Pile Investigation – 6 View Point Rd, McCrae VIC

Integrity Testing (Intl) Pty Ltd

Client: PSM

Report Number: IT025-009

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Structural & Civil Engineering Consultants

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Document History

Document Location

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Approval/Authors

Report was produced by the following. This document requires the following approvals:

Name	Title
John S Higgs	ITPL Snr. Director, Principal, Structural Engineer
John I Higgs	ITPL Director, Operations Manager
Rikki A Tongue	ITPL Director, Civil Engineer

Distribution

This document has been distributed to:

Name	Title
Dane Pope	PSM - Principal

Executive Summary

1. Integrity Testing (Intl) Pty. Ltd was engaged by PSM (client) to carry out testing on 4 existing piles which are the supporting foundations of the residential structure of 6 View Point Rd, McCrae VIC to confirm the length of the foundation piles. The property had recently had a major landslip at the south-western boundary, and pile lengths of the foundation was found to be integral in determining potential future remediation options. We carried out testing on these piles using our proprietary Mod-shock™ NDT method in order to achieve these objectives.

2. **Piles:** At the time of testing, visual inspection of elements was limited as pile heads were covered in tiles/pavers/soil which could not be removed/excavated due to client constraints. Mod-shock® testing of the piles and supports directly above indicated consistent results except for pile BP01, which was found with a shallower toe depth.

   a. Total lengths for 600mm diameter piles were found between 5.8m and 6.7m, measured from the top surface of the slab bearing upon pile head.

   b. Pile BP01, appearing to be an “isolated” pile element, analysed with shorter length of 5.8 m (compared to other pile results between 6.4-6.6m).

   c. Cross-sectional analysis indicated no significant structural defects along the shaft of the piles.

Table of Contents

1. Introduction

1.1 Brief

Integrity Testing (Int'l) Pty. Ltd. (Integrity) was engaged by PSM to test 4x number of piles to determine the present-day condition and length (depth of toe) of the piles.

Integrity proposed to test the piles with our propitiatory Mod-Shock® test system (in its respective compression wave mode) to determine the length and effective cross-section of the piles. This was accepted by the client and testing commenced on the 7th March 2025, completed that afternoon and this report contains the results of the tests carried out during the dates as stated above.

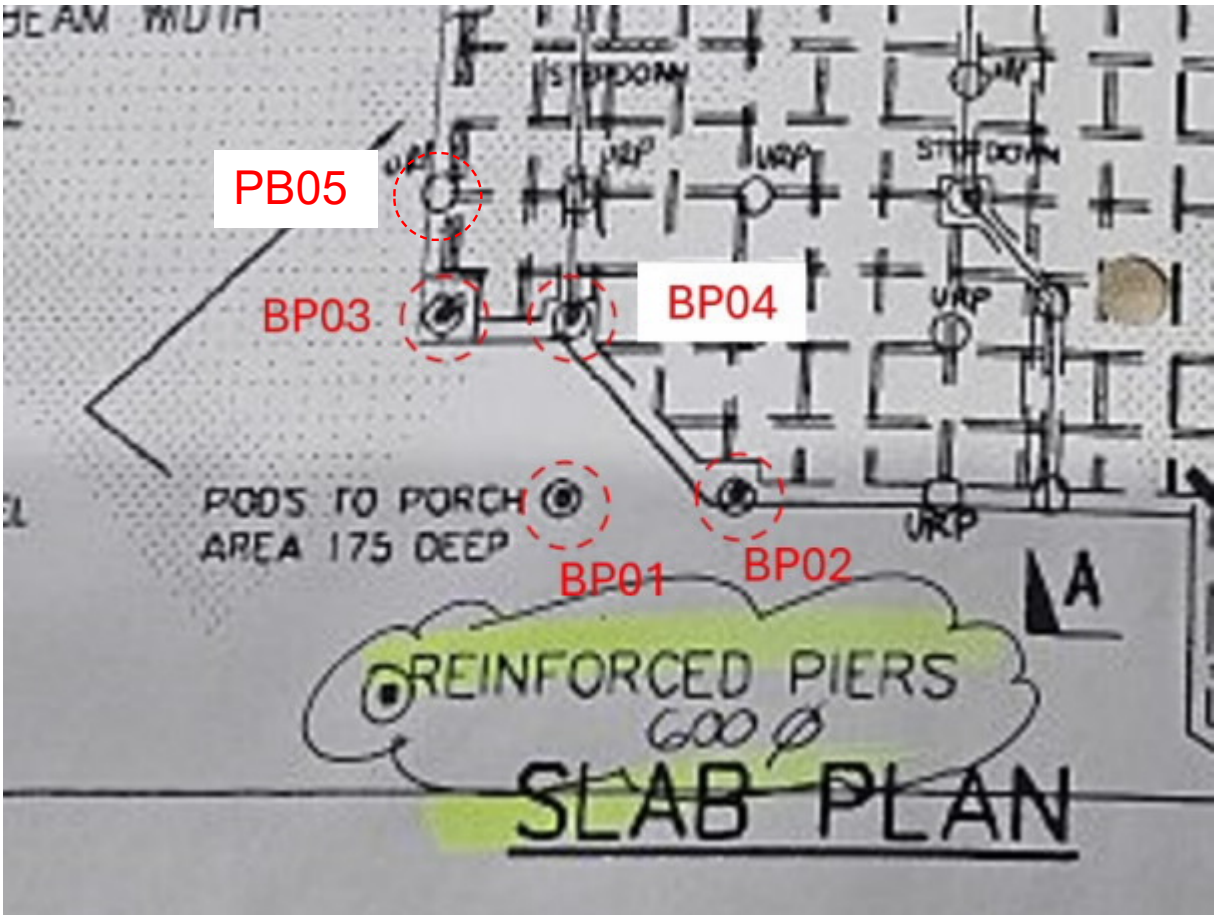
1.2 Deliverables

The following deliverables form the basis of reporting of this document.

- Depth of piled foundations and their serviceability in terms if effective full length of pile (depth of pile toe) measured from the top testing surface of the slab
- Effective cross-section of piles compared to nominal diameter information provided (600mm bored pile) from provided pile schedule. From this analysis, ITPL will make, and inference/determination of any defects present (necking, bulging, vertical or horizontal cracking).
- General visual condition and notes of visual structural defects of importance
- Any additional information pertaining to the structural condition and serviceability of the piles
- Provide analysis and comprehensive report of findings

1.3 Site Description

The location nominated for this investigation was located at 6 View Point Rd, MCrae VIC. The 4 RC piles nominated for testing were of bored pile construction, 600mm in diameter.



1: View of semi-wet pile SP03 under test – 6 View Point Rd McCrae VIC

Piles appeared to tie directly into a waffle slab or via a ground beam with the exception of BP01, which appeared according to the drawings to be an isolated pile.

The property recently had a major landslip to the south-west of the property, with BP01 and BP02 piles the closest pile to the slip.

BP04 pile was considered inaccessible due to deck tiles above pile head having an air-gap between slab-pile interface. BP05 was therefore supplementarily tested instead.

2. Mod-Shock® Results – Pile Length

For a more detailed explanation of the Mod-Shock® methodology, see Appendix C. All these parameters are derived from in depth analysis of wave forms measured in response to a small impact from a hammer.

The Mod-Shock testing satisfies the guidelines of AS1170.0-2002 in the following clauses: Clause B3.1 to B3.5, "Prototype Testing", as well as clauses App C and Table C1. These are summarised in the table on following page, and shown for individual piles contained in Appendix D. The Mod-Shock® methodology included the use of in-situ NDT testing with Mod-Shock® in their various modes to obtain the data required. The tests in this investigation include:

- A Mod-Shock® test on the piles, conducted directly at pile location
  - This is a non-destructive testing (NDT) test using a low energy impact source.

For full individual Mod-Shock Results, see Appendix D. Below is a summary table of the length and comments of any defects found from pile effective cross-section analysis. A category 1 is a hypothetical pile model with no defects; category 2 pile is considered serviceable with no or minimal defects; category 3 serviceable piles with identified defects and/or reduced capacity, and **category 4** indicating an unserviceable pile with severely reducing pile defections in immediate need of remediation/repairs.

2.1 Findings – Pier/Pile Length & Capacity

Locations of the tests are detailed in Appendix A of this report. See following pages for summary tables of results .

Link To Model	Pile Test Location	Category	Depth of Pile (m)	Loss of Section Depth (m)	Remarks	Diameter Nominal (mm)	Minimum Diameter Equiv. (mm)
MCR_BP01X	BP01	2	**5.8**	-2.4	Serviceable	600	570
MCR_BP02X	BP02	2	**6.7**	-3.3	Serviceable	600	560
MCR_BP03Z	BP03	2	**6.5**	-2.8	Serviceable	600	540
MCR_BP04Y	BP04	-	**N/A**	*-1.3*	*Inconclsuive, tile has air-gap*	600	590
MCR_BP05X	BP05	2	**6.5**	-1.9	Serviceable	600	630

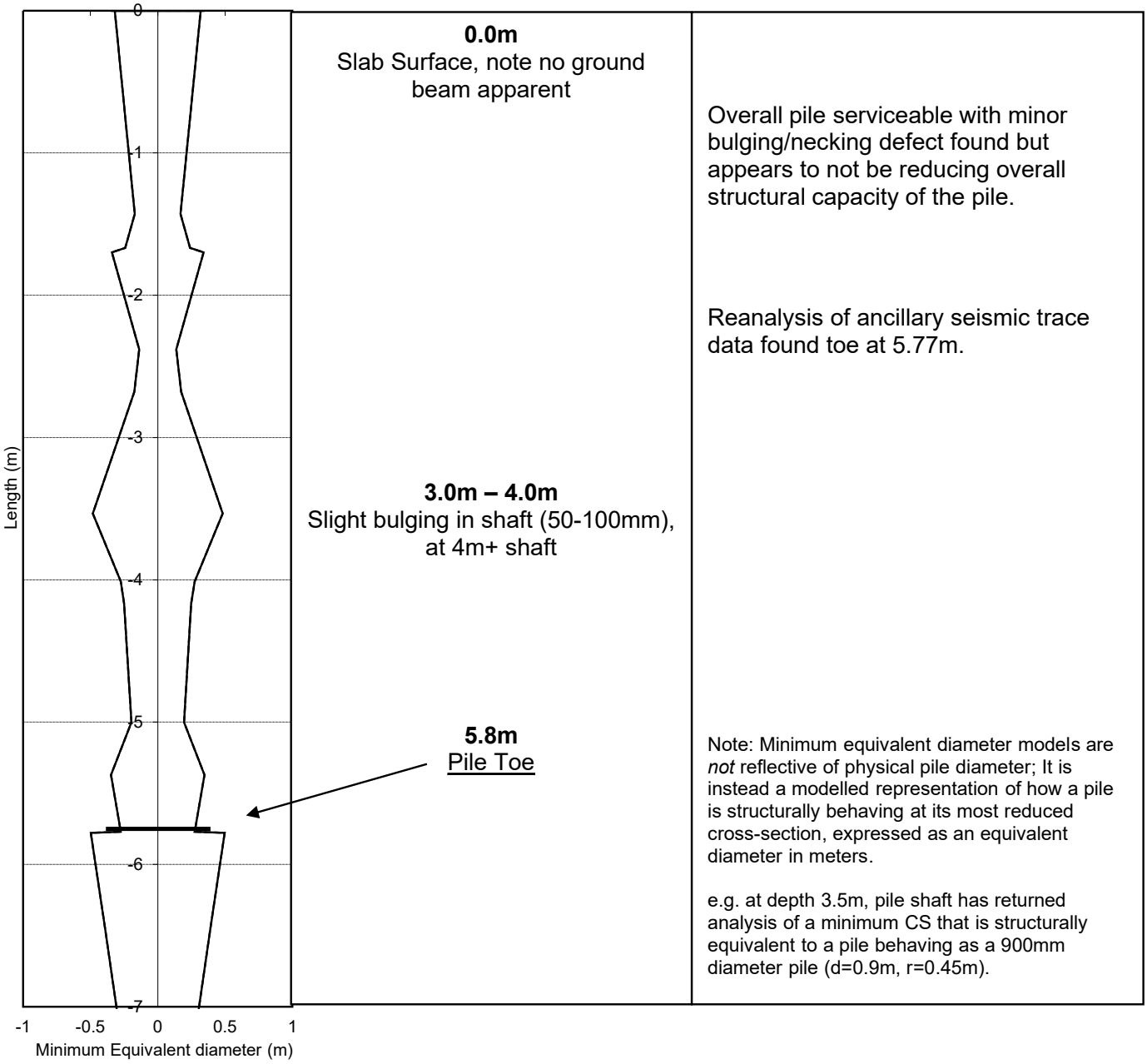
Table 1: Compression safe additional load results and equivalent diameter – 6 View Point Rd Piles

Piles lengths were variable and recorded between 5.8 and 6.7 meters. BP01 found shorter compared the rest of the piles. We leave final determinations to the responsible design engineers (PSM) to determine if lengths are adequate/fit-for-purpose.

Please see the following further analysis of pile lengths. Please see Appendices for full Mod-Shock® print-out of results.

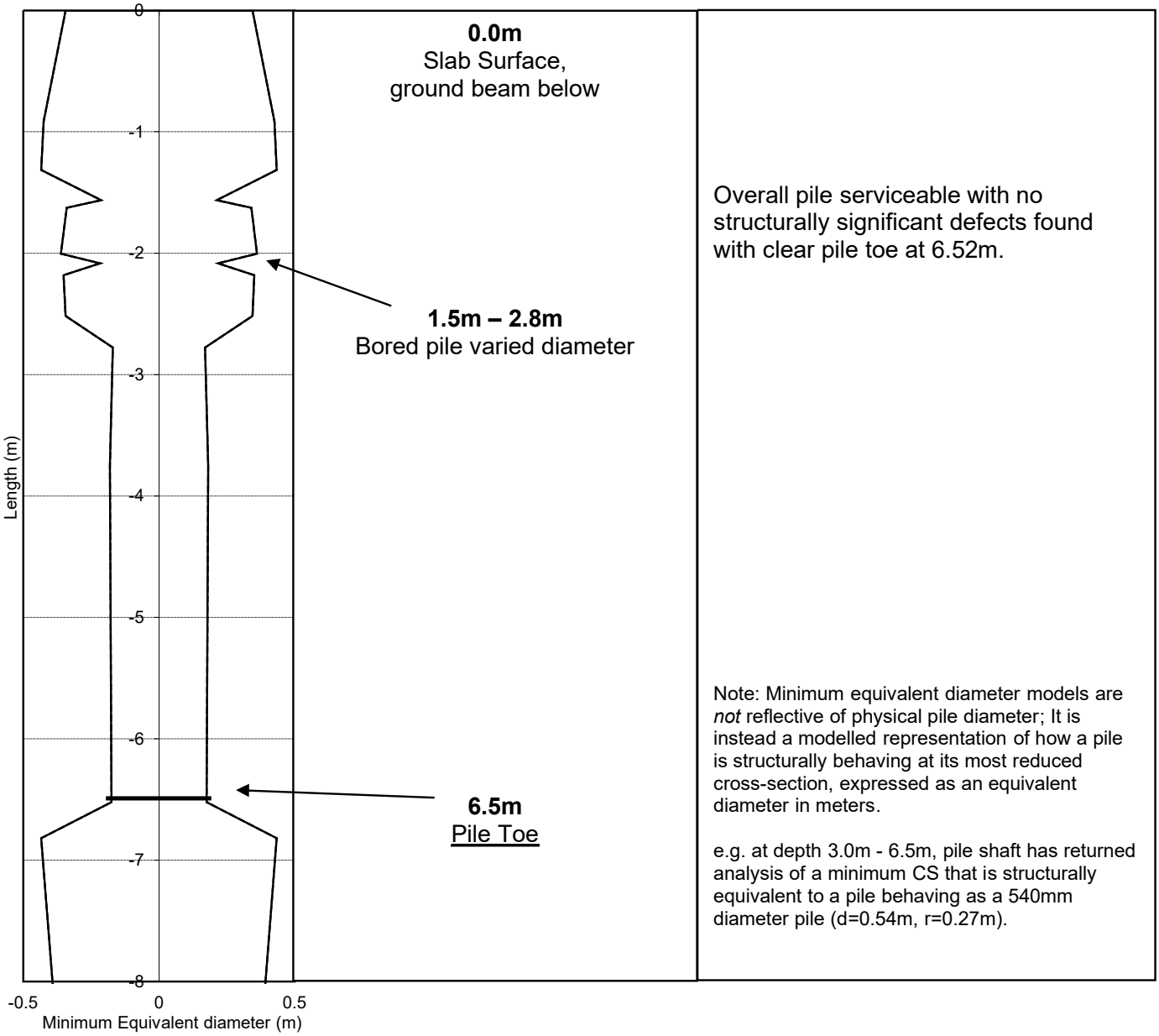
2.2 Findings - Further Pile Analysis

BP01, 600mm pile. Example analysis of piles of interest below. Shorter toe confirmed.



2: BP01 Pile Analysis – 6 View Point Rd Piles

BP03, 600mm pile. Example analysis of piles of interest below.



3: BP03 Pile Analysis – 6 View Point Rd Piles

3. Conclusions

At the time of testing, visual inspections of tested elements indicated serviceable construction with minimal defects. Mod-shock® testing of elements indicated consistent results. It was concluded that all piles tested in scope were found in serviceable conditions, but as Integrity Testing are not being privy to structural/geotechnical discussions of the project, we leave conclusions on serviceability/suitability of the foundation structures to responsible engineers (PSM).

Mod-shock® testing of the piles (supplemented by testing on supports directly above) indicated consistent results between 5.8m and 6.7m, measured from the top surface of the slab above the pile head). The exception was pile BP01, which was found with a shallower toe depth. Pile BP01, appearing to be an “isolated” pile element, was analysed with shorter length of 5.8 m (compared to other pile results between 6.4-6.7m).

Piles in cross-sectional analysis indicated no significant structural defects along the shaft of the piles apart from minor necking/bulging (+-50mm to 100mm increases/reductions in section).

Should you have any queries, or you need further information please contact the undersigned.
This report was produced by R A Tongue & J I Higgs.

Integrity Testing Intl Pty. Ltd
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4. Audit

All works performed supervised by John S Higgs.

Report Audited by John S Higgs.

Report Number: IT025-009 Pile Investigation – 6 View Point Rd, McCrae VIC was compiled with information obtained from the testing on 7th March 2025 and we carried out the tests as per the instructions from our client PSM. The information was obtained using the Mod-shock® and DBTS® test systems and scanning measurements, which gave measurements of certain properties, but also required interpretation. We have used our experience in our interpretation and have to the best of our ability produced a report which gives the information required by the client PSM as IT025-009 Revision: 01. This report, either in part or whole is not to be used for any contractual or legal action to any other body or party without the specific approval of Integrity Testing (Intl) Pty. Ltd. This report gives the information required in the scope of work directed by other parties. We shall not be liable for any error of judgment or mistake of law or for any loss suffered by the external parties in connection with the use of the information included in this report, due to not being privy to how the information is being used.

Signed for and on Behalf of Integrity Testing Int'l Pty. Ltd

John S Higgs.

Irrelevant & Sensitive

J. S. Higgs.

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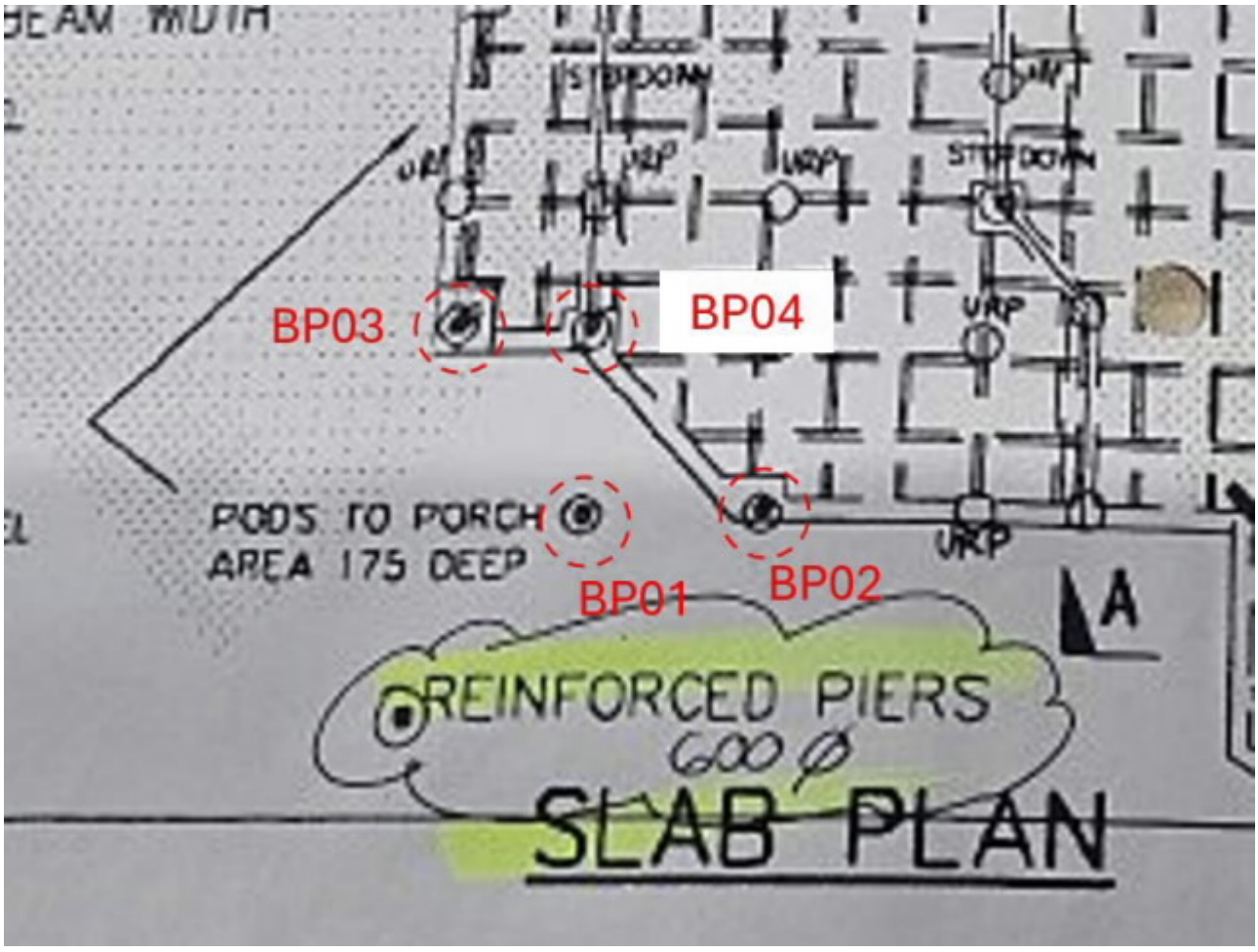
5. Appendices

5.1 Appendix A – Site Location and Location Plans

(see next page)


BP03
BP04
PODS TO PORCH
AREA 175 DEEP
BP01
BP02
A
REINFORCED PIERS
600 Ø
SLAB PLAN

5.2 Appendix B – Visual Inspection & Photographs

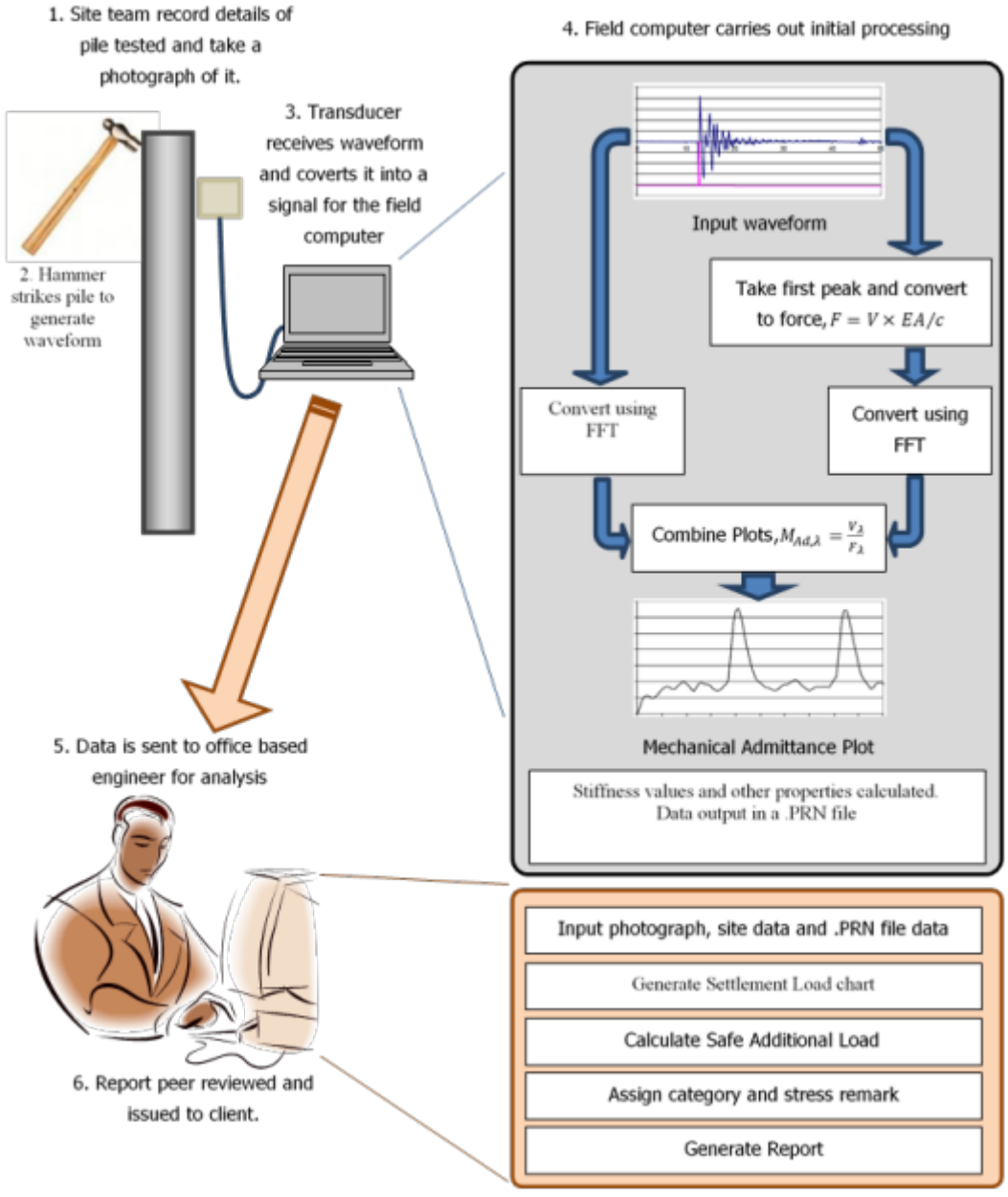
(see .ZIP folder IT025-009 AppB, available on request.)

See Appendix D for photos of individual piles.

5.3 Appendix C – Mod-Shock® and DBTS® Method

5.3.1 Mod-shock® Method & Testing

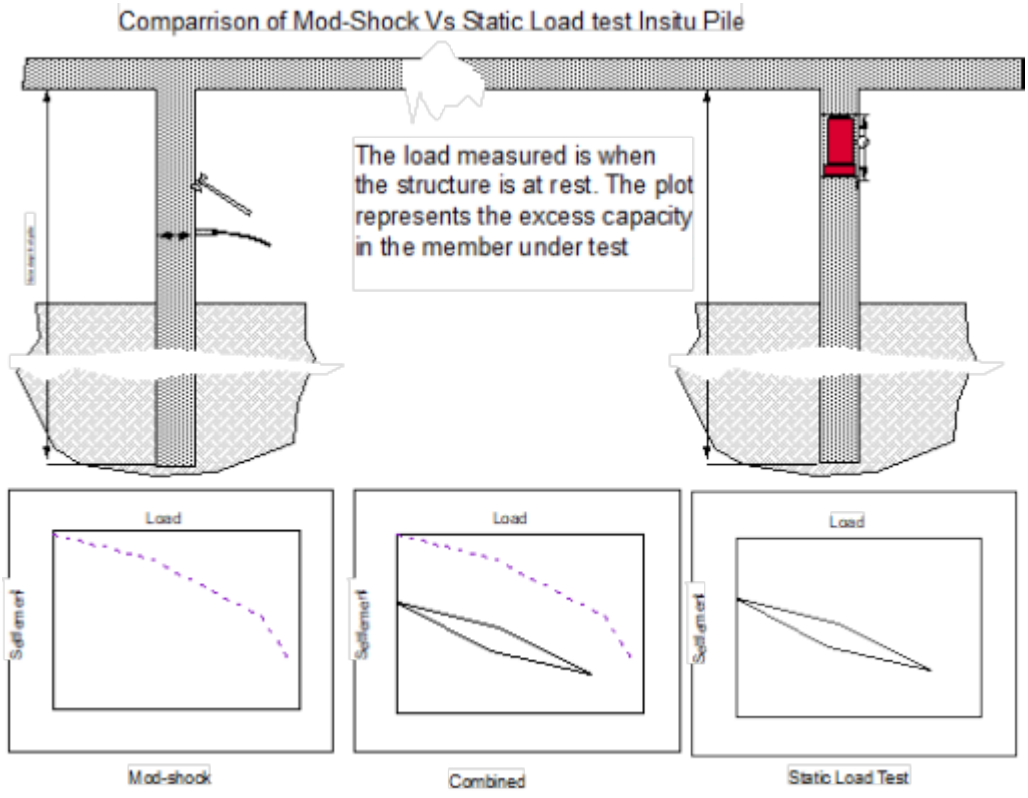
We used our exclusive MOD-SHOCK® test program to determine the condition of the piles/columns/piers. MOD-SHOCK® methodology is fully described in the paper available on request and/or as appended to this report but may be briefly summarized as below and indicated in the diagrammatic description of the test. Mod-Shock has been in use for over thirty years and is a hybrid test. It uses an equivalent "Capwap" method to determine the applied force of the hammer blow (drop weight or whatever is determined as a suitable impact force as the standard allows) and subsequently the modelled pile load test. It also provides in addition an equivalent dimension 2D model (shape) of the pile and pile elements i.e. it will determine the condition of the support piles. Mod-Shock satisfies Sections 8.7, 8.8 of *AS 2159-2009*, Rapid Load Testing and Integrity Testing respectively.



**Please note, any references to piles/poles in this section and further in the document can be considered to be interchangeable with columns, with some minor differences that will be noted.*

The columns are tested using our Mod-Shock™ system; where a seismic wave is imparted to the column/pile/joist etc at a convenient point on the column/pile, which can be from the top of the pile/column or if access is not available to the column/pile directly. The columns/piles will have a transducer placed on the side of the column/pile and then the column/pile will be struck in the same horizontal direction with a hammer, such as very little damage will occur to the column/pile under test. The resulting seismic response is captured via the transducer and by a cable sent to a Notebook computer for later analysis.

The analysis yields the column head stiffness, modelled load test response of the (column/piles) under load, the column/pile length, and significant column/pile diameter variations (enlargements or defects). We use a sketch as below to indicate how the “Reverse Engineering” works in relation to the determining the “Safe Additional Loading for the columns and piles”:



The test is a simplified forced vibration test of the pile, the forced vibration test being developed by Davis and Dunn in the early 70s. The forced vibration test was a good NDT method of testing piles, but due to the large volume of equipment required for the test it was essentially an unpractical method of testing piles.

John Higgs in association with others embarked on a way to copy the vibration test without the need for the forced vibration. Over a number of years, the Modified Shock test was developed

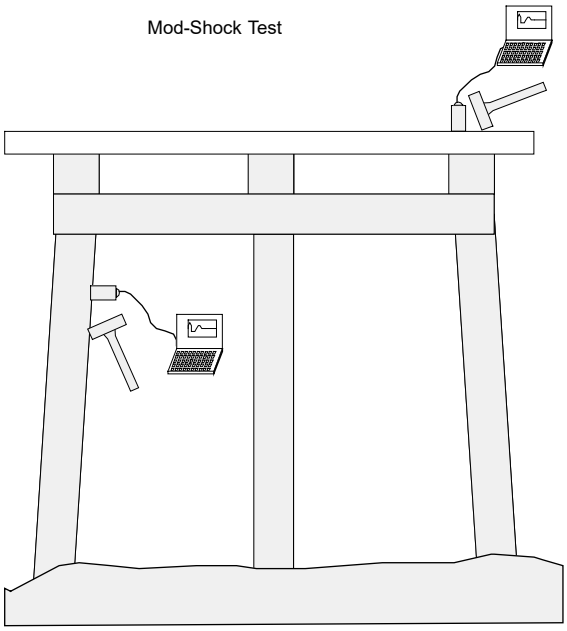
and the latest version of this is the MOD-SHOCK®, exclusively developed by Integrity Testing Pty. Ltd.

In essence the test uses the broad-spectrum frequency response from a hammer blow to the element under test, as the substitute to the forced vibration. The operator places a transducer on the element under test and then imparts sufficient vibrations into the element with hammer blows. The reflected signals are captured by the transducer and via a cable stored in a Notebook computer for later analysis.

The analogue signal is converted into a digital format and the signal under goes Fourier transform. The main components of this transform being a Mechanical Admittance plot and a frequency look up table, these being the main parameters obtained in a forced vibration test.

From the mechanical admittance plot the load/deflection values can be obtained as the plot is the solution of the Wave equation of motion and measures the resistance to the hammer blow. From the frequency look up tables the parameters of the pile model can be obtained in both directions, giving the two points to be able to plot a 2D model.

If piles are present at the abutments and piers, then a Mod-Shock® Test will be carried out to determine the integrity of the piles.



a) The test involves the use of a geophone or sensor which is placed on the side of the pile.
b) An impact source is then generated by the use of a small hammer.
c) The sound wave that is generated is then captured through an interface and filters whereby the data is then stored in a computer.
d) The test is then repeated on the next pile.
e) Depending on accessibility and the condition of the pile the test can be as fast as approximately five minutes or more per pile.

If the piles are directly connected to the road deck it is possible to sound the piles through the deck.

5.3.2 DBTS® Method & Testing

In the late 80's and early 90's the then Materials Consultants Ltd commenced development on a multi-point modal analysis system for the testing of bridges (DBTS). After a successful project where 110 railway bridges were tested on a World Bank project in Indonesia the system became fully operational and now over 1000 bridge, jetties and buildings have been successfully tested using the system.

The Dynamic Bridge Testing (DBTS®) system involves the measurement directly of the structural stiffness of the deck of the bridge. In a test a load is applied to the deck and the resulting deflection is measured. An estimate is then made of the fixing conditions and then the Structural Stiffness (EI) is calculated by formulation, typically:

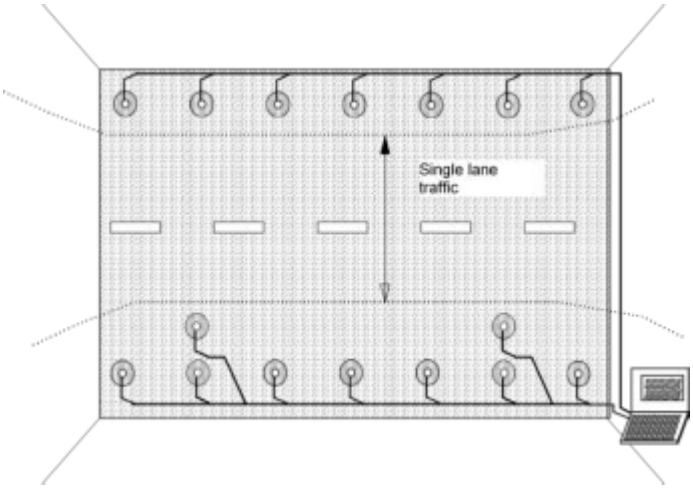
$$Deflection = \frac{K \times Load \times length \times n}{EI}$$

where k and n depend on the fixing conditions and type of load applied. Similarly, the slab is excited dynamically by a large drop weight and a known weighted vehicle if available with the resulting vibrations being recorded.

The analysis finds the frequency:

$$Frequency = \frac{k}{length^2} * \sqrt{EI}/M$$

where k depends on the fixing condition and M is the mass per unit length of the decks. The fixing condition of the decks can be accurately determined from the frequency spectra recorded. See the paper and the PDF attached to this report for the technical details relating to the technique applied to bridges, but which are still valid for buildings and floor slabs. During the dynamic testing we will be able to detect the principal and significant deflection mode shapes of the decks. Defects in the deck show up in deflection modes and as we will be testing over a number of decks at one time, we can study how the decks transfer any loadings to the adjacent decks and can fine tune the model for the correct fixing of the decks.



After the data from the foundations i.e. the abutments and piles/piers the deck is then tested using Integrity's DBTS® method of test:

1. The test involves the laying of cables on both sides of the bridge.
2. A series of sensors are then placed, usually eight on each side as not to restrict the passage of traffic.
3. The sensors are then connect to an A to D card through the cables which would then simultaneously record all the sixteen sensor data to a computer
4. An impact source is then generated either by the use of s drop weight or hammer. It is preferred if a vehicle or a loaded vehicle is available thought if the road is busy they not required. There is some disruption to road traffic, as there is usually single lane operation. There will be complete road closure for approximately 10 minutes to allow the setup of the transducers.
5. If the bridge is of multi spans then the sensors might have to be moved over the different spans and the tests repeated.
6. Depending on the length of each span and the number of spans the duration of the test will vary. The deck work normally takes ½ hour per span(s)

5.3.3 Glossary of Terms

Visual Inspection

A visual inspection is performed in addition to the testing, any visual defects or noteworthy items were noted prior to the analysis stage and included within the summary tables as a remark.

Test No

This is the number as assigned by ITPL. Pile No

This is the column number as given by ITPL as the pile numbers and referred to in the location sketch in appendices of the report.

Category

To assist with possible repair programs, we have devised a simple category system for the piles, described below:

1. Category 1 - Good pile, minor defects,
2. Category 2 - Good pile, but with some defects, but not structurally reducing the design load of the piles.
3. Category 3 - Defective pile, with major defects but still capable of design loads as indicated in the "total load" results.
4. Category 4 - Either structurally redundant or with sufficient defects to the piles to be repaired immediately.

Embedment length (m)

For the concrete elements we have used a velocity of 2,500 m/sec in both directions and the embedment length was measured by manual means from the top of the bridge to the ground line.

Pile Head Stiffness

This technology was developed by Davis and Dunn for bored concrete piles but having adopted and developed the theories over the past 3 to 4 decades, the theory is similar and applicable to the concrete supports we tested on this project.

This is the “E” prime of the column/pile measured as a direct measurement of the first part of the “mechanical admittance plot”, and is similar to a load/deflection graph for a dead weight load test. The “pile head stiffness (t/mm)” is compared to the two model stiffness values “E” min and “E” max. “E” min is a pile model with the pile pinned at its toe but with no clamping along its length. “E” max is a pile model with an infinite rigid base and clamped along its length. These models are based on the work carried out by Davis & Dunn (refer paper, on our website). In this instance the pile head stiffness for a good or even minor defective pile should be above the “E” min, but closer to the “E” min than the “E” max. For medium to defective piles the “pile head stiffness” would always be less than the “E” min model. The reduction in stiffness being due to the defects in the shaft of the pile effecting large reductions in the diameter or load bearing potential of the pile. This system has been in use for many years, although the original theories were based on piles they apply in this instance to piles and crossheads.

Min Diameter (min Dia)

The measured diameter is the equivalent diameter of the section either actual area or that contained in the loci of the section. The minimum diameter is calculated back from the change in cross section area. The change in rigid section is linear, hence diameter and not square function as in area.

Bending Moments

By using the data from the compression test it is possible to produce a 2D model of the columns as would be a column in a building, with details of the Bending Moment Safe additional loadings (SAL) per metre for the columns in Bending. We take two tests per column in opposite directions and combine them to give the model and for design purposes we use the lowest Bending Moment in the columns indicated as BMkN.m. Though we haven’t been able to verify these BM tests in large buildings or bridges our results for Bending Moment results from concrete poles do indicate the accuracy of our results. The additions to the summary table are as below:

C_High and C Low

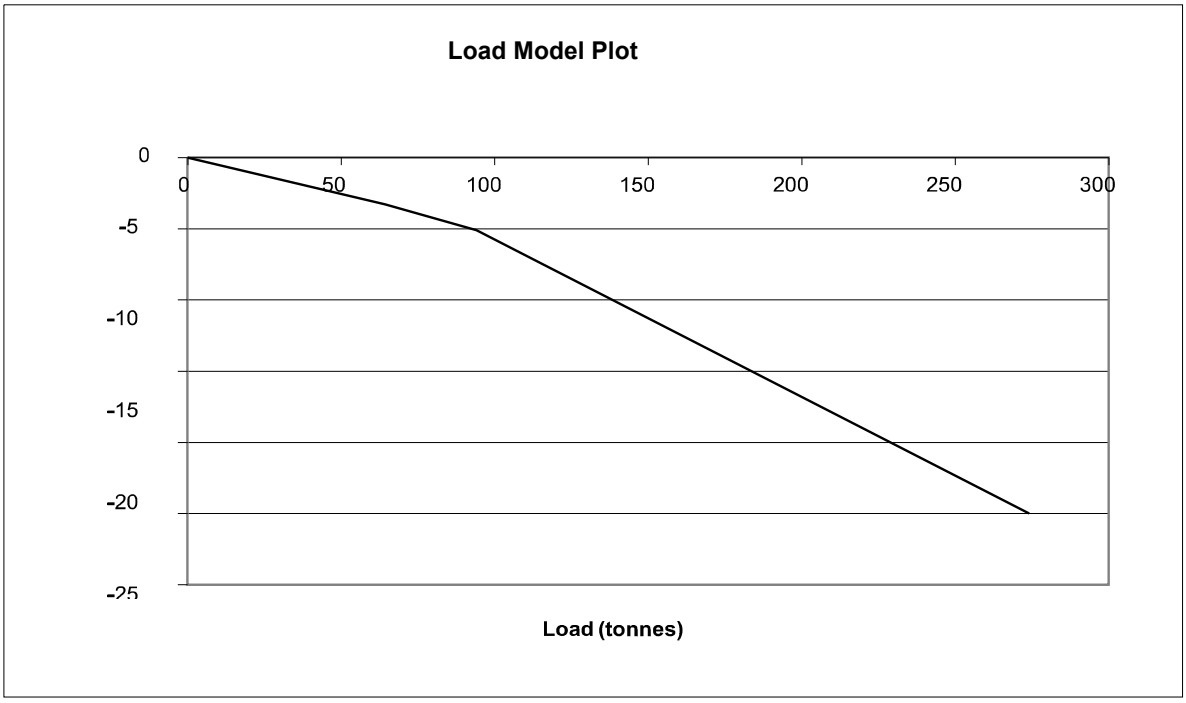
C_High and C_low are the unit of force at the reflected locations from the element under tests, so C_High is the tip load based on a free length of the pile with the remaining encased. The C_Low is the tip capacity of the pile with its full length free and fixed at the toe. They are seen as upper and lower limits. The BM is derived from wave form analysis; the test measures a solution to the normalised wave equation of motion of the pile as is. From this model the various constants and parameters are read off as EI, Z modulus and the lever arm derived from the distance of the test location from the end of the pile, automatically determined from the test results. This information is used to generate the max additional moment available concurrently with the current axial force at time of testing and is shown in the last column.

BM.KNm.
The bending moment "BM' as indicated in the summary tables is the force required to bend the

element and is within the elastic limit of the element under test concurrent with the existing axial force/load. The BM is derived from wave form analysis; the test measures a solution to the normalised wave equation of motion of the pile as is. From this model the various constants and parameters are read off as EI, Z modulus and the lever arm derived from the distance of the test location from the end of the pile, automatically determined from the test results. This information is used to generate the max additional moment available concurrently with the current axial force at time of testing and is shown in the last column. It is usually a multiple of between 6 and 10 times the C high, e.g. lever arm is typically between 6 and 10m. For establishing pile fixity we work in the elastic range with small displacements and we convert all displacement/ time responses through fourier transforms to normalised displacement/ frequency. Within this spectrum there will exist a number of fixing conditions which will include a free and fixed top.

Safe Additional Load (SAL) / Load Deflection Selection

The use of 4mm as a deflection for the calculation of the pile load capacity is defined by our estimate of a deflection value in the pure elastic allowable deflection for the pile can take. We chose 3mm or 4mm for consistency and be below the elastic limit expressed in tonne or kN as a Safe Additional Load (SAL). This value includes all dead and live load applied to the element at the time of testing. In other words, it is the remaining *reserve* capacity of the element under test. SAL can be made analogous to a service limit state (SL or SLS).



In the above model plot the pure elastic load is approximately 100t with a deflection of 5mm approximately. Within the elastic range the measured loads can either be tension of compression. We can model the deflection further, but we then get into the elastic – plastic range.

Reference Papers: http://www.integritytesting.com.au/papers/Mod-Shock.pdf

http://www.integritytesting.com.au/papers/Dbts_Paper.pdf

5.4 Appendix D – Mod-Shock® Results Full Print-outs

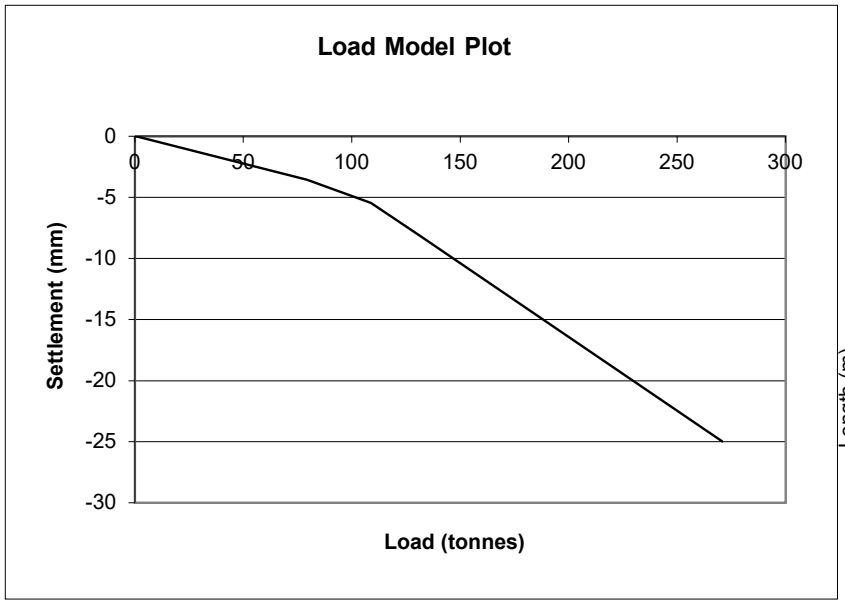
(See following page)

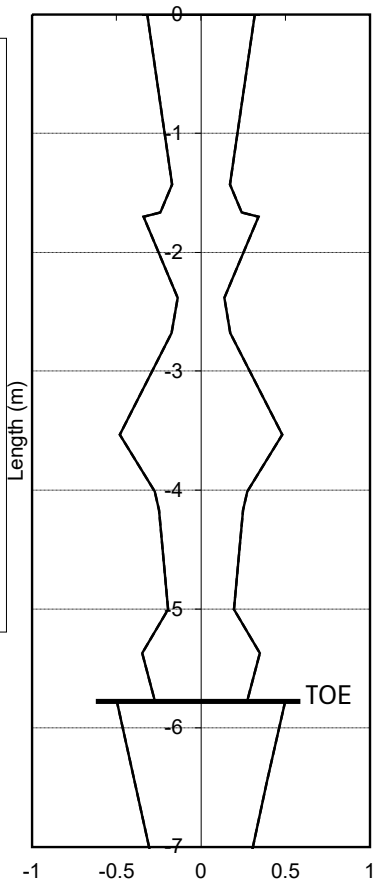
Photo

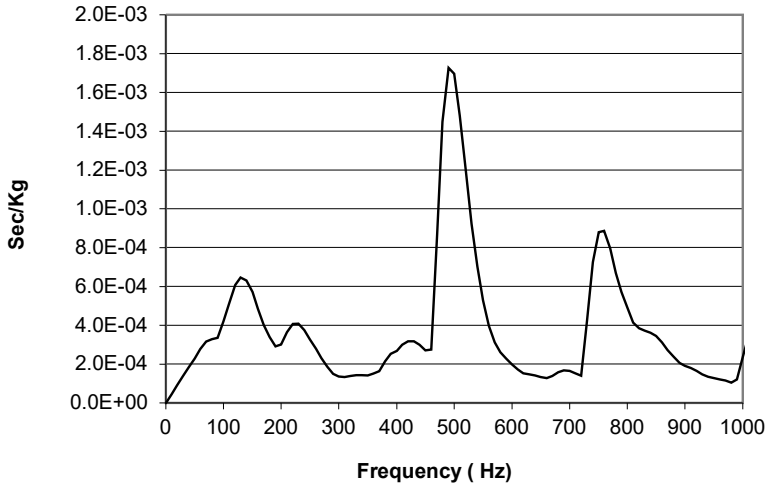
Integrity Testing Pty. Ltd.
ModShockPile

Table
Model

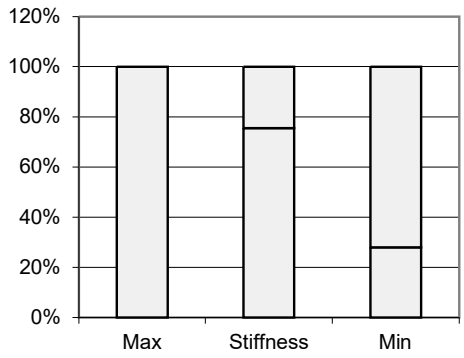
Location MCR BP01 Test Nos 6

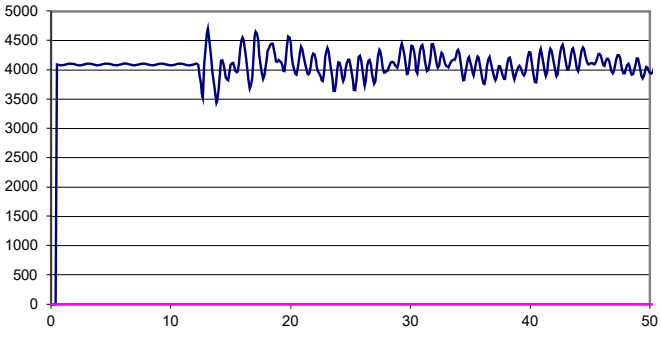






Deflection	Load
0.0	0.0
3.6	79.4
5.5	108.9
8.1	131.2
25.0	270.9





DUMP 1500 1000 15 5.6 8.700001 5.6 0 0

Integrity Testing Pty. Ltd. Programme: Pole-04-Bali.EXE-22-04-21

Http://www.integritytesting.com.au Email: info@integritytesting.com.au

VISUAL INSPECTION OF PILES

Client: PSM **Location** McCrae

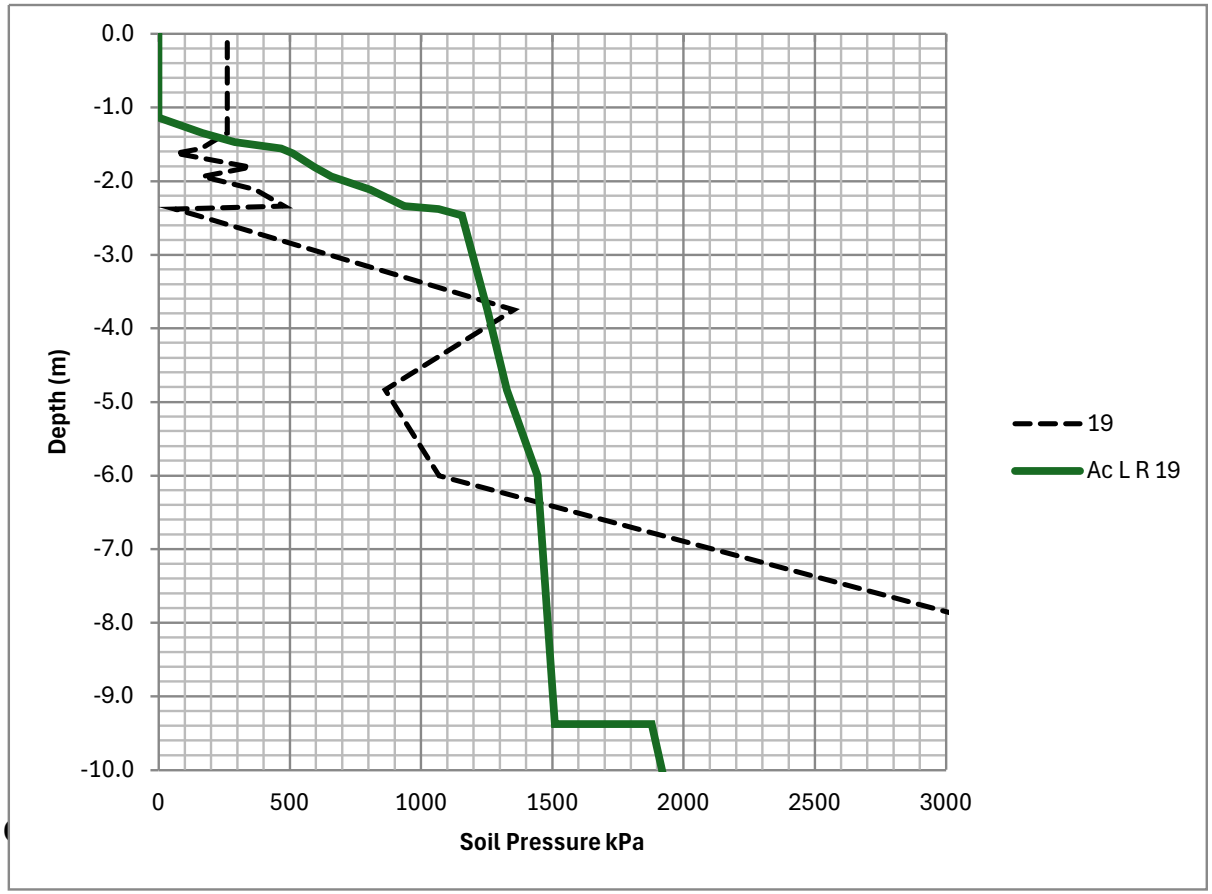
Pile test No. 6 **This** MCR_BP01X **Last**

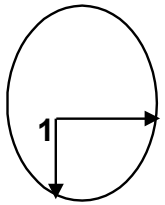
Results from Analysis of Modified Shock Test: Table

Length	**5.8 m.**		**Pile Diameter**	**600**
			Top	
Depth to Reductions:		**2.4 m.**	**Water line**	
Stiffness		**22.3 t/mm.**	**Min Diameter**	**275**
max		**29.5 t/mm.**	**Remarks:**	**Serviceable**
Min		**8.3 t/mm.**	**Category:**	**2.0**
Load Capacity @	**4**	**86.3 tonnes**		Model

ModShockPole

Pole No:	*MCR*	*ID*	*19*	C_low	C_High	SM	BM	AVE
Direction test No				kN	kN	Cm3	kN.m	kN.m
		BP01		29.6	295.7	1852.1	295.7	98.3





m.	Left	Right
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1		
0		0
-1		0
-2		1
-3	3	2
-4	2	1
-5		
-6		

Diameter	600
FreeLengtl	1.0
Bury Depth	19.0
Location	Min Wall
-11.00	270
Capacity	
Design	0
Top Averag	#DIV/0!
Location	Min Cap KN
-6.00	6.58
Pole Rating	
Out of Serv	
Risk	
Future Ris	*****
Serviceabl	

Table

Bury0
m
1.70

Bury1	Bury2
m	m
0.00	0.00

Pole at Serviceable Below Design Strength **Single locations**

Integrity Testing Pty Ltd **Pole-04-Bali.EXE-22-04-21** **Email: info@integritytesting.com.au**

Telephone 03 54440782 **Fax 03 54413810** **Pole No: MCR** 3

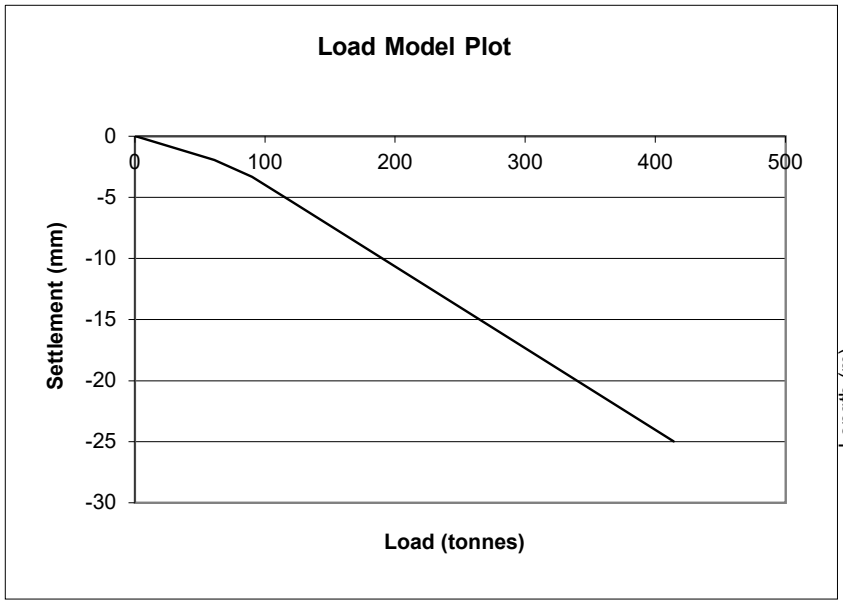
0 1500 1000 10 1 20 1 1 0 Model

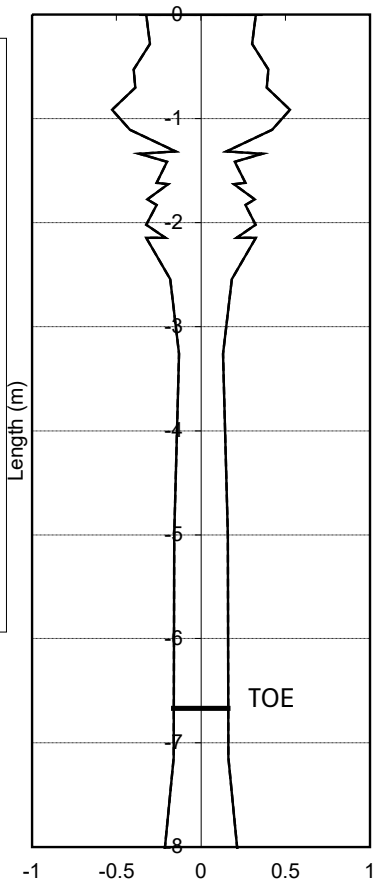
Photo

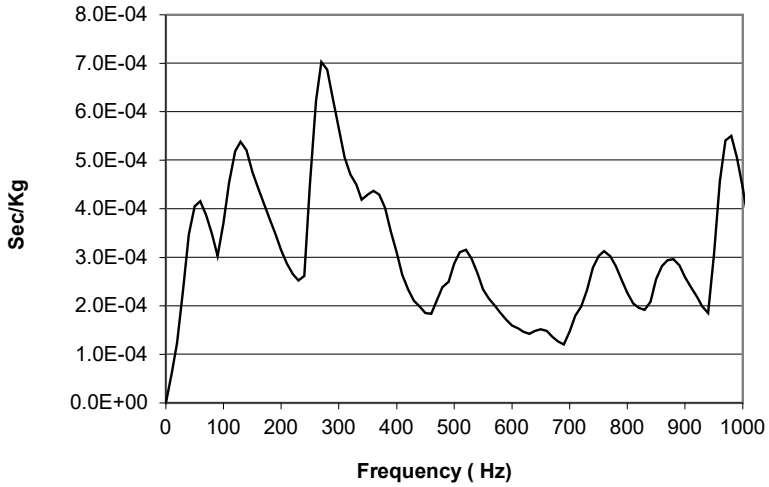
Integrity Testing Pty. Ltd.
ModShockPile

Table
Model

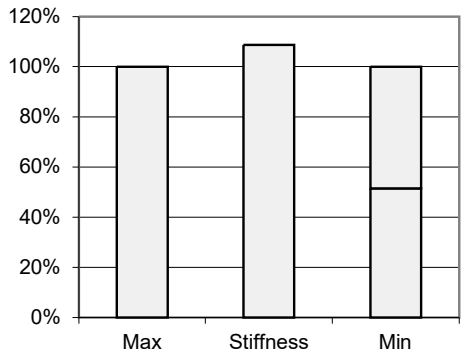
Location MCR BP02 Test Nos 12

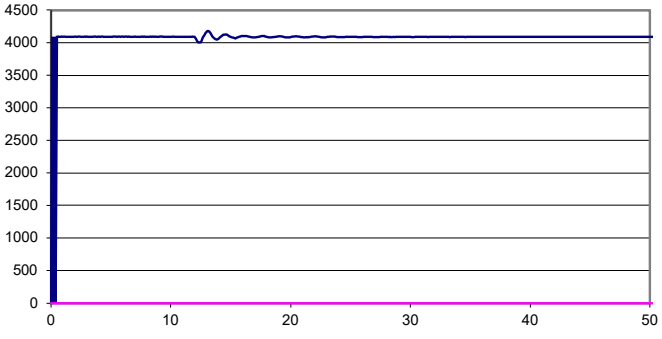






Deflection	Load
0.0	0.0
1.9	61.1
3.3	90.1
5.4	121.6
25.0	414.0





DUMP 1500 1000 10 1 2.25 1 0 0

Integrity Testing Pty. Ltd. Programme: Pole-04-Bali.EXE-22-04-21

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VISUAL INSPECTION OF PILES

Client: PSM **Location** McCrae

Pile test No. 12 **This** MCR_BP02X **Last**

Results from Analysis of Modified Shock Test: Table

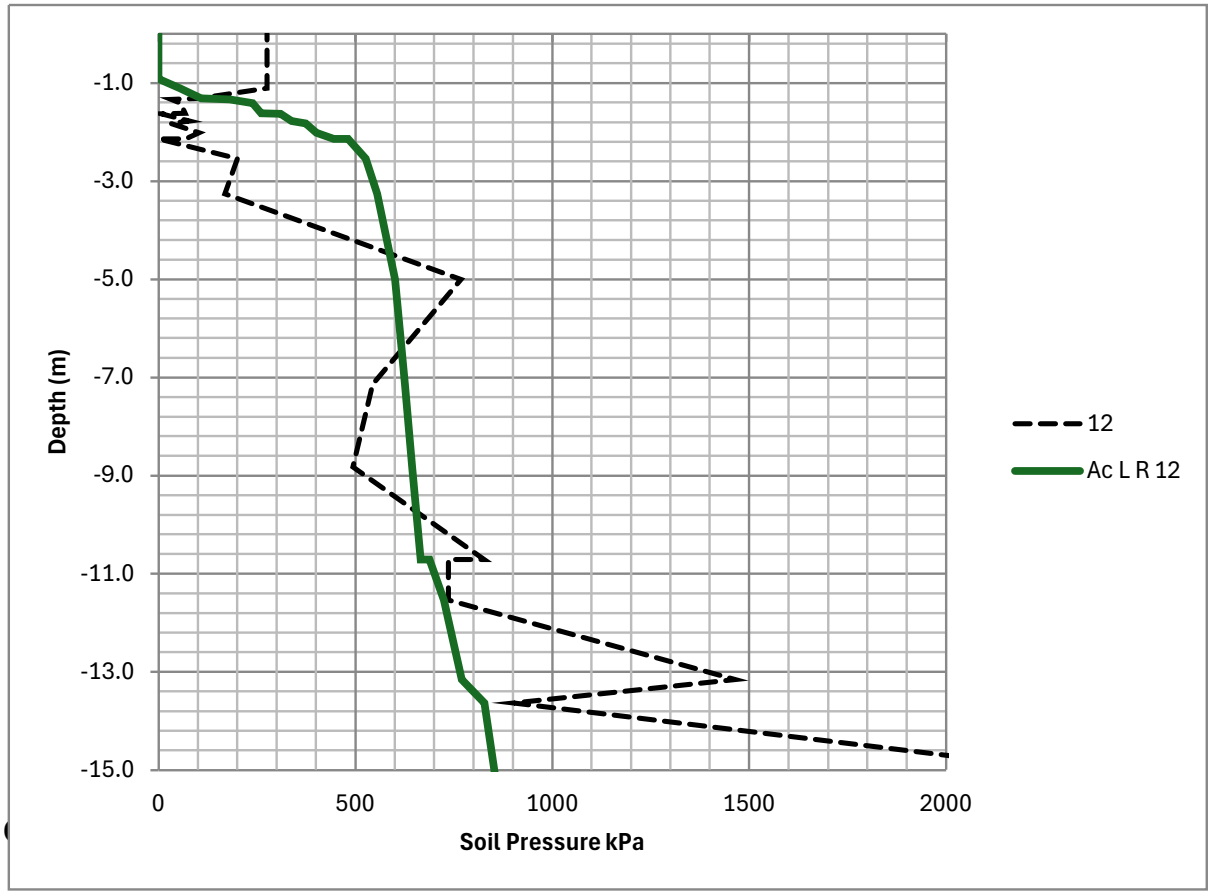
Length	**6.7 m.**		**Pile Diameter**	**600**
			Top	
Depth to Reductions:		**3.3 m.**	**Water line**	
Stiffness		**31.5 t/mm.**	**Min Diameter**	**262**
max		**29.0 t/mm.**	**Remarks:**	**Serviceable**
Min		**14.9 t/mm.**	**Category:**	**2.0**
Load Capacity @	**4**	**100.1 tonnes**		Model

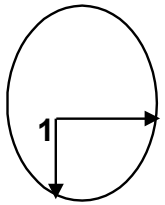
Integrity Testing Pty. Ltd. Pole-04-Bali.EXE-22-04-21

Http://www.integritytesting.com.au Email: info@integritytesting.com.au

ModShockPole

Pole No:	*MCR*	*ID*	*12*	C_low	C_High	SM	BM	AVE
Direction test No				kN	kN	Cm3	kN.m	kN.m
		BP02		65.6	655.5	0.0	655.5	182.9





m.	Left	Right
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5		
4		
3		
2		
1		
0		2
-1		0
-2	4	
-3	1	1
-4	3	
-5		
-6		

Diameter	600
FreeLengtl	1.0
Bury Deptl	19.0
Location	Min Wall
-16.00	0
Capacity	
Design	0
Top Averag	#DIV/0!
Location	Min Cap KN
#REF!	#REF!
Pole Rating	
Out of Serv	
Risk	
Future Ris	*****
Serviceabl	

Table

Bury0
m
1.25

Bury1	Bury2
m	m
0.00	0.00

Pole at Out of service Below Design Strength **Single locations**

Integrity Testing Pty Ltd **Pole-04-Bali.EXE-22-04-21** **Email: info@integritytesting.com.au**

Telephone 03 54440782 **Fax 03 54413810** **Pole No: MCR**

3

0 1500 1000 10 1 20 1 1 0

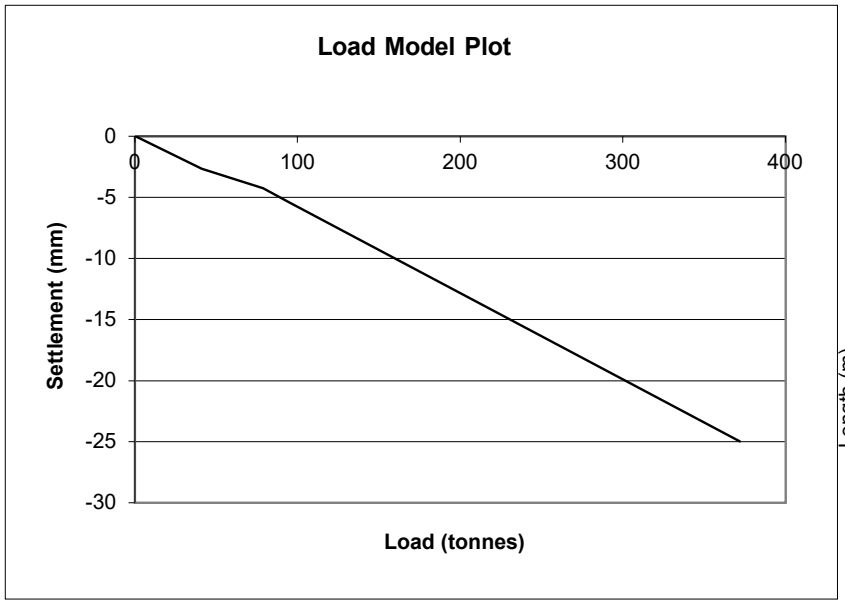
Model

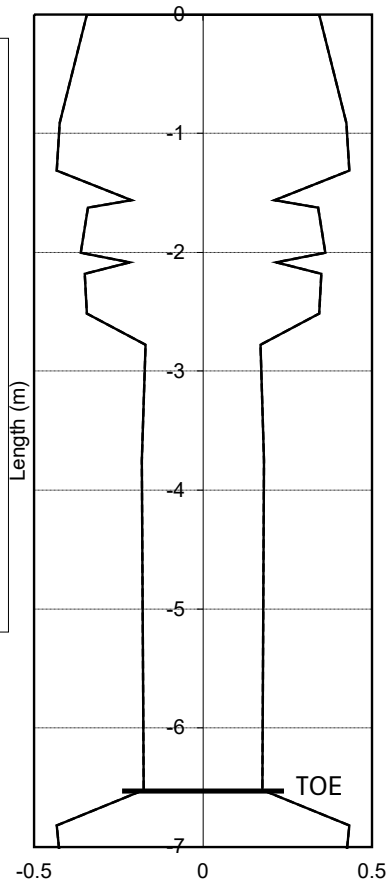
Photo

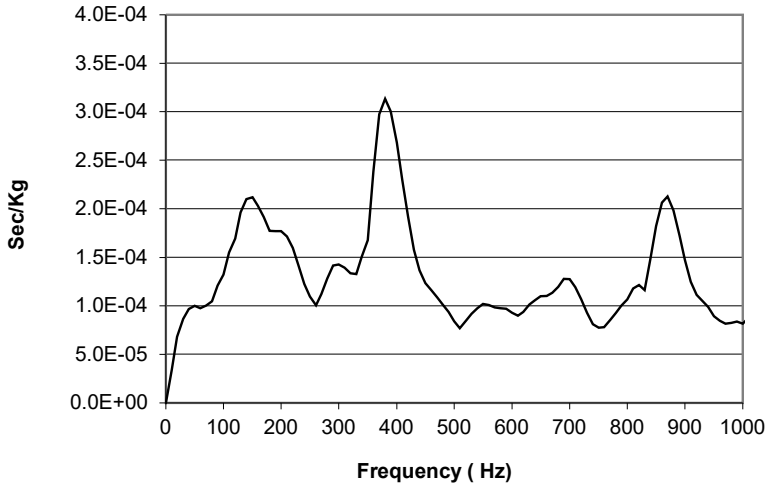
Integrity Testing Pty. Ltd.
ModShockPile

Table
Model

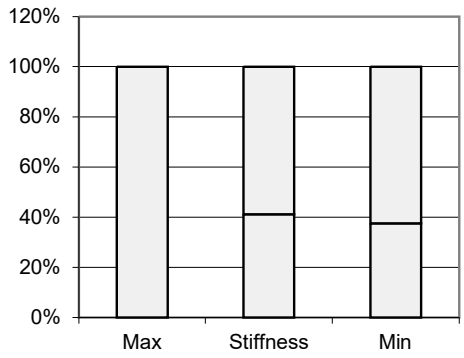
Location MCR BP03 Test Nos 17

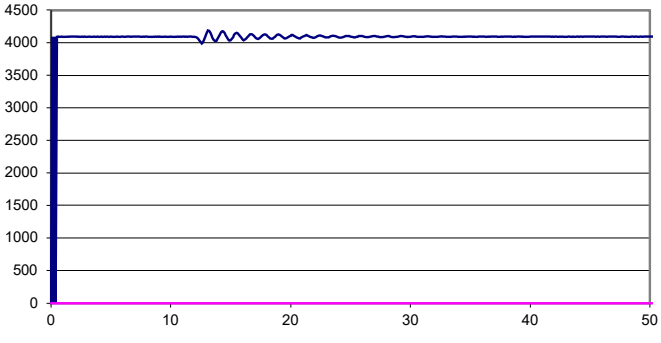






Deflection	Load
0.0	0.0
2.7	41.2
4.3	78.9
5.4	94.4
25.0	372.0





DUMP 1500 1000 10 1 2.850001 1 0 0

Integrity Testing Pty. Ltd. Programme: Pole-04-Bali.EXE-22-04-21

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VISUAL INSPECTION OF PILES

Client: PSM **Location** McCrae

Pile test No. 17 **This** MCR_BP03Z **Last**

Results from Analysis of Modified Shock Test: Table

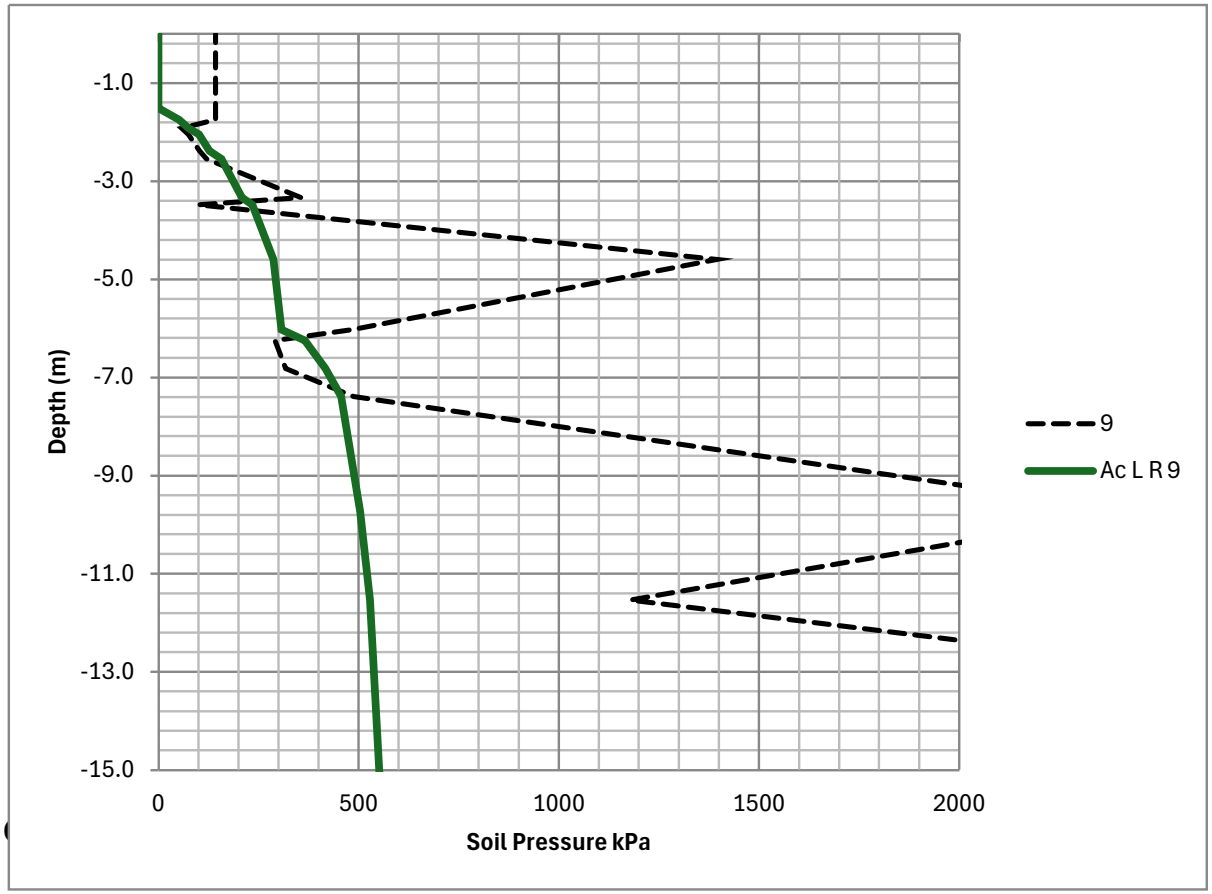
Length	**6.5 m.**	**Pile Diameter**	**600**
		Top	
Depth to Reductions:	**2.8 m.**	**Water line**	
Stiffness	**15.5 t/mm.**	**Min Diameter**	**340**
max	**37.6 t/mm.**	**Remarks:**	**Serviceable**
Min	**14.2 t/mm.**	**Category:**	**2.0**
Load Capacity @	**4** **72.2 tonnes**		Model

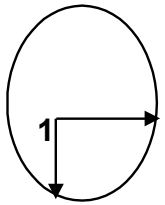
Integrity Testing Pty. Ltd. Pole-04-Bali.EXE-22-04-21

Http://www.integritytesting.com.au Email: info@integritytesting.com.au

ModShockPole

Pole No:	*MCR*	*ID*	*9*	C_low	C_High	SM	BM	AVE
Direction test No				kN	kN	Cm3	kN.m	kN.m
		BP03		25.4	68.1	0.0	381.5	118.7





m.	Left	Right
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7		
6		
5		
4		
3		
2		
1		
0		0
-1		0
-2	4	
-3	2	1
-4	2	
-5		
-6		

Diameter	600
FreeLengtl	1.0
Bury Depth	19.0
Location	Min Wall
-16.00	0
Capacity	
Design	0
Top Averag	#DIV/0!
Location	Min Cap KN
#REF!	#REF!
Pole Rating	
Out of Serv	
Risk	
Future Ris	*****
Serviceabl	

Table

Bury0	Bury1	Bury2
m	m	m
2.35	0.00	0.00

Pole at Out of service Below Design Strength **Single locations**

Integrity Testing Pty Ltd **Pole-04-Bali.EXE-22-04-21** **Email: info@integritytesting.com.au**

Telephone 03 54440782 **Fax 03 54413810** **Pole No: MCR** 3

0 1500 1000 15 5.6 20 1 1 0

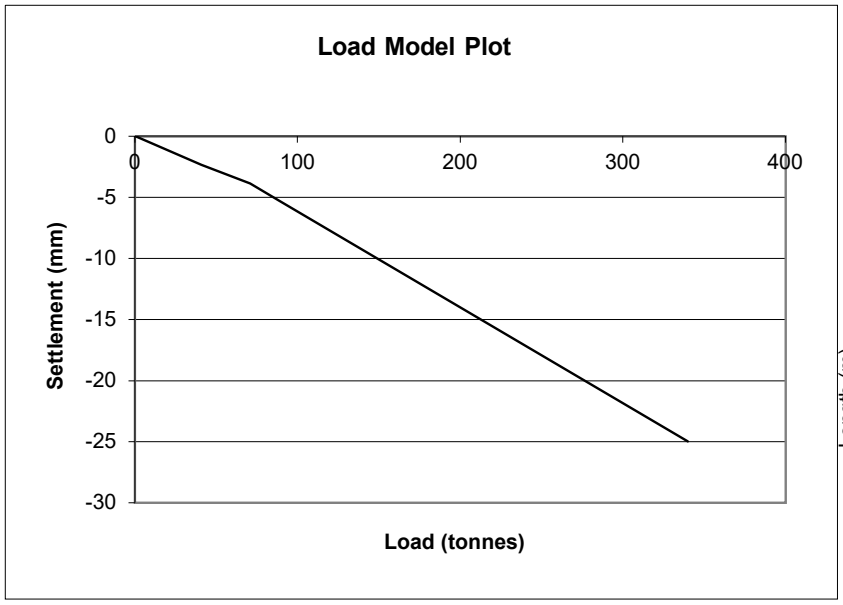
Model

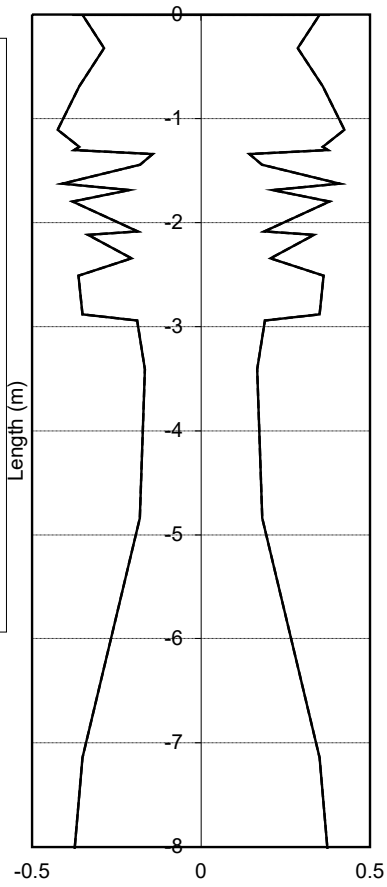
Photo

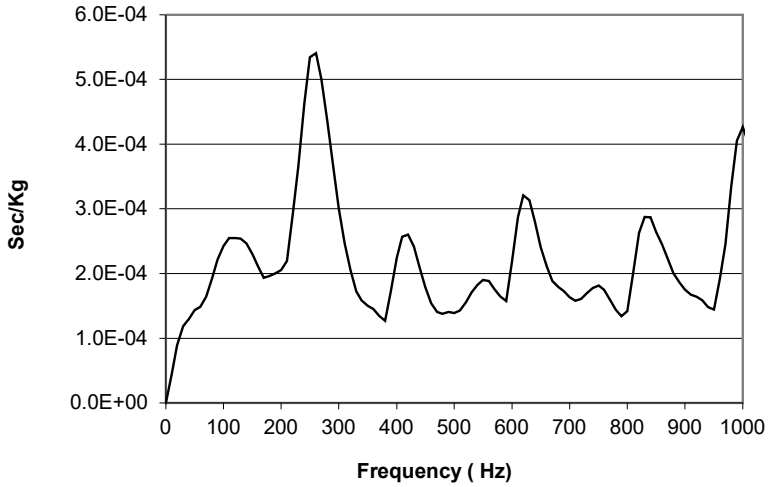
Integrity Testing Pty. Ltd.
ModShockPile

Table
Model

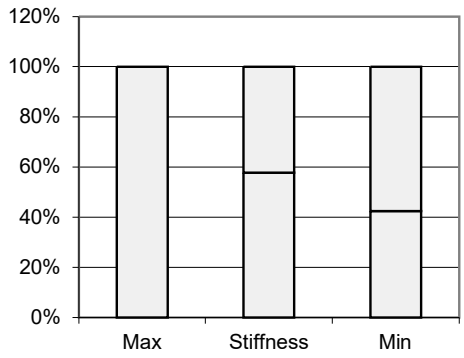
Location MCR BP04 Test Nos 14

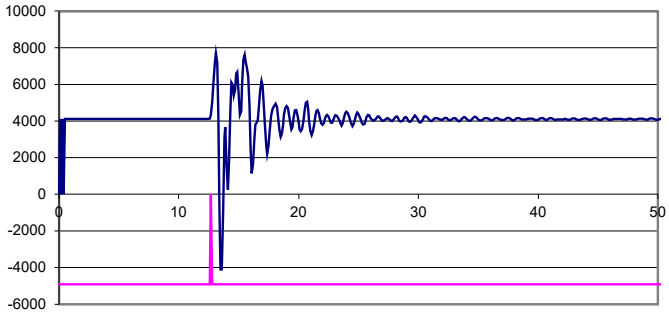






Deflectior	Load
0.0	0.0
2.4	40.9
3.9	70.9
5.3	88.2
25.0	340.0





DUMP 1500 1000 10 1 3.15 1 0 0

Integrity Testing Pty. Ltd. Programme: Pole-04-Bali.EXE-22-04-21

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VISUAL INSPECTION OF PILES

Client: PSM **Location** McCrae

Pile test No. 14 **This** MCR_BP04Y **Last**

no photo

Results from Analysis of Modified Shock Test: Table

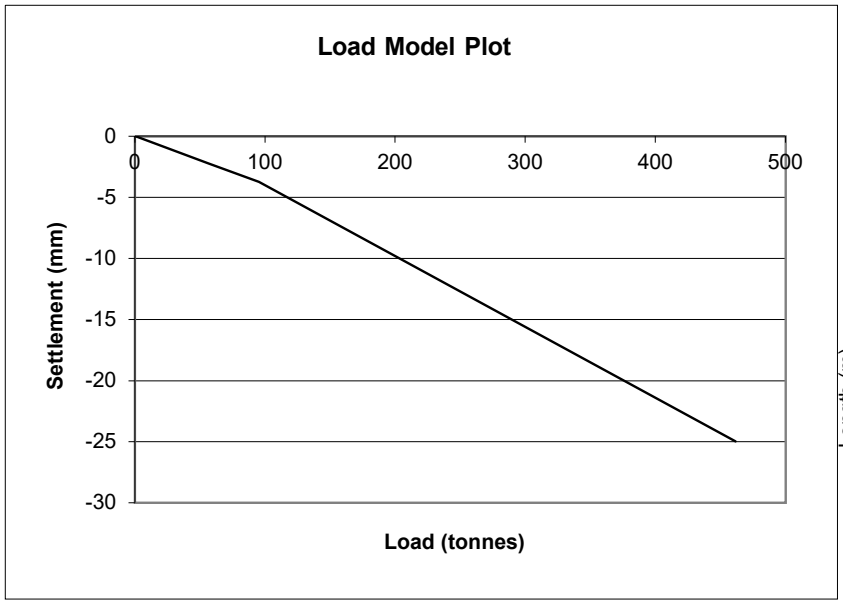
Length	-	**m.**		**Pile Diameter Top**	**600**
Depth to Reductions:			**1.3 m.**	**Water line**	
Stiffness			**17.4 t/mm.**	**Min Diameter**	**286**
max			**30.0 t/mm.**	**Remarks:**	
Min			**12.7 t/mm.**	**Category:**	
Load Capacity @		**4**	**72.3 tonnes**		Model

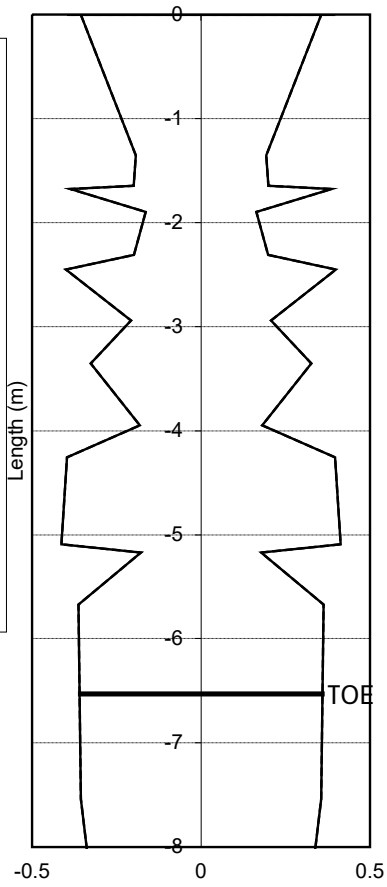
Photo

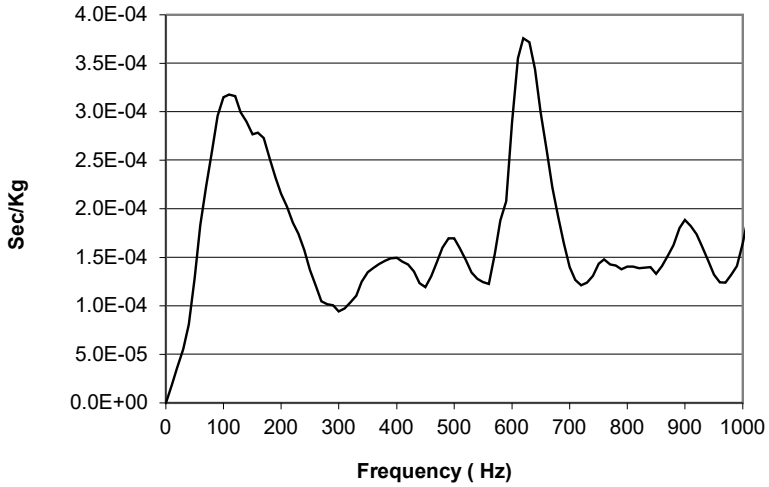
Integrity Testing Pty. Ltd.
ModShockPile

Table
Model

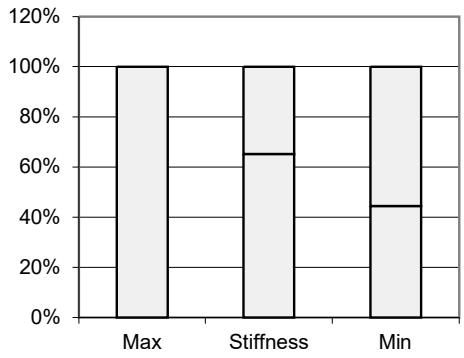
Location MCR BP05 Test Nos 1

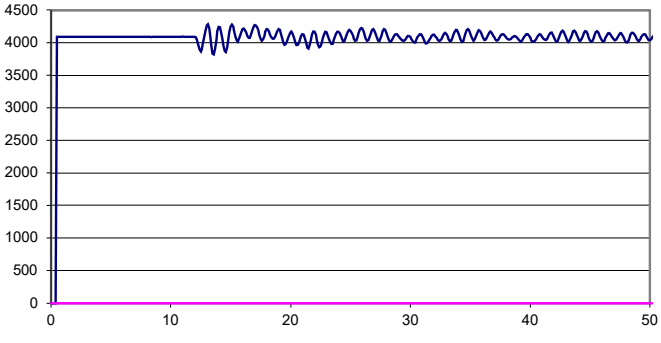






Deflection	Load
0.0	0.0
2.2	56.6
3.7	95.3
5.2	120.5
25.0	461.6





DUMP 1500 1000 15 5.6 8.250001 5.6 0 0

Integrity Testing Pty. Ltd. Programme: Pole-04-Bali.EXE-22-04-21

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VISUAL INSPECTION OF PILES

Client: PSM **Location** McCrae

Pile test No. 1 **This** MCR_BP05X **Last**

Results from Analysis of Modified Shock Test: Table

Length	**6.5 m.**		**Pile Diameter**	**600**
			Top	
Depth to Reductions:		**1.9 m.**	**Water line**	
Stiffness		**25.2 t/mm.**	**Min Diameter**	**327**
max		**38.7 t/mm.**	**Remarks:**	**Serviceable**
Min		**17.2 t/mm.**	**Category:**	**2.0**
Load Capacity @	**4**	**99.7 tonnes**		Model

Integrity Testing Pty. Ltd.

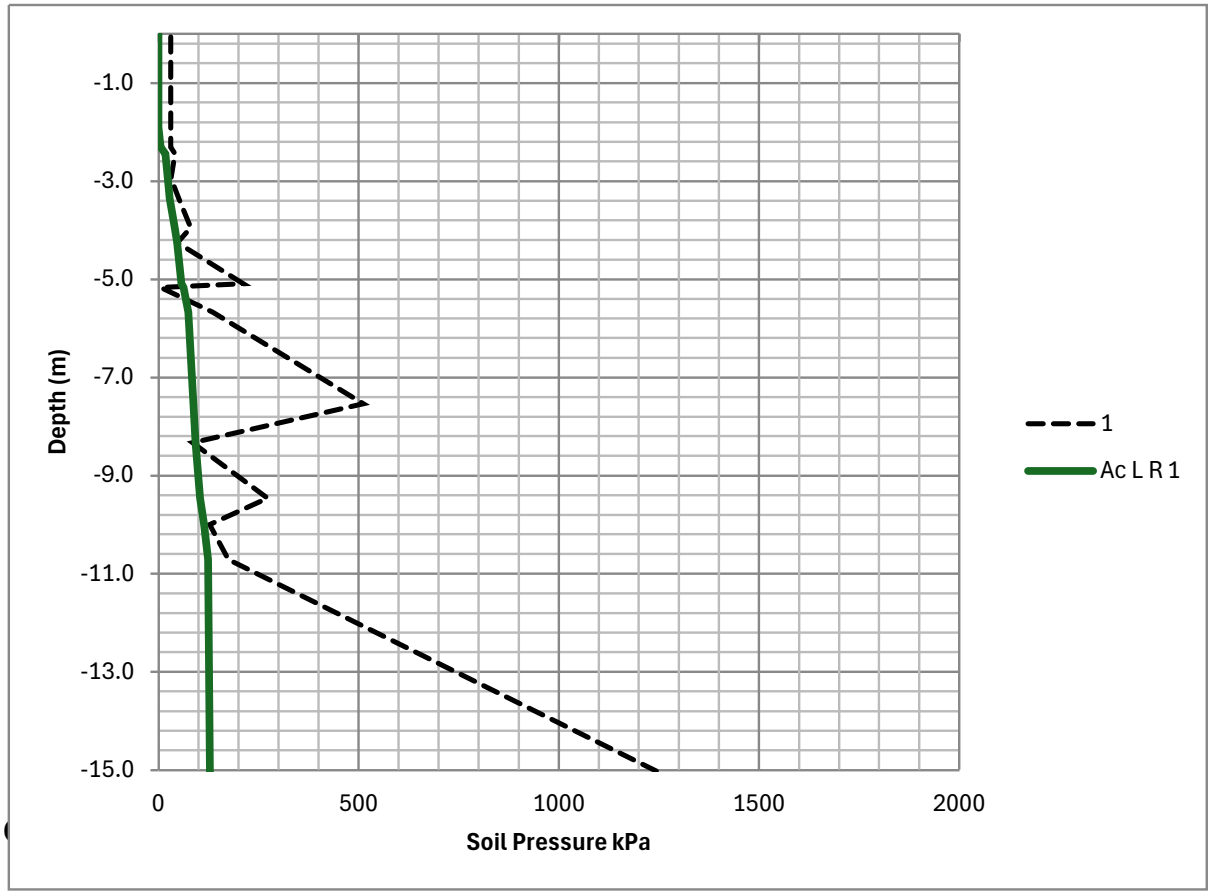
Http://www.integritytesting.com.au

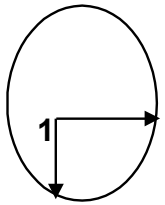
Pole-04-Bali.EXE-22-04-21

Email: info@integritytesting.com.au

ModShockPole

Pole No:	*MCR*	*ID*	*1*	C_low	C_High	SM	BM	AVE
Direction test No				kN	kN	Cm3	kN.m	kN.m
		BP05		44.0	117.9	2164.7	660.4	116.1





m.	Left	Right
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0		1
-1		0
-2		1
-3		1
-4	3	
-5		
-6		

Diameter	600
FreeLengt	1.0
Bury Dept	19.0
Location	Min Wall
-9.48	280
Capacity	
Design	0
Top Averag	#DIV/0!
Location	Min Cap KN
-9.48	3.30
Pole Rating	
Out of Ser	
Risk	
Future Ris	*****
Serviceabl	

Table

Bury0
m
2.65

Bury1	Bury2
m	m
0.00	0.00

Pole at Serviceable Below Design Strength **Single locations**

Integrity Testing Pty Ltd **Pole-04-Bali.EXE-22-04-21** **Email: info@integritytesting.com.au**

Telephone 03 54440782 **Fax 03 54413810** **Pole No: MCR** 3

0 1500 1000 15 5.6 20 1 1 0 Model