

Table-16 Results of Geological Investigation and Soil Test (Jalan Bachang - Batu Berendam, Melaka), BH-10 (Bridge)

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)			Bulk density (KN/m ³)	Dry density (KN/m ³)	Specific gravity	U.C.S (KN/m ²)	Triaxial test (UU)		Consolidation test	
				L.L	P.L	IP	Gravel	Sand	Silt & clay					C(KN/m ²)	ϕ (°)	Po(KN/m ²)	e_0
1.5	medium stiff, clayey silt	8	28	65	24	41	10	16	74	-	-	-	-	-	-	-	-
3.0	very soft, clay	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5	-ditto-	-	51	-	-	-	-	-	-	1.64	1.09	-	28.5	9.0	1.3	-	-
4.5	soft, clay	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.0	very soft, clayey silt	0	55	62	23	39	0	5	95	-	-	-	-	-	-	-	-
7.5	-ditto-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.0	-ditto-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.5	-ditto-	-	49	-	-	-	-	-	-	1.67	1.12	2.6	43	11.0	2.5	34	1.325
10.5	-ditto-	2	37	54	25	29	16	39	45	-	-	-	-	-	-	-	-
12.0	soft, clayey silt	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.5	-ditto-	3	51	61	23	38	0	5	95	-	-	-	-	-	-	-	-
15.0	medium stiff, clayey silt	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.5	-ditto-	5	53	58	23	35	0	5	95	-	-	-	-	-	-	-	-
18.0	-ditto-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.5	-ditto-	5	62	56	23	33	0	5	95	-	-	-	-	-	-	-	-
21.0	-ditto-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.5	very dense, clayey/silty medium to coars	50/22.5cm	34	42	30	12	11	40	49	-	-	-	-	-	-	-	-
24.0	-ditto-	50/12cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.5	hard, clayey silt	50/28cm	28	42	29	13	0	4	96	-	-	-	-	-	-	-	-
27.0	-ditto-	50/15cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.5	-ditto-	50/15cm	35	50	30	20	0	2	98	-	-	-	-	-	-	-	-
30.0	-ditto-	50/23.5cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.5	-ditto-	50/13cm	21	42	31	11	0	5	95	-	-	-	-	-	-	-	-

* Drilling depth : 31.63 m, water table : G.L 2.70 m, 0 - 0.8 m (silty clay)

* Shear strength by vane test : 6.5 m (11.90KN/m²), 8.0m (17.86KN/m²), 11.0 m (41.67KN/m²)

Table-17 Results of Geological Investigation and Soil Test (Tanjung Minyak, Melaka), BH1

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)			Specific Gravity	Bulk density (Mg/m ³)	Dry density (Mg/m ³)	Specific gravity	U.C.S (KN/m ²)	Triaxial test (UU)		Consolidation test		
				L.L	P.L	IP	Gravel	Sand	Silt, clay						C(KN/m ²)	φ (°)	Po(KN/m ²)	Cc	e ₀
1.5	very soft, clayey silt	1	93	111	85	26	0	4	96	2.40	-	-	-	-	-	-	-		
3.0	-ditto-	-	100	94	49	45	0	14	86	2.58	1.30	0.65	2.58	30	22.0	4.0	28	0.734	2.836
4.5	-ditto-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.0	-ditto-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.5	soft, clayey silt	2	77	80	55	25	4	7	89	2.42	-	-	-	-	-	-	-	-	-
9.0	medium dense, gravelly sand	18	15	NP	-	-	32	43	25	2.64	-	-	-	-	-	-	-	-	-
10.5	-ditto-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.0	dense, sandy gravel	31	12	NP	-	-	50	30	20	2.65	-	-	-	-	-	-	-	-	-
13.5	dense, gravelly sand	35	13	NP	-	-	24	39	37	2.68	-	-	-	-	-	-	-	-	-
15.0	very dense, gravelly sand	50/16.5cm	8	NP	-	-	28	39	33	2.91	-	-	-	-	-	-	-	-	-
16.5	-ditto-	50/14cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.0	hard, clayey silt	50/15cm	12	30	22	8	35	32	43	2.64	-	-	-	-	-	-	-	-	-
19.5	very dense, sandy gravel	50/19cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.0	-ditto-	50/21.5cm	8	NP	-	-	72	20	8	2.74	-	-	-	-	-	-	-	-	-
22.5	-ditto-	50/18cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.0	-ditto-	50/14cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Drilling depth : 24.29 m, water table : G.L 2.10 m, top soil (clayey silt)

* Shere strength by vane shere test : 4.5 m (3.00kN/m²)

Table-18 Results of Geological Investigation (Tanjung Minyak, Melaka), BH2

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit				Components of soil (%)				Specific Gravity	Bulk density (Mg/m³)	Dry density (Mg/m³)	Specific gravity	U.C.S (KN/m²)	Triaxial test (UU)		Consolidation test	
				L.L	P.L	IP	Gravel	Sand	Silt, clay	C(KN/m²)	ϕ (°)						Po(KN/m²)	Cc	e ₀	
1.5	very soft, clayey silt	1	50	55	45	10	0	12	88	2.45	-	-	-	-	-	-	-	-	-	
3.0	-ditto-	-	76	89	48	41	0	12	88	2.58	1.473	0.837	2.58	38	30.0	5.0	22.5	0.365	2.096	
4.5	-ditto-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6.0	soft, clayey silt	2	75	85	70	15	0	5	95	2.39	-	-	-	-	-	-	-	-	-	
7.5	-ditto-	2	45	55	33	22	0	7	93	2.48	-	-	-	-	-	-	-	-	-	
9.0	medium dense, silty gravel	11	27	NP	-	-	51	12	37	2.54	-	-	-	-	-	-	-	-	-	
10.5	-ditto-	13	24	NP	-	-	55	16	29	2.55	-	-	-	-	-	-	-	-	-	
12.0	hard, clayey silt	50/22.5cm	13	34	24	10	17	19	64	2.6	-	-	-	-	-	-	-	-	-	
13.5	-ditto-	50/22.5cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15.0	very dense, sandy gravel	50/18.5cm	8	NP	-	-	59	26	15	2.68	-	-	-	-	-	-	-	-	-	
16.5	-ditto-	50/15cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18.0	-ditto-	50/12cm	9	NP	-	-	60	28	12	2.63	-	-	-	-	-	-	-	-	-	
19.5	-ditto-	50/28cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21.0	-ditto-	50/17cm	8	NP	-	-	56	30	14	2.64	-	-	-	-	-	-	-	-	-	

* Drilling depth : 21.32 m, water table : G.L 2.20 m, top soil (clayey silt)

* Shere strength by vane shere test : 4.5 m (1.88kN/m²)

Table-19 Results of Geological Investigation Soil Test (Sg. Cheng, Melaka), DH1

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)		
				L.L	P.L	IP	Gravel	Sand	Silt & clay
0.0	silty/sandy gravels	-	-	-	-	-	18	48	34
1.0	loose, silty gravels	9	-	-	-	-	36	30	34
2.0	stiff, silt	11	-	-	-	-	4	22	74
3.0	very loose, silty/gravelly fine to coarse sand	2	-	-	-	-	29	50	21
4.0	very soft, silt	0	-	-	-	-	0	4	96
5.0	very soft, clay	0	94	99	39	60	0	1	99
6.0	-ditto-	0	90	93	34	59	0	1	99
7.5	very soft, silt	1	92	105	45	59	0	4	94
9.0	very hard, sandy silt	50/12.5cm	13	30	25	5	14	33	53
10.5	-ditto-	50/7cm	11	NP			13	31	56
12.0	very dense, silty/sandy gravels	50/7.5cm	8	NP			51	26	23
13.5	very hard, sandy silt	50/6.5cm	10	NP			28	36	36
15.0	very dense, silty/sandy gravels	50/5cm	9	NP			53	25	22

* Drilling depth : 15.13 m, water table : G.L 1.00 m (11/4/98)

Table-20 Results of Geological Investigation and Soil Test (Sg. Cheng, Melaka), DH2

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)		
				L.L	P.L	IP	Gravel	Sand	Silt & clay
0.0	Silty/sandy gravels	-	-	-	-	-	54	15	31
1.0	very soft, sandy silt	1	-	-	-	-	18	28	54
2.0	very soft to soft, sandy silt	2	-	-	-	-	6	39	55
3.0	very soft, silt	0	-	-	-	-	3	16	81
4.0	-ditto-	0	-	-	-	-	0	1	99
5.0	-ditto-	0	97	97	46	51	1	2	97
6.0	-ditto-	0	91	102	50	52	1	5	94
7.5	very loose, silty fine to medium sand	2	20	NP			0	80	20
9.0	-ditto-	3	16	NP			0	66	34
10.5	hard, sandy silt	28	17	36	25	11	11	25	64
12.0	very hard, silt	50/20cm	17	NP			4	16	80
13.5	-ditto-	50/20cm	17	NP			7	8	85
15.0	-ditto-	50/16cm	16	NP			2	5	93
16.5	very dense, sandy gravels	50/5cm	9	36	25	11	53	34	13
18.0	-ditto-	50/4.5cm	9	NP			58	31	11

* Drilling depth : 18.17 m, water table : G.L 1.40 m (15/4/98)

Table-21 Results of Geological Investigation and Soil Test (Sg. Gelam, Melaka), DB1

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)		
				L.L	P.L	IP	Gravel	Sand	Silt & clay
1.5	silty/sandy gravel	4	15	-	-	-	67	17	16
3.0	very soft, silt/clay	0	92	109	44	65	0	5	95
4.5	-ditto-	1	107	102	57	45	0	8	92
6.0	very soft to soft, clay	2	36	50	20	30	0	8	92
7.5	soft, clay	3	42	72	26	46	0	3	97
9.0	very soft, clay	0	68	86	32	54	0	0	100
10.5	-ditto-	0	86	87	34	53	0	9	91
12.0	very stiff, sandy silt/clay	25	48		NP		2	37	61
13.5	medium dense, silty/clayey fine to coarse sand	21	19		NP		29	38	33
15.0	very stiff, silty/clayey fine to coarse sand	50/20cm	14		NP		43	38	19
16.5	-ditto-	33	17		NP		23	47	30
18.0	very dense, silty/gravelly fine to coarse sand	50/25cm	20	49	33	16	27	38	35
19.5	hard, sandy silt	50/12.5cm	18		NP		28	34	38
21.0	-ditto-	50/22.5cm	18	46	30	16	15	44	41
22.5	-ditto-	50/22.5cm	17	45	30	15	30	34	36
24.0	-ditto-	50/20cm	19	97	31	66	19	34	47

* Drilling depth : 24.35 m, water table : G.L 0.92 m, 0 - 1.0 m (sandy/silty clay)

* Atterberg limit : L.L liquid limit, P.L plastic limit, IP index of plasticity

* gravel : grain size 2.0 mm or more, sand : 2.0 - 0.06 mm, silt & clay : 0.02 mm or less

Table-22 Results of Geological Investigation and Soil Test (Sg. Gelam, Melaka), DB2

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)		
				L.L	P.L	IP	Gravel	Sand	Silt & clay
1.5	very soft, silt	0	101	-	-	-	0	8	92
3.0	-ditto-	0	85	105	62	43	0	5	95
4.5	very soft to soft, sandy silt	1	58	132	28	104	0	23	77
6.0	very soft, sandy silt	1	37	54	24	30	0	4	96
7.5	very soft clay	0	63	85	27	58	0	1	99
9.0	soft, clay	3	80	39	23	16	3	29	68
10.5	very soft, sandy clay	0	17	21	10	11	0	63	37
12.0	medium dense, silty/gravelly fine to coarse sand	21	15		NP		12	77	11
13.5	stiff to very stiff, silt	15	50	56	36	20	2	17	81
15.0	hard, sandy silt	50	22	93	34	59	5	48	47
16.5	very dense, silty/gravelly fine to coarse sand	50/15cm	21		NP		11	59	30
18.0	-ditto-	50/27.5cm	20	47	34	13	24	39	37
19.5	-ditto-	50/27.5cm	18	49	35	14	31	37	31
21.0	hard, sandy silt	50/27.5cm	21	48	34	14	17	42	41

* Drilling depth : 21.38 m, water table : G.L 0.65 m, 0 - 4.2 m (silty clay)

Table-23 Results of Geological Investigation and Soil Test (Sg. Sri Melaka, Melaka), BHA1

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)		
				L.L	P.L	IP	Gravel	Sand	Silt & clay
1.5	very soft, clayey silt	0	48	49	31	18	24	29	47
3.0	very soft, silty clay	-	71	91	39	52	0	17	83
4.5	-ditto-	0	-	-	-	-	-	-	-
6.0	-ditto-	-	58	76	34	42	0	11	89
7.5	-ditto-	0	-	-	-	-	-	-	-
9.0	-ditto-	-	79	50	30	20	0	17	83
10.5	-ditto-	0	-	-	-	-	-	-	-
12.0	stiff to very stiff, silty clay	-	21	62	28	34	0	40	60
13.5	-ditto-	17	-	-	-	-	-	-	-
15.0	dense, clayey fine to medium sand	19	19	30	12	18	0	76	24
16.5	-ditto-	33	-	-	-	-	-	-	-
18.0	stiff, silty clay	8	41	60	26	34	0	4	96
19.5	dense, silty sand	38	-	-	-	-	-	-	-
21.0	very dense, silty medium to coarse sand	50/28cm	16	-	NP	-	12	79	9
22.5	hard, clayey silt	39	-	-	-	-	-	-	-
24.0	-ditto-	34	24	40	25	15	10	40	50
25.5	-ditto-	36	-	-	-	-	-	-	-
27.0	-ditto-	32	26	41	23	18	6	30	64
28.5	-ditto-	50/23cm	-	-	-	-	-	-	-
30.0	-ditto-	50/19cm	27	39	22	17	17	28	55
31.5	stiff to very stiff, clayey silt	14	-	-	-	-	-	-	-
33.0	-ditto-	17	30	44	26	18	23	26	51
34.5	very dense, sandy silt	50/20cm	-	-	-	-	-	-	-
36.0	-ditto-	50/17cm	-	-	-	-	-	-	-
37.5	hard, clayey silt	50/22.5cm	-	-	-	-	-	-	-
39.0	-ditto-	50/23cm	-	-	-	-	-	-	-
40.5	-ditto-	50/20cm	-	-	-	-	-	-	-

* Drilling depth : 40.85 m, water table : G.L 0.95 m, 0 - 1.1 m (clayey sand)

* Undisturbed shere strength : 3.0 m (233 psi), 6.0 m (171 psi), 9.0 m (280 psi)

Table-24 Results of Geological Investigation and Soil Test (Sg. Sri Melaka, Melaka), BHP1

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)		
				L.L	P.L	IP	Gravel	Sand	Silt & clay
1.5	very soft, silty clay	0	-	-	-	-	-	-	-
3.0	-ditto-	-	72	96	40	56	0	15	85
4.5	-ditto-	0	-	-	-	-	-	-	-
6.0	-ditto-	-	59	80	35	45	0	15	85
7.5	-ditto-	0	-	-	-	-	-	-	-
9.0	soft, silty clay	-	62	99	41	58	0	17	83
10.5	-ditto-	0	-	-	-	-	-	-	-
12.0	stiff to very stiff, silty clay	23	23	61	20	41	0	43	57
13.5	-ditto-	27	26	66	18	48	1	47	52
15.0	stiff, fine sandy clay	11	-	-	-	-	-	-	-
16.5	-ditto-	9	20	30	12	18	2	50	48
18.0	-ditto-	10	-	-	-	-	-	-	-
19.5	medium dense, silty coarse sand	14	16	-	NP	-	-	-	-
21.0	-ditto-	20	-	-	-	-	-	-	-
22.5	hard, clayey silt	43	-	-	-	-	-	-	-
24.0	-ditto-	50/28cm	18	49	27	22	43	19	38
25.5	-ditto-	47	-	-	-	-	-	-	-
27.0	-ditto-	50	-	-	-	-	-	-	-
28.5	very stiff, clayey silt	18	-	-	-	-	-	-	-
30.0	-ditto-	15	38	51	30	21	0	11	89
31.5	very stiff, silty clay	19	-	-	-	-	-	-	-
33.0	hard, clayey silt	50	21	41	24	17	40	23	37
34.5	-ditto-	50/18cm	-	-	-	-	-	-	-
36.0	-ditto-	50/17cm	-	-	-	-	-	-	-
37.5	-ditto-	50/22cm	-	-	-	-	-	-	-
39.0	-ditto-	50/14cm	-	-	-	-	-	-	-
40.5	-ditto-	50/19cm	-	-	-	-	-	-	-

* Drilling depth : 40.84 m, water table : G.L. 1.20 m, 0 - 0.8 m (clayey gravel)

* Undisturbed she strength : 3.0 m (357 psi), 6.0 m (451 psi), 9.0 m (311 psi)

Table-25 Results of Geological Investigation and Soil Test (Sg.Sri Melaka, Melaka), BHA2

Depth (m)	Geological condition	N-value (times)	Moisture content (%)	Atterberg limit			Components of soil (%)		
				L.L	P.L	IP	Gravel	Sand	Silt & clay
1.5	very soft, silty clay	-	-	-	-	-	-	-	-
3.0	-ditto-	-	75	92	38	54	0	22	78
4.5	-ditto-	-	-	-	-	-	-	-	-
6.0	-ditto-	-	59	70	32	38	0	10	90
7.5	-ditto-	1	-	-	-	-	-	-	-
9.0	medium stiff to stiff, silty clay	-	27	54	24	30	0	16	84
10.5	-ditto-	9	-	-	-	-	-	-	-
12.0	stiff, silty clay	9	18	57	27	30	0	43	57
13.5	-ditto-	11	-	-	-	-	-	-	-
15.0	-ditto-	10	40	91	30	61	0	17	83
16.5	medium stiff, silty clay	7	-	-	-	-	-	-	-
18.0	loose, clayly fine sand	7	19	22	10	12	0	68	32
19.5	medium dense, silty medium to coarse sand	21	-	-	-	-	-	-	-
21.0	dense, silty medium to coarse sand	34	11	-	-	-	-	-	-
22.5	very stiff, clayey silt	17	-	-	NP	-	-	-	-
24.0	hard, silt	25	22	46	27	19	10	21	69
25.5	very stiff to hard, clayey silt	17	-	-	-	-	-	-	-
27.0	-ditto-	35	31	44	26	18	11	19	70
28.5	hard, clayey silt	50	-	-	-	-	-	-	-
30.0	-ditto-	50	-	-	-	-	-	-	-
31.5	-ditto-	50/14cm	-	-	-	-	-	-	-
33.0	-ditto-	50/21cm	-	-	-	-	-	-	-
34.5	-ditto-	50/22cm	-	-	-	-	-	-	-
36.0	-ditto-	50/26cm	-	-	-	-	-	-	-

* Drilling depth : 36.41 m, water table : G.L 1.00 m, 0 - 1.0 m (sand & gravel)

* Undisturbed sheare strength : 3.0 m (254 psi), 6.0 m (378 psi)