033 2.018 2.014 2.013 2.045 2.003 2.031 2.017 2.067 2.053 2.042 2.025 1.949 1.965 1.898 1.936	22.92 21.93 21.7 18.23 17.53 24.34 21.67 23.06 24.53 22.85 21.04 22.51 24.62 20.14 23.78 20.94 25.09 21.85 19.95 19.49 19.71 20.41	1.632 1.657 1.668 1.666 1.764 1.634 1.671 1.639 1.617 1.638 1.69 1.635 1.63 1.679 1.67 1.697 1.632 1.662 1.625 1.644 1.586 1.608	1.40E-10 1.30E-10 1.20E-10 8.10E-11
Cell 3 upper side seals	2.091 2.106 2.097 2.076 2.042 2.11 2.064 2.029 2.047 2.066 2.052 2.023 2.095 2.043 2.086 2.097 2.007 2.1 2.04 2.053 2.026 2.014 2.053 2.014 2.056 2.055 2.016 2.1 2.013 2.016 2.028 2.052 2.043 2.041 2.078	19.5 18.9 18.9 20.8 20 17.9 19.7 19.7 21.4 20.6 20 20.2 18.1 19.7 20 17.9 20.8 18.8 19.9 20.8 20.7 20.2 21.1 20.9 20.4 20.1 18.4 18.4 20.7 18.8 19.5 19.8 20.1 20.7 19	1.75 1.771 1.764 1.719 1.702 1.79 1.724 1.695 1.686 1.713 1.71 1.682 1.774 1.707 1.738 1.779 1.661 1.768 1.701 1.7 1.679 1.676 1.695 1.666 1.708 1.711 1.703 1.774 1.668 1.697 1.697 1.713 1.701 1.691 1.746	8.80E-11 1.90E-10

Location	Bulk density (mg/m3)	Moisture content (%)	Dry density (mg/m3)	Permeability (m/s) under constant head conditions
Cell 3 upper side seals	2.038	20.1	1.617	
	2.017	23	1.64	
	2.068	21.3	1.705	
	2.035	19.7	1.7	
	2.017	20.9	1.668	
	2.042	20.6	1.693	
	2.086	20.2	1.735	
	2.074	18.9	1.744	
	2.057	19.3	1.724	
	2.054	18.9	1.728	
	2.078	19.6	1.737	
	2.093	18.5	1.766	
	2.074	19.4	1.737	
	2.075	19	1.744	
	2.046	20.6	1.697	
	2.074	18.2	1.755	
	2.089	19.8	1.744	
	2.112	20.6	1.76	
	2.032	19.9	1.695	
	2.079	19	1.747	
	2.08	19.4	1.742	
	2.046	21	1.691	
	2.102	19.3	1.762	
	2.096	19.2	1.758	
	2.038	19.7	1.703	
	2.051	19.5	1.716	
	2.074	19.6	1.734	
	2.059	21.2	1.699	
	2.072	20.1	1.725	
	2.073	18.8	1.745	
	2.077	18.8	1.748	
	2.037	22.3	1.666	
	2.112	18.6	1.781	
	2.103	18.7	1.772	
2.063	19.7	1.723		
2.043	21.9	1.676		
2.063	21.7	1.695		
2.074	20.2	1.725		
2.043	22.5	1.668		
2.108	29.1	1.77		
2.062	22.2	1.687		
Cell 6 development	1.98	22	1.62	8.10E-11
	1.96	21	1.62	1.80E-10
	1.97	20	1.65	
Cell 3 internal bund	1.936	21.4	1.595	
	1.943	21.59	1.598	
	1.906	21.78	1.565	
	2.006	20.48	1.665	
	1.906	22.13	1.634	
	1.983	21.33	1.634	
	1.948	20.11	1.622	
	1.99	23.79	1.608	
	1.96	20.32	1.629	
	1.938	20.74	1.622	
	2.012	19.33	1.686	
	1.953	19.77	1.631	
	1.922	19.95	1.602	
	1.885	26.99	1.484	
	1.91	23.38	1.548	
	1.977	21.01	1.634	
	1.921	22.06	1.574	
	1.905	21.57	1.587	
	1.95	20.2	1.622	
	1.915	22.23	1.567	
	1.963	24.29	1.579	
2.02	19.94	1.684		
1.951	22.03	1.599		

Location	Bulk density (mg/m3)	Moisture content (%)	Dry density (mg/m3)	Permeability (m/s) under constant head conditions
Cell 3 internal bund	1.921	28.31	1.49	
	1.899	24.32	1.528	
	1.935	20.02	1.612	
	1.9	23.74	1.535	
	1.974	21.68	1.622	
	1.948	22.21	1.594	
	1.855	26.07	1.471	
	1.962	19.49	1.642	
	1.93	22.14	1.58	
	1.88	23.17	1.526	
	1.936	21.07	1.6	

Test Results Summary for Leadenham Cell 4

Sample Ref	Compaction Cores				Atterberg Limits			Bulk		Permeability Cores
	MC (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Air Voids (%)	Plastic Limit (%)	Liquid Limit (%)	Plasticity Index	PD	PSD (% Clay Content)	
TC1	19.60	2.02	1.69	4.7						
TC2	19.20	1.95	1.63	8.6						
TC3	-	-	-	-						1.00E-11
TC4	20.00	2.02	1.69	4.2						
TC5	17.70	2.06	1.75	4.5						
TC6	22.40	2.03	1.66	1.8						
TB1					21	57	36	2.73	48.4	
TB2					20	55	35	2.71	50	
TB3					20	56	36	2.71	49.2	
TB4					19	55	36	2.71	50.1	
TB5					19	57	38	2.75	49.5	
C1	20.60	1.95	1.61	6.90						
C2	22.90	1.99	1.62	2.80						
C3	22.50	2.00	1.63	2.70						
C4	24.30	1.97	1.59	2.70						
C5	23.40	1.99	1.61	2.70						
C6	28.80	1.90	1.48	2.70						
C7	23.8	1.98	1.6	2.9						
C8	22.4	2.01	1.64	2.4						
C9	20.5	1.96	1.63	6.3						
C10	19.5	2.04	1.7	3.7						
C11	22.2	2.01	1.64	2.6						
C12	23.9	2	1.61	1.6						
C13	22.3	2.02	1.65	2.1						
C14	22.5	2.09	1.71	-1.6						
C15	17.5	2.08	1.77	3.7						
C16	19.8	2.09	1.74	1.1						
B1					19	60	41	2.7	54.4	
B2					23	61	38	2.69	57	
B3					21	52	31	2.69	62.1	
B4					24	61	37	2.68	75.7	
B5					19	56	37	2.73	47.2	
B6					19	57	38	2.75	45.5	
B7					21	56	35	2.73	48.4	
B8					20	59	39			
B9										
B10					20	57	37		49.4	
B11					23	56	33		58.9	
B12									56.1	
B13										
P1										2.10E-11
P2										2.50E-11
P3										2.10E-11
P4										3.70E-11
P5										3.30E-11
P6										1.00E-10
P7										6.80E-11
P8										
P9										
P10										
P11										
P12										
P13										

When filling perm resul
Example = 1.0E-11, Ct

1.3 x 10⁻¹¹