

Appendix F Point load test results



Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>8/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>14/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests					Strength Classification		
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)		I _{s(50)} (MPa)	Failure Mode
SILTSTONE	CBH 1	4.93-5.53	45	60	2.55	1.2	<i>Parallel to bedding</i>	45	40		7.16	3.12	3.06	<i>Through substance</i>	H / VH
SILTSTONE	CBH 1	6.0-6.08	45	80	3.05	1.44	<i>Parallel to bedding</i>	45	40		6.21	2.71	2.66	<i>Along defect</i>	H
SILTSTONE	CBH 1	8.47-8.54	45	70	3.68	1.73	<i>Along defect</i>	45	35		7.48	3.73	3.55	<i>Along defect</i>	H / VH
SILTSTONE	CBH 1	9.80-9.93	45	13	8.11	3.82	<i>Parallel to bedding</i>	45	30		13.8	8.03	7.38	<i>Through substance</i>	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>15/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>11/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SANDY SILTSTONE	CBH 2	10.05-10.16	45	110	3.05	1.44	Parallel to bedding	45	30		6.21	3.61	3.32	Along defect	H / VH
SANDY SILTSTONE	CBH 2	11.90-12.0	45	100	3.68	1.73	Parallel to bedding	45	35		9.37	4.67	4.45	Through substance	H / VH
SANDY SILTSTONE	CBH 2	13.87-14.0	45	130	4.32	2.03	Parallel to bedding	45	35		11.27	5.62	5.35	Through substance	H / VH
SANDY SILTSTONE	CBH 2	15.05-15.21	45	160	4.95	2.33	Parallel to bedding	45	40		10.64	4.64	4.55	Through substance	H / VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>12/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>14/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SILTSTONE - SW	CBH 3	6.28-6.40	45	120	1.79	0.84	Along defect	45	30		4.32	2.51	2.31	Through substance	M / H
SILTSTONE - SW	CBH 3	7.87-8.00	45	130	1.79	0.84	Parallel to bedding	45	25		3.37	2.35	2.07	Through substance	M / H
SILTSTONE - SW	CBH 3	8.19-8.26	45	70	3.05	1.44	Parallel to bedding	45	35		4.95	2.47	2.35	Along defect	H
SILTSTONE - SW-MW	CBH 3	9.24-9.34	45	100	2.74	1.29	Along defect	45	40		4.32	1.88	1.85	Through substance	H
SANDY SILTSTONE - SW	CBH 3	10.88-11.00	45	120	0.52	0.25	Parallel to bedding	45	35		6.84	3.41	3.25	Along defect	L / VH
SANDY SILTSTONE - SW	CBH 3	14.89-15.00	45	110	2.42	1.14	Parallel to bedding	45	44		5.26	2.09	2.09	Along defect	H

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>13/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>14/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SILTSTONE - HW	CBH 4	7.86-7.94	45	60	2.92	1.38	Through substance	45	25		2.48	1.73	1.53	Along defect	H
SILTSTONE - HW	CBH 4	9.6-9.24	45	60	1.47	0.69	Parallel to bedding	45	40		1.72	0.75	0.74	Through substance	M
SILTSTONE - HW	CBH 4	10.3-10.25	45	110	1.79	0.84	Through substance	45	40		1.72	0.75	0.74	Through substance	M
SILTSTONE - FR	CBH 4	11.54-11.6	45	65	7.16	3.37	Parallel to bedding	45	30		15.06	8.76	8.05	Through substance	VH
SILTSTONE - FR	CBH 4	12.80-13	45	180	5.58	2.63	Parallel to bedding	45	40		10.32	4.5	4.42	Through substance	H / VH
SILTSTONE - FR	CBH 4	14.88-15	45	120	3.68	1.73	Parallel to bedding	45	35		6.21	3.1	2.95	Through substance	H

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>21/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>27/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SANDSTONE COBBLE	CBH 5	8.35-8.50	50	150	> 18.85	> 7.54	N/A	50	45		> 18.85	> 6.58	> 6.79	N/A	VH
SANDSTONE COBBLE	CBH 5	9.57-9.68	50	110	10.64	4.25	Through substance								VH
SANDSTONE COBBLE	CBH 5	10.0-10.06	50	60	> 18.85	> 7.54	N/A	50	49		16.96	5.44	5.71	Through substance	VH
SANDSTONE COBBLE	CBH 5	11.45-11.53	50	80	> 18.85	> 7.54	N/A	50	49		17.59	5.64	5.93	Through substance	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>15/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>10/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
CLAYSTONE	CBH 6	5.76-5.86	45	100	0.52	0.25	Along defect	45	30		0.52	0.3	0.28	Through substance	L
SILTY CLAYSTONE	CBH 6	8.83-8.93	45	100	0.52	0.25	Through substance	45	33		0.52	0.28	0.26	Through substance	L
SANDY SILTSTONE	CBH 6	11.75-11.86	45	110	1.15	0.54	Parallel to bedding	45	38		1.79	0.82	0.8	Through substance	M

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>8/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>14/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SILTSTONE - HW	CBH 7	4.0 - 4.07	45	60	0.52	0.25	Parallel to bedding	45	44		1.79	0.71	0.71	Along defect	L / M
SILTSTONE - HW	CBH 7	5.00-5.07	45	65	0.84	0.4	Parallel to bedding	45	30		2.1	1.22	1.12	Along defect	M / H
SILTSTONE - HW	CBH 7	6.59-6.67	45	70	2.29	1.08	Parallel to bedding	45	35		1.79	0.89	0.85	Through substance	M / H
SILTSTONE - HW	CBH 7	7.82-7.89	45	55	0.84	0.4	Through substance	45	30		1.28	0.75	0.69	Along defect	M
SILTSTONE - SW	CBH 7	8.00-8.06	45	60	1.47	0.69	Through substance	45	30		1.79	1.04	0.96	Through substance	M
SILTSTONE - SW	CBH 7	9.79-9.85	45	65	3.05	1.44	Parallel to bedding	45	40		9.37	4.09	4.01	Through substance	H / VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>12/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>14/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SILTSTONE - MW	CBH 9	6.28-6.34	45	47	1.28	0.6	Parallel to bedding	45	25		1.15	0.81	0.71	Through substance	M
SILTSTONE - MW	CBH 9	8.65-8.80	45	120	1.15	0.54	Along defect	45	35		1.15	0.58	0.55	Along defect	M
SILTSTONE - MW	CBH 9	9.68-9.78	45	100	0.52	0.25	Through substance	45	20		2.42	2.11	1.77	Along defect	L / H

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>22/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>27/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests					Strength Classification		
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)		I _{s(50)} (MPa)	Failure Mode
CLAYSTONE - SW	CBH 10	5.5-5.56	50	60	3.05	1.22	Parallel to bedding	50	30		4.95	2.59	2.44	Through substance	H
CLAYSTONE - SW	CBH 10	6.6-6.69	50	90	4.32	1.73	Along defect	50	45		6.21	2.17	2.24	Through substance	H
SILTSTONE - FR	CBH 10	7.67-7.74	50	70	1.79	0.71	Parallel to bedding	50	35		6.21	2.79	2.72	Through substance	M / H
SILTSTONE - FR	CBH 10	8.92-9.00	50	80	6.84	2.74	Parallel to bedding	50	25		8.11	5.09	4.6	Through substance	H / VH
SILTSTONE - FR	CBH 10	11.88-11.97	50	90	6.84	2.74	Along defect	50	45		11.27	3.93	4.06	Through substance	H / VH
SILTY SANDSTONE	CBH 10	14.86-14.97	50	110	8.74	3.5	Along defect	50	40		14.43	5.67	5.69	Through substance	VH
SILTY SANDSTONE	CBH 10	17.0-17.11	50	110	9.37	3.75	Parallel to bedding	50	49		16.33	5.23	5.5	Through substance	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>29/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>3/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests					Strength Classification		
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)		I _{s(50)} (MPa)	Failure Mode
SILTY SANDSTONE - FR	CBH 12	<i>6.79-7.00</i>	45	210	5.58	2.63	<i>Parallel to bedding</i>	45	35		4.95	2.47	2.35	<i>Through substance</i>	H
SILTY SANDSTONE - FR	CBH 12	<i>9.70-10.00</i>	45	310	5.77	2.72	<i>Parallel to bedding</i>	45	42		9.37	3.89	3.86	<i>Along defect</i>	H / VH
SILTY SANDSTONE - FR	CBH 12	<i>11.92-12.00</i>	45	80	8.11	3.82	<i>Parallel to bedding</i>	45	43		13.17	5.34	5.33	<i>Through substance</i>	VH
SILTY SANDSTONE - FR	CBH 12	<i>14.23-14.30</i>	45	70	5.58	2.63	<i>Along defect</i>	45	35		11.27	5.62	5.35	<i>Along defect</i>	H / VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>12/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>10/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SILTY SANDSTONE	CBH 13	5.54-5.61	45	70	4.95	2.33	Parallel to bedding	45	35		3.05	1.52	1.45	Along defect	H
SILTY SANDSTONE	CBH 13	8.0-8.12	45	120	3.68	1.73	Parallel to bedding	45	37		5.58	2.63	2.54	Along defect	H

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>19/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>10/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests					Strength Classification		
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)		I _{s(50)} (MPa)	Failure Mode
SILTY SANDSTONE	CBH 14	10.0-10.07	45	70	6.21	2.93	<i>Parallel to bedding</i>	45	38		16.96	7.79	7.55	<i>Through substance</i>	H / VH
SILTSTONE	CBH 14	13.87-13.98	45	110	8.74	4.12	<i>Parallel to bedding</i>	45	38		13.17	6.05	5.86	<i>Through substance</i>	VH
SILTY SANDSTONE	CBH 14	14.43-14.50	45	70	6.53	3.07	<i>Parallel to bedding</i>	45	40		11.9	5.19	5.09	<i>Through substance</i>	VH
CONGLOMERATE	CBH 14	16.0-16.10	45	100	4.95	2.33	<i>Along defect</i>	45	42		9.37	3.89	3.86	<i>Through substance</i>	H / VH
SILTY SANDSTONE	CBH 14	18.0-18.16	45	160	10.64	5.01	<i>Along defect</i>	45	35		11.27	5.62	5.35	<i>Through substance</i>	VH
SANDSTONE	CBH 14	21.0-21.15	45	150	7.48	3.52	<i>Parallel to bedding</i>	45	40		10.64	4.64	4.55	<i>Through substance</i>	VH
SANDSTONE	CBH 14	21.89-22.0	45	110	11.27	5.31	<i>Parallel to bedding</i>	45	30		12.53	7.29	6.7	<i>Through substance</i>	VH
SANDSTONE	CBH 14	25.59-25.68	45	90	13.48	6.35	<i>Through substance</i>	45	32		16.96	9.25	8.63	<i>Through substance</i>	VH
SILTY SANDSTONE	CBH 14	30.0-30.08	45	80	14.43	6.8	<i>Through substance</i>	45	40		9.37	4.09	4.01	<i>Through substance</i>	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>23/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>27/03/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests					Strength Classification		
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)		I _{s(50)} (MPa)	Failure Mode
SANDSTONE - MW	CBH 15	1.6-1.68	50	80	2.74	1.09	Along defect	50	40		4.63	1.82	1.83	Through substance	H
SILTY SANDSTONE- FR	CBH 15	1.87-1.95	50	80	3.68	1.47	Parallel to bedding	50	35		10.07	4.52	4.4	Through substance	H / VH
SILTY SANDSTONE- FR	CBH 15	2.94-3.0	50	60	13.17	5.27	Parallel to bedding	50	30		12.22	6.4	6.02	Through substance	VH
SILTY SANDSTONE- FR	CBH 15	4.0-4.11	50	110	12.53	5.01	Along defect	50	48		16.96	5.55	5.81	Through substance	VH
SANDSTONE- FR	CBH 15	7.0-7.08	50	80	11.27	4.51	Along defect	50	40		15.69	6.16	6.19	Through substance	VH
SANDSTONE- FR	CBH 15	10-10.15	50	150	11.9	4.76	Parallel to bedding								VH
SANDSTONE- FR	CBH 15	14.75-14.85	50	100	16.33	6.53	Parallel to bedding	50	49		11.9	3.82	4.01	Through substance	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>22/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>10/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SILTSTONE	CBH 16	6.0-6.11	45	110	10.01	4.71	Parallel to bedding	45	44		10.64	4.22	4.23	Through substance	VH
SANDSTONE	CBH 16	10.87-10.99	45	120	10.32	4.86	Through substance	45	40		10.01	4.37	4.28	Through substance	VH
SANDSTONE	CBH 16	11.85-12.0	45	150	10.64	5.01	Parallel to bedding	45	30		8.42	4.9	4.51	Through substance	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>13/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>11/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
TUFFACIOUS SANDSTO	CBH 17	7.87-7.98	45	110	3.68	1.73	<i>Parallel to bedding</i>	45	35		3.05	1.52	1.45	<i>Through substance</i>	H
TUFFACIOUS SANDSTO	CBH 17	10.82-10.94	45	120	8.11	3.82	<i>Parallel to bedding</i>	45	37		12.22	5.76	5.55	<i>Through substance</i>	VH
TUFFACIOUS SANDSTO	CBH 17	11.60-11.71	45	110	9.37	4.41	<i>Parallel to bedding</i>	45	39		10.64	4.76	4.64	<i>Through substance</i>	VH
TUFFACIOUS SANDSTO	CBH 17	14.56-15.56	45	100	10.64	5.01	<i>Parallel to bedding</i>	45	34		11.9	6.11	5.78	<i>Through substance</i>	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>10/04/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>10/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification	
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode
SILTY SANDSTONE	CBH 18	5.05-5.18	45	130	8.74	4.12	Through substance	45	32		13.17	7.18	6.7	Through substance	VH
SILTY SANDSTONE	CBH 18	7.0-7.08	45	80	9.37	4.41	Parallel to bedding	45	40		12.53	5.47	5.36	Through substance	VH
SILTY SANDSTONE	CBH 18	9.05-9.15	45	100	6.21	2.93	Parallel to bedding	45	38		12.53	5.76	5.58	Through substance	H / VH
SANDSTONE	CBH 18	1.55-11.6	45	110	8.74	4.12	Parallel to bedding	45	32		13.8	7.53	7.02	Through substance	VH

Point Load Strength Index Test Results

Client	MAUNSELL / AECOM	Office	UNANDERRA
Principal	ROADS AND TRAFFIC AUTHORITY	Date	13/4/07
Project	GEOTECH INVESTIGATION - PRINCES HWY, PHASE 1	By	CA
Location	GERRINGONG TO BOMADERRY	Checked	JT

Test Method	<i>AS 4133.4.1 - 1993 Methods of Testing Rocks for Engineering Purposes, Determination of Point Load Strength Index</i>	Sampling Technique	<i>Selected from boreholes</i>	Sampling Date	<i>28/03/2007</i>
Test Machine	<i>Green Impell Tester</i>	Storage History	<i>Coffey UNAN office indoor core storage area</i>	Testing Date	<i>3/04/2007</i>
Calibration Date	<i>2/9/2004</i>	Moisture Condition	<i>Natural</i>	Tested By	<i>CA</i>
		Loading Rate	<i>< 30 seconds</i>		

Rock Type	Location	Depth (m)	Diametral Tests					Axial, Block, and Irregular Lump Tests						Strength Classification		
			D (mm)	L (mm)	P (kN)	I _{s(50)} (MPa)	Failure Mode	W (mm)	D (mm)	L (mm)	P (kN)	I _s (MPa)	I _{s(50)} (MPa)		Failure Mode	
SILTSTONE	CBH 20	1.10-1.15	45	50	18.85	8.88	Along defect									VH
TUFF	CBH 20	7.25-7.37	45	120	3.05	1.44	Along defect	45	44		3.05	1.21	1.21	Through substance	H	
SILTSTONE	CBH 20	9.08-9.16	45	80	7.48	3.52	Along defect	45	30		6.21	3.61	3.32	Through substance	VH	
SANDSTONE	CBH 20	9.50-9.70	45	200	6.21	2.93	Parallel to bedding	45	35		3.05	1.52	1.45	Through substance	H	
SANDSTONE	CBH 20	10.71-11.0	45	290	9.37	4.41	Parallel to bedding	45	36		10.95	5.31	5.09	Through substance	VH	
SILTSTONE	CBH 20	13.88-13.98	45	100	12.53	5.9	Along defect	45	30		7.48	4.35	4	Through substance	VH	