



UNIAXIAL COMPRESSIVE STRENGTH

GBTesting

9 Lerista Court, Bibra Lake WA 6163
Ph (08) 9434 9999

AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/259
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-21 11.12 to 11.3m	Sample No.	G17/259
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	146 mm	Bulk Density	1.889 t/m ³
Diameter (D)	60.1 mm	Dry Density	1.605 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.4

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	0.94	MPa
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Test Duration	03:02 minutes : seconds
Moisture Content @ time of test	17.7 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.

Sample outside of the 5 to 15 minute testing range.

Sample did not meet the requirement for length to diameter ratio to be between 2.5 and 3.

Advisian Project Number - 301012-02366

Legend : * - after Szwedzicki & Shamu 1999



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GBTesting

9 Lerista Court, Bibra Lake WA 6163
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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/261
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-21 11.8 to 12m	Sample No.	G17/261
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	172 mm	Bulk Density	1.913 t/m ³
Diameter (D)	60.2 mm	Dry Density	1.599 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.9

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	5.1	MPa
------------	-----	-----

Test Duration	03:50 minutes : seconds
Moisture Content @ time of test	19.7 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.

Sample outside of the 5 to 15 minute testing range.

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/263
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-26 1.15 to 1.4m	Sample No.	G17/263
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	168 mm	Bulk Density	2.068 t/m ³
Diameter (D)	60.1 mm	Dry Density	1.802 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	3.4	MPa
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Test Duration	04:28 minutes : seconds
Moisture Content @ time of test	14.7 %

STORAGE HISTORY AND ENVIRONMENT

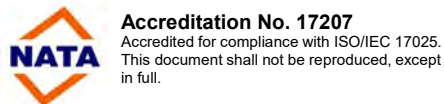
	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/265
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-26 10.45 to 10.7m	Sample No.	G17/265
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	168 mm	Bulk Density	2.225 t/m ³
Diameter (D)	60.8 mm	Dry Density	2.082 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	6.2	MPa
------------	-----	-----

Test Duration	04:02 minutes : seconds
Moisture Content @ time of test	6.9 %

STORAGE HISTORY AND ENVIRONMENT

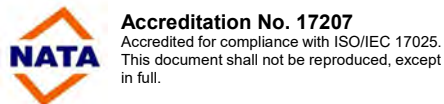
	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample outside of the 5 to 15 minute testing range.

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/268
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-26 13.46 to 13.7m	Sample No.	G17/268
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	170 mm	Bulk Density	2.028 t/m ³
Diameter (D)	60.3 mm	Dry Density	1.785 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	2.6	MPa
------------	-----	-----

Test Duration	03:23 minutes : seconds
Moisture Content @ time of test	13.6 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

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Report no C03-G17/270
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-47 4.15 to 4.35m	Sample No.	G17/270
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	170 mm	Bulk Density	2.268 t/m ³
Diameter (D)	60.5 mm	Dry Density	2.092 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	23	MPa
------------	----	-----

Test Duration	05:45 minutes : seconds
Moisture Content @ time of test	8.4 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

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Report no C03-G17/272
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-47 5 to 5.2m	Sample No.	G17/272
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	170 mm	Bulk Density	2.005 t/m ³
Diameter (D)	59.8 mm	Dry Density	1.693 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	3.5	MPa
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Test Duration	05:21 minutes : seconds
Moisture Content @ time of test	18.4 %

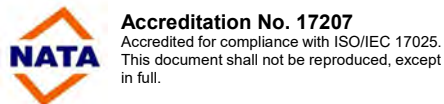
STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Advisian Project Number - 301012-02366

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AS 4133.4.2.2
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Report no C03-G17/280
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-47 11.1 to 11.3m	Sample No.	G17/280
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	154 mm	Bulk Density	1.782 t/m ³
Diameter (D)	60.0 mm	Dry Density	1.335 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.6

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	1.1	MPa
------------	-----	-----

Test Duration	03:01 minutes : seconds
Moisture Content @ time of test	33.5 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.

Sample outside of the 5 to 15 minute testing range.

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/282
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-47 13.5 to 13.7m	Sample No.	G17/282
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	174 mm	Bulk Density	1.945 t/m ³
Diameter (D)	59.8 mm	Dry Density	1.558 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.9

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	1.1	MPa
------------	-----	-----

Test Duration	03:41 minutes : seconds
Moisture Content @ time of test	24.8 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.

Sample outside of the 5 to 15 minute testing range.

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/287
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-59 7.75 to 8m	Sample No.	G17/287
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	167 mm	Bulk Density	1.932 t/m ³
Diameter (D)	60.6 mm	Dry Density	1.607 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	2.6	MPa
------------	-----	-----

Test Duration	03:52 minutes : seconds
Moisture Content @ time of test	20.3 %

STORAGE HISTORY AND ENVIRONMENT

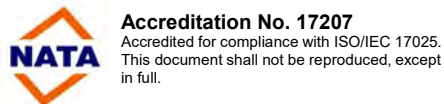
	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

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UNIAXIAL COMPRESSIVE STRENGTH

GBTesting

9 Lerista Court, Bibra Lake WA 6163
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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/289
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-59 11 to 11.2m	Sample No.	G17/289
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	169 mm	Bulk Density	1.838 t/m ³
Diameter (D)	60.4 mm	Dry Density	1.441 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	2.7	MPa
------------	-----	-----

Test Duration	04:39 minutes : seconds
Moisture Content @ time of test	27.5 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/293
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-59 14.8 to 15m	Sample No.	G17/293
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	170 mm	Bulk Density	1.800 t/m ³
Diameter (D)	59.6 mm	Dry Density	1.334 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.9

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	0.50	MPa
------------	------	-----

Test Duration	01:29 minutes : seconds
Moisture Content @ time of test	34.9 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/294
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-65 4.33 to 4.57m	Sample No.	G17/294
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	172 mm	Bulk Density	1.944 t/m ³
Diameter (D)	60.3 mm	Dry Density	1.597 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.9

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	1.3	MPa
------------	-----	-----

Test Duration	04:02 minutes : seconds
Moisture Content @ time of test	21.8 %

STORAGE HISTORY AND ENVIRONMENT

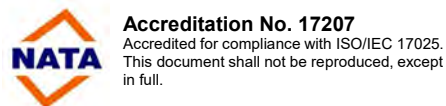
	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

Legend : * - after Szwedzicki & Shamu 1999



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9 Lerista Court, Bibra Lake WA 6163
Ph (08) 9434 9999

AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/296
Client No. C03
Date 12/6/17

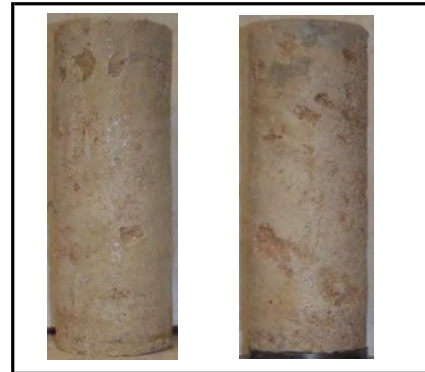
Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-65 5.3 to 5.5m	Sample No.	G17/296
Sample Description	Not Available		
Failure Mode*	Vertical splitting		

SAMPLE DETAILS

Length (L)	174 mm	Bulk Density	1.904 t/m ³
Diameter (D)	60.3 mm	Dry Density	1.569 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.9

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	2.9	MPa
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Test Duration	03:26 minutes : seconds
Moisture Content @ time of test	21.3 %

STORAGE HISTORY AND ENVIRONMENT

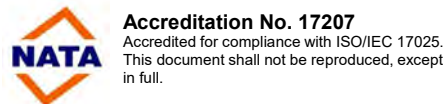
	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

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GBTesting

9 Lerista Court, Bibra Lake WA 6163
Ph (08) 9434 9999

AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/299
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-65 7.5 to 7.73m	Sample No.	G17/299
Sample Description	Not Available		
Failure Mode*	Failure mode not visible		

SAMPLE DETAILS

Length (L)	127 mm	Bulk Density	2.020 t/m ³
Diameter (D)	60.1 mm	Dry Density	1.699 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.1

After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	0.92	MPa
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Test Duration	03:51 minutes : seconds
Moisture Content @ time of test	18.9 %

STORAGE HISTORY AND ENVIRONMENT

	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample sides are not smooth and free of irregularities and straight to within over the full length of the sample as per standard - due to naturally occurring voids, exposed grains or drilling irregularities.
 Sample did not meet the requirement for length to diameter ratio to be between 2.5 and 3.
 Sample outside of the 5 to 15 minute testing range.

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AS 4133.4.2.2
AS 4133.1.1.1

Report no C03-G17/302
Client No. C03
Date 12/6/17

Client	Advisian	Date Tested	9/6/17
Client Address	Level 4, 600 Murray Street, West Perth 6005	Tested by	G Bilton
Project	BYRE Rail Extension	Checked by	G Bilton
Location	Butler to Yanchep		

Sample Identification	BH-65 14 to 14.2m	Sample No.	G17/302
Sample Description	Not Available		
Failure Mode*	Simple shear		

SAMPLE DETAILS

Length (L)	171 mm	Bulk Density	2.109 t/m ³
Diameter (D)	60.6 mm	Dry Density	1.869 t/m ³
Strain Rate	0.1 mm/min	L /D Ratio	2.8

Before Test After Test



TEST RESULTS

Testing Machine	Wykeham Farrance
------------------------	------------------

UCS	2.2	MPa
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Test Duration	02:38 minutes : seconds
Moisture Content @ time of test	12.8 %

STORAGE HISTORY AND ENVIRONMENT

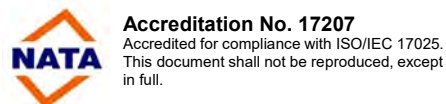
	Yes	No
Plastic wrapped		
Bagged		
Plastic sleeve wrapped	X	
Evidence of moisture loss		X

COMMENTS / OBSERVATIONS

Sample outside of the 5 to 15 minute testing range.

Advisian Project Number - 301012-02366

Legend : * - after Szwedzicki & Shamu 1999



Approved Signatory :



Point Load Strength Index
AS 4133.4.1

9 Lerista Court
Bibra Lake WA 6163

Client:	Worley / Advisian	Report No. :	C03-G17/221
Client Address:	BYRE Rail Extension	Date Tested :	8/06/2017
Project:	Butler to Yanchep	Tested By :	G Bilton
Location:		Client No. :	C03
Date of Sampling and Sampling Method:		Unknown/Drillcore	

Sample No. G17/	Sample	Rock Type	Moisture	Test Type	L (mm)	W (mm)	D (mm)	P (kN)	Is (MPa)	Is50 (MPa)	Failure Mode*	Comments
221	BH-03 0.88 to 1m	D	M	D	60		60	0.06	0.02	0.02	1	
222	BH-03 2.4 to 2.5m	D	M	D	55		60	0.37	0.10	0.11	1	
224	BH-03 3.2 to 3.3m	D	M	D	53		51	1.70	0.65	0.66	1	
226	BH-03 3.89 to 4m	D	M	D	60		57	0.77	0.24	0.25	1	
227	BH-03 4.9 to 5m	A	M	A		58	50	0.53	0.14	0.16	1	
227	BH-03 4.9 to 5m	D	M	D	55		52	0.49	0.18	0.18	1	
229	BH-03 5.67 to 5.8m	A	M	A		60	30	0.74	0.32	0.32	1	D < 0.6 W
229	BH-03 5.67 to 5.8m	D	M	D	61		54	0.68	0.23	0.24	1	
230	BH-03 6.5 to 6.6m	A	M	A		61	44	1.38	0.41	0.44	1	
230	BH-03 6.5 to 6.6m	D	M	D	51		53	1.21	0.43	0.44	1	
231	BH-03 8 to 8.1m	A	M	A		60	61	0.42	0.09	0.10	4	
232	BH-03 9.07 to 9.18m	A	M	A		60	57	0.15	0.03	0.04	1	
233	BH-09 6.25 to 6.35m	D	M	D	55		49	0.11	0.05	0.05	1	
234	BH-09 7.35 to 7.45m	D	M	D	57		43	0.52	0.28	0.26	4	
236	BH-09 8.35 to 8.42m	D	M	D	41		45	0.49	0.24	0.23	4	
237	BH-09 8.85 to 8.95m	D	M	D	47		39	1.28	0.84	0.75	1	
238	BH-09 9.5 to 9.57m	D	M	D	44		52	0.79	0.29	0.30	1	
241	BH-09 10.4 to 10.55m	A	M	A		55	41	0.94	0.33	0.34	1	
241	BH-09 10.4 to 10.55m	D	M	D	45		39	0.99	0.65	0.58	1	
242	BH-09 11.9 to 12m	A	M	A		43	41	0.71	0.32	0.31	1	
242	BH-09 11.9 to 12m	D	M	D	61		49	0.66	0.27	0.27	1	
243	BH-12 4.05 to 4.15m	D	M	D	65		42	2.55	1.45	1.34	1	
244	BH-12 4.66 to 4.75m	D	M	D	40		58	0.69	0.20	0.22	1	
245	BH-12 5.76 to 5.83m	D	M	D	42		57	0.10	0.03	0.03	1	
246	BH-12 5.83 to 5.94m	A	M	D		60	53	6.89	2.45	2.52	1	L < 0.5 D
Failure Mode*		1. Fracture through fabric of specimen oblique to bedding, not influenced by weak planes			3. Fracture influenced by pre-existing plane, microfracture, vein, chemical alteration							
		2. Fracture along bedding			4. Chip or partial failure			5. Did not fail				

KEY:

Moisture
D - Dry
M - Moist
W - Wet

Test Type
L - Lump
A - Axial
D - Diametral



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Approved Signatory: Greg Bilton

NR - Rock strength higher than point load machine capacity
IS - Insufficient Sample



GBTesting

Point Load Strength Index
AS 4133.4.1

1/1 Pusey Rd

Cockburn Central 6164

Client:	Worley / Advisian	Report No. :	C03-G17/221
Client Address:	BYRE Rail Extension	Date Tested :	8/06/2017
Project:	Butler to Yanchep	Tested By :	G Bilton
Location:		Client No. :	C03
Date of Sampling and Sampling Method:	Unknown/Drillcore		

Sample No. G17/	Sample	Rock Type	Moisture	Test Type	L (mm)	W (mm)	D (mm)	P (kN)	Is (MPa)	Is50 (MPa)	Failure Mode*	Comments
247	BH-12 7.1 to 7.2m	A	M	A		58	48	0.39	0.11	0.12	4	
248	BH-12 7.2 to 7.3m	D	M	D	42		50	0.19	0.07	0.07	1	
249	BH-21 2.1 to 2.22m	D	M	D	60		51	2.22	0.85	0.86	1	
250	BH-21 3 to 3.12m	D	M	D	55		45	0.99	0.49	0.47	1	
252	BH-21 3.65 to 3.7m	D	M	D	31		54	0.21	0.07	0.07	4	
254	BH-21 4.55 to 4.63m	D	M	D	35		55	0.56	0.19	0.19	1	
256	BH-21 7.55 to 7.7m	D	M	D	75		54	0.21	0.07	0.07	1	
258	BH-21 9.2 to 9.3m	A	M	D		60	30	0.77	0.86	0.68	1	
258	BH-21 9.2 to 9.3m	D	M	D	37		41	2.05	1.22	1.12	4	
260	BH-21 11.7 to 11.8m	A	M	A		57	40	2.46	0.85	0.87	1	
260	BH-21 11.7 to 11.8m	D	M	D	55		49	2.57	1.07	1.06	1	
262	BH-26 1.07 to 1.15m	D	M	D	39		58	0.64	0.19	0.20	1	
264	BH-26 2 to 2.08m	D	M	D	40		44	2.13	1.10	1.04	1	
266	BH-26 10.7 to 10.8m	A	M	A		60	50	2.80	0.73	0.81	1	
266	BH-26 10.7 to 10.8m	D	M	D	51		58	7.95	2.36	2.52	1	
267	BH-26 11.35 to 11.5m	A	M	A		50	58	3.64	0.99	1.08	1	
267	BH-26 11.35 to 11.5m	D	M	D	60		39	6.74	4.43	3.96	1	
268	BH-26 13.70 to 13.83m	D	M	D	61		40	5.34	3.34	3.02	1	note - sample location moved
269	BH-47 4.05 to 4.15m	D	M	D	43		51	6.31	2.43	2.45	1	
271	BH-47 4.87 to 5m	D	M	D	62		49	1.67	0.70	0.69	1	
273	BH-47 6.1 to 6.2m	D	M	D	63		51	1.34	0.51	0.52	1	
274	BH-47 6.2 to 6.28m	A	M	A		57	46	1.23	0.37	0.39	4	
275	BH-47 7.2 to 7.3m	D	M	D	56		54	2.41	0.82	0.85	1	
276	BH-47 8.25 to 8.35m	D	M	D	65		55.0	1.02	0.34	0.35	1	
277	BH-47 8.35 to 8.45m	A	M	A		57	51.0	1.32	0.36	0.39	1	

Failure Mode*	1. Fracture through fabric of specimen oblique to bedding, not influenced by weak planes	3. Fracture influenced by pre-existing plane, microfracture, vein, chemical alteration
	2. Fracture along bedding	4. Chip or partial failure
		5. Did not fail

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Point Load Strength Index
AS 4133.4.1

1/1 Pusey Rd

Cockburn Central 6164

Client:	Worley / Advisian	Report No. :	C03-G17/221
Client Address:	BYRE Rail Extension	Date Tested :	8/06/2017
Project:	Butler to Yanchep	Tested By :	G Bilton
Location:		Client No. :	C03
Date of Sampling and Sampling Method:	Unknown/Drillcore		

Sample No. G17/	Sample	Rock Type	Moisture	Test Type	L (mm)	W (mm)	D (mm)	P (kN)	Is (MPa)	Is50 (MPa)	Failure Mode*	Comments
278	BH-47 9.75 to 9.86m	A	M	A		58	49	0.13	0.04	0.04	1	
278	BH-47 9.75 to 9.86m	D	M	D	52		41	0.21	0.12	0.11	4	
279	BH-47 10.55 to 10.7m	A	M	A		59	36	2.35	0.87	0.88	1	
279	BH-47 10.55 to 10.7m	D	M	D	45		51	1.21	0.47	0.47	1	
281	BH-47 11.3 to 11.43m	A	M	A		58	53	0.26	0.07	0.07	4	
281	BH-47 11.3 to 11.43m	D	M	D	62		51	0.93	0.36	0.36	1	
283	BH-47 13.7 to 13.85m	A	M	A		57	47	1.70	0.50	0.53	1	
283	BH-47 13.7 to 13.85m	D	M	D	71		54	0.56	0.19	0.20	1	
284	BH-59 5.32 to 5.5m	D	M	D	69		49	1.12	0.46	0.46	1	
285	BH-59 6.6 to 6.7m	D	M	D	50		55	0.89	0.29	0.31	1	
286	BH-59 7.67 to 7.75m	D	M	D	29		51	0.91	0.35	0.35	1	
288	BH-59 9.85 to 10m	D	M	D	62		41	1.30	0.77	0.70	1	
290	BH-59 11.2 to 11.3m	D	M	D	75		50	2.04	0.82	0.82	1	
291	BH-59 13 to 13.13m	A	M	A		57	53	1.12	0.29	0.32	4	
291	BH-59 13 to 13.13m	D	M	D	55		49	1.33	0.55	0.55	1	
292	BH-59 14.72 to 14.8m	A	M	A		59	39	0.62	0.21	0.22	1	
292	BH-59 14.72 to 14.8m	D	M	D	50		51	0.52	0.20	0.20	1	
295	BH-65 4.57 to 4.66m	D	M	D	52		53	0.23	0.08	0.08		
297	BH-65 5.5 to 5.6m	D	M	D	70		53	1.23	0.44	0.45	1	
298	BH-65 7.4 to 7.5m	D	M	D	60		52	1.20	0.44	0.45	1	
300	BH-65 9 to 9.15m	A	M	A		58	43	0.74	0.23	0.24	1	
300	BH-65 9 to 9.15m	D	M	D	55		51	0.41	0.16	0.16	1	
301	BH-65 13.85 to 14m	A	M	A		60	48	1.94	0.53	0.58	1	
301	BH-65 13.85 to 14m	D	M	D	60		50	4.96	1.98	1.98	1	
303	BH-65 14.9 to 15m	A	M	A		60	44	0.47	0.14	0.15	4	

Failure Mode*	1. Fracture through fabric of specimen oblique to bedding, not influenced by weak planes	3. Fracture influenced by pre-existing plane, microfracture, vein, chemical alteration
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