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Existing Pavement Strength Analysis

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Contents

Appendices

1. Introduction

1.1 Background

Aurecon was commissioned by Flinders Council on 25 May 2012 to undertake an analysis of Falling Weight Deflectometer (FWD) test results for the 14/32 Runway, 05/23 Runway, Taxiway A and the RPT Apron at Flinders Island Aerodrome. A plan of the aerodrome layout is shown in **Figure 1**, contained in **Appendix A**.

The objective of the study was to analyse the FWD test data and provide an assessment of the existing pavement strength, and to establish the theoretical Pavement Classification Number (PCN) for the pavements tested.

To allow the PCN assessment to proceed, Falling Weight Deflectometer (FWD) and a geotechnical investigation (comprising fieldwork and laboratory testing) was undertaken to provide information on the existing pavement composition and strength and pavement material characteristics.

Fugro PMS was engaged by Aurecon, on behalf of Flinders Council, to undertake the FWD testing. The testing was undertaken over three day work shifts on 13, 14 and 15 June 2012.

The FWD test is non-destructive and operates by lifting and dropping an adjustable weight onto a set of springs mounted on a circular loading plate of 150 mm radius. A load cell measures the dynamic load applied to the pavement during each test, and nine geophones (seismic velocity transducers) accurately measure the pavement deflection at various distances up to 1500 mm from the load.

By analysing the measured deflection values, representative strength values for the subgrade can be established.

Tasman Geotechnics was engaged by Aurecon, on behalf of Flinders Council, to undertake a geotechnical investigation to provide information on the existing pavement composition, layer thicknesses, material properties and subgrade strength. The geotechnical investigation was undertaken over three days between 5 and 7 June 2012.

With knowledge of the pavement material and subgrade stiffnesses from the analysis of the FWD test results, and the pavement material thicknesses from the boreholes, the strength of the subgrade and pavement layers was determined. Areas of common strength have been grouped, and the study also identified areas of pavement with substantially different or weaker strength.

This report provides:

- Details of the geotechnical investigation undertaken in June 2012;
- Details of the FWD testing undertaken in June 2012;
- An assessment of the subgrade strength based on the results of the FWD testing and geotechnical investigation;
- An assessment of the existing pavement strength and theoretical Pavement Classification Number (PCN); and
- Concept pavement strength upgrade options with indicative budget cost estimates.

1.2 References

a) International Civil Aviation Organisation (ICAO)
"Aerodrome Design Manual Part 3 - Pavements"
2nd Edition, 1983

b) Austroads
"Austroads Guide to Pavement Technology Part 2 – Pavement Structural Design"
February 2012

2. Geotechnical Investigation

2.1 Field and Laboratory Test Results

Tasman Geotechnics was engaged to undertake a geotechnical investigation (comprising fieldwork and laboratory testing) to provide information on the existing pavement composition, layer thicknesses, material properties and subgrade strength. The geotechnical investigation field and laboratory test report is included in **Appendix B**.

A summary of borehole locations and pavement thicknesses is presented in **Table 2-1** and a summary of field and laboratory test results is presented in **Table 2-2**.

Table 2-1: Summary of Borehole Locations and Pavement Thicknesses

Area	Borehole No.	Approximate Chainage (m)	Approximate Offset from Centreline (m)	Base Course Thicknesses (mm)
14/32 Runway	1	45	7.2 Left	150
	2	215	7.3 Right	500
	3	430	4.2 Left	600
	4	645	9.8 Right	350
	5	860	4.8 Left	100
	6	1075	7.8 Right	400
	7	1290	8.3 Left	550
	8	1505	4.5 Right	250
	9	1675	0.7 Right	350
05/23 Runway	10	15	7.1 Right	550
	11	265	6.3 Left	350
	12	535	5.1 Right	450
	13	805	9.3 Left	350
	14	1010	6.5 Right	350
	15	1120	10.7 Left	150
Taxiway A	16	40	5.9 Left	250
	17	105	Centreline	150
RPT Apron	18	135	7.0 Right	150
	19	150	5.0 Right	250
	20	150	25.7 Left	350
	21	140	34.1 Right	200
	22	155	17.0 Left	150
	23	165	5.0 Left	200

Notes: 1) The chainage system for the RPT Apron is a continuation from Taxiway A.
2) Chainages are shown in Figure 2.

Table 2-2: Summary of Field and Laboratory Test Results

Area	Borehole No.	Pavement Layer	USCS	Moisture Content (%)		Soaked CBR (%)	Atterberg Limits			PSD (%)		
				OMC	In-Situ		LL	PL	PI	Gravel	Sands	Fines
14/32 Runway	3	Base Course	SM	-	5.9	-	-	-	-	35	50	15
	4		SM	-	5.2	-	-	-	-	28	53	19
	7		SM	-	6.2	-	-	-	-	30	51	19
	2	Subgrade	SP	-	-	-	-	-	-	95		5
	6		SM	-	-	-	-	-	-	73		27
05/23 Runway	10	Base Course	SP	-	8.5	-	-	-	-	32	68	0
	12		SM	-	4.9	-	-	-	-	32	49	19
	10	Subgrade	SC	-	-	-	-	-	-	1	52	47
	12		SM	8.8	6.3	30	NP	NP	-	7	75	18
	15		SC	15.5	14.8	3	28	15	13	6	48	46
RPT Apron	21	Base Course	SM	-	-	-	-	-	-	25	58	17
	20	Subgrade	SC	16.2	15.1	3.5	50	21	29	5	49	46
	21		CH	20.5	20.4	4	60	25	35	7	29	64

Note: USCS denotes Unified Soil Classification System

A total of 23 boreholes were undertaken on the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron. Based on the geotechnical investigation, the existing pavement comprised an asphalt layer overlying a base course layer over existing subgrade. No sub-base layers were identified during the borehole investigation.

It is assumed that the asphalt layer identified during the geotechnical investigation is in fact a multiple coat sprayed seal or sprayed seal treatment as there are no records indicating that an asphalt overlay has been previously constructed.

The base course layer thicknesses ranges from 100mm to 550mm and is predominantly silty gravelly sand with subrounded gravel and non-plastic fines. The particle size distribution (PSD) indicates that the base course material is finer than what would be typically expected for an aerodrome pavement base course material and is more comparable to a sub-base course material that is normally used in aerodrome pavements.

Tasman Geotechnics has also compared the PSD for the base course material with the (Tasmanian) Department of Infrastructure, Energy and Resources (DIER) specifications for base and sub-base course materials used in road pavements and concluded that the base course material is also comparable to a sub-base course material.

However, it is not uncommon for regional aerodromes to use sub-base course material in lieu of better quality base course material due to material availability (remoteness) and budget constraints, given that regional aerodromes do not normally receive the heavier RPT aircraft that typically operate at Australian capital city airports.

The subgrade material encountered in the boreholes can be broadly divided into two zones. The first zone generally applies to the 14/32 Runway between the 14 Runway End and the intersection with the 05/23 Runway. In this zone, the subgrade was found to be predominantly sand that extends to at least 1m below the runway surface level and contains thin layers of clay material. No Soaked CBR tests were performed on the subgrade samples from this zone.

In the second zone, which generally applies to the remainder of the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron, the subgrade was found to comprise of sand that extends to less than 1m below the runway surface level, which is underlain by clayey sand or sandy clay.

Soaked CBR tests were performed on the sandy clay or clayey sand subgrade samples from boreholes BH 15, BH 20 and BH 21 and the soaked CBR values were between 3% and 4%. The soaked CBR value of the single gravelly sand subgrade sample from borehole BH 12 was 30%. The presence of gravel in the subgrade sample, combined with the confining effects of the mould during the soaked CBR tests, is likely to have contributed to the relatively higher soaked CBR value in this instance.

3. Falling Weight Deflectometer (FWD) Testing

3.1 FWD Equipment

The FWD test system is non-destructive and operates by lifting and dropping an adjustable weight onto a set of springs mounted on a circular loading plate of 150 mm radius. The resulting dynamic, single impulse load of up to 240 kN is applied over a duration of 25-30 milliseconds, corresponding to the effect of a moving aircraft wheel load. A load cell measures the dynamic load applied to the pavement during each test, and nine geophones (seismic velocity transducers) accurately measure the pavement deflection at various distances up to 1500 mm from the load.

Each test can be completed in less than two minutes, and extensive coverage of the pavements at an aerodrome can be completed within a single day.

The ability of the FWD to provide a non-destructive pavement testing method that is quick, accurate and reliable has been demonstrated in other projects undertaken by Aurecon in the past.

3.2 FWD Test Results

The FWD testing was undertaken by Fugro PMS. The testing was undertaken over three day work shifts on 13, 14 and 15 June 2012. The testing program was organised to cover the areas shown in **Table 3-1**.

Table 3-1: Summary of FWD Testing Program

Area	Chainage (m)	Offsets (m)	Datum
14/32 Runway	-70 to 1760	CL ± 3.75 ± 7.5	Ch 0 m corresponds to the 14 Runway End Threshold and chainages increase towards the south to the 32 Runway End.
05/23 Runway	-50 to 1140	CL ± 3.75 ± 7.5	Ch 0 m corresponds to the 05 Runway End Threshold and chainages increase towards the east to the 23 Runway End.
Taxiway A	0 - 100	CL ± 2 ± 4 ± 6 ± 8	Ch 0 m corresponds to the intersection of the centrelines of the taxiway and the 05/23 Runway, and chainages increase to the south towards the RPT Apron. Taxiway widens at the intersection with the 05/23 Runway and FWD testing was carried across the full width.
RPT Apron	100 – 170	-30 to 40	Ch 100 m corresponds approximately to where Taxiway A interfaces with the RPT Apron.

Note: The chainages for the RPT Apron is a continuation from Taxiway A.

In order to eliminate the effect of load variations, and to permit comparison between pavements tested at different loads, the measured deflections have been standardised by converting the measured deflections into unit deflections (i.e. the deflection in mm divided by the contact pressure in MPa).

The FWD deflections measured from the testing on the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron are shown in **Appendices C, D, E and F**, respectively.

The unit deflections derived from the FWD test results for the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron are shown in **Appendices G, H, I and J**, respectively.

The unit deflections for the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron are also shown on **Figures 3, 4, 5 and 6,** respectively, contained in **Appendix A**.

4. Subgrade Strength Assessment

4.1 Method of Analysis

Two techniques are available for determining theoretical pavement and subgrade strengths from the FWD deflection test results.

The first technique involves a deflection bowl fitting computer program to determine the stiffness of each pavement layer. The procedure used is based on an elastic layered pavement model comprising up to five layers, each of which is assumed to be homogeneous, isotropic and characterised by an elastic modulus (stiffness), Poisson's ratio, and thickness (see **Figure 7** in **Appendix A**). Using this model, pavement responses such as stresses, strains and elastic deflections can be predicted for a given load. A computer program is used to determine, by successive iterations, the combination of pavement layer and subgrade stiffnesses that produce the closest deflected pavement shape to that measured.

The deflection bowl fitting procedure commences with the lowest layer (the subgrade). At some distance remote from the loaded area and dependent on the pavement layer stiffnesses and thicknesses, the surface deflection is due only to the elastic compression of the lowest layer. This is because the layers above it are outside the zone of influence created by the load which, for this purpose, is assumed to be a truncated cone. Consequently, the stiffness of the lowest layer can be estimated from the deflections measured at the appropriate outer gauge (see **Figure 8 (a)** in **Appendix A**). Similarly, the deflections at distances closer to the loading plate are only dependent on the pavement layers within their zone of influence, and this procedure can be used, at least conceptually, to determine the stiffnesses of each of the pavement layers (see **Figure 8 (b)** in **Appendix A**).

Using these initial estimates of pavement layer stiffnesses, the iterative bowl-fitting procedure adjusts the layer stiffnesses until the predicted deflections match the measured deflections within the desired level of accuracy.

The second technique assumes a non-linear stress-strain relationship for the subgrade. The elastic modulus is not constant and is assumed to be stress dependent in accordance with the relationship:

$$E_s = C * (\sigma' / \sigma)^n$$

Where: E_s is the subgrade modulus

C is a positive constant

σ' is the major principal stress

σ is the reference stress

n is a negative constant (commonly in the range –0.25 to –0.5).

In this study, the second technique has been used to establish representative modulus values from the measured deflections as it is considered to provide more reliable results.

The FWD test results were analysed to provide estimates of the subgrade strengths at each test location. The results were tabulated and categorised into sections of common subgrade strengths. Abnormalities in test results such as extremely low or high deflections and/or where the deflections did not decrease with increasing distance from the central loading plate have been omitted from the analysis.

For each of the areas identified as exhibiting similar behaviour, the mean and standard deviation were computed. The representative subgrade modulus value for each area was calculated as the mean minus

one standard deviation, which represents the 15th percentile. By implication, 15% of the tests (assumed to represent 15% of the pavement area tested) have strength values below this level.

The CBR for each area was derived using the empirical, but widely accepted relationship:

$$CBR\ (\%) = k * E_s\ (MPa)$$

where k is a constant within the range 0.08 - 0.20 (taken in this case as 0.10).

The strength of an unbound granular pavement has little effect on pavement deflections (provided it comprises well-compacted, high strength materials), since the majority of the elastic deflection occurs in the lower (weaker) layers. Conversely, it is difficult to derive accurate modulus values for these layers from the analysis of deflection test results.

For this pavement strength assessment, it has been assumed that the subgrade is always the weakest layer controlling the load-carrying capacity. However, areas of low base course strength that may provide poor pavement performance have also been identified in the following sections.

4.2 14/32 Runway

4.2.1 Subgrade Strength

The structural capacity of a pavement typically varies throughout the test length. For pavement strength assessment, it is usually necessary to divide the test length into sub-sections that display similar characteristics in terms of the deflections and pavement details.

Wherever possible, the test length has been divided into subsections based on Austroads Guide to Pavement Technology: Part 5 which recommends that sub-sections should exceed 100 m in length and is considered homogeneous if the deflection values have a coefficient of variation CV (i.e standard deviation divided by mean) of 25% or less.

The theoretical subgrade strength values for all test locations on the 14/32 Runway ranged between CBR 5% and 16%. A summary of the sections and the inferred CBR values are shown in **Table 4-1**.

Table 4-1: Summary of Results – 14/32 Runway

Section No.	Chainage (m)	Mean Unit Deflection (mm/MPa) at Geophone									Inferred CBR			
		0 mm	200 mm	300 mm	450 mm	600 Mm	750 mm	900 mm	1200 mm	1500 mm	Mean	Std Dev	CV (%)	Rep Value
1	0 – 120	2.446	1.231	0.729	0.436	0.304	0.223	0.176	0.109	0.077	6.5	0.7	10.6	6
2	120 – 300	2.116	1.128	0.714	0.454	0.324	0.241	0.190	0.121	0.086	7.2	0.8	11.1	6
3	300 – 500 1090 – 1400	1.842	0.953	0.606	0.382	0.271	0.200	0.159	0.105	0.076	8.4	1.3	15.3	7
4	500 – 830 1500 – 1600	1.456	0.753	0.488	0.318	0.232	0.175	0.141	0.096	0.071	10.3	1.7	16.9	9
5	830 – 980 1400 – 1500	1.748	0.914	0.565	0.353	0.248	0.184	0.147	0.098	0.075	9.2	2.5	27.2	7
6	980 – 1090	2.391	1.258	0.747	0.423	0.280	0.197	0.152	0.088	0.054	6.0	0.9	14.3	5
7	1600 – 1740	2.162	1.162	0.657	0.306	0.170	0.117	0.097	0.070	0.057	7.1	1.4	19.4	6
8	RESA -70 – 0 1740 – 1760	3.098	1.601	0.859	0.455	0.280	0.180	0.129	0.084	0.073	5.4	1.2	22.2	4

4.2.2 Base Course Strength

The base course appears to be of lower strength than would normally be expected for an aerodrome pavement in the following areas:

- At Chainage 890 m – Offset 7.5L;
- Between Chainage 990 m and Chainage 1060 m;
- At Chainage 1320 m – Offset 3.75R;
- At Chainage 1410 m – Offset 7.5R;
- Between Chainage 1610 m and Chainage 1630 m; and
- Between Chainage 1670 m and Chainage 1720 m.

The pavements in these locations need to be monitored for evidence of distress under traffic.

4.3 05/23 Runway

4.3.1 Subgrade Strength

The theoretical subgrade strength values for all test locations on 05/23 Runway ranged between 4% and 21%. A summary of the sections and the representative CBR values are shown in **Table 4-2**.

Table 4-2: Summary of Results – 05/23 Runway

Section No.	Chainage (m)	Mean Unit Deflection (mm/MPa) at Geophone									Inferred CBR			
		0 mm	200 mm	300 mm	450 mm	600 Mm	750 mm	900 mm	1200 mm	1500 mm	Mean	Std Dev	CV (%)	Rep Value
1	0 – 35	1.784	0.890	0.505	0.278	0.177	0.123	0.097	0.109	0.070	8.8	1.0	11.8	8
2	70 – 280	1.325	0.669	0.396	0.231	0.154	0.111	0.088	0.062	0.049	12.1	1.9	16.0	10
3	280 – 860	1.154	0.555	0.335	0.209	0.147	0.111	0.091	0.065	0.051	15.3	2.1	14.0	13
4	860 – 950	0.996	0.483	0.297	0.186	0.134	0.101	0.083	0.059	0.046	16.7	2.2	13.3	15
5	950 – 1110	1.623	0.767	0.433	0.229	0.145	0.101	0.080	0.056	0.045	10.7	2.1	19.6	9
6	-50 – 0 1110 – 1140	2.347	1.109	0.569	0.275	0.159	0.110	0.089	0.060	0.057	7.1	1.7	23.4	5

Note: Section between Chainage 35 m and 70 m is covered in Section 7 of 14/32 Runway (Refer to Table 4-1)

4.3.2 Base Course Strength

The base course appears to be of lower strength than would normally be expected for an aerodrome pavement in the following areas:

- At Chainage 170 m – Offset 7.5L;
- At Chainage 960 m – Offset 3.75L; and
- At Chainage 1070 m – Centreline.

The pavements in these locations need to be monitored for evidence of distress under traffic.

4.4 Taxiway A

4.4.1 Subgrade Strength

The theoretical subgrade strength values for all test locations on Taxiway A ranged between 4% and 15%. A summary of the sections and the representative CBR values are shown in

Table 4-3.

Table 4-3: Summary of Results – Taxiway A

Section No.	Chainage (m)	Mean Unit Deflection (mm/MPa) at Geophone									Inferred CBR			
		0 mm	200 mm	300 mm	450 mm	600 Mm	750 mm	900 mm	1200 mm	1500 mm	Mean	Std Dev	CV (%)	Rep Value
1	0 – 105	2.047	1.105	0.623	0.312	0.186	0.127	0.102	0.076	0.061	7.6	2.1	27.4	5

4.4.2 Base Course Strength

The base course appears to be of lower strength than would normally be expected for an aerodrome pavement in the following areas:

- At Chainage 16 m – Offsets 20R and 24R;
- At Chainage 20 m – Offset 10L;
- At Chainage 30 m – Offsets 6L and 10R;
- At Chainage 35 m – Offset 8R;
- At Chainage 40 m – Offset 6R;
- At Chainage 45 m – Offset 4R and 8R;
- At Chainage 50 m – Offset 6R;
- At Chainage 60 m – Offset 6R;
- Between Chainage 75 m and Chainage 85 m; and
- At Chainage 95 m – Offset 4R.

The pavements in these locations need to be monitored for evidence of distress under traffic.

4.5 RPT Apron

4.5.1 Subgrade Strength

The theoretical subgrade strength values for all test locations on the RPT Apron ranged between 3% and 18%. A summary of the sections and the representative CBR values are shown in **Table 4-4**.

Table 4-4: Summary of Results – RPT Apron

Section No.	Chainage (m)	Mean Unit Deflection (mm/MPa) at Geophone									Inferred CBR			
		0 mm	200 mm	300 mm	450 mm	600 Mm	750 mm	900 mm	1200 mm	1500 mm	Mean	Std Dev	CV (%)	Rep Value
1	105 – 120 135 – 175 (Offset 5L to east apron edge)	1.382	0.620	0.336	0.182	0.120	0.089	0.073	0.053	0.042	13.0	2.4	18.6	11
2	120 – 130 130 – 165 (Offset 5L to west apron edge)	1.815	0.817	0.404	0.200	0.131	0.096	0.079	0.056	0.045	9.7	1.8	18.3	8
3	130 – 135 (Offset 5L to east apron edge) 165 – 175 (Offset 5L to west apron edge)	3.255	1.564	0.716	0.274	0.142	0.099	0.081	0.060	0.046	5.3	1.4	26.5	4

4.5.2 Base Course Strength

The base course appears to be of lower strength than would normally be expected for an aerodrome pavement in the following area:

- At Chainage 135 m – Offsets 10L to 30L and Offset 40R;
- At Chainage 145 m – Offset 40R;
- At Chainage 150 m – Offset 40R;
- At Chainage 155 m – Offset 40R;
- At Chainage 160 m – Offset 40R; and
- At Chainage 170 m – Offsets 5L to 30R.

The pavement in this location needs to be monitored for evidence of distress under traffic.

5. Pavement Strength Assessment

5.1 ACN-PCN Method

5.1.1 Basis

The International Civil Aviation Organisation (ICAO) Air Navigation Commission approved a recommendation of the Eighth Air Navigation Conference in 1974 that called for the development of a single internationally accepted method of reporting airport pavement strength. A Study Group subsequently examined various methods and, through its work, the Aircraft Classification Number-Pavement Classification Number (ACN-PCN) method was proposed as an amendment to ICAO Annex 14: “International Standards and Recommended Practices for Aerodromes”.

The two terms used in the system are defined as follows:

Aircraft Classification Number (ACN) is a number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade strength.

Pavement Classification Number (PCN) is a number expressing the bearing strength of a pavement for unrestricted operations.

The ACN-PCN method reports pavement strengths on a continuous scale from zero, but with no upper limit, and the same scale is used to measure the load ratings of both aircraft and pavements.

Any aircraft having an ACN equal to or less than the reported PCN can operate on the pavement in question at unrestricted frequency, subject to any tyre pressure limitations.

The theoretical PCN for any pavement can be mathematically derived from the US Army Corps of Engineers CBR design procedure, using the following expression:

$$T = \sqrt{\frac{DSWL}{C1.CBR} - \frac{DSWL}{C2.P}}$$

where: T is the pavement thickness
DSWL is the design single wheel load (at a tyre pressure, P, of 1.25MPa)
CBR is the California Bearing Ratio of the subgrade
C1 and C2 are numerical constants.

For T in cm, and DSWL in kg, the appropriate constants are:

C1 = 0.5695 and C2 = 32.035.

By transposition, the design single wheel load for a pavement whose thickness and subgrade strength are known is given by:

$$DSWL = \frac{T^2 (C1.CBR.C2.P)}{C2.P - C1.CBR}$$

$$= \frac{22.805T^2.CBR}{(40.044 - 0.5695\ CBR)}$$

By definition, the PCN is assigned a value equal to twice the derived single wheel load (expressed in tonnes). The factor of two is used only to achieve a suitable scale so that the system can be used with reasonable accuracy.

Thus, the theoretically derived PCNs for each of the pavements evaluated in this report have been determined using the following expression:

PCN rating = 2 DSWL/1000

$$= 0.002 \times \frac{22.805\ T^2\ CBR}{(40.044 - 0.5695\ CBR)}$$

where: T is the thickness of pavement above the critical layer (cm); and
CBR is the representative CBR value determined from the analysis of the HWD test results.

The ACN-PCN method is intended only for the reporting of pavement strength data, typically in the Aeronautical Information Publication (AIP) or in ERSA. It is not intended that the method be used for the design or evaluation of pavements. Whilst various rules of thumb are available for determining pavement overload concessions using the ACN to PCN ratio, it is not suited for this purpose since it cannot take into account the cumulative effect of such overloads.

5.1.2 Reporting Method

The standard method for reporting the assigned pavement strength classification of a pavement is:

PCN V/W/X/Y/Z

where: V is the assigned PCN value
W is the pavement type (F for flexible or R for rigid)
X is the subgrade strength category (A, B, C, or D)
Y is the maximum allowable tyre pressure (in kPa)
Z is the method by which the pavement strength has been evaluated (T for Technical or U for Experience).

For flexible pavements, four standard subgrade strength categories are used and these are defined as follows:

- Category A: High Strength CBR > 13%
- Category B: Medium Strength CBR 8 - 13%
- Category C: Low Strength CBR 4 - 8 %
- Category D: Ultra-low Strength CBR < 4%

5.1.3 Currently Published PCN Rating

The current version of EnRoute Supplement Australia (ERSA) dated 23 August 2012, shows the strength rating of the 14/32 Runway and 05/23 Runway as PCN 7/F/B/610/T Sealed. This rating is interpreted as follows:

Pavement Classification Number (PCN)	= 7
Pavement Type	= F = Flexible Pavement
Subgrade Strength	= B = Medium Strength
Maximum Tyre Pressure	= 610 kPa
Method of Evaluation	= T = Technical

No strength ratings were published for Taxiway A or the RPT Apron.

5.1.4 Use of the ACN-PCN Method

A paper entitled “Aircraft Pavement Strength Classification – The ICAO ACN-PCN Method” was presented by Bruce Rodway at the International Airport Engineering Course, Canberra, in 2003.

This paper clearly identifies that:

- The ACN-PCN method is a reporting system only and cannot be used for pavement design.

- The selection of an appropriate PCN is a business decision by the airport owner, and should not be linked to the theoretical PCN of the pavement computed from knowledge of the pavement thickness and subgrade support.
- The method cannot quantify the relative damaging effect of:
  - different aircraft types;
  - the same aircraft at different loads; or
  - different frequencies of operation.

The ACN-PCN system is the means by which **airport owners and operators regulate the use of their pavements** having regard to pavement strength and maintenance strategies in relation to revenue from landing fees. The owners are free to design the pavements by any method they choose, and are also free to assign a load rating of their choice which is published as a PCN, a subgrade strength category, and an upper tyre pressure limit. The aircraft manufacturers provide their customers, the aircraft operators, with aircraft load data. This is in the form of ACNs for all possible aircraft operating weights.

If the aircraft's ACN at its intended operating weight is less than the PCN of the runway, it is able to operate at unrestricted frequency. If the ACN is greater than the PCN, however, access is at the discretion of the airport owners. They may allow unrestricted operations at the requested operating weight, or may restrict the frequency of operations. These permits to operate at ACNs that are higher than the PCN are called pavement concessions. The owners may require that the aircraft operate at a lower load, thereby reducing the aircraft's ACN to an acceptable number. The owners can take into account any likely additional maintenance cost or reduced pavement life (i.e. reduced time between asphalt overlays) that might result from so-called 'overload' operations and balance these and other factors against the extra revenue obtained through landing charges.

ACNs must be calculated using a **fixed** technical method and they are intended to indicate the relative pavement damaging effect of each aircraft. The ACN of an aircraft is determined based on its weight and wheel layout, and the subgrade strength. The airport owner has no say in what the ACN of an aircraft is. It is a technical fact. By contrast, the PCN functions as a pavement management tool, and its selection is largely a business decision. Airport operators have considerable scope in rating their pavements. They take into account the thickness and strength of their pavements together with the observed performance of their pavements under aircraft of known ACNs if such information is available. But they also have regard to the size and numbers of aircraft they wish to attract to their airport, and take into account the amount they are prepared to spend to maintain the pavements. They can, for example raise the PCN of their runway to allow unrestricted access of a new heavier aircraft if they wish, and consciously accept the fact that their pavement maintenance bill may increase as a result of the heavier aircraft's use of the runway.

5.1.5 Aerodrome Pavement Composition Requirements

As discussed in **Section 5.1.1** the theoretical PCN for any pavement can be mathematically derived from the USACE CBR design procedure.

The design procedure still in use in Australia for flexible airport pavements is based on the former Australian Department of Housing and Construction method. This method is based on the USACE procedures developed over many years and supported by test track verification.

The CBR method for aircraft flexible pavement design was developed by the USACE during World War II and greatly refined in subsequent years. The system and its derivatives are probably still the most widely accepted methods for the design of pavements for aircraft. The method was adopted (with slight modification) by the Commonwealth Department of Works which assumed responsibility for the design of all government owned airport pavements in Australia after the war.

Without going into a high level of technical detail, the CBR design system essentially comprises three components.

1. The Thickness Requirement

The design method assumes that the pavement comprises various layers, starting with the natural soil at the site (termed the subgrade), and progressing upwards generally with each layer stronger than the underlying one. Each layer, including the subgrade, is rated in terms of its load supporting strength according to a test known as the California Bearing Ratio (CBR). The computations that are undertaken provide the thickness of stronger material required over a layer of a given CBR for it to be able to support an aircraft wheel of a given magnitude. Thus a pavement structure can be designed with each layer being checked to ensure that it is protected by sufficient cover of stronger materials above it.

The amount of cover provided is increased or decreased according to a defined procedure depending on whether the number of effective repetitions of the aircraft load is greater than or less than the standard number assumed in the computations.

If more than one aircraft type is involved, or if the same aircraft type operates at a range of loads, the cumulative effects also need to be considered.

2. The Materials Quality Requirement

In assessing the strength (CBR) of the materials to be used in the various layers above the subgrade in the pavement, the USACE in its Technical Manual TM-824-2 “Flexible Airfield Pavements”, warns against reliance on the results of laboratory CBR tests because “experience has shown that laboratory CBR tests on gravelly materials have tended to give CBR values higher than those obtained in the field”. The USACE consequently placed an upper limiting value on the CBR to be used for design purposes for materials within the pavement layers depending on the properties of the materials. These properties can be determined by simple laboratory tests, namely the amount of the material that will pass through certain key sieve sizes, and the plastic properties as measured by the Plasticity Index (PI), which together indicate the amount and nature of the clay minerals in the material.

3. The Density Requirement

The strength and stability of a pavement layer is generally improved by increasing its density. This is usually achieved during construction by subjecting the layer to numerous passes of a heavy roller to pack the individual soil and rock particles as closely together and to achieve the highest density as is possible.

Aircraft wheels can have the same effect as a roller and could possibly further pack the particles together and cause depressions or other unevenness in the surface if a high level of compaction is not achieved throughout the pavement depth in the initial construction. In order to minimise this possibility, the USACE design system specifies densities to be achieved at various depths within the pavement structure for aircraft loads of different magnitudes.

The combined effect of adherence to all three of the above can be summarised as follows:

- The **Thickness Requirement** ensures that the load transmitted from aircraft wheels to the subgrade is reduced to a value such that any progressive deformation in the subgrade will be very gradual by providing overlying stronger layers of appropriate thickness.

- The **Materials Quality Requirement** ensures that each layer of pavement material above the subgrade is stronger than the layer below so that the weakest link in the total pavement structure is the subgrade, which is the layer furthest from the aircraft wheels.

- The **Density Requirement** ensures that little, if any, further compaction occurs in any of the pavement layers above the subgrade as a result of aircraft wheel loads.

A properly designed and constructed pavement will therefore deteriorate very gradually as a result of the subgrade slowly but progressively deforming under repeated loads. Little, if any, deformation will occur within the highly compacted layers above the subgrade. As a consequence, over a long period of time the pavement could be expected to develop shallow broad depressions in the wheel tracks. Its riding quality may gradually deteriorate, and puddles of water may remain in the depressions for some time after rainfall.

In this condition the pavement is still structurally sound and can be brought to an “as new” condition by placing a variable thickness layer of asphalt on the surface, or resheeting with gravel and resealing to restore the riding quality and ensure that the surface sheds water effectively.

Pavements with bituminous surfaces normally require resurfacing within a period of say 10-15 years as a result of ageing of the surface. It is common for a pavement to be designed for a life of about this value so that correction of the riding quality and surface drainage can be undertaken at the same time as the cyclic resurfacing.

5.1.6 14/32 Runway, 05/23 Runway, Taxiway A, and RPT Apron Pavement Strength

The structure of flexible pavements generally comprises a range of materials from asphalt and crushed rock to stabilised materials and natural subgrade.

In order to evaluate the theoretical bearing strength of a pavement structure, accurate information on the material layer thickness and material characteristics within the pavement structure is required. Material equivalency factors are used to determine the equivalent thickness that is required by alternative materials to achieve the same structural bearing strength.

The material equivalency factors that have been adopted to determine existing pavement thicknesses are presented in **Table 5-1**.

Table 5-1: Adopted Material Equivalency Factors

Pavement Material	Material Equivalency Factors		
	Adopted	ICAO Range	FAA Range
Asphalt to crushed rock (for thickness > 100mm only)	1.3	1.5 to 2	1.2 to 1.6
Stablised crushed rock (base) to crushed rock (base) (for thickness > 100mm only)	1.5	1.5 to 2	1.2 to 1.6
Stablised crushed rock (subbase) to crushed rock (subbase) (for thickness > 100mm only)	1.5	1.5 to 2	1.6 to 2.3
Portland cement concrete to crushed rock (base) (for thickness >100mm only)	2	2 to 3	-
Crushed rock base to uncrushed gravel	0.5	1	0.2 to 0.8

Table 5-2 shows a summary of the representative pavement thicknesses and subgrade strengths adopted for the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron together with the theoretical PCN ratings.

The representative pavement thicknesses were obtained from the boreholes undertaken as part of the geotechnical investigation. Sprayed seal surfaces do not provide any contribution to the pavement structural strength and is not considered as part of the representative pavement thicknesses.

On sections where no boreholes were undertaken, representative pavement thicknesses from other sections which displayed similar deflections have been adopted.

Table 5-2: Theoretical PCN Ratings – 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron

Area	Section	Chainages (m)	Representative Pavement Thickness (mm)	Representative Subgrade CBR (%)	Theoretical PCN	Subgrade Strength Category
14/32 Runway	1	0 – 120	150	6	2	C
	2	120 – 300	500	6	19	C
	3	300 – 500 1090 – 1400	580	7	30	C
	4	500 – 830 1500 – 1600	350	9	6	B
	5	830 – 980 1400 – 1500	180	7	3	C
	6	980 – 1090	400	5	10	C
	7	1600 – 1740	350	6	9	C
	8	RESA -70 – 0 1740 – 1760	150	4	1	C
05/23 Runway	1	0 – 35	550	8	31	B
	2	70 – 280	350	10	16	B
	3	280 – 860	400	13	29	B
	4	860 – 950	400	15	35	A
	5	950 – 1110	350	9	14	B
	6	RESA -50 – 0	150	5	1	C

Area	Section	Chainages (m)	Representative Pavement Thickness (mm)	Representative Subgrade CBR (%)	Theoretical PCN	Subgrade Strength Category
		1110 – 1140				
Taxiway A	1	0 – 105	200	5	2	C
RPT Apron	1	105 – 120 135 – 175 (Offset 5L to east apron edge)	350	11	18	B
	2	120 – 130 130 – 165 (Offset 5L to west apron edge)	200	8	4	C
	3	130 – 135 (Offset 5L to east apron edge) 165 – 175 (Offset 5L to west apron edge)	200	4	2	C
Current PCN For 14/32 and 05/23 Runways					**7**	**B**

Based on the geotechnical laboratory test results and the relatively high FWD unit deflections, the actual theoretical PCN is considered to be less than the value stated in Table 5-2 due to the base/sub-base course potentially not satisfying the Material Quality Requirement and Material Density Requirement as identified in Section 5.1.5. If the Material Quality Requirement and Material Density Requirement are not satisfied, the theoretical load bearing capacity of the pavement would be reduced and therefore the theoretical PCN would be reduced also.

Considering the base/sub-base materials potential poor quality and potential poor density it is suggested that a material equivalency factor of 0.6 be applied to achieve a more realistic total equivalent pavement thickness (i.e. equivalent pavement thickness x 0.6). A summary of reduced theoretical PCNs is provided in **Table 5-3**.

Table 5-3: Theoretical PCN Ratings – 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron Using Material Equivalency of 0.6

Area	Section	Chainages (m)	Representative Pavement Thickness (mm)	Representative Subgrade CBR (%)	Theoretical PCN	Subgrade Strength Category	General Allowable MTOW Range (kg) (Note 1)
14/32 Runway	1	0 – 120	90	6	1	C	**Aircraft < 5,700 kg**
	2	120 – 300	300	6	7	C	Aircraft < 10,000 kg
	3	300 – 500 1090 – 1400	350	7	11	C	Aircraft < 10,000 kg
	4	500 – 830 1500 – 1600	210	9	5	B	**Aircraft < 5,700 kg**
	5	830 – 980 1400 – 1500	110	7	1	C	**Aircraft < 5,700 kg**
	6	980 – 1090	240	5	4	C	**Aircraft < 5,700 kg**
	7	1600 – 1740	210	6	3	C	**Aircraft < 5,700 kg**
	8	RESA -70 – 0 1740 – 1760	90	4	1	C	**Aircraft < 5,700 kg**
05/23 Runway	1	0 – 35	330	8	11	B	Aircraft < 10,000 kg
	2	70 – 280	210	10	6	B	Aircraft < 10,000 kg
	3	280 – 860	240	13	10	B	Aircraft < 10,000 kg
	4	860 – 950	240	15	13	A	Aircraft < 15,000 kg
	5	950 – 1110	210	9	5	B	**Aircraft < 5,700 kg**
	6	RESA	90	5	1	C	**Aircraft < 5,700 kg**

Area	Section	Chainages (m)	Representative Pavement Thickness (mm)	Representative Subgrade CBR (%)	Theoretical PCN	Subgrade Strength Category	General Allowable MTOW Range (kg) (Note 1)
		-50 – 0 1110 – 1140					
Taxiway A	1	0 – 105	120	5	1	C	**Aircraft < 5,700 kg**
RPT Apron	1	105 – 120 135 – 175 (Offset 5L to east apron edge)	210	11	7	B	Aircraft < 10,000 kg
	2	120 – 130 130 – 165 (Offset 5L to west apron edge)	120	8	1	C	**Aircraft < 5,700 kg**
	3	130 – 135 (Offset 5L to east apron edge) 165 – 175 (Offset 5L to west apron edge)	120	4	1	C	**Aircraft < 5,700 kg**
Current PCN For 14/32 and 05/23 Runways					**7**	**B**	

Notes:
1. General Allowable MTOW Range based on the weights of aircraft that correspond to ACN's that are equal to the given theoretical PCN. This is not definitive for all aircraft within the weight range identified and is only provided for the purpose of comparison. For individual aircraft a detailed analysis should be undertaken based on the ACN-PCN system.

6. Pavement Strengthening Requirements

6.1 Aircraft Traffic Scenarios

The following scenarios have been adopted as representative of the potential future aircraft traffic at Flinders Island Aerodrome.

Traffic Scenario A

Metro 23	6 arrivals per day at Maximum Landing Weight (7.5 tonnes)
Metro 23	6 departures per day at Maximum Take-off Weight (7.5 tonnes)
King Air 200	6 arrivals per day at Maximum Landing Weight (5.7 tonnes)
King Air 200	6 departures per day at Maximum Take-off Weight (5.7 tonnes)

Traffic Scenario B

Metro 23	8 arrivals per day at Maximum Landing Weight (7.5 tonnes)
Metro 23	8 departures per day at Maximum Take-off Weight (7.5 tonnes)
SAAB 340	3 arrivals per day at Maximum Landing Weight (12.9 tonnes)
SAAB 340	3 departures per day at Maximum Take-off Weight (13.2 tonnes)

Traffic Scenario C

Metro 23	12 arrivals per day at Maximum Landing Weight (7.5 tonnes)
Metro 23	12 departures per day at Maximum Take-off Weight (7.5 tonnes)
SAAB 340	6 arrivals per day at Maximum Landing Weight (12.9 tonnes)
SAAB 340	6 departures per day at Maximum Take-off Weight (13.2 tonnes)
DHC-8-300	3 arrivals per day at Maximum Landing Weight (18.7 tonnes)
DHC-8-300	3 departures per day at Maximum Take-off Weight (18.7 tonnes)

Note that in Traffic Scenario B and C, aircraft smaller than a Metro 23 will not influence the pavement thickness design due to their relatively small loads when compared to the other larger aircraft being considered. Accordingly, aircraft such as the King Air 200 have been removed from Traffic Scenarios A and B.

These scenarios have been adopted to determine the pavement upgrade requirements for a 20 year functional design life.

6.2 Wearing Course Options

It has been assumed that the wearing course for any reconstructed or granular overlaid pavement will be a two coat (likely 10mm/7mm) bitumen seal in the short to medium term due to the cost difference between asphalt and a two coat bitumen seal, which may be attributed to labour, plant and equipment

transportation and the lack of high quality construction materials currently available on Flinders Island. Considering the likely frequency of use, lower wheel loads and lower tyre pressures of the probable smaller aircraft in the short to medium term, an aerodrome specific two coat bitumen seal is appropriate. It is recommended in the medium to long term that if aircraft greater than 10,000kg MTOW are proposed to utilise Flinders Island Aerodrome that consideration be given to an asphalt wearing course as the potential aircraft safety risk and pavement maintenance is minimised with an asphalt wearing course as opposed to a two coat bitumen seal.

For an aerodrome bituminous seal coat it is noted that high quality materials, workmanship and construction techniques are required for the duration of the works to ensure an adequate wearing course is achieved (well compacted, tight surface texture with minimal loose aggregate). The level of construction and material quality generally accepted for a rural road will not be adequate for the movement area wearing courses at the aerodrome. It is recommended that an aerodrome specific bituminous seal coat design be undertaken prior to tender and construction. It is also recommended that Contractors with suitable aerodrome construction experience be sought for such work, as well as ensuring that construction is closely monitored by suitably qualified engineers.

It is noted that for many local government owned and operated Aerodromes around Australia it is common practice for local governments to incorporate the cyclical re-sealing of the aerodrome movement areas pavements into the overall road asset maintenance program in order to achieve capital expenditure reductions.

6.3 Concept Pavement Upgrade Design Options

Two concept pavement upgrade design options were considered as follows;

- Pavement reconstruction; and
- Pavement overlay with granular material (crushed rock) and a bituminous spray seal surfacing.

The pavement reconstruction option involves excavation and removal of the existing pavement material to the required depth to allow new cement treated crushed rock material sub-base course and new granular crushed rock base course material to be placed followed by a prime coat and bituminous sprayed seal surfacing. The main objective of this option is to ensure pavement material and construction quality and to maintain the existing finish surface levels and profile as much as possible in order to minimise the amount of work that is required on the shoulders and adjacent grassed flank areas to achieve grade compliance.

The pavement granular overlay option involves maintaining the existing pavement structure, proof rolling the existing surface, overlaying the existing pavement with new granular crushed rock base course material followed by a prime coat and bituminous sprayed seal surfacing. The objective of this option is to retain the existing pavement material as a substrate for the pavement strengthening overlay. This option will increase the total pavement thickness over the existing subgrade which will reduce the horizontal strain on the subgrade, subsequently minimising the total new granular crushed rock base course material overlay thickness required to increase the existing pavement strength.

However, with an increase in finished surface level, additional crushed rock base course material would be required on the shoulders to match the overlay surface levels and additional fill material would also be required on the adjacent grassed flanks to achieve drainage and grade compliance. The elevated edge lights and SIT pits also may have to be lifted if additional fill material is required on the flanks. This option does not provide assurance in the overall strength of the pavement due to the potential variability in the quality of the underlying pavement materials and the underlying pavement construction techniques.

The selection of the most appropriate form of construction will need to be determined based on an assessment of the cost, existing surface grade and shape (including compliance with MOS Part 139), quality of material available, quality of construction equipment available, finished pavement quality and maintaining safe aircraft operations at the aerodrome. The existing pavement surface grading and drainage compliance has the potential to be a governing factor in which construction method is selected. A detailed geometric assessment of the existing surface shape can only be determined once the runways, taxiways and RPT Apron are surveyed over a grid (normally 10m longitudinally and 3.75m transversely). This is normally undertaken prior to the concept or preliminary design phase.

Table 6-1 to **Table 6-3** illustrates the pavement thickness requirements for a range of subgrade CBR values to support the aircraft types and frequencies detailed in Traffic Scenarios A, B and C. A design life of 20 years has been adopted for both pavement upgrade options. The pavement design thicknesses are considered preliminary only and do not take into consideration the individual representative pavement thickness and subgrade CBR values for each section of the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron.

For the pavement granular overlay option, the average existing pavement thicknesses for the 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron are based on the representative pavement thicknesses shown in **Table 5-2** for comparison purposes. The adopted average existing pavement thicknesses are presented in **Table 6-1** to **Table 6-3.**

Based on the representative existing pavement thicknesses and the representative subgrade CBR values for the sections shown in **Table 5-2,** the existing pavement thicknesses of the 14/32 Runway and 05/23 Runway are generally adequate to cater for Traffic Scenarios A and B, with the exception of Sections 1 and 5 on the 14/32 Runway. Due to a combination of relatively low subgrade CBR values and small existing pavement thicknesses, pavement strengthening would be required in Sections 1 and 5.

For Traffic Scenario C, majority of the sections on the 14/32 Runway would require pavement strengthening. The existing pavement thickness of the 05/23 Runway is generally adequate to accommodate the aircraft types and frequency for Traffic Scenario C for the range of subgrade CBR values presented.

Pavement strengthening is required for Taxiway A and RPT Apron for Traffic Scenarios A, B and C.

Table 6-1: Pavement Thickness Requirements – Traffic Scenario A

Area	Average Existing Pavement Thickness (mm)	Option 1 – Pavement Reconstruction				Option 2 – Granular Overlay			
		Design Subgrade CBR (%)				Design Subgrade CBR (%)			
		5%	6%	8%	10%	5%	6%	8%	10%
14/32 Runway	400	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
05/23 Runway	380	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Taxiway A	200	110mm Class A CR 150mm CTCR	100mm Class A CR 140mm CTCR	100mm Class A CR 100mm CTCR	75mm Class A CR 100mm CTCR	180mm Class A CR	140mm Class A CR	75mm Class A CR*	75mm Class A CR*
RPT Apron	250	140mm Class A CR 140mm CTCR	130mm Class A CR 130mm CTCR	90mm Class A CR 100mm CTCR	N/R	160mm Class A CR	120mm Class A CR	75mm Class A CR*	N/R

Note: N/R denotes pavement strengthening not required; CR denotes Crushed Rock; CTCR denotes Cement Treated Crushed Rock

Table 6-2: Pavement Thickness Requirements – Traffic Scenario B

Area	Average Existing Pavement Thickness (mm)	Option 1 – Pavement Reconstruction				Option 2 – Granular Overlay			
		Design Subgrade CBR (%)				Design Subgrade CBR (%)			
		5%	6%	8%	10%	5%	6%	8%	10%
14/32 Runway	400	75mm Class A CR 100mm CTCR	N/R	N/R	N/R	75mm Class A CR*	N/R	N/R	N/R
05/23 Runway	380	75mm Class A CR 100mm CTCR	N/R	N/R	N/R	75mm Class A CR*	N/R	N/R	N/R
Taxiway A	200	140mm Class A CR 150mm CTCR	120mm Class A CR 140mm CTCR	110mm Class A CR 110mm CTCR	100mm Class A CR 100mm CTCR	120mm Class A CR 120mm Class B CR	180mm Class A CR	75mm Class A CR*	75mm Class A CR*
RPT Apron	250	140mm Class A CR 150mm CTCR	130mm Class A CR 140mm CTCR	100mm Class A CR 100mm CTCR	75mm Class A CR 100mm CTCR	190mm Class A CR	140mm Class A CR	75mm Class A CR*	75mm Class A CR*

Note: N/R denotes pavement strengthening not required; CR denotes Crushed Rock; CTCR denotes Cement Treated Crushed Rock

Table 6-3: Pavement Thickness Requirements – Traffic Scenario C

Area	Average Existing Pavement Thickness (mm)	Option 1 – Pavement Reconstruction				Option 2 – Granular Overlay			
		Design Subgrade CBR (%)				Design Subgrade CBR (%)			
		5%	6%	8%	10%	5%	6%	8%	10%
14/32 Runway	400	120mm Class A CR 150mm CTCR	75mm Class A CR 100mm CTCR	NR	NR	100mm Class A CR	75mm Class A CR*	NR	NR
05/23 Runway	380	110mm Class A CR 180mm CTCR	90mm Class A CR 110mm CTCR	75mm Class A CR 100mm CTCR	NR	120mm Class A CR	75mm Class A CR*	75mm Class A CR*	NR
Taxiway A	200	170mm Class A CR 180mm CTCR	150mm Class A CR 170mm CTCR	130mm Class A CR 140mm CTCR	120mm Class A CR 120mm CTCR	160mm Class A CR 170mm Class B CR	130mm Class A CR 130mm Class B CR	170mm Class A CR	120mm Class A CR
RPT Apron	250	170mm Class A CR 180mm CTCR	160mm Class A CR 170mm CTCR	140mm Class A CR 150mm CTCR	130mm Class A CR 130mm CTCR	140mm Class A CR 150mm Class B CR	110mm Class A CR 120mm Class B CR	130mm Class A CR	90mm Class A CR

Note: N/R denotes pavement strengthening not required; CR denotes Crushed Rock; CTCR denotes Cement Treated Crushed Rock

6.4 Indicative Budget Costs

6.4.1 Basis for Costing

Indicative budget costs for providing existing pavement upgrades for aircraft operations as detailed in this report are summarised below. All costs exclude GST, allowances for other fees, other Flinders Council costs and contingencies.

Aurecon's considers indicative budget costs to be a first cost indication (at current prices at the date stated). They are provided to Flinders Council based on an outline estimate of Flinders Council's needs; prepared by reference to feasibility sketches or assessed without sketches (in some instances) and based on Aurecon's knowledge of costs for similar projects. They have been prepared without the benefit of detailed design and without detailed consideration of survey, geometry, drainage, existing/proposed services or other local information. An indicative cost is intended only as a guide for a pre-feasibility and planning purposes, it is not an estimate and may not be quoted as such. Indicative budget costs are prepared using broad cost parameters (eg. earthworks and pavements on a cost per square metre basis).

Since Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over Contractor's methods of determining prices, or over competitive bidding or market conditions, any opinion or indicative costs by Aurecon is made on the basis of our experience and represents Aurecon's judgement as experienced and qualified professional engineers. Aurecon cannot and does not, however, guarantee that proposals, bids or actual construction costs will not vary from our budgets and estimates.

6.4.2 Indicative Budget Cost Breakdown

Table 6-4 to **Table 6-6** provide a summary of indicative budget costs for both pavement strengthening options for each traffic scenario as described in **Section 6.1** and **Section 6.2** based on the following average representative subgrade CBR values for the movement areas described in **Section 5.1.6**.

- 14/32 Runway – CBR 7%;
- 05/23 Runway – CBR 12%;
- Taxiway A – CBR 5%; and
- RPT Apron – CBR 8%.

Table 6-4: Indicative Budget Cost – Traffic Scenario A

Option	Item	Cost ($M)
Option 1 – Pavement Reconstruction	Preliminaries	$0.10
	Demolition and removal of existing pavement	$0.15
	Taxiway A pavement reconstruction	$0.15
	RPT Apron pavement reconstruction	$0.27
	Line Marking	$0.01
	Stormwater Drainage	$0.04
	Provisional Sums	$0.05
	Total	**$0.8**
Option 2 – Pavement Overlay	Preliminaries	$0.08
	Taxiway A pavement overlay	$0.15
	RPT Apron pavement overlay	$0.15
	Aeronautical Ground Lighting	$0.02
	Line Marking	$0.01
	Stormwater Drainage	$0.04
	Provisional Sums	$0.05
	Total	**$0.5**

Table 6-5: Indicative Budget Cost – Traffic Scenario B

Option	Item	Cost
Option 1 – Pavement Reconstruction	Preliminaries	$0.10
	Demolition and removal of existing pavement	$0.16
	Taxiway A pavement reconstruction	$0.16
	RPT Apron pavement reconstruction	$0.27
	Line Marking	$0.01
	Stormwater Drainage	$0.04
	Provisional Sums	$0.05
	Total	**$0.8**
Option 2 – Pavement Overlay	Preliminaries	$0.08
	Taxiway A pavement overlay	$0.20
	RPT Apron pavement overlay	$0.16
	Aeronautical Ground Lighting	$0.02
	Line Marking	$0.01
	Stormwater Drainage	$0.04
	Provisional Sums	$0.05
	Total	**$0.6**

Table 6-6: Indicative Budget Cost – Traffic Scenario C

Option	Item	Cost
Option 1 – Pavement Reconstruction	Preliminaries	$0.40
	Demolition and removal of existing pavement	$1.30
	14/32 Runway pavement construction	$3.20
	Taxiway A pavement reconstruction	$0.16
	RPT Apron pavement reconstruction	$0.31
	Aeronautical Ground Lighting	$0.05
	Line Marking	$0.06
	Stormwater Drainage	$0.30
	Provisional Sums	$0.30
	Total	**$6.1**
Option 2 – Pavement Overlay	Preliminaries	$0.40
	14/32 Runway pavement overlay	$2.45
	Taxiway A pavement overlay	$0.19
	RPT Apron pavement overlay	$0.18
	Aeronautical Ground Lighting	$0.08
	Line Marking	$0.06
	Stormwater Drainage	$0.30
	Provisional Sums	$0.45
	Total	**$4.2**

The indicative budget costs are based on construction costs and include an estimation of:

- Preliminaries such as Contractor site establishment and disestablishment, Contractor site administration, Contractor QA and environmental management, maintenance of site access roads, surveying and supply of As-Built drawings;
- Pavement excavation and earthworks and subgrade preparation including cartage and compaction and proof rolling;
- Pavement construction (based on bituminous sprayed seal surfacing, base course, sub-base course and cement treated crushed rock material where applicable);
- Pavement construction from locally sourced material only;
- Select fill material for subgrade replacement from local sourced materials only;
- Lifting of elevated edge lights and SIT pits including new concrete bases;
- Line marking;
- Stormwater drainage (no allowance for sub-surface drainage); and
- Provisional items estimate such as treatment of existing pavement, subgrade replacement and topsoiling of disturbed areas.

The indicative budget costs specifically exclude an estimation of:

- Sprayed seal treatment on areas where pavement strengthening is not required;
- Costs associated with excavation and earthworks to achieve compliant design longitudinal and transverse gradients (vertical geometry);
- Importing select fill material for subgrade replacement from a remote site;
- Disposal of cut material from site which may not be suitable for use as general fill in flanks;
- Costs associated with delays as a result of weather during construction;
- Costs associated with new infrastructure and services (including buildings, roads, electrical, communications, sewerage, water, gas and fuel facilities);
- Costs associated with upgrades to existing infrastructure and services (including buildings, roads, electrical, communications, sewerage, water, gas and fuel facilities);
- Costs associated with future pavement, drainage, lighting or infrastructure expansion;
- Costs associated with any aerodrome fencing and security control;
- Costs associated with any restrictions to airfield operations during construction;
- Costs associated with any aircraft operational matters including:
  - Take-off and approach tracks;
  - GPS approaches;
  - Noise and noise abatement procedures;
  - Navigational aids (with the exception of line marking)
  - Obstacle Limitation Surfaces;
- Costs associated with the potential development or redevelopment of airside areas into the future; and
- Costs associated with any additional statutory, regulatory, planning or environmental requirements associated with the pavement strengthening options.

6.4.3 Accuracy of Indicative Budget Costs

The accuracy of the indicative budget cost estimates is considered to be of the order of 30% too high to 30% too low.

The accuracy is governed by the limitations identified in **Section 6.4.1**.

6.4.4 Potential Project Cost Savings

Once a preferred option is adopted by Flinders Council for further development to tender design, there is potential for overall project cost savings related to the following:

- Adopting a combination of both pavement strengthening options to achieve a more economical pavement strengthening design;
- Flinders Council sources suitable aggregate from a local quarry (compared to importing material from Tasmania);

- The assumed aircraft traffic is refined (potentially reducing the pavement thickness); and
- Flinders Council may complete earthworks and other construction elements at rates cheaper than market rates.

7. Conclusions and Recommendations

7.1 General

Based on the geotechnical investigation results provided by Tasman Geotechnics and the FWD test data provided by Fugro PMS, the subgrade strength of the existing 14/32 Runway, 05/23 Runway, Taxiway A and RPT Apron at Flinders Aerodrome were assessed.

The existing pavement comprises sprayed seal surface overlying a base course layer with thicknesses ranging from 100 mm to 550 mm over the existing subgrade. No sub-base layers were identified during the borehole investigation.

The laboratory test results indicate that the base course material does not typically satisfy the material characteristics anticipated for aerodrome pavement base course materials and is more comparable to sub-base course material. However, it is not uncommon for regional aerodromes to use sub-base course material in lieu of better quality base course material due to material availability (remoteness) and budget constraints, given that regional aerodromes do not normally receive the heavier RPT aircraft that typically operate at Australian capital city airports.

The subgrade material was predominantly sand with thin layers of clay material, overlying a clayey sand or sandy clay. The theoretical subgrade CBR values obtained from the FWD test analysis were between 3% and 21% which is comparable to the values obtained from the soaked CBR tests performed during the geotechnical investigation (CBR values in the range of 3% to 30%).

Based on Austroads publication 'Guide to Pavement Technology: Part 2 – Pavement Structural Design', the presumptive CBR values for sand subgrade are generally between 10 to 18%. The presence of clay in the subgrade material is likely to have contributed to the lower CBR values whilst the presence of gravel in the subgrade material, combined with the confining effects of the mould during the soaked CBR tests, is likely to have contributed to the higher soaked CBR test values.

The representative subgrade CBR values for the 14/32 Runway were between 5% and 9%, which relates to a subgrade category C, meaning it is generally lower than the published subgrade category of B. CBR values for subgrade category B are between 9% and 13%.

Based on the above, consideration should be given to lowering the published subgrade category from B to C for the 14/32 Runway.

Based on the representative subgrade CBRs and representative pavement thicknesses obtained from the FWD and geotechnical investigations, the theoretical PCN ratings for the existing pavements excluding the Runway Safety End Areas (RESA) that are lower than the 14/32 Runway and 05/23 Runway published PCN rating of 7/F/B/610/T, are as follows:

	Theoretical PCN Rating
• 14/32 Runway, Section 1	1/F/C/610/T
• 14/32 Runway, Section 4	5/F/B/610/T
• 14/32 Runway, Section 5	1/F/C/610/T
• 14/32 Runway, Section 6	4/F/C/610/T
• 14/32 Runway, Section 7	3/F/C/610/T
• 05/23 Runway, Section 2	6/F/C/610/T
• 05/23 Runway, Section 5	5/F/C/610/T
• Taxiway A, Section 1	1/F/C/610/T
• RPT Apron, Section 2	1/F/C/610/T
• RPT Apron, Section 3	1/F/C/780/T

If the ACN's of the aircraft that are currently operating at Flinders Aerodrome are significantly higher than the theoretical PCN ratings shown in **Table 5-3**, it is recommended that these sections of pavement are closely monitored for evidence of distress under traffic. Where appropriate routine pavement maintenance or pavement reconstruction should be undertaken to reduce or eliminate potential safety risks to aircraft operations.

Three traffic scenarios were considered in the concept pavement strengthening design. Scenario A is based on the aircraft mix that currently operates at Flinders Island Aerodrome. Scenarios B and C are medium to long term scenarios that include heavier Code 3C aircraft such as the SAAB 340 and/or the DHC-8-300.

Two concept pavement strengthening options were investigated, the first option is pavement reconstruction and the second option is a granular overlay of the existing pavement.

The pavement reconstruction option involves excavation and removal of the existing pavement material to the required depth to allow new cement treated crushed rock material sub-base course and new granular crushed rock base course material to be placed followed by a prime coat and bituminous sprayed seal surfacing. The main objective of this option is to ensure pavement material and construction quality and to maintain the existing finish surface levels and profile as much as possible in order to minimise the amount of work that is required on the shoulders and adjacent grassed flank areas to achieve grade compliance.

The pavement granular overlay option involves maintaining the existing pavement structure, proof rolling the existing surface, overlaying the existing pavement with new granular crushed rock base course material followed by a prime coat and bituminous sprayed seal surfacing. The objective of this option is to retain the existing pavement material as a substrate for the pavement strengthening overlay. This option will increase the total pavement thickness over the existing subgrade which will reduce the horizontal strain on the subgrade, subsequently minimising the total new granular crushed rock base course material overlay thickness required to increase the existing pavement strength.

However, with an increase in finished surface level, additional crushed rock base course material would be required on the shoulders to match the overlay surface levels and additional fill material would also be required on the adjacent grassed flanks to achieve drainage and grade compliance. The elevated edge lights and SIT pits also may have to be lifted if additional fill material is required on the flanks. This option does not provide assurance in the overall strength of the pavement due to the potential variability in the quality of the underlying pavement materials and the underlying pavement construction techniques.

The majority of the 14/32 Runway does not require pavement strengthening to cater for Traffic Scenarios A and B, whilst the majority of the sections would require pavement strengthening to accommodate Traffic Scenario C.

The 05/23 Runway does not generally require any pavement strengthening for Traffic Scenarios A, B and C.

Taxiway A and the RPT Apron require pavement strengthening for all traffic scenarios.

The indicative budget costs indicate that the difference in cost between Traffic Scenarios A and B is marginal. The pavement strengthening cost to cater for Traffic Scenario C is significantly higher, due to the required pavement strengthening of the 14/32 Runway which was not required for Traffic Scenarios A and B.

The selection of the most appropriate form of construction will need to be determined based on an assessment of the cost, existing surface grade and shape (including compliance with MOS Part 139),

quality of material available, quality of construction equipment available, finished pavement quality and maintaining safe aircraft operations at the aerodrome. The existing pavement surface grading and drainage compliance has the potential to be a governing factor in which construction method is selected. A detailed geometric assessment of the existing surface shape can only be determined once the runways, taxiways and RPT Apron are surveyed over a grid (normally 10m longitudinally and 3.75m transversely). This is normally undertaken prior to the concept or preliminary design phase.

It has been assumed that the wearing course for any reconstructed or granular overlaid pavement will be a two coat (likely 10mm/7mm) bitumen seal in the short to medium term due to the cost difference between asphalt and a two coat bitumen seal, which may be attributed to labour, plant and equipment transportation and the lack of high quality construction materials currently available on Flinders Island. Considering the likely frequency of use, lower wheel loads and lower tyre pressures of the probable smaller aircraft in the short to medium term, an aerodrome specific two coat bitumen seal is appropriate. It is recommended in the medium to long term that if aircraft greater than 10,000kg MTOW are proposed to utilise Flinders Island Aerodrome that consideration be given to an asphalt wearing course as the potential aircraft safety risk and pavement maintenance is minimised with an asphalt wearing course as opposed to a two coat bitumen seal.

For an aerodrome bituminous seal coat it is noted that high quality materials, workmanship and construction techniques are required for the duration of the works to ensure an adequate wearing course is achieved (well compacted, tight surface texture with minimal loose aggregate). The level of construction and material quality generally accepted for a rural road will not be adequate for the movement area wearing courses at the aerodrome. It is recommended that an aerodrome specific bituminous seal coat design be undertaken prior to tender and construction. It is also recommended that Contractors with suitable aerodrome construction experience be sought for such work, as well as ensuring that construction is closely monitored by suitably qualified engineers.

It is noted that for many local government owned and operated Aerodromes around Australia it is common practice for local governments to incorporate the cyclical re-sealing of the aerodrome movement areas pavements into the overall road asset maintenance program in order to achieve capital expenditure reductions.

7.2 Pavement Upgrade Recommendations

It is difficult to provide a definitive pavement upgrade recommendation for the movement areas at Flinders Island Aerodrome considering the following

- The variable existing subgrade strength;
- The potential variable quality of existing pavement materials;
- The potential variable quality of construction techniques previously employed to construct the existing pavements;
- The unknown future aircraft types and frequency of operations in the medium (5 to 20 years) to long term (20 years and beyond);
- The commercial considerations of Flinders Council's expenditure on pavement maintenance compared to pavement upgrade (plant and equipment, materials and labour) in order to maintain safe movement areas.

In the short term (less than 5 years) it is recommended that if the ACN's of the aircraft that are currently operating at Flinders Aerodrome are significantly higher than the theoretical PCN ratings shown in **Table 5-3**, issue pavement concessions (where required and appropriate) and ensure these sections of pavement are closely monitored for evidence of distress under traffic. Where appropriate

routine pavement maintenance or pavement reconstruction (in localised areas) should be undertaken to reduce or eliminate potential safety risks to aircraft operations.

In the medium term (less than 20 years) the low risk option recommended is to monitor the ACN's of the aircraft that propose to operate at Flinders Aerodrome to establish if they are significantly higher than the theoretical PCN ratings shown in **Table 5-3**, issue pavement concessions (where required and appropriate) and ensure these sections of pavement are closely monitored for evidence of distress under traffic. Where appropriate routine pavement maintenance or pavement reconstruction (in localised areas) should continue to be undertaken to reduce or eliminate potential safety risks to aircraft operations. Cyclical pavement maintenance should also continue (i.e. a bituminous spray seal should be constructed as required every 10-15 years). This medium term recommendation is dependent on the current aircraft traffic remaining unchanged. If the aircraft traffic does change or is foreseen to change in the medium term, and the potential aircraft operating are larger and/or more frequent, this is considered the trigger point for the long term recommendation process to commence.

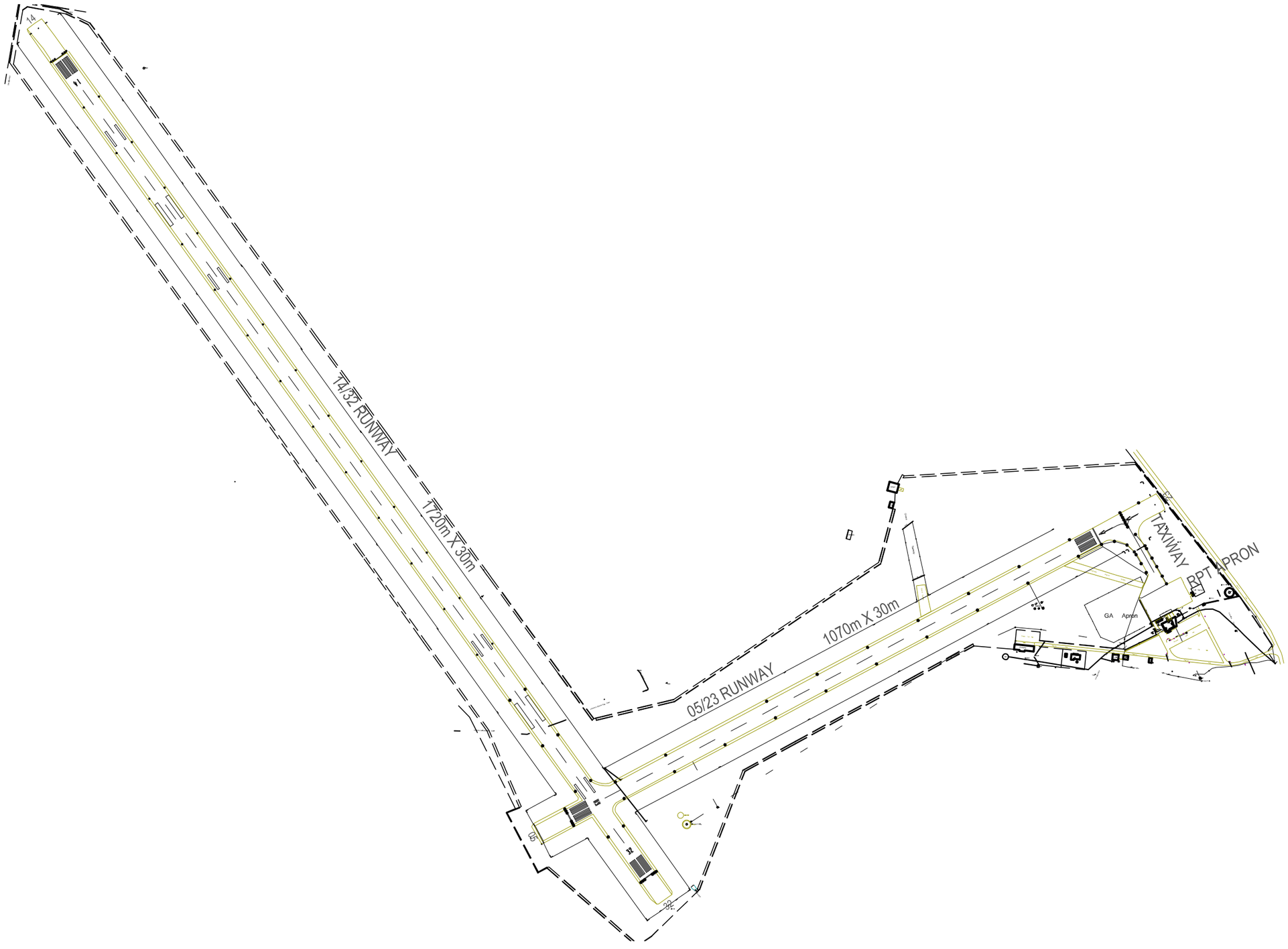
It is recommended that detailed planning and pavement engineering advice be sought for routine pavement maintenance, localised pavement reconstruction as well as cyclical pavement maintenance to ensure that the maintenance activities are targeted, of the highest quality possible and do not result in the creation of a situation where the repair works give rise to further pavement issues.

Furthermore, maintenance activities such as wearing course construction (bituminous spray seal) and pavement reconstruction should be undertaken, as previously discussed using skilled labour, suitably sized equipment and high quality materials with a high level of quality control, including being technically specified and monitored by a suitably qualified engineer to ensure an adequate wearing course is achieved (well compacted, tight surface texture with minimal loose aggregate).

In the long term (greater than 20 years) the lowest risk option recommended is adopt Traffic Scenario C and investigate, plan, design and construct a new Runway (orientation likely to be 10/28) west of the existing 14/32 Runway connecting to the 14/32 Runway and reconstruct Taxiway A and RPT Apron pavements at Flinders Island Aerodrome (lowest disruption to existing aircraft operations).

Due to the potential extended disruption to existing aircraft operations during construction it is not considered appropriate to reconstruct or overlay the existing 14/32 Runway, Taxiway and RPT Apron pavements at Flinders Island Aerodrome.

Appendix A
Figures



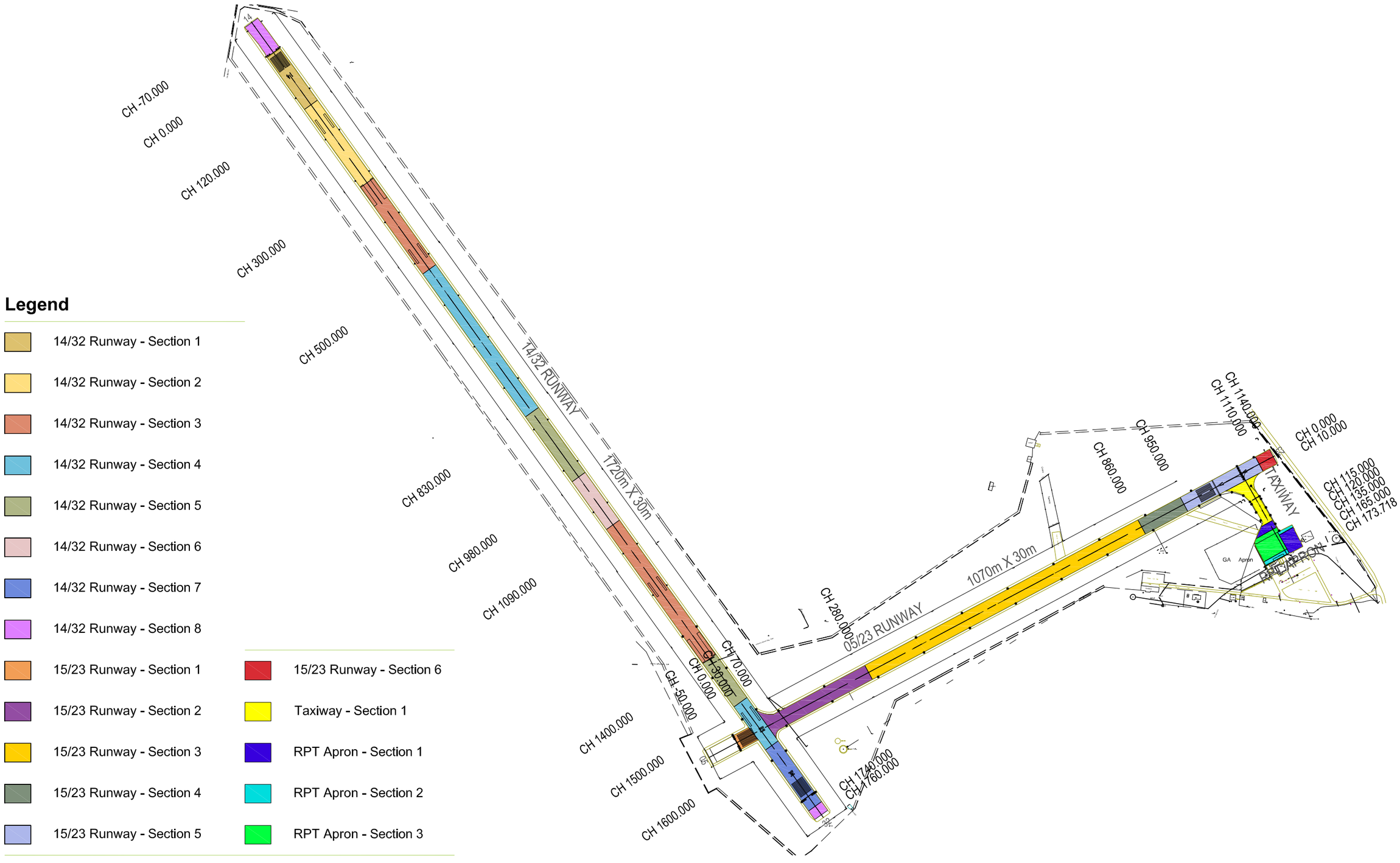
NOT TO SCALE

Flinders Island Aerodrome

229779.001

Layout Plan

Figure 1



Legend

- 14/32 Runway - Section 1
- 14/32 Runway - Section 2
- 14/32 Runway - Section 3
- 14/32 Runway - Section 4
- 14/32 Runway - Section 5
- 14/32 Runway - Section 6
- 14/32 Runway - Section 7
- 14/32 Runway - Section 8
- 15/23 Runway - Section 1
- 15/23 Runway - Section 2
- 15/23 Runway - Section 3
- 15/23 Runway - Section 4
- 15/23 Runway - Section 5
- 15/23 Runway - Section 6
- Taxiway - Section 1
- RPT Apron - Section 1
- RPT Apron - Section 2
- RPT Apron - Section 3

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Flinders Island Aerodrome

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Pavement Strength Layout Plan

Figure 2

FIGURE 3 - FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

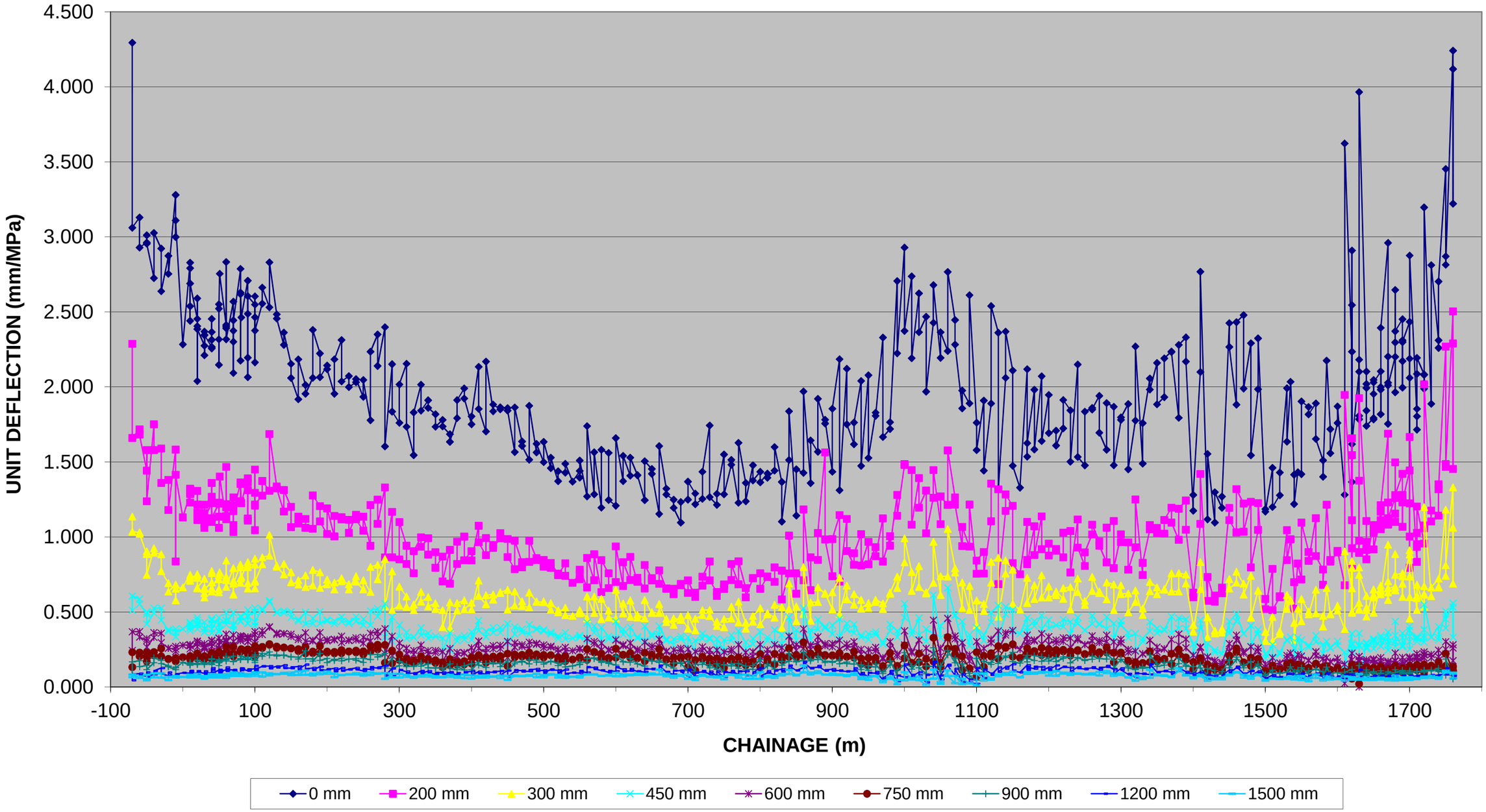


FIGURE 4 - FLINDERS ISLAND AERODROME
05/23 RUNWAY UNIT DEFLECTIONS

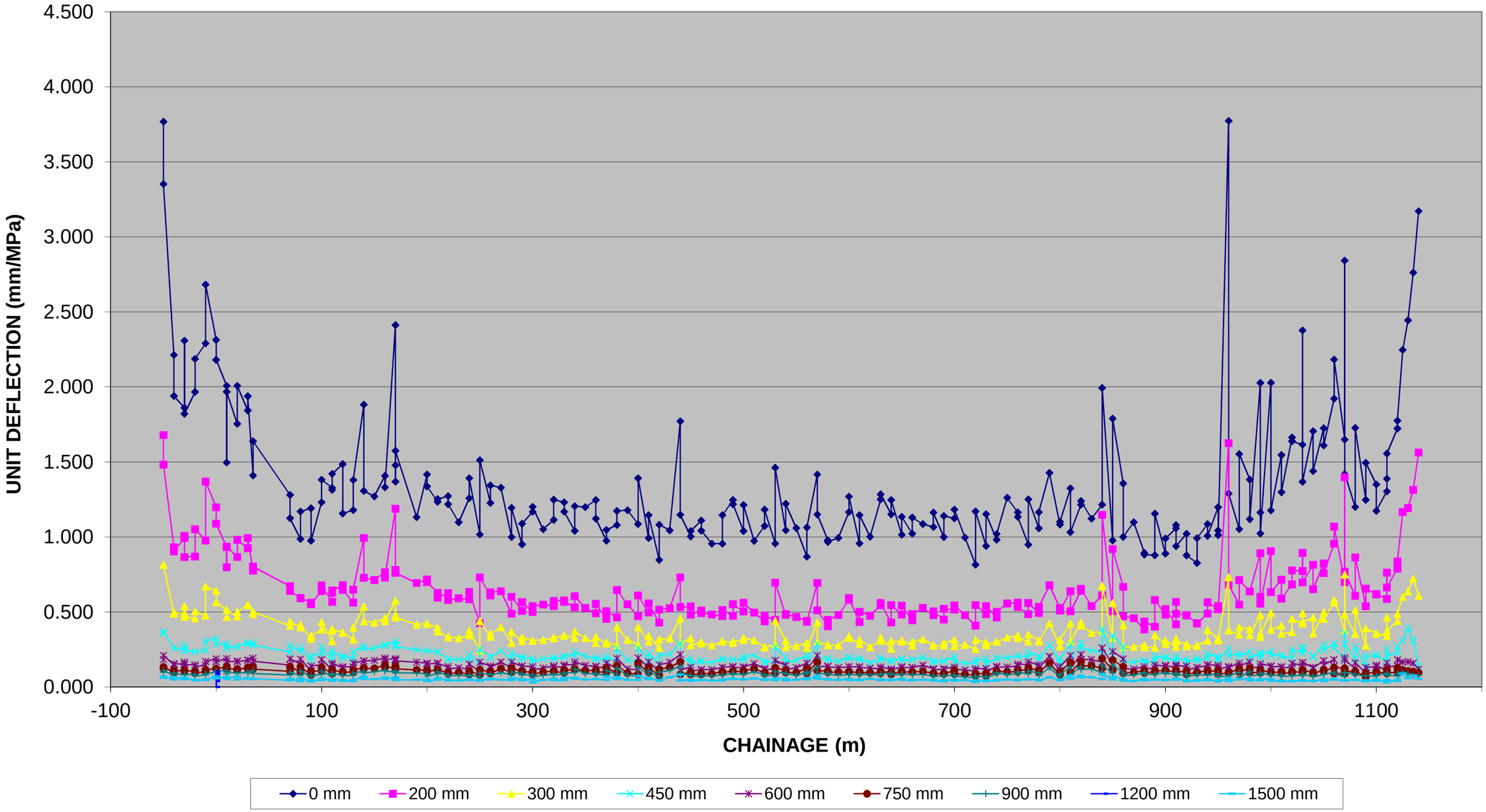


FIGURE 5 - FLINDERS ISLAND AERODROME
TAXIWAY A UNIT DEFLECTIONS

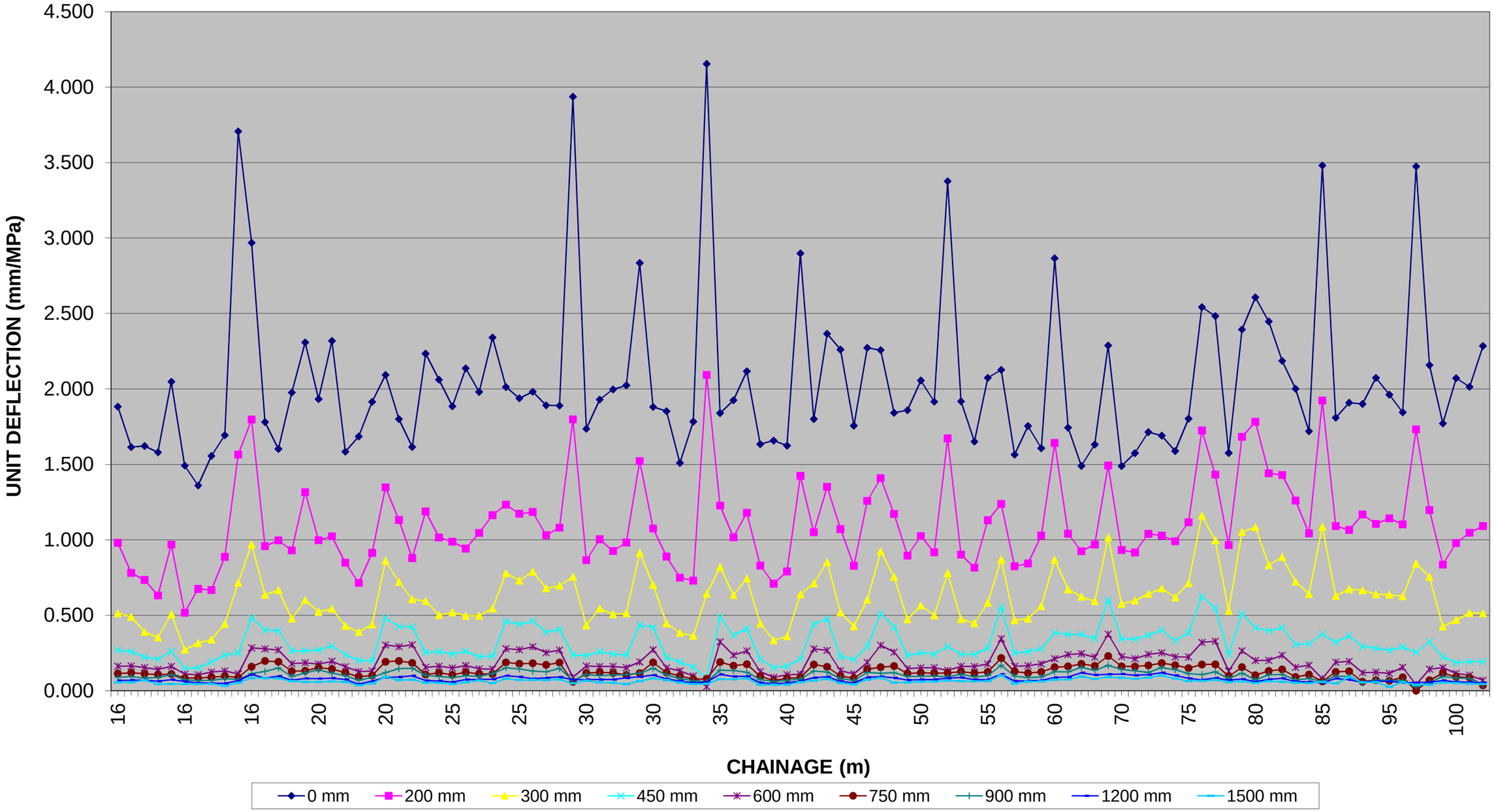


FIGURE 6a - FLINDERS ISLAND AERODROME
APRON UNIT DEFLECTIONS

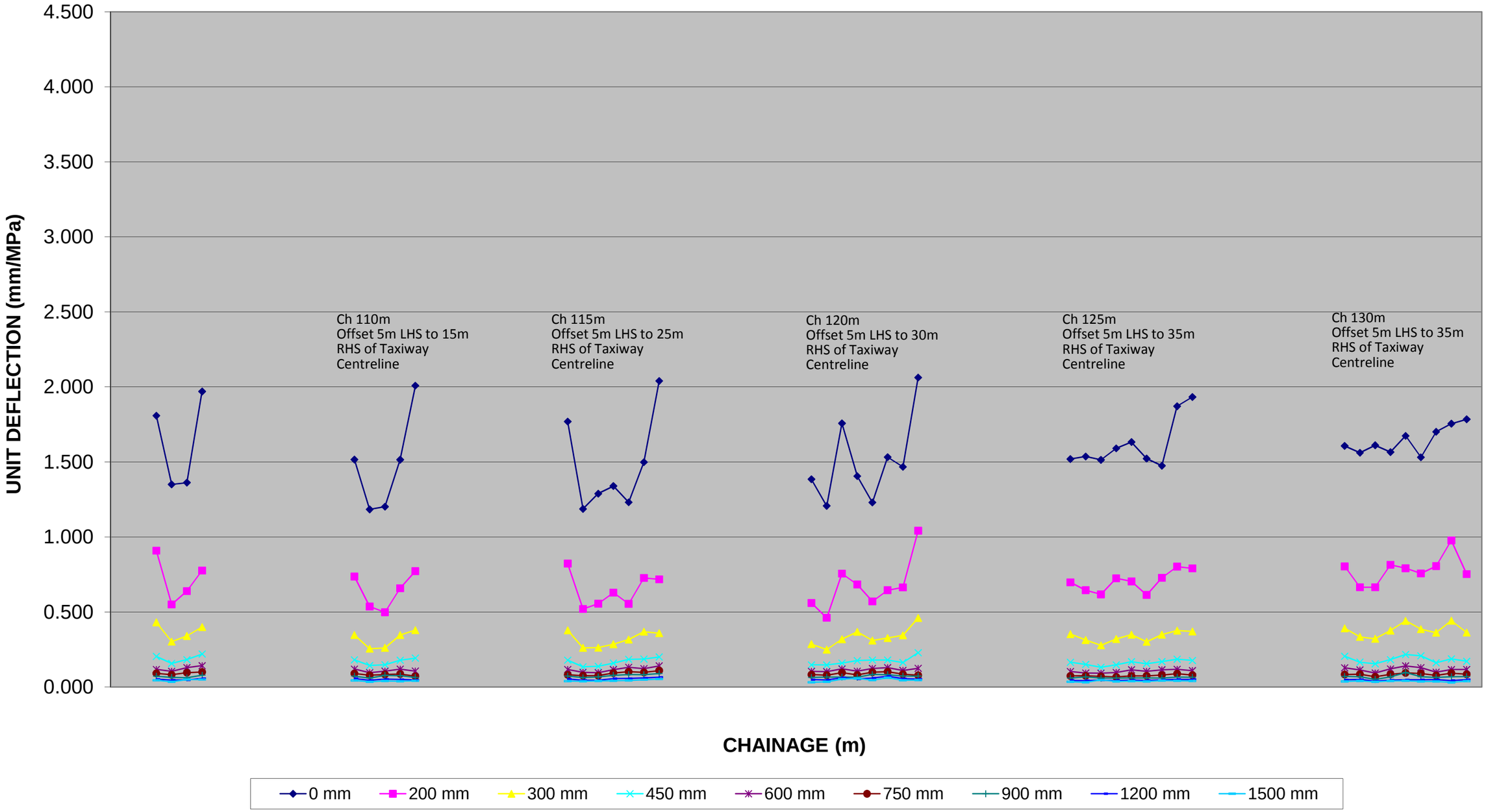


FIGURE 6b - FLINDERS ISLAND AERODROME
APRON UNIT DEFLECTIONS

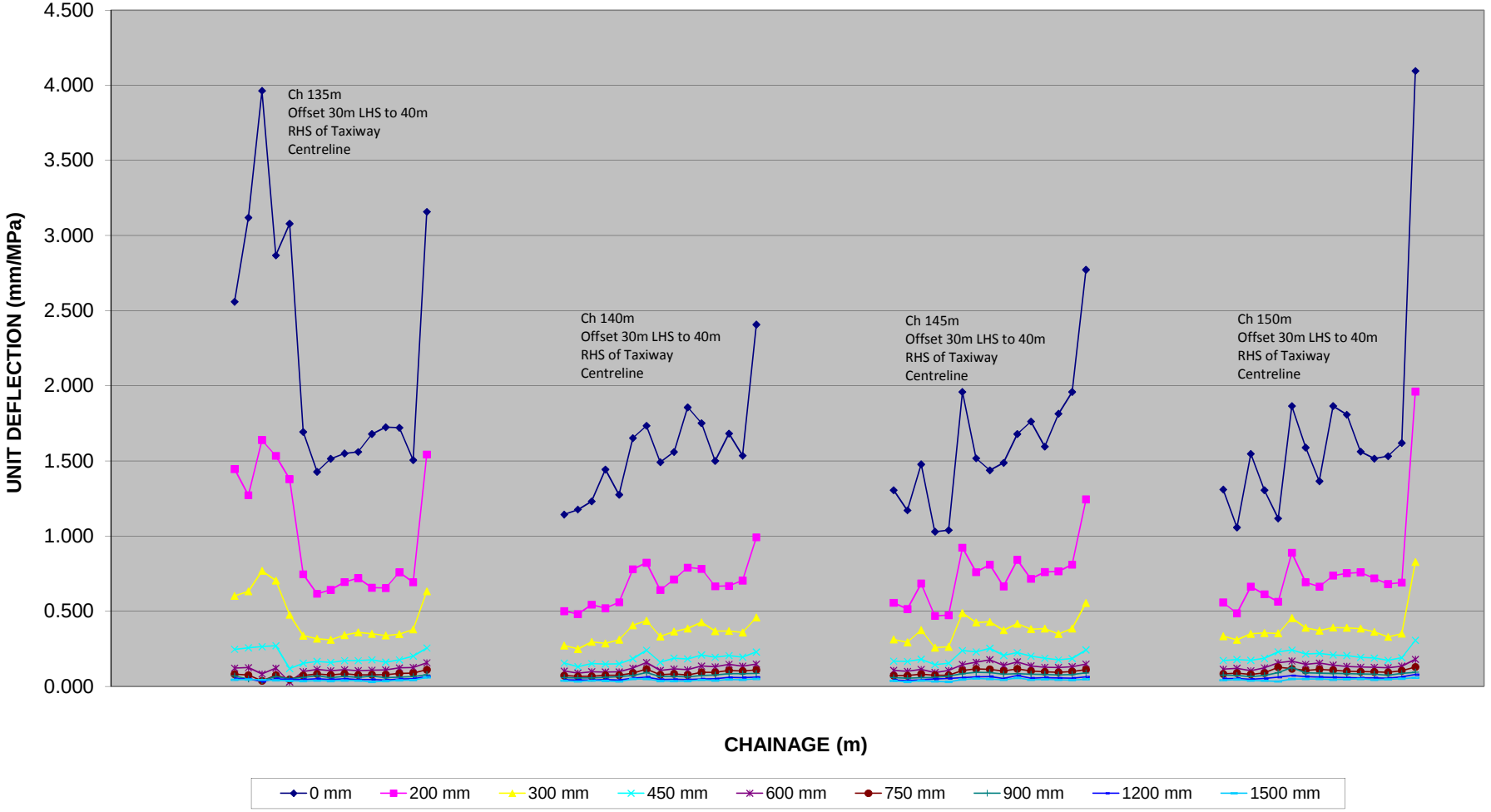
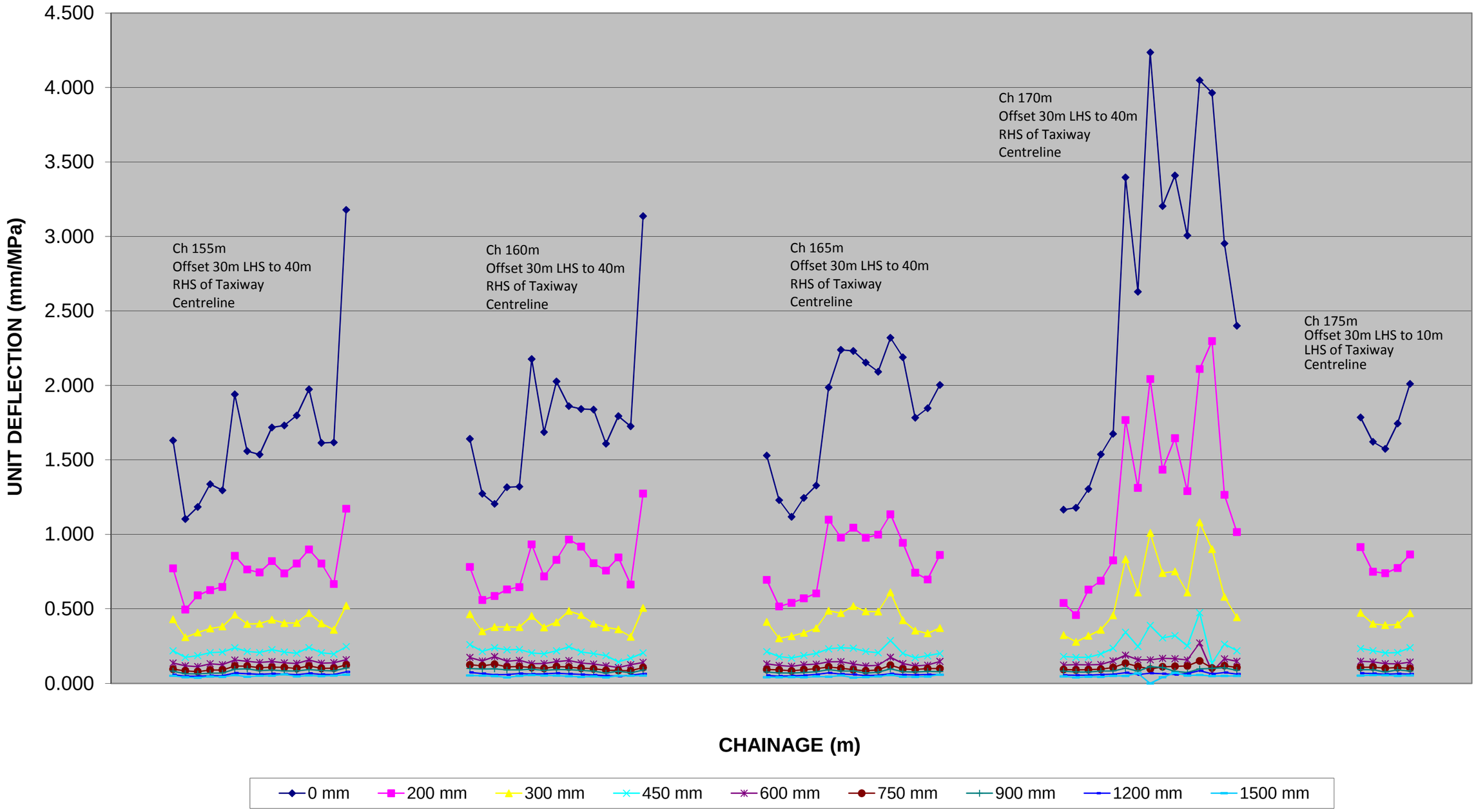
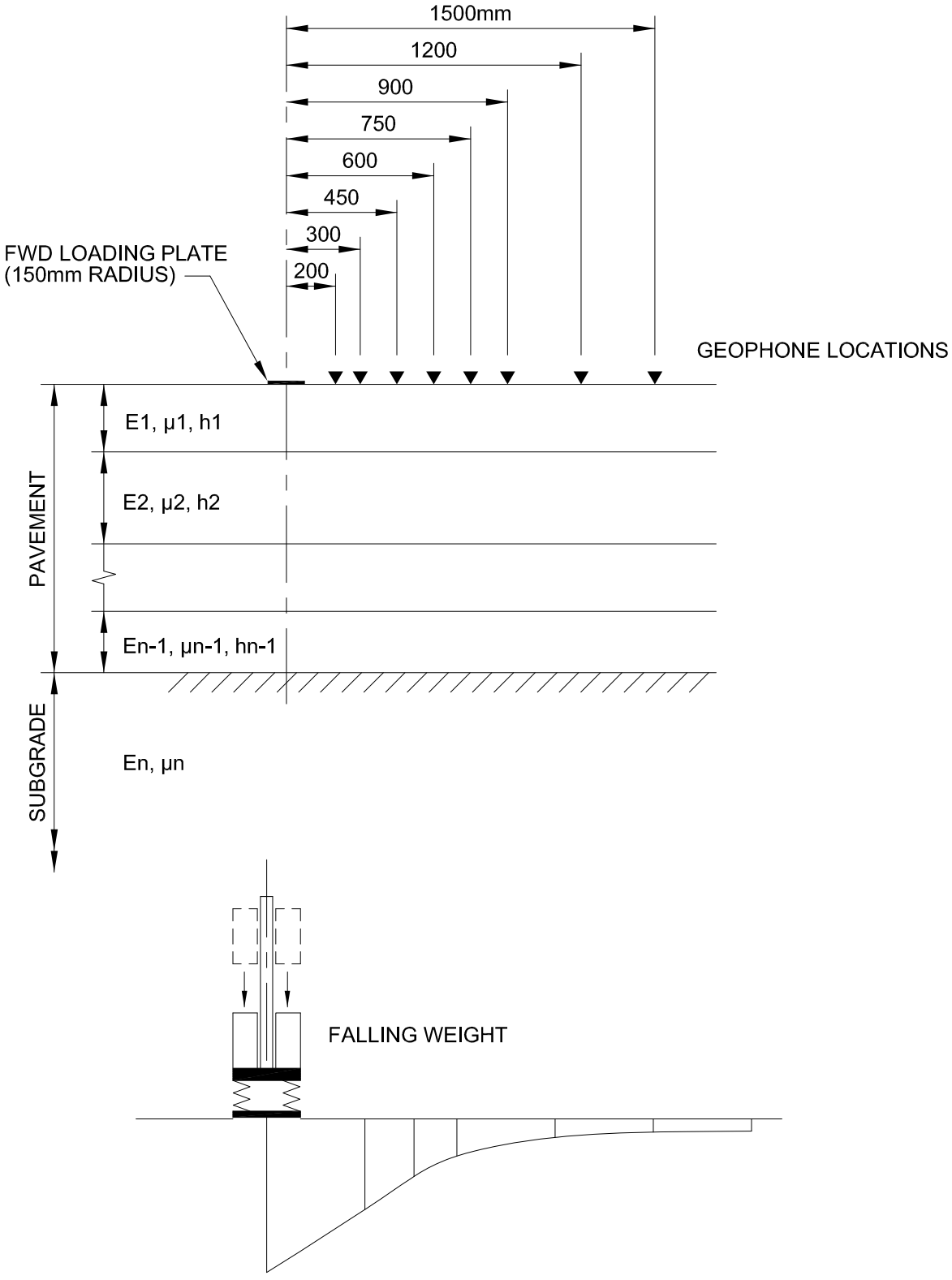


FIGURE 6c - FLINDERS ISLAND AERODROME
APRON UNIT DEFLECTIONS





TYPICAL DEFLECTION PAVEMENT SHAPE UNDER FWD LOAD

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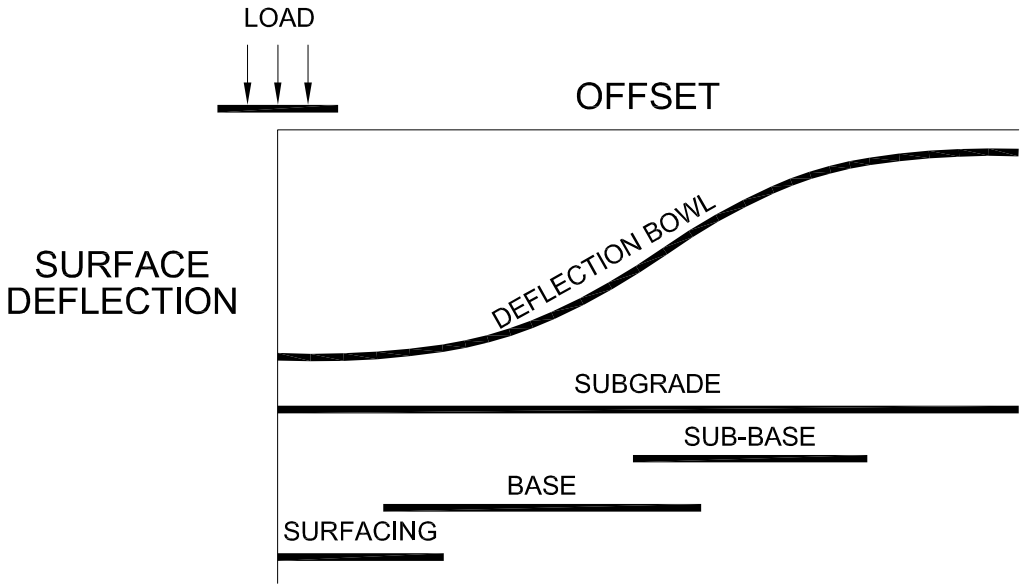
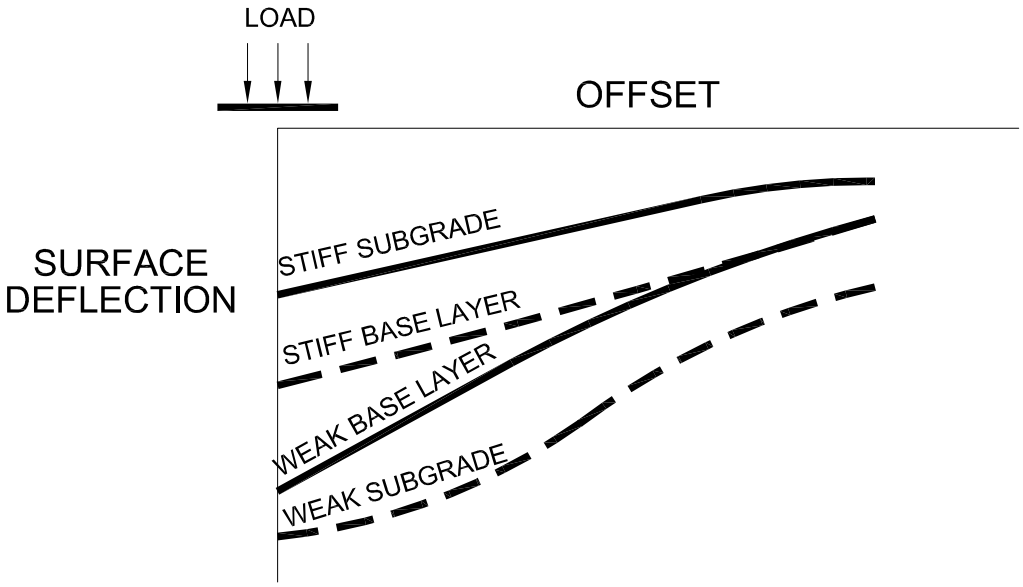


(a) INFLUENCE OF PAVEMENT LAYERS ON DEFLECTION BOWL



(b) INFLUENCE OF SUBGRADE AND BASE STIFFNESSES ON DEFLECTION BOWL

Appendix B
Geotechnical Investigation Report

GEOTECHNICAL INVESTIGATION
FLINDERS ISLAND AERODROME
WHITEMARK

Prepared for:	**Aurecon**
Date:	9 August 2012
Prepared by:	Dr Wayne Griffioen
Document Reference:	TG12028/1 - 04report Rev01

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TASMAN
geotechnics

9 August 2012

Aurecon
Level 12, 60 Albert Road
SOUTH MELBOURNE VIC 3205

Attention: Mr Simon Oakley

RE: Geotechnical Investigation Flinders Island Aerodrome Whitemark

Tasman Geotechnics is pleased to present this revised report on a geotechnical investigation undertaken at Flinders Island Aerodrome, Whitemark, Tasmania. The revision incorporates comments and clarifications requested by Aurecon.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

For and on behalf of Tasman Geotechnics Pty Ltd

Dr Wayne Griffioen

Senior Geotechnical Engineer

Distribution: 1 copy Aurecon

1 copy Flinders Island Aerodrome

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Contents

Figures

Appendices

Abbreviations

BH	Borehole
CBR	California Bearing Ratio
DCP	Dynamic Cone Penetrometer
LL	Liquid Limit
PI	Plasticity Index (= Liquid Limit – Plastic Limit)
PL	Plastic Limit
PP	Pocket Penetrometer
PSP	Perth Sand Penetrometer
USCS	Unified Soil Classification System

1 INTRODUCTION

Tasman Geotechnics was commissioned by Aurecon to carry out a geotechnical investigation of the existing runways, taxiway and apron at Flinders Island Aerodrome, Whitemark.

This report presents the results of the fieldwork, laboratory testing and our interpretation of the data.

2 SCOPE OF WORK

The scope of work for the geotechnical investigation involved both a fieldwork component and laboratory testing.

2.1 Fieldwork

The fieldwork was carried out from Tuesday 5 June to Thursday 7 June 2012 by two Engineering Geologists from Tasman Geotechnics. Mr Geoff Grace was present during the fieldwork, providing air traffic management while the fieldwork was being carried out.

The scope of work originally suggested by Aurecon included 25 test locations. The fieldwork comprised drilling 23 boreholes (BH1 to BH23) using a Bobcat mounted auger rig (300mm diameter) at locations as identified on the Aurecon site plan. Actual locations were determined by measuring wheel and confirmed by Mr Grace. Coordinates at each test location were determined using hand held GPS.

Two borehole locations, as proposed in the original scope, were not carried out at the request of Mr Geoff Grace, as they were located in an area of the taxiway recently reconstructed.

Insitu testing comprised Perth Sand Penetrometer (PSP) tests by counting blows per 150mm to determine the sand density and clay consistency. Pocket penetrometer tests were conducted on relatively undisturbed lumps of clay where encountered.

Engineering logs of the boreholes and the PSP results are presented in Appendix A, and discussed in Section 3. The positions of boreholes are shown on a site plan in Figures 1 and 2. The borehole labels on the figures and on the logs include the chainage and offset side from the centreline (E = east, C = centre, W = west, etc). Table 1 summarises the borehole locations.

Disturbed and bulk soil samples were taken of the various materials encountered in the boreholes. The soil samples were freighted to Tasman Geotechnics' office in Launceston.

Table 1. Summary of Borehole Locations

Borehole Reference	Location (runway, chainage, offset side)	Coordinates
BH1	N-S runway, 45m, E	583824mE, 5562547mN
BH2	N-S runway, 215m, W	583911mE, 5562400mN
BH3	N-S runway, 430m, E	584046mE, 5562233mN
BH4	N-S runway, 645m, W	584158mE, 55620527mN
BH5	N-S runway, 860m, E	584296mE, 5561886mN
BH6	N-S runway, 1075m, W	584412mE, 5561702mN
BH7	N-S runway, 1290m, E	584549mE, 5561540mN
BH8	N-S runway, 1505m, W	584659mE, 5561364mN
BH9	N-S runway, 1675m, C	5848014mE, 5561175mN
BH10	E-W runway, 15m, S	584678mE, 5561286mN
BH11	E-W runway, 265m, N	584896mE, 5561418mN
BH12	E-W runway, 535m, S	585129mE, 5561529mN
BH13	E-W runway, 805m, N	585361mE, 5561669mN
BH14	E-W runway, 1010m, S	585543mE, 55617487mN
BH15	E-W runway, 1120m, N	585640mE, 5561820mN
BH16	Taxiway, 40m, E	585645mE, 5561734mN
BH17	Taxiway, 105m, W	585655mE, 5561702mN
BH18	Apron	585667mE, 5561667mN
BH19	Apron	585675mE, 5561657mN
BH20	Apron	585703mE, 5561671mN
BH21	Apron	585645mE, 5561651mN
BH22	Apron	585668mE, 5561645mN
BH23	Apron	585696mE, 5561638mN

2.2 Laboratory Testing

Soil samples were selected by Tasman Geotechnics for laboratory testing. The testing was conducted by ADG Laboratories in Launceston. The laboratory test schedule is summarized in Table 2.

Laboratory test certificates are presented in Appendix B (please note: the sample references on the certificates refer to TP rather than BH).

Table 2. Summary of Laboratory Tests Requested

Borehole Reference	Depth	Atterberg Limits	Particle Size Distribution	Insitu Moisture Content	% Passing 75«m	Compaction & CBR
BH2	1.0 to 1.15m				✓	
BH3	0.1 to 0.3		✓	✓		
BH4	0.3 to 0.4m		✓	✓		
BH6	0.7 to 0.9m				✓	
BH7	0.1 to 0.2m		✓	✓		
BH10	0.2 to 0.3m		✓	✓		
BH10	0.65 to 0.75m		✓			
BH12	0.3 to 0.4m		✓	✓		
BH12	0.7 to 1.1m	✓	✓	✓		✓
BH15	0.5 to 0.7m	✓	✓	✓		✓
BH20	0.4 to 1.0m	✓	✓	✓		✓
BH21	0.05 to 0.2m		✓			
BH21	0.3 to 0.7m	✓	✓	✓		✓

3 RESULTS

3.1 Geology

The surface geology is taken from the 1:250,000 scale Geology of Northeast Tasmania map (Mineral Resources Tasmania).

The site is underlain by Quaternary aged sediments consisting mainly of sand. An outcrop of Tertiary aged basalt is mapped along the shore to the north west of the runway, and Neoproterozoic mudstone is mapped south of the Pats River.

3.2 Subsurface Conditions

Table 3 summarises the observed subsurface conditions at each borehole.

Table 3. Summary of Borehole Observations

Borehole Reference	Location (runway, chainage, offset side)	Layer Thickness (mm)			Subgrade Material
		Wearing Course	Base Course	Subgrade	
BH1	N-S runway, 45m, E	50	150	>1300	Sand
BH2	N-S runway, 215m, W	50	500	>1000	Sand
BH3	N-S runway, 430m, E	50	600	>600	Sand
BH4	N-S runway, 645m, W	50	350	>800	Sand
BH5	N-S runway, 860m, E	50	100	>1050	Sand (HW granite)
BH6	N-S runway, 1075m, W	50	400	>750	Sand
BH7	N-S runway, 1290m, E	50	550	>300	Sand
BH8	N-S runway, 1505m, W	50	250	>900	Sand
BH9	N-S runway, 1675m, C	50	350	>800	Sand over clayey sand
BH10	E-W runway, 15m, S	50	550	>600	Clayey sand
BH11	E-W runway, 265m, N	50	350	>800	Clayey sand
BH12	E-W runway, 535m, S	50	450	>700	Gravelly sand
BH13	E-W runway, 805m, N	50	350	>800	Gravelly sand over sandy clay
BH14	E-W runway, 1010m, S	50	350	400	Gravelly sand over sandy clay
BH15	E-W runway, 1120m, N	50	150	>1000	Sand over clayey sand
BH16	Taxiway, 40m, E	50	250	>900	Sand over clayey sand
BH17	Taxiway, 105m, W	50	150	>1000	Sand over clayey sand
BH18	Apron	50	150	>1000	Clayey sand
BH19	Apron	50	250	>900	Clayey sand
BH20	Apron	50	350	>800	Clayey sand
BH21	Apron	50	200	>950	Sandy clay
BH22	Apron	50	150	>1000	Sandy clay
BH23	Apron	50	200	>950	Sandy clay

3.2.1 Pavement

The boreholes encountered a thin layer of pavement, comprising about 50mm of asphalt overlying 150mm to 350mm of base course (average thickness from 23 boreholes is 310mm). No sub-base was identified in the boreholes. At several locations (such as BH3 and BH10) the pavement thickness appears to increase to more than 0.5m. These may be associated with low points in the topography that were raised with the base course.

Based on laboratory testing, the base course is described as a silty gravelly sand (Unified Soil Classification System symbol SM). No testing for Atterberg Limits was conducted on the fines in the base course, as they are assessed to be non-plastic.

3.2.2 Natural Soils

The subsurface conditions encountered in the boreholes can be broadly divided into two zones:

- Zone 1 (BH1 to BH8 and BH12): sand extend to at least 1m below the runway level. Based on PSP tests, the sand is medium dense to dense, and contains thin layers (up to 100mm thick) of grey clay.

- Zone 2 (BH9 to BH11 and BH13 to BH23): sand (and base course) extend to less than 1m below the runway level, and are underlain by clayey sand/sandy clay (27% to 53% sand). The clayey sand/sandy clay contains medium plasticity fines and is very stiff to hard. Near the airport terminal building, the pavement appears to be constructed directly on the clayey sand/sandy clay.

Figure 2 shows the approximate boundary between the two zones.

3.2.3 Groundwater

Wet sands were observed in boreholes BH1, BH2 and BH6. The wet conditions typically occur from about 0.9m below the runway level.

Groundwater inflow was observed at 1.1m and 1.5m below the runway level in BH1 and BH2, respectively.

It is probable that groundwater flow occurs as perched flow on the thin clay layers and on the underlying clayey sand/sandy clay. The permanent groundwater level is likely to be close to the depth at which inflow was observed, given the low-lying nature of the area and the proximity to the coast.

3.3 Laboratory Test Results

The laboratory test results are summarized in Table 4, by grouping the soils by their type (base course, sand or "clay"). Results for soaked CBR are discussed in Section 3.4.

Table 4. Summary of Laboratory Test Results, Grouped by Soil Type

Soil Type	Borehole	Depth	USCS	% Gravel	% Sand	% Fines	LL	PL	PI	Nat MC
Base course	BH3	0.1 to 0.3	SM	35	50	15				5.9
	BH4	0.3 to 0.4m	SM	28	53	19				5.2
	BH7	0.1 to 0.2m	SM	30	51	19				6.2
	BH10	0.2 to 0.3m	SP	32	68	0				8.5
	BH12	0.3 to 0.4m	SM	32	49	19				4.9
	BH21	0.05 to 0.2m	SM	25	58	17				
Sand	BH2	1.0 to 1.15m	SM	95		4.9				
	BH6	0.7 to 0.9m	SM	73		27.3				
	BH12	0.7 to 1.1m	SM	7	75	18	NP	NP		6.3
Clayey sand	BH10	0.65 to 0.75m	SC	1	52	47				
	BH15	0.5 to 0.7m	SC	6	48	46	28	15	13	14.8
	BH20	0.4 to 1.0m	SC	5	49	46	50	21	29	15.1
	BH21	0.3 to 0.7m	CH	7	29	64	60	25	35	20.4

3.4 Subgrade CBR

The CBR of the clayey sand/sandy clay subgrade was estimated using a number of direct and indirect test methods. The methods were as follows, and the results are summarized in Table 5:

PSP Tests: Strictly speaking, the PSP should be used for sand and the Dynamic Cone Penetrometer (DCP) on cohesive soils. During the fieldwork, we consistently used the PSP, counting blows per 150mm, at each borehole (see Appendix A for PSP results). The equivalent DCP blow count (in blows/50mm) was calculated in two steps:

1. Calculating an equivalent density index from the PSP results (found to be medium dense to dense); and
2. Calculating the equivalent DCP blows from the equivalent density index

Both correlations were based on in-house correlations. The equivalent DCP blow counts for the clays was calculated to be between 3 and 5 blows/50mm.

Soil Stiffness: Pocket penetrometer results for the insitu clays ranged from about 400kPa to more than 600kPa. Based on our experience, the insitu CBR can be calculated from pocket penetrometer resistance as follows:

CBR = PP/50 to PP/25

Where PP is the pocket penetrometer resistance in kPa.

Laboratory Testing: Samples of the clayey sand/sandy clay were prepared at 100% Maximum Dry Density (Standard Compaction) prior to conducting 4-day soaked CBR tests.

Calculated CBR: The Country Roads Board (now VicRoads) published a correlation between 4-day soaked CBR (at Standard Compaction) and various soil properties such as grading, Plasticity Index and Linear Shrinkage (see also MRWA, 2010). The method is limited to soils having more than 75% passing the 2.36mm sieve. In this instance, the method was applied to the results for the natural subgrade encountered in the present investigation.

Table 5. Subgrade CBR Results

Borehole	Depth	USCS	CBR Derivation			
			4-day Soaked	Calculated CBR	PSP	Soil Stiffness
BH10	0.65 to 0.75m	SC	-	6	14 to 22	8 to 24
BH12	0.7 to 1.1m	SM	30	23		
BH15	0.5 to 0.7m	SC	3	11		
BH20	0.4 to 1.0m	SC	3.5	7		
BH21	0.3 to 0.7m	CH	4	6		

3.5 Base Course CBR

No soaked CBR tests were conducted on the base course material. The CBR was estimated using the Country Roads Board method described in Section 3.4. Strictly speaking, the method is not applicable, as the base course has typically 25 to 35% gravel, while the method is limited to materials with more than 75% passing the 2.36mm (ie less than 25% gravel). Therefore results summarized in Table 6 for the base course should be used with caution.

Table 6. Base Course Calculated CBR Results

Borehole	Depth	USCS	Calculated CBR[1]
BH3	0.1 to 0.3m	SM	34
BH4	0.3 to 0.4m	SM	30
BH7	0.1 to 0.2m	SM	30
BH10	0.2 to 0.3m	SP	30
BH12	0.3 to 0.4m	SM	31
BH21	0.05 to 0.2m	SM	26

Note: 1 the calculation strictly speaking only applies to material with more than 75% passing the 2.36mm sieve.

4 DISCUSSION & RECOMMENDATIONS

4.1 Subgrade CBR

The subgrade materials in Zone 2 range from high plasticity sandy clay (eg in BH21) to clayey sand with medium plasticity fines (eg in BH15). Notwithstanding the diverse materials, the soaked CBR ranges from 3% to 4%.

The range of CBR from the various calculation methods, varies from 3% (from 4-day soaked laboratory test) to 24% (inferred from pocket penetrometer stiffness).

A design subgrade CBR value of 3.5% is recommended for pavements to be constructed on the clayey sand/sandy clay in Zone 2.

In the absence of laboratory testing on the silty sand subgrade (Zone 1), we recommend using a CBR consistent with the presumptive values published by Austroads (2012). Table 5.4 in "Guide to Pavement Technology Part 2: Pavement Structural Design" provides typical CBR values of 10 to 18 for sand with fair to poor drainage. Given the silty nature of the subgrade, the soaked CBR of the silty sand will be dependent on the moisture content. Assuming the water table can be maintained at least 0.5m below the subgrade level, a nominal value of 8 may be adopted.

Some additional test pitting may be required to more accurately delineate the boundary between the zones in the area between boreholes BH8 and BH13.

4.2 Base Course CBR

Based on the results presented in Table 5, a nominal CBR value of 25% may be assigned to the base course materials, based on the calculated CBR.

Table 7 compares the base course material with (Tasmanian) Department of Infrastructure, Energy and Resources (DIER) specifications for Base A, Base B and Subbase 1 for use in roads. The results show that the base course material has an over-representation of sand to be suitable as Base B. The absence of plastic fines means that the base course has little cohesion which may lead to poor insitu performance. Also, the calculated CBR is less than that required for Base B.

No testing for wet/dry strength variation, or flakiness index, or secondary mineralization has been carried out.

Therefore, we recommend that the insitu base course material is considered as Subbase 1 quality.

Table 7. Comparison of Insitu Base Course with DIER Specification

Parameter		Base A (19mm)	Base B	Subbase 1	Observed range
AS Sieve Size	19mm	95 – 100	68 – 100	52 – 100	100
	9.5mm	66 – 80	50 – 100	40 – 100	99 – 100
	4.75mm	47 – 61	38 – 90	30 – 100	81 – 95
	2.36mm	33 – 45	28 – 60	22 – 75	65 – 75
	0.425mm	14 – 21	14 – 30	12 – 40	28 – 46
	0.075mm	5 – 10	7 – 20	6 – 26	0 – 19
Liquid Limit		<25	25 (max)	35 (max)	NP
Plasticity Index		<4	6 (max)	12 (max)	NP
CBR		Not defined	80 (min)	30 (min)	26 – 34

4.3 Groundwater

The groundwater level was encountered at about 0.9m below runway level in Zone 1. Groundwater levels will fluctuate with season and rainfall. No monitoring of groundwater levels has been undertaken for this investigation.

In the absence of long-term groundwater level data, we recommend assuming a saturated subgrade. Construction of table drains to about 0.3m below natural ground level is recommended to control surface runoff and reduce the likelihood of the base course becoming saturated.

The use of vibration equipment on saturated sand should not be allowed, as the groundwater may cause liquefaction of the sands. Therefore, construction should occur in summer when groundwater levels are likely to be lowest.

5 REFERENCES

Austroads (2012) “Guide to Pavement Technology Part 2: Pavement Structural Design”, Publication AGPT02-12.

Department of Infrastructure, Energy and Resources (2012) “Road Specification, R40 Pavement Base & Subbase”.

Main Roads WA (2010) Engineering Road Note 9 “Procedure for the Design of Flexible Pavements”.

Important information about your report

These notes are provided to help you understand the limitations of your report.

Project Scope

Your report has been developed on the basis of your unique project specific requirements as understood by Tasman Geotechnics at the time, and applies only to the site investigated. Tasman Geotechnics should be consulted if there are subsequent changes to the proposed project, to assess how the changes impact on the report's recommendations.

Subsurface Conditions

Subsurface conditions are created by natural processes and the activity of man.

A site assessment identifies subsurface conditions at discreet locations. Actual conditions at other locations may differ from those inferred to exist, because no professional, no matter how qualified, can reveal what is hidden by earth, rock and time.

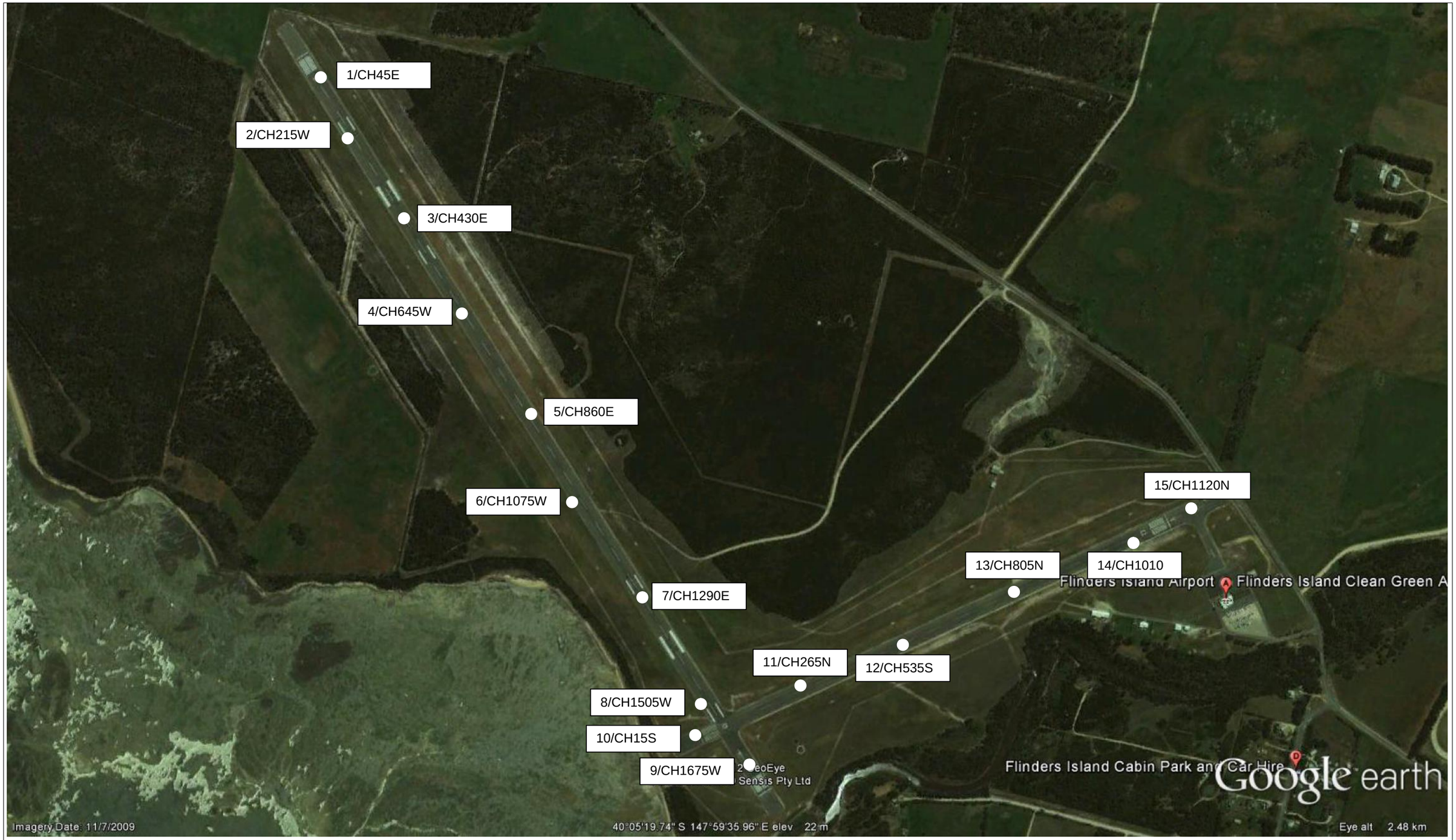
Nothing can be done to change the conditions that exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, the services of Tasman Geotechnics should be retained throughout the project, to identify variable conditions, conduct additional investigation or tests if required and recommend solutions to problems encountered on site.

Advice and Recommendations

Your report contains advice or recommendations which are based on observations, measurements, calculations and professional interpretation, all of which have a level of uncertainty attached.

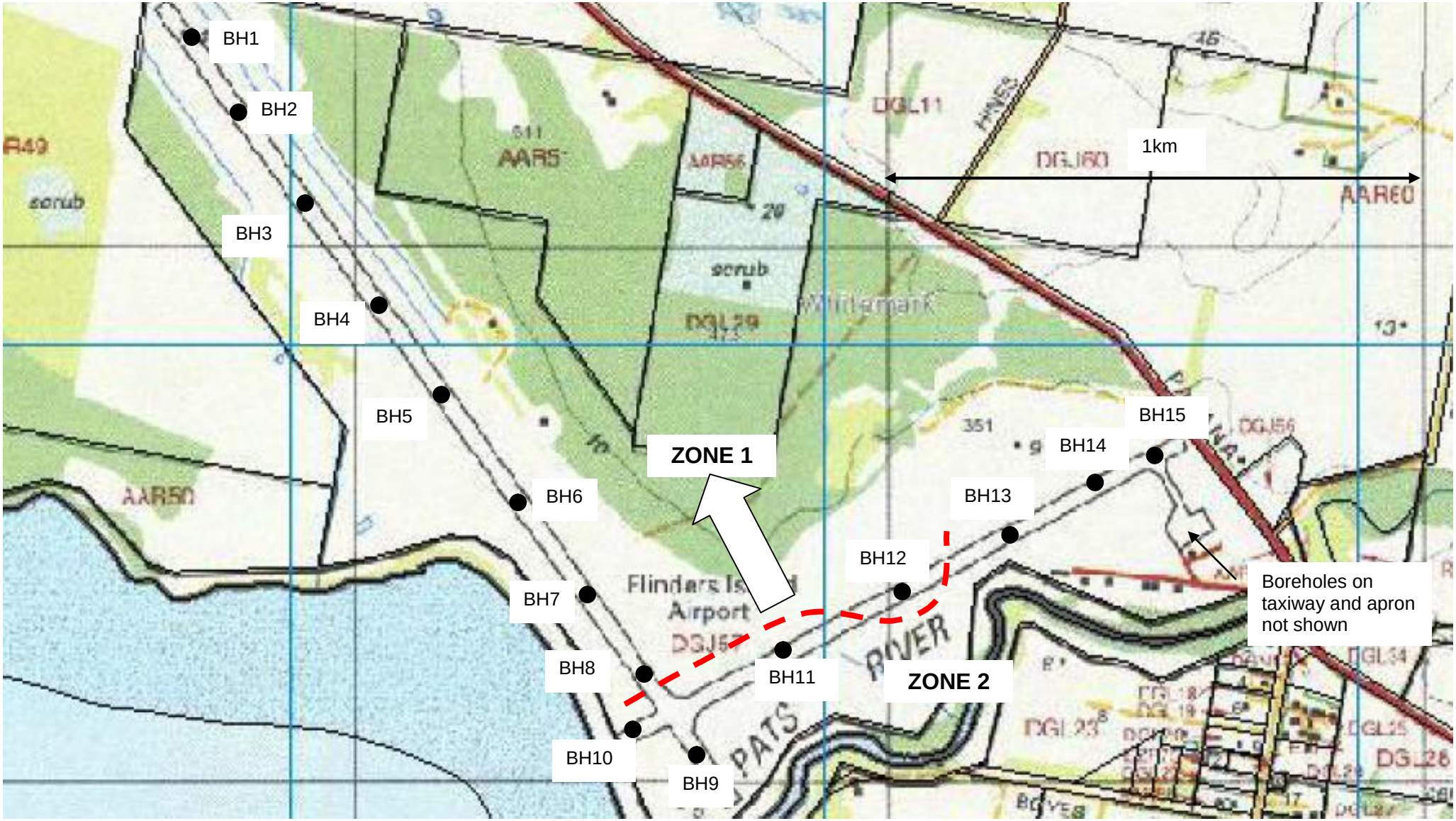
The recommendations are based on the assumption that subsurface conditions encountered at the discreet locations are indicative of an area. This can not be substantiated until implementation of the project has commenced. Tasman Geotechnics is familiar with the background information and should be consulted to assess whether or not the report's recommendations are valid, or whether changes should be considered.

The report as a whole presents the findings of the site assessment, and the report should not be copied in part or altered in any way.



drawn	**FH**	TASMAN geotechnics	client:	**Aurecon**
approved	**WG**		project:	**Geotechnical Investigation Flinders Island Aerodrome**
date	**21-06-2012**			
scale	**NTS**		title:	**Site Layout and Borehole Locations**
original size	**A3**		project no: **TG12028/1 – 04report**	figure no: **FIGURE 1**

drawn	**FH**	TASMAN geotechnics	client:	**Aurecon**
approved	**WG**		project:	**Geotechnical Investigation** **Flinders Island Aerodrome**
date	**21-06-2012**		title:	**Site Layout and Borehole Locations**
scale	**NTS**		project no: **TG12028/1 – 04report**	figure no: **FIGURE 2**
original size	**A3**			



drawn	**WG**	TASMAN geotechnics	client:	**Aurecon**
approved	**WG**		project:	**Geotechnical Investigation Flinders Island Aerodrome**
date	**25/6/12**		title:	**Site Layout and Subsurface Zones**
scale	**As shown**		project no: **TG12028/1 – 04report**	figure no: **FIGURE 3**
original size	**A4**			

Appendix A

Borehole Logs and Perth Sand Penetrometer Data

SOIL DESCRIPTION EXPLANATION SHEET

TASMAN geotechnics

Soils are described in accordance with the Unified Soil Classification System (USCS), as shown in the following table.

FIELD IDENTIFICATION

COARSE GRAINED SOILS	more than 50% of material less than 63mm is larger than 0.075mm	GRAVELS	GW	Well graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELLY SOILS	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
		SANDS	SW	Well graded sands and gravelly sands, little or no fines
			SP	Poorly graded sands and gravelly sands, little or no fines
		SANDY SOILS	SM	Silty sand, sand-silt mixtures, non-plastic fines
			SC	Clayey sands, sand-clay mixtures, plastic fines

					DRY STRENGTH	DILATANCY	TOUGHNESS
FINE GRAINED SOILS	more than 50% of material less than 63mm is less than 0.075mm	SILT & CLAY, liquid limit less than 50%	ML	Inorganic silts, very fine sands or clayey fine sands	None to low	Quick to slow	None
			CL	Inorganic clays or low to medium plasticity, gravelly clays, sandy clays and silty clays	Medium to high	None to very slow	Medium
			OL	Organic silts and organic silty clays of low plasticity	Low to medium	Slow	Low
		SILT & CLAY, liquid limit greater than 50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts	Low to medium	Slow to none	Low to medium
			CH	Inorganic clays of high plasticity, fat clays	High	None	High
			OH	Organic clays of medium to high plasticity	Medium to high	None to very slow	Low to medium
PEAT			Pt	Peat muck and other highly organic soils			

Particle size descriptive terms

Name	Subdivision	Size
Boulders		>200mm
Cobbles		63mm to 200mm
Gravel	coarse	20mm to 63mm
	medium	6mm to 20mm
	fine	2.36mm to 6mm
Sand	coarse	600µm to 2.36mm
	medium	200µm to 600µm
	fine	75µm to 200µm

Consistency of cohesive soils

Term		Undrained strength	Field guide
Very soft	VS	<12kPa	A finger can be pushed well into soil with little effort
Soft	S	12 - 25kPa	Easily penetrated several cm by fist
Firm	F	25 - 50kPa	Soil can be indented about 5mm by thumb
Stiff	St	50-100kPa	Surface can be indented but not penetrated by thumb
Very stiff	VSt	100-200kPa	Surface can be marked but not indented by thumb
Hard	H	>200kPa	Indented with difficulty by thumb nail
Friable	Fb	-	Crumbles or powders when scraped by thumb nail

Moisture Condition

Dry (D)	Looks and feels dry. Cohesive soils are hard, friable or powdery. Granular soils run freely through fingers.
Moist (M)	Soil feels cool, darkened in colour. Cohesive soils are usually weakened by moisture presence, granular soils tend to cohere.
Wet (W)	As for moist soils, but free water forms on hands when sample is handled

Density of granular soils

Term	Density index
Very loose	<35%
Loose	15 to 35%
medium dense	35 to 65%
Dense	65 to 85%
Very dense	>85%

Cohesive soils can also be described relative to their plastic limit, ie: <Wp, =Wp, >Wp

The plastic limit is defined as the minimum water content at which the soil can be rolled into a thread 3mm thick.

Minor Components

Term	Proportions	Observed properties
Trace of	Coarse grained: <5% Fine grained: <15%	Presence just detectable by feel or eye. Soil properties little or no different to general properties of primary component.
With some	Coarse grained: 5-12% Fine grained: 15-30%	Presence easily detected by feel or eye. Soil properties little different to general properties of primary component.

ENGINEERING BOREHOLE LOG

TASMAN geotechnics

Borehole no. BH1/CH45E

Sheet no. 1 of 1
Job no. TG12028/1

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0583824 E
5562547 N

Date : 5/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow/brown, fine subrounded gravel, with non plastic fines	M	MD	
							0.25		SM	SILTY SAND, fine, light grey with layers (100 mm) of coarse dark grey sand in between	M	D	
							0.50						
							0.75						
Hand auger									SP	SAND, fine - medium grained, yellow/brown some fine gravel	M-W	MD-D	
					D		1.00				W		
									CL	SANDY CLAY, low - medium plasticity, grey	W	S	
							1.25		SP	SAND, fine-medium grained, yellow brown some fine gravel	W	L	
							1.50						
										Terminated at 1.5m. Still going.			
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH2/CH215W

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0583911 E
5562400 N

Date : 5/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger							0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, yellow/brown, fine subrounded gravel, with non plastic fines	M	MD	
							0.50						
Hand auger							0.75		SM	SILTY SAND, trace of medium, angular gravel, light grey with layers (100mm) dark grey, coarse sand in between	M	D	
					D		1.00						
							1.25						trace of clay, light green
						▽	1.50			sand becomes white, medium grained	W	L	
							1.75			Terminated at 1.55m. Still going			
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH3/CH430E

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584046 E
5562233 N

Date : 5/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	Penetration 2	Penetration 3	Penetration 4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger					D		0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, yellow/brown, fine subrounded gravel, with non plastic fines	M	MD	granite boulder
Hand auger							0.50						trace of brown clay, low-medium plasticity
							0.75		SM	SILTY SAND, fine grained, black, some fine gravel becomes light grey	M	L	
					D		1.00					VL	
							1.25			sand becomes yellow and coarse			cobbles
										Terminated at 1.25. Still going			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH4/CH645W

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584158 E
55620527 N

Date : 5/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	MD	
					D		0.25						
									SM	SILTY SAND, fine medium grained, dark grey trace of gravel	D	D	organics, cemented
							0.50						
							0.75						
					D								
							1.00		SM	SILTY SAND, fine grained, grey	D	L	
							1.25			Terminated at 1.2m. Still going			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH5/CH860E

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584296 E
5561886 N

Date : 5/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	Penetration 2	Penetration 3	Penetration 4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	MD	
							0.25		SP	Highly weathered granite, showing as medium coarse sand/gravel with traces of plastic fines	M	D	
							0.50						
							0.75						
							1.00		SM	SAND, fine grained with traces of fine-medium gravel, subrounded, dark grey-black	M	D	
					D								
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH6/CH1075W

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584412 E
5561702 N

Date : 5/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	MD	
							0.25		SM	GRAVELLY SAND, medium grained, subrounded grav	D	D	
							0.50		SM	SILTY SAND, fine grained, light grey	M	MD	
					D		0.75				M-W		
							1.00		SM	SILTY SAND, grey trace of coarse gravel, high proportion of fines	M	L MD	
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH7/CH1290E

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584549 E
5561540 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	Penetration 2	Penetration 3	Penetration 4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger					D		0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	D	
							0.50		SM	SILTY SAND, medium grained, brown, trace of medium grained gravel, subrounded	M	D-MD	trace of clay cobbles
							0.75						
							1.00			Terminated at 0.9m due to auger refusal on cobbles			
							1.25						
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH8/CH1505W

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584659 E
5561364 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	MD	
							0.25		SM	SILTY SAND, fine-medium grained, black, some fine gravel	M	D	organics
							0.50		SM	SILTY SAND, medium grained, yellow, trace of gravel	M	D	
							0.75		CL	SILTY CLAY, low plasticity, grey/green	M	St	
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH9/CH1675C

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 05848014 E
5561175 N

Date : 5/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	L	
					D		0.25						
							0.50		SM	SILTY SAND, fine grained, dark brown	M	D	
					D		0.75		SC	CLAYEY SAND, fine grained, low-medium plasticity fines, brown-orange mottled, trace of gravel	M	VSt-H	pp = 400 kPa
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH10/CH15S

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584678 E
5561286 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
					D		0.25		SP	GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel	M	MD	
							0.50						
					D		0.75		SC	CLAYEY SAND, fine to medium grained, medium plasticity fines, orange-grey mottled	M	VSt	pp = 400 kPa
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH11/CH265N

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0584896 E
5561418 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	Penetration 2	Penetration 3	Penetration 4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger							0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	MD	
					D		0.50		SC	CLAYEY SAND, fine to medium grained, medium plasticity fines, orange-grey mottled, trace of gravel	M	H	pp = 570 kPa pp > 600 kPa
							0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH12/CH535S

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585129 E
5561529 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
							0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, yellow, fine subrounded gravel, with non plastic fines	M	MD	
					D								
							0.50		SM	SILTY GRAVELLY SAND, fine to medium grained, brown, fine subrounded gravel, with non plastic fines	M	D	
							0.75						
					Bs								
							1.00		CL	SANDY CLAY, medium plasticity, grey-orange mottled	M	VSt	
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH13/CH805N

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585361 E
5561669 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	Penetration 2	Penetration 3	Penetration 4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow fine subrounded gravel, non plastic fines	M	MD VD	very compact layer, close to auger refusal
					Bs		0.25		SM	GRAVELLY SAND, fine grained, yellow-orange, fine subrounded gravel, with non plastic fines	M	D	
					D		0.50		CL	SANDY CLAY, low-medium plasticity, grey-orange mottled	M	H	pp > 600 kPa
							0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH14/CH1010S

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585543 E
55617487 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger							0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, yellow fine subrounded gravel, non plastic fines	M	L	
					D		0.50		SM	GRAVELLY SAND, very fine, yellow/brown, fine-medium gravel, trace of non plastic fines	M	D	
							0.75			Terminated at 0.7m due to auger refusal in very hard clay			
							1.00						
							1.25						
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH15/CH1120N

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585640 E
5561820 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow fine subrounded gravel, non plastic fines	M	MD	
							0.25		SM	SAND, fine grained, grey	M	D	
										white	D	H	cemented
					Bs		0.50		SC	CLAYEY SAND, fine to medium grained, low plasticity fines, light brow/grey	M	St-VSt	trace of organics
							0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH16/CH40E

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585645 E
5561734 N

Date : 6/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
									SM	GRAVELLY SAND, fine to medium grained, white, fine subrounded gravel, non plastic fines	M M	L D	
							0.25		SM	SILTY SAND, fine grained, dark brown	M	D	
							0.50		SC	CLAYEY SAND, fine to medium grained, orange-grey mottled, low plasticity fines, trace of gravel	M	H	pp = 500 kPa
					D		0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH17/CH105W

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585655 E
5561702 N

Date : 7/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
									SM	SILTY GRAVELLY SAND, fine to medium grained, brown, fine subrounded gravel, non plastic fines	M	MD	
							0.25		SM	SAND, fine grained, brown, some gravel	D	MD	
					D		0.50		SC	CLAYEY SAND, fine to medium grained, orange-grey green mottled, low plasticity fines	M	VSt-H	pp = 450 kPa
							0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH18

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585667 E
5561667 N

Date : 7/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
									SM	SILTY GRAVELLY SAND, fine to medium grained, brown, fine subrounded gravel, non plastic fines	M	MD	
Power auger					D		0.25 0.50 0.75 1.00		SC	CLAYEY SAND, fine to medium grained, grey-green mottled, low plasticity fines	M	VSt-H	pp = 450 kPa
							1.25 1.50 1.75 2.00			Terminated at 1.2m. Still going.			

ENGINEERING BOREHOLE LOG

Borehole no. BH19

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585675 E
5561657 N

Date : 7/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger							0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, brown, fine subrounded gravel, non plastic fines	M	MD	
							0.50		SC	CLAYEY SAND, fine to medium grained, green-orange mottled, medium plasticity fines	M	VSt-H	pp = 480 kPa
					D		0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH20

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585703 E
5561671 N

Date : 7/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger							0.25		SM	SILTY GRAVELLY SAND, fine to medium grained, brown, fine subrounded gravel, non plastic fines	M	MD	
					Bs		0.50		SC	CLAYEY SAND, fine to medium grained, orange-grey/ green mottled, medium plasticity fines	M	H	pp = 570 kPa
							0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH21

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585645 E
5561651 N

Date : 7/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
Power auger										ASPHALT			
					D				SM	SILTY GRAVELLY SAND, fine to medium grained, brown, fine subrounded gravel, non plastic fines	M	MD	
							0.25		CH	SANDY CLAY, high plasticity, grey with orange mottles	M	VSt-H	
					Bs		0.50						pp = 420 kPa
							0.75						
							1.00						
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH22

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585668 E
5561645 N

Date : 7/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow/brown, fine subrounded gravel, non plastic fines	M	MD	
							0.25		CL	SANDY CLAY, medium plasticity, grey/green with orange mottles, some gravel	M	VSt	
							0.50						pp = 450 kPa
					Bs		0.75						
							1.00			becomes orange			
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

ENGINEERING BOREHOLE LOG

Borehole no. BH23

Sheet no. 1 of 1
Job no. TG12028/1

TASMAN geotechnics

Client : Aurecon
Project : Flinders Island Aerodrome
Location : 0585696 E
5561638 N

Date : 7/6/12
Logged By : AC/FH

Drill model : Bobcat, skid steer
Hole diameter : 300mm

Slope : deg
Bearing : deg

RL Surface :
Datum :

Method	Penetration 1	2	3	4	Notes Samples Tests	Water		Graphic Log	Classification	Material Description	Moisture Condition	Consistency density, index	Structure, additional observations
										ASPHALT			
Power auger									SM	SILTY GRAVELLY SAND, fine to medium grained, yellow fine subrounded gravel, non plastic fines	M	MD	
							0.25		CL	SANDY CLAY, medium plasticity, green/orange mottled, some gravel	M	VSt	cobbles in top of clay
							0.50					H	pp = 500 kPa
							0.75						
							1.00			becomes grey/orange mottled			
					D					becomes grey	M	S	
							1.25			Terminated at 1.2m. Still going.			
							1.50						
							1.75						
							2.00						

Project no TG12028/1

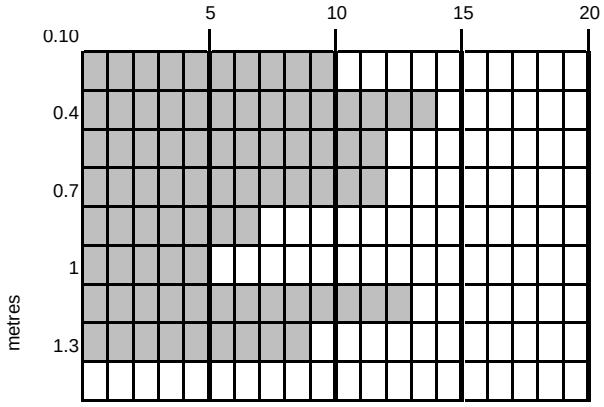
TASMAN geotechnics

PERTH SAND PENETROMETER PENETROMETER TESTING

client Aurecon
project Flinders Island Aerodrome
location Whitemark

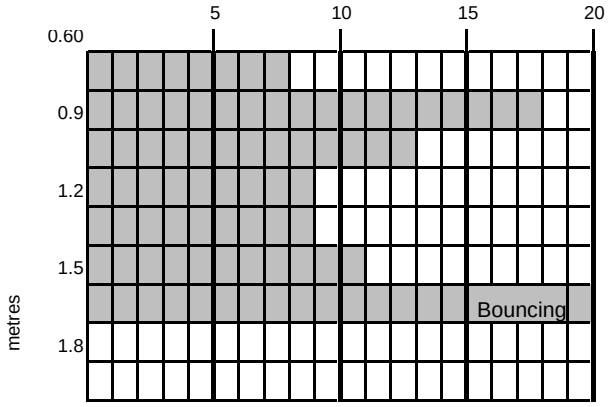
performed by FH
date 5-7/06/2012
Surface RL runway

Number of Blows/150mm



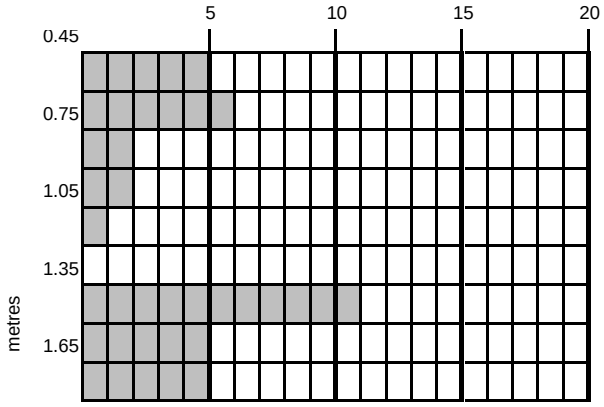
Location 1/CH45E

Number of Blows/150mm



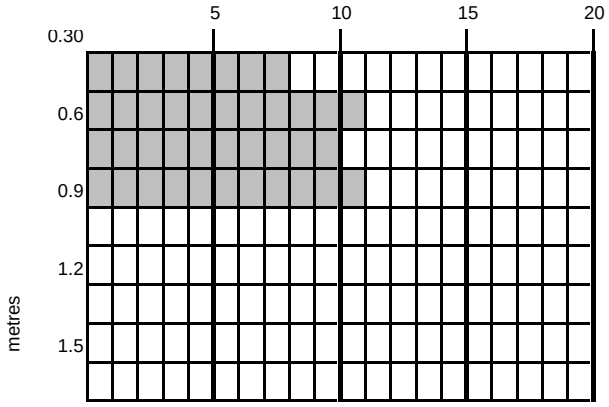
Location 2/CH215W

Number of Blows/150mm



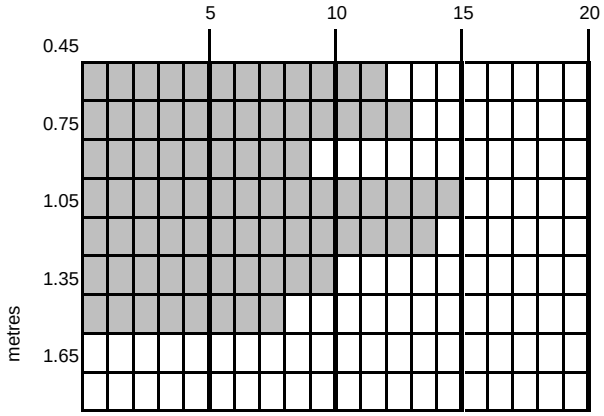
Location 3/CH430E

Number of Blows/150mm



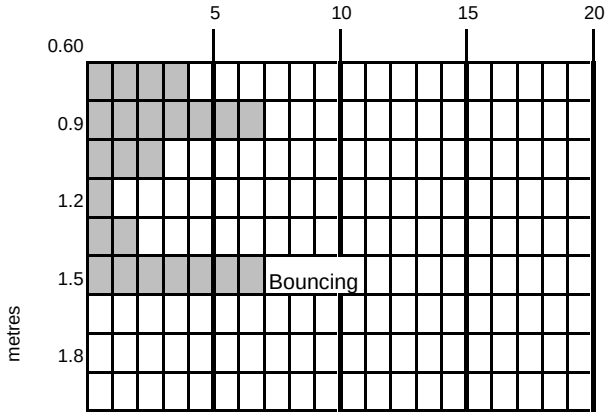
Location 4/CH645W

Number of Blows/150mm



Location 5/CH860E

Number of Blows/150mm



B

Location 6/CH1075W

Project no TG12028/1

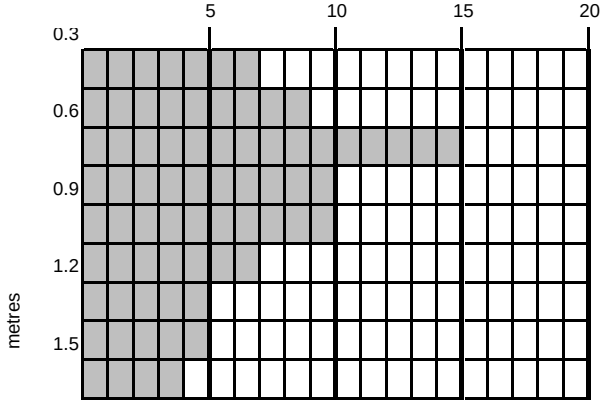
TASMAN geotechnics

PERTH SAND PENETROMETER PENETROMETER TESTING

client Aurecon
project Flinders Island Aerodrome
location Whitemark

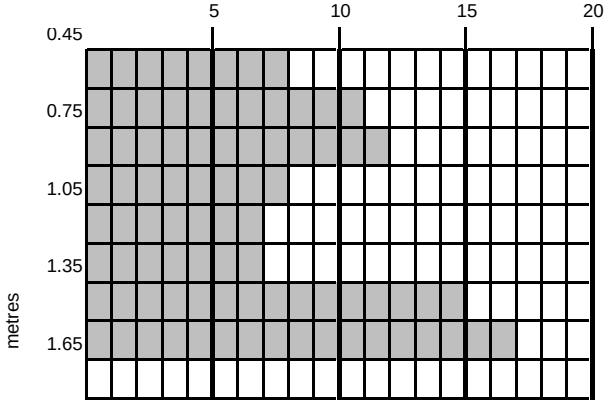
performed by FH
date 5-7/06/2012
Surface RL runway

Number of Blows/150mm



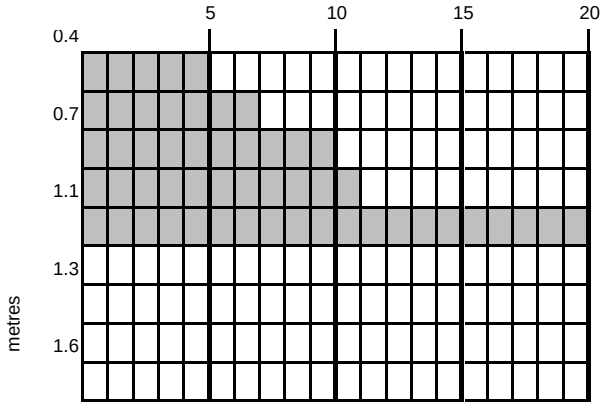
Location 7/CH1290E

Number of Blows/150mm



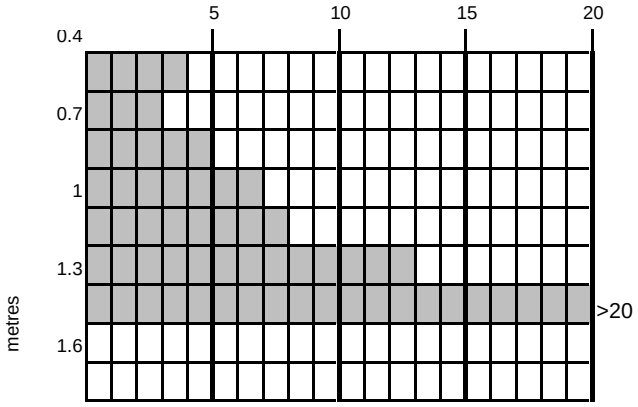
Location 8/CH1505W

Number of Blows/150mm



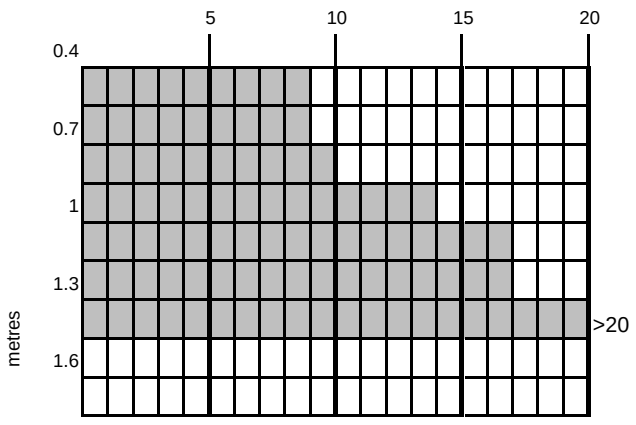
Location 9/CH1675W

Number of Blows/150mm



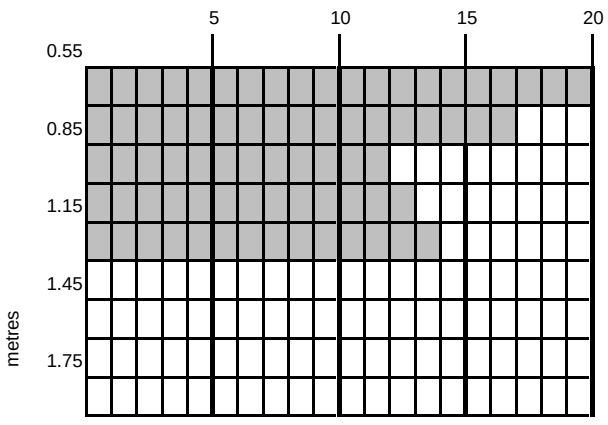
Location 10/CH15S

Number of Blows/150mm



Location 11/CH265N

Number of Blows/150mm



Location 12/CH535S

Project no TG12028/1

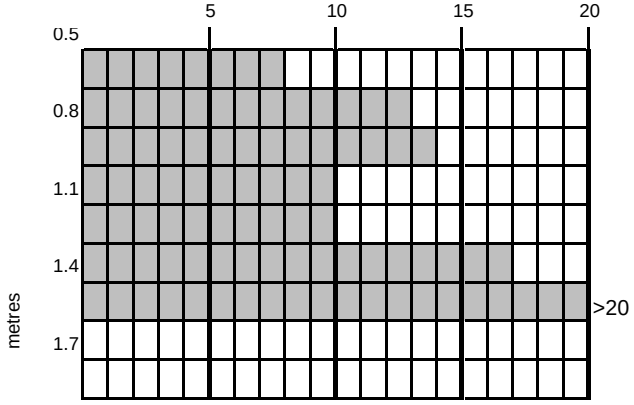
TASMAN geotechnics

PERTH SAND PENETROMETER PENETROMETER TESTING

client Aurecon
project Flinders Island Aerodrome
location Whitemark

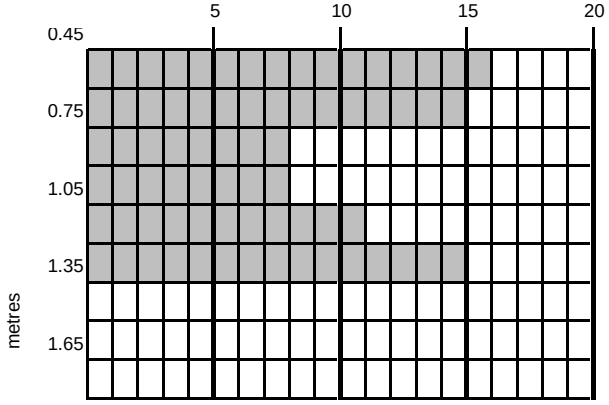
performed by FH
date 5-7/06/2012
Surface RL runway

Number of Blows/150mm



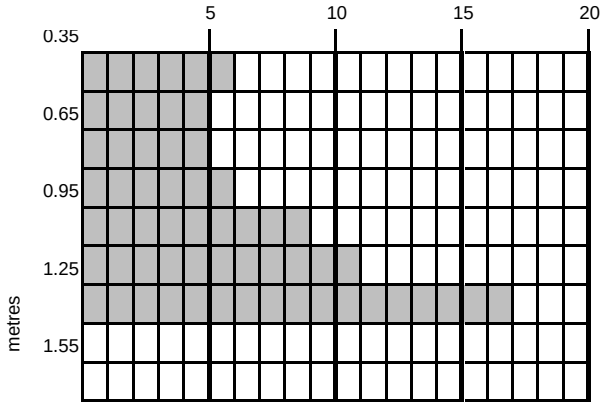
Location 13/CH805N

Number of Blows/150mm



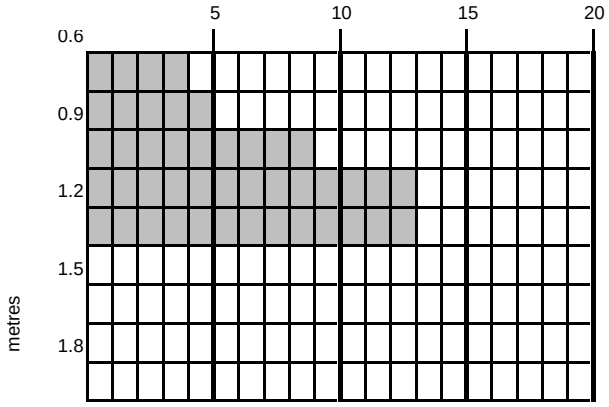
Location 14/CH1010S

Number of Blows/150mm



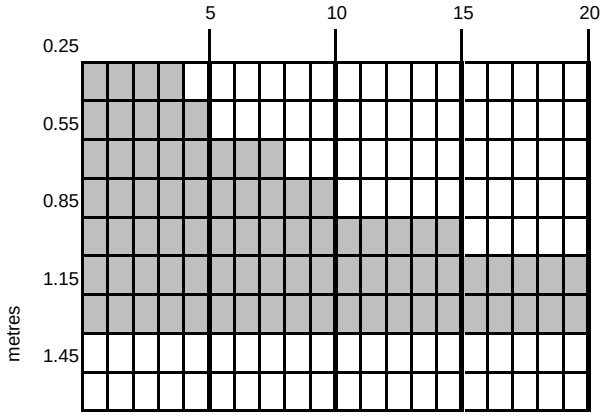
Location 15/CH1120N

Number of Blows/150mm



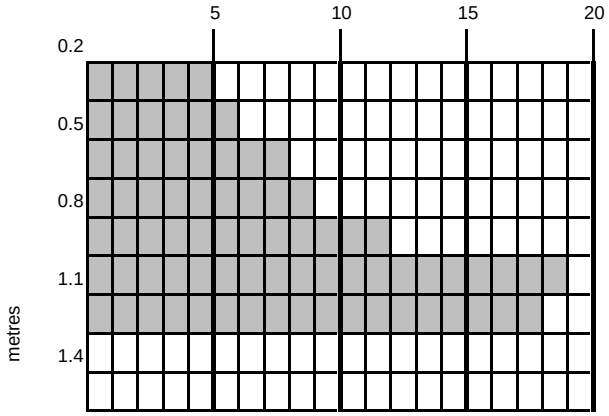
Location 16/CH40E

Number of Blows/150mm



Location 17/CH105W

Number of Blows/150mm



Location 18/Apron

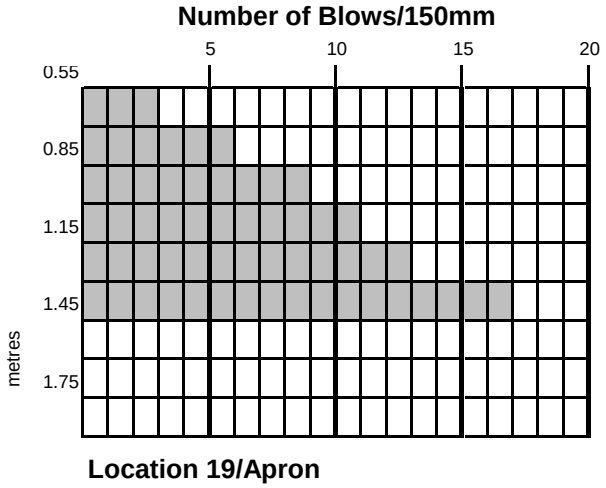
Project no TG12028/1

TASMAN geotechnics

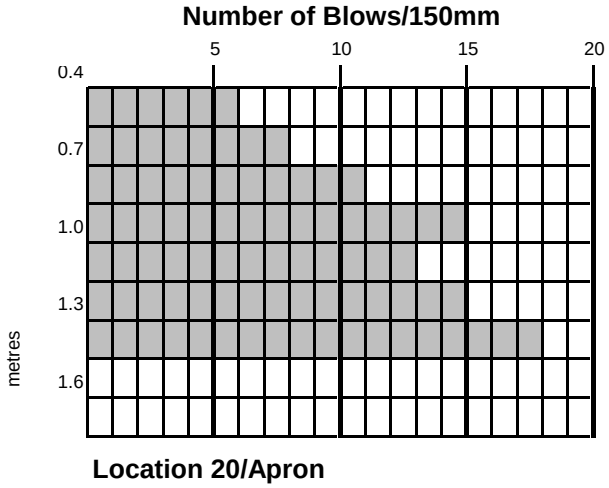
PERTH SAND PENETROMETER PENETROMETER TESTING

client Aurecon
project Flinders Island Aerodrome
location Whitemark

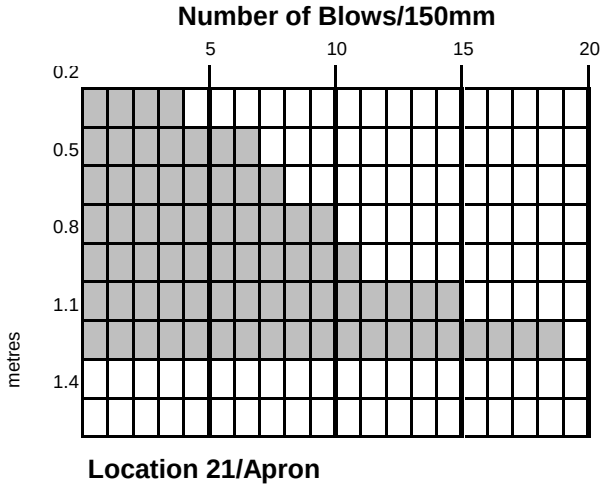
performed by FH
date 5-7/06/2012
Surface RL runway



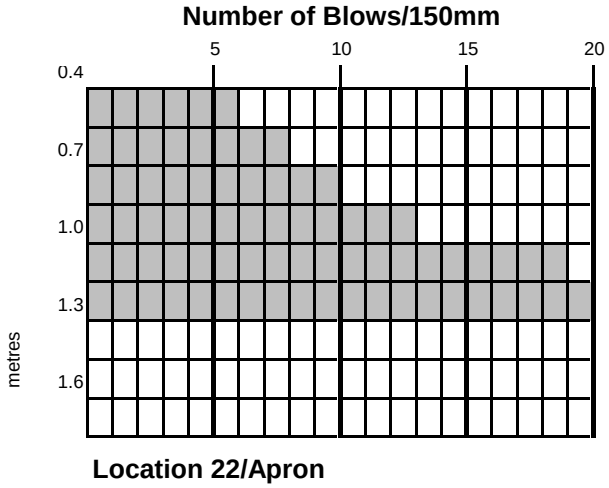
Location 19/Apron



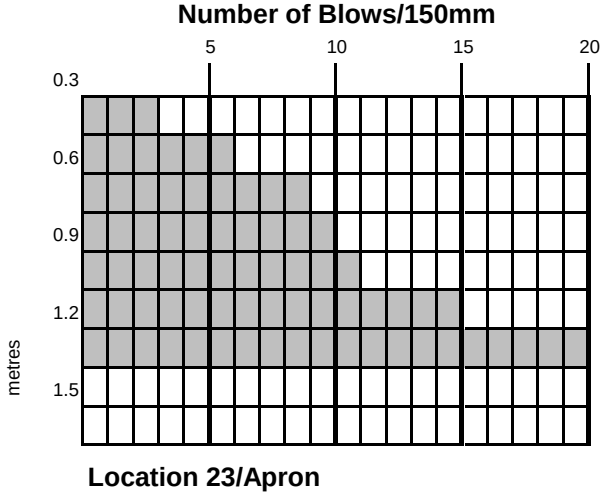
Location 20/Apron



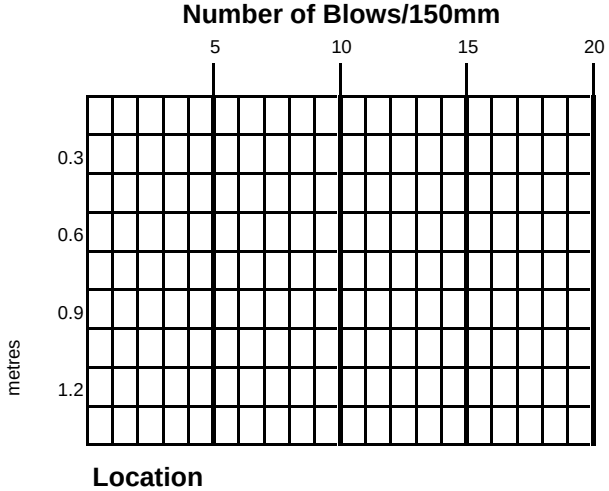
Location 21/Apron



Location 22/Apron



Location 23/Apron



Location

Appendix B

Laboratory Test Certificates

ADG LABORATORIES

materials testing laboratories

7 Derby Street Mowbray Ph (03) 63261266 Fax (03) 63261566 ACN 117 593 254

client	**Tasman Geotechnics**
project	**TG12028/1**
location	**Flinders Island Aerodrome**
project no	**M540**
date received	**21/6/12**
date tested	**9/7/12**
sampled by	**Client**
test report No	**M540/AH**

laboratory No.		L12/422	h	a	b		
test pit No.			**TP # 2 1.0-1.15m**	**TP # 3 0.1-0.3m**	**TP # 4 0.3-0.4m**		
material description			Grey Sand	Grey/Brown Silty Sand / Gravel	Light Brown Silty Sand/Gravel		
Test description		Test Method **AS 1289**	Results			units	
Liquid Limit		3.1.1	**NR**	**NR**	**NR**	%	
Plastic Limit		3.2.1				%	
Plasticity Index		3.3.1				%	
Linear Shrinkage		3.4.1				%	
75 Micron Wash		1141.11	**4.9**	**NR**	**NR**	%	
Moisture Content		2.1.1	**NR**	**5.9**	**5.2**	%	
Particle Size Distribution		3.6.1					
	mm		**NR**				
	100					%	
finer than	75					%	
	37.5					%	
	26.5					%	
	19					%	
	13.2			**100**	**100**	%	
	9.5			**99**	**99**	%	
	6.7			**97**	**97**	%	
	4.75			**89**	**92**	%	
	2.36			**65**	**72**	%	
	1.18			**43**	**53**	%	
	0.600			**32**	**41**	%	
	0.425			**28**	**37**	%	
	0.300			**25**	**33**	%	
	0.150			**19**	**25**	%	
	0.075			**15**	**19**	%	

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Approved Signatory

B Cuthbertson

date of issue **11/7/12**

ADG LABORATORIES

materials testing laboratories

7 Derby Street Mowbray Ph (03) 63261266 Fax (03) 63261566 ACN 117 593 254

client	**Tasman Geotechnics**
project	**TG12028/1**
location	**Flinders Island Aerodrome**
project no	**M540**
date received	**21/6/12**
date tested	**9/7/12**
sampled by	**Client**
test report No	**M540/AI**

laboratory No.		L12/422	g	c	i		
test pit No. material description			**TP # 6 0.7-0.9m** Light Grey Silty Sand	**TP # 7 0.1-0.2m** Light Brown Silty Sandy Gravel	**TP #10 0.65-0.75m** Light Brown Silty Sandy Gravel		
Test description		Test Method **AS 1289**	Results			units	
Liquid Limit		3.1.1	**NR**	**NR**	**NR**	%	
Plastic Limit		3.2.1				%	
Plasticity Index		3.3.1				%	
Linear Shrinkage		3.4.1				%	
75 Micron Wash		1141.11	**27.3**	**NR**	**NR**	%	
Moisture Content		2.1.1	**NR**	**6.2**	**NR**	%	
Particle Size Distribution		3.6.1					
	mm		**NR**				
	100					%	
finer than	75					%	
	37.5					%	
	26.5					%	
	19					%	
	13.2			**100**		%	
	9.5			**99**		%	
	6.7			**97**		%	
	4.75			**91**	**100**	%	
	2.36			**70**	**99**	%	
	1.18			**52**	**93**	%	
	0.600			**42**	**79**	%	
	0.425			**37**	**71**	%	
	0.300			**33**	**64**	%	
	0.150			**24**	**53**	%	
	0.075			**19**	**47**	%	

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ADG LABORATORIES

materials testing laboratories

7 Derby Street Mowbray Ph (03) 63261266 Fax (03) 63261566 ACN 117 593 254

client	**Tasman Geotechnics**
project	**TG12028/1**
location	**Flinders Island Aerodrome**
project no	**M540**
date received	**21/6/12**
date tested	**9/7/12**
sampled by	**Client**
test report No	**M540/AJ**

laboratory No.		L12/422	d	e	m		
test pit No. / material description			**TP # 10 0.2-0.3m** Grey Silty Sand Gravel	**TP # 12 0.3-0.4m** Brown Silty Sand Gravel	**TP #12 0.7-1.1m** Light Brown Silty Clayey Sand		
Test description		Test Method **AS 1289**	Results			units	
Liquid Limit		3.1.1	**NR**	**NR**	**NA**	%	
Plastic Limit		3.2.1			**NA**	%	
Plasticity Index		3.3.1			**non plastic**	%	
Linear Shrinkage		3.4.1			**0**	%	
75 Micron Wash		1141.11	**NR**	**NR**	**NR**	%	
Moisture Content		2.1.1	**8.5**	**4.9**	**NR**	%	
Particle Size Distribution		3.6.1					
	mm						
	100					%	
finer than	75					%	
	37.5					%	
	26.5					%	
	19					%	
	13.2			**100**		%	
	9.5		**100**	**99**	**100**	%	
	6.7		**99**	**96**	**99**	%	
	4.75		**81**	**91**	**99**	%	
	2.36		**68**	**68**	**93**	%	
	1.18		**56**	**50**	**80**	%	
	0.600		**47**	**39**	**59**	%	
	0.425		**35**	**35**	**49**	%	
	0.300		**16**	**31**	**40**	%	
	0.150		**11**	**24**	**26**	%	
	0.075			**19**	**18**	%	

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ADG LABORATORIES

materials testing laboratories

7 Derby Street Mowbray Ph (03) 63261266 Fax (03) 63261566 ACN 117 593 254

client	**Tasman Geotechnics**
project	**TG12028/1**
location	**Flinders Island Aerodrome**
project no	**M540**
date received	**21/6/12**
date tested	**9/7/12**
sampled by	**Client**
test report No	**M540/AK**

laboratory No.		L12/422	l	j	f		
test pit No.			**TP # 15 0.5-0.7m**	**TP # 20 0.4-1.0m**	**TP #21 0.05-0.2m**		
material description			Light Brown/Grey Silty Sandy Clay	Grey/Brown Sandy Clay	Grey Silty Sandy Gravel		
Test description		Test Method **AS 1289**	Results			units	
Liquid Limit		3.1.1	**28**	**50**	**NR**	%	
Plastic Limit		3.2.1	**15**	**21**		%	
Plasticity Index		3.3.1	**13**	**29**		%	
Linear Shrinkage		3.4.1	**7**	**10.5**		%	
75 Micron Wash		1141.11	**NR**	**NR**	**NR**	%	
Moisture Content		2.1.1	**NR**	**NR**	**NR**	%	
Particle Size Distribution		3.6.1					
	mm						
	100					%	
finer than	75					%	
	37.5					%	
	26.5					%	
	19					%	
	13.2		**100**	**100**	**100**	%	
	9.5		**98**	**99**	**99**	%	
	6.7		**97**	**99**	**98**	%	
	4.75		**97**	**97**	**95**	%	
	2.36		**94**	**95**	**75**	%	
	1.18		**90**	**89**	**63**	%	
	0.600		**81**	**76**	**54**	%	
	0.425		**74**	**69**	**46**	%	
	0.300		**66**	**62**	**34**	%	
	0.150		**53**	**51**	**20**	%	
	0.075		**46**	**46**	**17**	%	

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ADG LABORATORIES

materials testing laboratories

7 Derby Street Mowbray Ph (03) 63261266 Fax (03) 63261566 ACN 117 593 254

client	**Tasman Geotechnics**
project	**TG12028/1**
location	**Flinders Island Aerodrome**
project no	**M540**
date received	**21/6/12**
date tested	**9/7/12**
sampled by	**Client**
test report No	**M540/AL**

laboratory No.		**L12/422**	**k**				
test pit No.			**TP # 21 0.3-0.7m**				
material description			Light Brown/Grey Silty Sandy Clay				
Test description		Test Method **AS 1289**	Results			units	
Liquid Limit		3.1.1	**60**			%	
Plastic Limit		3.2.1	**25**			%	
Plasticity Index		3.3.1	**35**			%	
Linear Shrinkage		3.4.1	**12**			%	
75 Micron Wash		1141.11	**NR**			%	
Moisture Content		2.1.1	**NR**			%	
Particle Size Distribution		3.6.1					
	mm						
	100					%	
finer than	75					%	
	37.5					%	
	26.5					%	
	19					%	
	13.2					%	
	9.5					%	
	6.7		**100**			%	
	4.75		**99**			%	
	2.36		**93**			%	
	1.18		**84**			%	
	0.600		**76**			%	
	0.425		**72**			%	
	0.300		**69**			%	
	0.150		**66**			%	
	0.075		**64**			%	

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date of issue **11/7/12**

SOAKED CBR TEST
AS 1289 6.1.1

ADG LABORATORIES

materials testing laboratories

7 Derby Street Mowbray ph 63261266 fx 63261566 ACN 117 593 254

client	**Tasman Geotechnics**	
project	**TG12028/1**	
location	**Flinders Island Aerodrome**	
date received	**21/6/12**	
date tested	**9/7/12**	
sample identification	**TP 12 0.7-1.1m**	**TP 15 0.5-0.7n**
sampled by	**client**	**client**
sample description	**Light Brown Silty Clayey Sand**	**Light Brown/Grey Silty Sandy Clay**
test report no	**443/AM**	

compaction details 1			
test method	AS 1289 5.1.1 Standard Compaction		
sample identification	L12/422e	L12/422l	
maximum dry density t/m^3	2.03	1.82	
optimum moisture content %	8.8	15.5	
field moisture content %	6.3	14.8	
compaction details 2			
required density ratio for remoulding %	100	100	
retained 19mm (not replaced) %	0	0	
specimen details before soaking			
dry density ratio %	100	101	
moisture ratio %	94	95	
test details			
period of soaking days	**4**	**4**	
moisture content top 30mm %	10.3	21.3	
surcharge mass kgs	4.5	4.5	
C.B.R. VALUE	**30**	**3.0**	
penetration mm	5.0	5.0	

remarks

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11/7/12

date of issue

cbr 0806

SOAKED CBR TEST
AS 1289 6.1.1

ADG LABORATORIES

materials testing laboratories

7 Derby Street Mowbray ph 63261266 fx 63261566 ACN 117 593 254

client	**Tasman Geotechnics**	
project	**TG12028/1**	
location	**Flinders Island Aerodrome**	
date received	**21/6/12**	
date tested	**9/7/12**	
sample identification	**TP 20 0.4-1.0m**	**TP 21 0.3-0.7m**
sampled by	**client**	**client**
sample description	**Grey/Brown Silty Sandy Clay**	**Light Brown/Grey Silty Sandy Clay**
test report no	**443/AN**	

compaction details 1			
test method	AS 1289 5.1.1 Standard Compaction		
sample identification	L12/422j	L12/422k	
maximum dry density t/m^3	1.79	1.65	
optimum moisture content %	16.2	20.5	
field moisture content %	15.1	20.4	
compaction details 2			
required density ratio for remoulding %	100	100	
retained 19mm (not replaced) %	0	0	
specimen details before soaking			
dry density ratio %	101	100	
moisture ratio %	91	100	
test details			
period of soaking days	**4**	**4**	
moisture content top 30mm %	21.2	29.1	
surcharge mass kgs	4.5	4.5	
C.B.R. VALUE	**3.5**	**4.0**	
penetration mm	2.5	2.5	

remarks

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11/7/12
date of issue

Appendix C
FWD Test Deflections – 14/32 Runway

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
1	14/6/2012	1545	-18.75	821.6	472.1	299.7	188.5	124	85.7	65.3	45.7	42.1
2	14/6/2012	1585	-15	1248.4	697.3	378.5	174.6	111.6	80	76	52.6	39.9
3	14/6/2012	1535	-11.25	1167.9	565	332.4	191.7	129.8	92.9	76.9	50.5	39.8
4	14/6/2012	1550	-11.25	813.9	411.3	251.8	136.4	89	62.9	50.5	35.2	26.8
5	14/6/2012	-70	-7.5	2464.6	1312.6	651.9	293.4	140.1	75.7	48.3	25.2	38
6	14/6/2012	-50	-7.5	1699.9	827.5	508.2	279.5	177.2	115.6	82.6	41.4	25.6
7	14/6/2012	-40	-7.5	1563.9	1004.6	530.9	283.1	189.4	121.4	92.9	48.9	37.3
8	14/6/2012	-20	-7.5	1649.3	792.3	396.8	218.1	148	107.6	81	42.2	26.2
9	14/6/2012	-10	-7.5	1882.1	908.2	392.4	221.9	145.3	101.4	66.4	36.8	41.9
10	14/6/2012	10	-7.5	1623.3	739.4	429.4	246.8	162	111.9	83	53.2	40.3
11	14/6/2012	20	-7.5	1407.9	750.1	428.3	243.8	166	119.1	90.7	53.4	37.1
12	14/6/2012	30	-7.5	1305.3	697.5	414	247.1	165.3	118.3	92.2	51.2	36.1
13	14/6/2012	40	-7.5	1300.7	703.6	400.5	241.5	167.1	121.6	95.3	55	49.5
14	14/6/2012	50	-7.5	1329.7	701.5	427.3	265.1	186.8	135	104.4	64.7	40.3
15	14/6/2012	60	-7.5	1384.5	641.6	409.1	254.6	175.6	133.7	108.5	64.9	35.4
16	14/6/2012	70	-7.5	1473.9	725	454.7	284.9	199.1	154	117.8	65.1	55.1
17	14/6/2012	80	-7.5	1599.6	782.5	468.8	269.4	195.9	136	105.6	52.5	42
18	14/6/2012	90	-7.5	1554.3	798.1	478	294.8	192.2	144	104.8	61.9	41.2
19	14/6/2012	100	-7.5	1462.8	742.3	468.1	287.4	200.4	148.8	116.9	69.9	49.3
20	14/6/2012	110	-7.5	1466.4	732.1	469.6	298.8	215.5	153.4	128.4	78.4	40.1
21	14/6/2012	120	-7.5	1452	750.9	502.1	325.2	228.5	161.7	134.2	79.9	44
22	14/6/2012	140	-7.5	1308.9	671.2	430.7	283.1	203.9	151.3	122.2	83.1	50.7
23	14/6/2012	150	-7.5	1235.9	689.3	438.8	288	202	148	115.3	72	45.3
24	14/6/2012	170	-7.5	1155.1	642.4	426.8	286.1	207.8	152.8	137.9	85.9	63.2
25	14/6/2012	190	-7.5	1275.9	691.5	438.6	288.6	208.1	156.9	128.1	78	54.8
26	14/6/2012	200	-7.5	1229.6	585.2	392.8	256.5	180.7	131.5	109	64.7	50.9
27	14/6/2012	220	-7.5	1327.1	649.5	416.1	268.1	194.4	140.9	110	72.9	46
28	14/6/2012	230	-7.5	1189.6	639.7	393	250.5	179.3	135.5	106.9	67.5	48.4
29	14/6/2012	250	-7.5	1109.8	598.1	373.2	237.2	168.1	124.5	93.8	60.9	43.4
30	14/6/2012	270	-7.5	1348.4	716.8	467.2	299.8	211.9	161.3	124.6	72.4	51.2
31	14/6/2012	280	-7.5	1376.3	763.3	489.5	318.5	223	160.9	127.8	81.3	53.2
32	14/6/2012	300	-7.5	1010.6	488	311.6	194.4	140.2	102.9	81.5	50.1	36.6
33	14/6/2012	310	-7.5	1236.6	540.7	345.9	209	148.3	107.4	85.9	58.9	46.2
34	14/6/2012	330	-7.5	1156.4	572.3	363.5	226.9	160.3	116.9	91.6	61.3	44.6
35	14/6/2012	350	-7.5	1043.4	515.7	319.9	193.9	131.8	91.8	72.1	48.1	36.7
36	14/6/2012	360	-7.5	1021.8	499	294.2	187.7	134.7	94.7	72.1	55.2	37.2
37	14/6/2012	380	-7.5	1028.6	470.6	293	177.4	118.1	85.2	66.6	46.3	35.9
38	14/6/2012	390	-7.5	1142.3	575.2	331.6	195.8	128.5	86.5	65.3	47.3	34.1

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
39	14/6/2012	410	-7.5	1225.1	616.4	406.9	254.1	176.1	121.7	94.2	58.3	43.1
40	14/6/2012	430	-7.5	1054.4	543.2	353.8	227	158.3	116.5	92.7	56.8	39.5
41	14/6/2012	440	-7.5	1062	568.9	359.3	227.7	159.9	118.2	91.6	60.7	44.1
42	14/6/2012	460	-7.5	898.4	450.8	311.4	202.4	152.4	114	89.1	58.5	41.6
43	14/6/2012	470	-7.5	938.8	477	327.2	221.9	161.8	122.8	95.6	62.7	41.3
44	14/6/2012	490	-7.5	897.3	492.6	326.9	219.9	166.5	125	103.1	68.7	50.5
45	14/6/2012	510	-7.5	837.1	455.9	295.5	202.6	153.1	121.5	98.7	66.9	47
46	14/6/2012	520	-7.5	787.4	433.5	294.2	194.9	144.8	113.2	91.3	64	46.5
47	14/6/2012	540	-7.5	785.7	398.6	271.9	187.1	138.5	105.1	80.7	55	38.9
48	14/6/2012	550	-7.5	826.6	434.6	282.2	197.4	146.5	111.4	87.4	53.5	36.9
49	14/6/2012	570	-7.5	737.2	408.2	283.1	207.6	165	132.1	111.2	74.1	48.1
50	14/6/2012	590	-7.5	895.3	435.1	292	193.3	140.3	108	93.5	55.9	43.4
51	14/6/2012	600	-7.5	693.6	401.7	261.7	186.2	141.4	112.6	84	59.9	41.2
52	14/6/2012	620	-7.5	808.3	409.1	268.3	188.6	142.9	111.9	94.3	61.9	45
53	14/6/2012	630	-7.5	811.2	401.8	265.8	186.6	138.1	110.2	88	59.4	52.1
54	14/6/2012	650	-7.5	833.8	416.6	283.2	194.3	147.9	114.3	99.6	68.4	48.4
55	14/6/2012	670	-7.5	758.6	376.4	248.8	177.4	134.7	104.4	86.2	57.6	40.9
56	14/6/2012	680	-7.5	716.4	355.1	237.8	163.1	119.3	90.7	72.1	47.9	35.6
57	14/6/2012	700	-7.5	716.7	360	222.9	146.6	102.4	75.5	62	39.9	31.3
58	14/6/2012	710	-7.5	740	344	216.6	134.7	93.7	63.3	58.6	39.6	26.5
59	14/6/2012	730	-7.5	1000.7	480.3	295.1	182.4	123.7	93	73.1	48.9	40.1
60	14/6/2012	750	-7.5	889.5	392.1	228.7	141.9	97.9	73.5	57.1	38.9	29.4
61	14/6/2012	760	-7.5	850.2	409.2	261.7	178.1	135.9	101	80.6	54.5	46.7
62	14/6/2012	780	-7.5	780.6	378.7	245.9	171.3	132.4	104.1	79.8	60.3	47.4
63	14/6/2012	790	-7.5	848	416.7	249.8	164.4	117.6	88	68	44.3	31.9
64	14/6/2012	810	-7.5	816.3	422.4	278.1	179.1	128.2	98.6	80	54.2	38.2
65	14/6/2012	830	-7.5	784.5	444.8	305.5	200.2	150.1	117.7	98.1	68	50.4
66	14/6/2012	840	-7.5	868.4	434.2	299.2	198.6	152.1	115.7	99	68.8	50
67	14/6/2012	860	-7.5	818.8	408.1	279.9	194.7	148.2	119	101.1	74	56.2
68	14/6/2012	870	-7.5	780.1	370.2	253.6	181.5	143.6	116.2	100.1	71.5	48.4
69	14/6/2012	890	-7.5	1008.2	897.5	356.8	224.7	157.8	118.6	93.5	62.2	47.2
70	14/6/2012	910	-7.5	1253.9	657.2	418.4	260.6	178.7	130.1	103.4	63.1	48.5
71	14/6/2012	920	-7.5	1217.6	642.6	387.6	243.5	164.6	116	95.2	59.4	41.5
72	14/6/2012	940	-7.5	1170.9	585	333.3	190.7	125.1	88.3	67.3	43	30.1
73	14/6/2012	950	-7.5	1192.5	554.7	321.6	181.8	118.7	83.4	63.9	39.5	27.5
74	14/6/2012	970	-7.5	1336.6	644.8	319.7	164.8	107.2	72.1	51.4	28.4	18.6
75	14/6/2012	990	-7.5	1553.1	734.4	422	214.2	126.1	74.7	45	22.4	10.3
76	14/6/2012	1000	-7.5	1680.7	849.1	477.4	266	160.7	110.2	82.9	37.6	25.6

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
77	14/6/2012	1020	-7.5	1505.8	799.1	462.3	264.2	179.4	128.1	99.8	56.6	39.9
78	14/6/2012	1030	-7.5	1416	751.3	357.7	173.9	114.2	78.9	51.1	17.9	8.7
79	14/6/2012	1050	-7.5	1258.8	622.8	352.1	188.1	118.7	76.8	58.5	29.5	18.4
80	14/6/2012	1070	-7.5	1403.9	725.2	454.4	273.4	184.2	125.8	92.5	44.4	14.8
81	14/6/2012	1080	-7.5	1065.8	538.7	301.7	167.5	102.8	64.7	45.1	19.1	10.3
82	14/6/2012	1100	-7.5	1011.2	433	236.3	119.8	66.4	41.9	25.9	11.9	8
83	14/6/2012	1110	-7.5	1095.3	516.2	317.9	177.5	114.2	76.9	56.9	34.1	25.1
84	14/6/2012	1130	-7.5	1355.1	756.1	494.8	311.7	214.4	156.3	119.7	74.3	48.6
85	14/6/2012	1150	-7.5	1210.8	693	448.4	295.3	216.2	163.5	132.8	87.7	58.6
86	14/6/2012	1170	-7.5	1215.7	631.2	417.6	264.4	198	148.6	121	83.5	56.8
87	14/6/2012	1180	-7.5	1137.2	614.3	389.7	251.4	180.5	133	101.4	70.3	51.2
88	14/6/2012	1190	-7.5	1189	652.3	427.8	273.8	203.6	149.9	114.9	76.5	58.1
89	14/6/2012	1210	-7.5	980.8	521	351.5	236.5	179.3	142	112.7	82.5	60.7
90	14/6/2012	1230	-7.5	1058.4	596.3	382.3	249.7	187.1	137.2	112.7	73.9	53.9
91	14/6/2012	1240	-7.5	1233.4	641	414.3	266.4	187.6	141.1	111.1	76	51.4
92	14/6/2012	1260	-7.5	1067.9	583.8	368.1	242	175.9	131.1	106.5	72.8	52.1
93	14/6/2012	1270	-7.5	1113.6	557	359.1	238.4	169.8	126.5	108.5	66.4	44.3
94	14/6/2012	1290	-7.5	1072.2	635.1	391.9	243	173	130.9	102.6	67.7	50.7
95	14/6/2012	1310	-7.5	1082.4	553.3	358.2	208	143.6	101	77.2	48.4	37.3
96	14/6/2012	1320	-7.5	1019.4	534.3	324.8	204.8	137.5	95.4	66.4	37.6	24.3
97	14/6/2012	1340	-7.5	1180.3	602.6	366.5	213.7	138.6	95.3	75.6	47.8	35.5
98	14/6/2012	1350	-7.5	1239.8	608.2	380.9	224.5	153.1	108.8	88	56.6	45.5
99	14/6/2012	1370	-7.5	1283.4	685.9	435.1	269.6	182.4	127.3	97.2	56.9	39.9
100	14/6/2012	1390	-7.5	1337.4	713.6	430	259.2	183.6	113.2	83.9	57.9	44.4
101	14/6/2012	1400	-7.5	674.5	360.8	237.2	164.9	121.8	95.7	78	50.7	38
102	14/6/2012	1420	-7.5	641.5	329.4	190.9	114.1	78.5	57.2	47.9	31.4	24.1
103	14/6/2012	1430	-7.5	628.7	326.4	215.4	141.9	102	78.4	62.4	41.9	29.5
104	14/6/2012	1450	-7.5	1391.9	684.6	412.7	250.9	166.2	120.7	103	64.8	48.2
105	14/6/2012	1470	-7.5	1422.7	701.5	395	204.1	135.7	94.6	73.6	51.7	46.6
106	14/6/2012	1480	-7.5	1315.1	708.3	425.2	235.4	153.9	111.8	96.9	60.9	42.9
107	14/6/2012	1500	-7.5	680.5	337	210.4	127	87	62.6	46.2	34	25.9
108	14/6/2012	1510	-7.5	838	451.8	268.4	161.8	111.7	82.1	64.8	45.4	33.1
109	14/6/2012	1530	-7.5	1142.7	599.6	352	180.6	109.1	72	56.4	39.4	30.9
110	14/6/2012	1560	-7.5	1071.4	516.3	288.7	160.1	102.4	67	51.8	34.5	22.4
111	14/6/2012	1580	-7.5	867.1	449.3	271.9	163.1	108.5	76.2	57.9	40.1	29.9
112	14/6/2012	1590	-7.5	986.2	486	277.5	147.7	97.6	66.2	47.3	39.8	35.6
113	14/6/2012	1610	-7.5	735.1	389.2	222	132.2	87.4	59.7	47.3	30.7	24.4
114	14/6/2012	1620	-7.5	1282.9	638.1	377.3	204	129.2	85.1	66.9	48.9	37.8

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
115	14/6/2012	1630	-7.5	1206.2	559.8	321.7	156.9	99.1	69.9	52.1	36.8	28.9
116	14/6/2012	1640	-7.5	1206.7	635.2	348.5	169.9	97.7	63.8	44.8	31.3	26.9
117	14/6/2012	1650	-7.5	1029	618.6	372.8	184.7	104.2	72.5	56.4	41.6	33.6
118	14/6/2012	1660	-7.5	1207.6	670.6	388.4	179.5	92.7	63.2	53.1	40	32.4
119	14/6/2012	1670	-7.5	1699	968.9	544.5	210	82.2	48	47	36.4	29.9
120	14/6/2012	1680	-7.5	1263	723.2	383.4	171.7	99.7	63.5	46.8	39.2	33.2
121	14/6/2012	1690	-7.5	1406.6	815.4	435.4	154.4	75.3	55.9	63.7	31.2	26.3
122	14/6/2012	1700	-7.5	1397.1	828.3	507.2	231.6	114.1	64.6	55.9	36.4	27.1
123	14/6/2012	1710	-7.5	1035	478.3	294.6	173.9	115.3	79	59.9	42.6	32.3
124	14/6/2012	1720	-7.5	1195.9	548.7	307.8	171.3	112.5	79.6	62	43.6	34.7
125	14/6/2012	1740	-7.5	1325.9	655.7	414.7	230.9	141.3	94.2	71.4	45.8	36.4
126	14/6/2012	1750	-7.5	1981.8	1301.7	678.8	289.7	144.4	75.7	45.1	47.6	55.6
127	13/6/2012	-60	-3.75	1795.9	985.5	591.3	337	212.2	131.6	100.6	51.2	34.7
128	13/6/2012	-30	-3.75	1677.1	912.5	507.8	302	205.5	147.1	102.1	72.5	52.1
129	13/6/2012	0	-3.75	1310.5	649	381	221.8	159.9	113.5	94.7	54.2	38.3
130	13/6/2012	10	-3.75	1601.9	758.7	408.9	227	157.6	114.7	87.3	55.9	42.2
131	13/6/2012	20	-3.75	1380.1	666.9	417.9	264.7	176.1	122.7	88.5	58.9	49.6
132	13/6/2012	30	-3.75	1359.4	608.1	342.3	210.4	148.5	107.7	85.5	54.3	37.1
133	13/6/2012	40	-3.75	1408.1	727.9	444	260.8	176.7	127.7	104.9	65.8	44.3
134	13/6/2012	50	-3.75	1232.1	609.1	362.4	216.3	147.6	105.5	82.2	53.5	36.8
135	13/6/2012	60	-3.75	1378.1	699.3	422.2	252.9	176.5	126.2	99.2	60.7	41.4
136	13/6/2012	70	-3.75	1320.3	694.7	405.5	233.3	158.9	117.1	97	59.8	42.4
137	13/6/2012	80	-3.75	1248.4	706.1	398.1	250.4	183.1	137	104.5	64	44.1
138	13/6/2012	90	-3.75	1185	644.5	376.8	242.3	174.3	127.3	106.6	63.6	45.6
139	13/6/2012	100	-3.75	1241.7	599.8	377	234.7	171.7	124.2	100.5	60.8	42.8
140	13/6/2012	130	-3.75	1425.5	766.8	464	284.4	206.3	154.5	122.8	79.1	50
141	13/6/2012	160	-3.75	1100.8	624.9	392.4	258.5	188.8	144.8	114.3	78.8	59.5
142	13/6/2012	180	-3.75	1182.4	605.5	388.2	242.4	175.6	135.5	107.5	72.8	51.6
143	13/6/2012	210	-3.75	1121.4	576.3	373.4	241.6	182.5	134.4	106.2	71.1	50.9
144	13/6/2012	240	-3.75	1165.5	658.5	423.9	268.3	188.1	139	108.5	72.7	52.6
145	13/6/2012	260	-3.75	1020.6	539.8	363.4	236.7	176.2	136.1	105.2	67.5	45.3
146	13/6/2012	290	-3.75	1234.5	669.7	442.4	267.6	194.6	139.1	110.9	71	50.1
147	13/6/2012	320	-3.75	886.8	434.9	294	191.5	140.1	101.8	80.2	52.6	39.4
148	13/6/2012	340	-3.75	1096.8	569.2	344.1	206.4	139	106.1	88.1	60.5	47.7
149	13/6/2012	370	-3.75	966.8	524.6	323.9	206.8	147	106.5	88.5	56.7	46.5
150	13/6/2012	400	-3.75	1004.7	519.6	322.6	210.7	149.7	113.7	88.7	59.9	44.9
151	13/6/2012	420	-3.75	977.2	503.8	317	191.8	131.6	93.4	74.4	49.6	36.6
152	13/6/2012	450	-3.75	1067.2	566	371.4	242.2	174.6	127.4	100	62.8	42.6

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
153	13/6/2012	480	-3.75	869.3	478.5	304.3	201.9	148.7	112.7	88	60.1	43.2
154	13/6/2012	500	-3.75	860	460.5	324.4	219.2	160.9	122.6	95.4	63.7	45.1
155	13/6/2012	530	-3.75	819.7	473.1	303.1	207.9	151.4	117.7	92.8	67	42.2
156	13/6/2012	560	-3.75	728.9	381.2	262.5	178.9	136.3	103.5	94.9	54.5	47.9
157	13/6/2012	580	-3.75	686.1	362.8	258.9	182.1	141.2	109.7	93.8	63.3	42
158	13/6/2012	610	-3.75	787.4	386.3	281.6	201.6	157.6	123.1	98.5	67.7	48.4
159	13/6/2012	640	-3.75	714.7	376.4	262.6	177.6	135.3	98.9	79.3	57	45.4
160	13/6/2012	660	-3.75	662.1	394.7	283.2	200.5	156.4	117.5	93.6	63.9	47.6
161	13/6/2012	690	-3.75	628.6	389	256.4	183.3	139.8	110	92.7	62.5	46.3
162	13/6/2012	720	-3.75	719.9	387.9	274.8	185	139.1	107.9	86.1	58	42.8
163	13/6/2012	740	-3.75	696.6	363.6	233.7	150	111	83.4	67.8	43	36.4
164	13/6/2012	770	-3.75	704.5	393	247.2	161.9	118.4	89.7	71.2	47.3	36.1
165	13/6/2012	800	-3.75	823.2	434.7	301.1	211.3	162.2	126	104.3	73.5	56
166	13/6/2012	820	-3.75	827.6	401.9	265.6	170.2	123	86.5	68.3	45	34.6
167	13/6/2012	850	-3.75	655.3	356.8	252.2	179	140.5	113.2	95.5	63.2	46.5
168	13/6/2012	880	-3.75	899.6	485.9	325.3	220.5	167.4	124.5	104.8	75.8	53.5
169	13/6/2012	900	-3.75	823.2	424.1	297.1	203.2	153.4	119.3	97.2	68.2	51.4
170	13/6/2012	930	-3.75	928.7	467.6	314.8	207.3	154.5	112.4	87.9	60.3	46.2
171	13/6/2012	960	-3.75	1049.8	535	325.2	200.6	138.3	98.5	75.8	53.1	42.2
172	13/6/2012	980	-3.75	986.7	576.4	356.5	214.5	148.7	105.7	84.2	51.2	32
173	13/6/2012	1010	-3.75	1570.9	829.5	439.9	214.7	135.9	92.9	79.9	46.8	34.1
174	13/6/2012	1040	-3.75	1393.2	724.1	398.5	203.3	127	97.4	77.7	48.7	32.2
175	13/6/2012	1060	-3.75	1284.8	696.4	422.4	263.3	188.9	146.8	122.4	85.4	63.4
176	13/6/2012	1090	-3.75	1085	536.8	294.5	158.3	99.4	71	52.3	29.3	15
177	13/6/2012	1120	-3.75	1084.5	634	399.2	248.1	168.2	116.7	86.6	51.9	32.9
178	13/6/2012	1140	-3.75	1182.7	673.4	433.5	278.2	198.7	150	118.6	77	53.6
179	13/6/2012	1170	-3.75	881.4	486.2	322.2	211.7	159.9	120.7	95.8	65.6	50.3
180	13/6/2012	1200	-3.75	1117.3	548.1	384.6	256.5	192.6	144.4	111.5	74.6	56.6
181	13/6/2012	1220	-3.75	989.5	495.6	337.7	231.9	174	136.3	109.7	76.5	55
182	13/6/2012	1250	-3.75	847.7	462.8	313.6	217.2	162.3	125.2	101.6	68.2	49.7
183	13/6/2012	1280	-3.75	907.5	476.4	335.3	222.4	173.1	132.6	106.6	76.7	53.7
184	13/6/2012	1300	-3.75	1021.5	584.4	389.3	253.1	182.3	131.6	106.2	71.2	51.5
185	13/6/2012	1330	-3.75	854.5	427.9	275.2	174.7	127.8	92	77.1	51	30
186	13/6/2012	1360	-3.75	1108.6	586.8	372.3	217.7	146.8	103.5	83.7	60.4	45.2
187	13/6/2012	1380	-3.75	1029.8	563	365.3	224.3	160.2	121.5	89.3	60	59.9
188	13/6/2012	1410	-3.75	1204.7	623.8	374.5	225.6	151.6	110.5	84.9	58.4	46.6
189	13/6/2012	1440	-3.75	685.5	358.7	208	127.5	87	61.5	48.2	36.9	29.4
190	13/6/2012	1460	-3.75	1079.9	591.3	399.2	251.8	179.1	133.6	104.2	73.3	55.7

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
191	13/6/2012	1490	-3.75	1138.8	600.9	369	219.2	149	107.5	87.9	59.9	47.7
192	13/6/2012	1520	-3.75	733.4	342.8	203.3	125.8	91.5	68.6	53.4	38.2	29.7
193	13/6/2012	1540	-3.75	812.1	401	245.2	149.5	101.4	75.8	58	43.5	32.7
194	13/6/2012	1570	-3.75	1085.3	645.4	372.3	196.9	134.7	89.3	67.3	51.3	48.7
195	13/6/2012	1600	-3.75	1009.6	515	311	174.7	109.8	73.8	55.9	36.8	29.7
196	13/6/2012	1620	-3.75	1461.2	886.6	481.9	167.4	53.3	53.3	42.6	42.4	35.7
197	13/6/2012	1630	-3.75	1251.9	789.2	457.2	205.6	116.9	82.2	82.3	65.9	49.8
198	13/6/2012	1640	-3.75	1144.3	555	304	166.2	104.7	75.2	65.1	36.1	36.9
199	13/6/2012	1650	-3.75	1174.4	619.5	342.3	180.9	107.8	73.7	57.4	36.3	26.9
200	13/6/2012	1660	-3.75	1043.6	619.2	375.7	196.6	112.4	78.7	61.7	43.9	35
201	13/6/2012	1670	-3.75	1007	621	361.5	161.3	91.1	64.8	48	40.6	31.5
202	13/6/2012	1680	-3.75	1127.1	631.4	369.9	173.8	87.2	65.3	50.7	39.6	25.1
203	13/6/2012	1690	-3.75	1145.5	612.7	344.3	160	91	64.5	52.8	43.4	35
204	13/6/2012	1700	-3.75	1256	702.1	422.7	194.7	109.3	72.2	57.1	43.2	35.6
205	13/6/2012	1710	-3.75	984.4	546.3	343.8	190.7	113	75.4	58	42.8	33.6
206	13/6/2012	1720	-3.75	1193.8	616.5	355.2	196.1	122.2	81.9	59.1	39	39.2
207	13/6/2012	1730	-3.75	1083.2	633.5	347.5	191.6	125.1	81.9	64.8	46	42.3
208	13/6/2012	1760	-3.75	2434.3	1436.5	763.9	320.6	149.1	63.1	30.2	42.7	54.7
209	13/6/2012	-50	0	1728.4	906.2	518.9	287.4	185.5	131.6	91.9	55.2	46.8
210	13/6/2012	-10	0	1721.6	480.4	331.8	191.3	135.4	98	76.6	49.4	40.3
211	13/6/2012	10	0	1456.9	705.3	406.4	233.9	161.8	117.6	90.4	60	46.7
212	13/6/2012	20	0	1486.2	697.6	431.9	255.4	173.6	127.8	102.8	60.5	42.8
213	13/6/2012	30	0	1268.9	622.5	359.1	210.7	145.8	106.9	90.2	54.1	34.6
214	13/6/2012	40	0	1294.9	631.4	365.7	206.9	137.3	107.2	85.5	50.2	39.7
215	13/6/2012	50	0	1463.9	705.5	411.8	238.1	160	117	92.9	65.9	45.2
216	13/6/2012	60	0	1372.4	686.4	416.2	253.3	180.5	133.3	108.2	68.9	49.3
217	13/6/2012	70	0	1201.4	592.7	353.6	217.6	155.6	122.6	98.4	64.6	46.4
218	13/6/2012	80	0	1502.5	711.2	414.4	252.7	177	134	106.8	71.4	53.3
219	13/6/2012	90	0	1259.6	636.5	396.8	243.4	173.6	130.7	104.2	65.5	50
220	13/6/2012	100	0	1494.7	693.8	407.1	233.9	161.5	116.8	93.5	60	52.5
221	13/6/2012	110	0	1527.8	787.9	495.9	293.2	200.9	149.3	117.7	80	56.2
222	13/6/2012	150	0	1181.8	611.2	401	266.9	193.5	147.4	115.2	75.4	54.5
223	13/6/2012	190	0	1184.8	633.3	379.2	242.3	177.5	129.4	102	64.9	49.3
224	13/6/2012	230	0	1147.3	589.9	373.4	242.8	177.6	136	106.4	67.6	47.6
225	13/6/2012	270	0	1227.7	624.1	412.2	269.6	193.4	144.3	114.7	74.4	52.5
226	13/6/2012	310	0	995.4	470.4	307	185.1	129.1	92.3	77.7	51.5	39.1
227	13/6/2012	350	0	995.6	456.2	298.3	194.2	139.8	102.7	73.4	54.1	40.9
228	13/6/2012	390	0	1103.5	484.7	297.8	181.6	131.5	99.1	80.9	56.5	47.7

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
229	13/6/2012	430	0	1080.4	531.9	334.1	209	145.9	108.2	88.1	58.7	39.7
230	13/6/2012	470	0	922.4	458.3	309.2	209.5	154.5	116.8	99	59.2	42.5
231	13/6/2012	510	0	877.7	474.3	320.9	209.4	156.1	122	97.8	66	49.7
232	13/6/2012	550	0	801.3	412.2	284.1	189.9	145.3	112.9	85.9	61.7	43.1
233	13/6/2012	590	0	715.1	378.4	265.7	183.9	142.7	111.6	90.1	61.5	45.7
234	13/6/2012	630	0	809.4	417.5	277	192.1	144.3	112.1	88.5	59.9	45.8
235	13/6/2012	670	0	736.1	376.2	261	182.5	137.2	106.2	85.7	56	50.4
236	13/6/2012	710	0	698.8	360.9	261.3	177.9	135.3	103.3	86.7	54.8	37.1
237	13/6/2012	750	0	737.1	374.7	259.5	179.6	134.4	101.4	84.4	57.4	41.7
238	13/6/2012	790	0	790	415.7	271.5	185.1	134.7	97.2	82	55.1	43.1
239	13/6/2012	830	0	632.9	335.1	226.4	163.6	126.7	103	83.6	59.3	44.2
240	13/6/2012	870	0	943.6	495.8	323.5	218.4	161	128.8	105.8	72.9	54.9
241	13/6/2012	910	0	752.3	403.6	279.9	191.7	143.8	112.5	88.7	61.5	45.5
242	13/6/2012	950	0	876.2	468.9	301.8	203	142.3	111.5	81.4	54.2	38.3
243	13/6/2012	990	0	1276.3	654.8	378.7	190.7	117.6	80.7	64.9	44.2	27.9
244	13/6/2012	1030	0	1129.5	588	361.5	221.5	147.8	107.3	81.3	46.2	28.2
245	13/6/2012	1070	0	1309.9	697.9	438.4	276.1	195.1	146.1	107.9	69.8	42.3
246	13/6/2012	1110	0	827.8	433.8	291	200.2	148	119.5	99.5	68.4	51.5
247	13/6/2012	1150	0	846.3	473.4	317.9	212.6	158	116	96.8	62.6	45.7
248	13/6/2012	1190	0	940.6	526.9	342.4	221.3	163.8	121.6	98.2	63.4	53.9
249	13/6/2012	1230	0	862.2	438	296.7	203.4	150.7	120.1	92	58.4	45.9
250	13/6/2012	1270	0	972.3	540.9	365.3	242.3	177.7	132.9	108.7	73.5	57.6
251	13/6/2012	1310	0	832.8	448.7	286.1	189.1	132.8	96.2	72.9	50.5	37.1
252	13/6/2012	1350	0	1081.5	587.8	354.6	207.8	134.3	97.7	78.6	57.5	44.8
253	13/6/2012	1390	0	1244.9	601.6	396	224	149.7	103.6	78.9	52.3	46.2
254	13/6/2012	1430	0	745.1	349.7	205.1	133.3	92.9	66.6	49.5	34.4	34.2
255	13/6/2012	1470	0	1141.4	594.4	353.8	205.1	129	92.7	81.8	45.6	36.2
256	13/6/2012	1510	0	688.3	293.7	175.9	114.7	86	65.7	54.7	38.7	30.8
257	13/6/2012	1550	0	1092.3	628.6	336.3	179.9	117.9	83.4	73.6	52.3	41.7
258	13/6/2012	1590	0	894.2	480	279.6	151.9	96.6	66.2	50.9	35.4	28.4
259	13/6/2012	1620	0	784.5	458.1	283.9	160.1	104	72.2	55	38.4	28.1
260	13/6/2012	1630	0	1024.1	512.5	298.1	161.4	104.2	70.2	50.5	37.3	33.3
261	13/6/2012	1640	0	1159.2	524.8	294.9	155	94.7	65.1	51	36.4	29
262	13/6/2012	1650	0	1023.2	589.9	352.5	170.4	102.2	71.5	58.9	43.2	34.2
263	13/6/2012	1660	0	1147.2	603.5	366.7	188.8	100.1	67.3	53.7	43.9	34.9
264	13/6/2012	1670	0	1263.7	706	404	189.3	98.1	67	53.6	40.6	29.8
265	13/6/2012	1680	0	1318	859.5	508.2	250.9	129.9	80.8	65.9	47	42.7
266	13/6/2012	1690	0	1246.3	705.9	425.4	206.2	113.2	72.5	58.8	42.5	36.9

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
267	13/6/2012	1700	0	1182.3	575.7	343.5	173.9	109.7	80	62.4	44.2	37.2
268	13/6/2012	1710	0	1063.7	535.9	340	192.7	127.3	85	58.9	43.1	34
269	13/6/2012	1720	0	1161.2	618.2	385.8	219.6	134	86.1	63.6	43.3	36.7
270	13/6/2012	1750	0	1647.1	852.7	424.9	225.8	126.3	81.1	65.8	62.4	62.6
271	13/6/2012	-70	3.75	1756.6	952.7	593.8	348.2	211.4	132.9	95.7	48.4	48
272	13/6/2012	-40	3.75	1737	906.2	513	301.1	208.4	133.9	111.3	61.8	52.3
273	13/6/2012	-20	3.75	1580.5	676.9	364.9	212.9	148.4	106.6	76.8	55.5	39.2
274	13/6/2012	10	3.75	1400.4	749.9	423.9	241.8	161	118.2	93.3	62	43.7
275	13/6/2012	20	3.75	1169.9	638.8	377.2	222.2	153.3	108.9	85.7	50.9	38.6
276	13/6/2012	30	3.75	1346.6	664.8	379.6	224.3	156.3	115	92.4	59.5	41.8
277	13/6/2012	40	3.75	1357.6	780.6	436.1	254.6	179.2	130.4	108.2	72.2	46.5
278	13/6/2012	51	3.75	1581.1	804.5	438.5	242.8	172.5	126.9	96.3	60.7	47.9
279	13/6/2012	60	3.75	1625.7	842.2	483.7	285.1	202	153.5	117.4	74.6	49
280	13/6/2012	70	3.75	1362.7	619.8	355	217.7	158.9	122.5	97.9	65.1	50.9
281	13/6/2012	81	3.75	1414	702.9	420.8	267.8	193.3	145	118.4	70.4	48.5
282	13/6/2012	90	3.75	1427.7	783.6	458.9	267.9	191.2	141.7	114.4	67.8	48.1
283	13/6/2012	100	3.75	1414.6	831.7	491.1	301.8	212.1	156.7	122.7	81	55.8
284	13/6/2012	120	3.75	1624.5	967.4	581.7	330	230.8	164.2	121.8	71.6	52.3
285	13/6/2012	140	3.75	1356.2	752.9	471	291.2	204.7	150.1	121.3	72.7	54.3
286	13/6/2012	170	3.75	1121.9	609.3	382.2	241.2	175.5	128.4	107.5	68.6	46.9
287	13/6/2012	200	3.75	1215.5	682.8	410.7	252.3	176.5	135.8	93.5	68.2	59.1
288	13/6/2012	220	3.75	1169.1	641	404.5	249.7	170.5	129.1	99.9	62.3	45.1
289	13/6/2012	250	3.75	1174.3	651	408.5	259.8	190.4	136.6	109.2	68.1	50.3
290	13/6/2012	280	3.75	920.5	495	308.2	190.8	127.9	92.6	72.6	43.4	31.7
291	13/6/2012	300	3.75	1157	631	384	237.1	167.8	124	98	65.5	50.1
292	13/6/2012	330	3.75	1056.8	536.2	326.5	199	141	100	79.8	52.9	39.9
293	13/6/2012	360	3.75	996.7	403.7	229.5	134.4	95.2	75.9	65.8	50.3	38.5
294	13/6/2012	380	3.75	1097.4	555.4	320.8	188.9	132	97.1	77.5	52.6	40.9
295	13/6/2012	410	3.75	1064.1	553.8	348.7	216.4	147.9	110.8	83.7	52.9	36.7
296	13/6/2012	440	3.75	1069.9	588.6	362	208.2	146.7	101.7	77.8	45.6	33.9
297	13/6/2012	460	3.75	1069.4	560.1	365.2	229.8	168.3	124.5	95.6	64.4	44.3
298	13/6/2012	490	3.75	930.1	485.4	325.6	223.5	163.3	118.2	95.4	61.5	38
299	13/6/2012	520	3.75	825.3	427.3	286.1	185	131.6	102.4	82.1	52.8	36.7
300	13/6/2012	550	3.75	866	448.4	294.5	193.7	144.9	113.2	94.6	60.5	41.4
301	13/6/2012	570	3.75	898.2	507.7	345.9	233.8	174.3	134.2	108.9	69.2	48.5
302	13/6/2012	600	3.75	951.8	537.8	371.9	250.3	180.2	146.9	118.9	75.7	54.1
303	13/6/2012	620	3.75	877.3	497.8	331.9	228.8	168.2	130.2	108.6	68.7	47.4
304	13/6/2012	650	3.75	815.5	407.4	286	202.3	156.9	123.8	101	69.5	51.6

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
305	13/6/2012	680	3.75	685.4	375.5	262.8	183.4	141.4	113.4	91.5	62.6	44.4
306	13/6/2012	700	3.75	785.6	407.6	274.8	190.1	145.5	116.3	98.6	67.4	48.3
307	13/6/2012	730	3.75	726.6	407.9	271.6	188.8	141.8	108.9	86	58.5	39.1
308	13/6/2012	760	3.75	868.5	470.6	306.8	198.1	144.3	108.6	89.6	61.1	46.5
309	13/6/2012	780	3.75	710.3	343.2	223.2	146.7	109.6	83.4	66.9	45	31.9
310	13/6/2012	810	3.75	800.6	421	282.3	189.9	142.5	106.7	87.8	60	42.4
311	13/6/2012	840	3.75	1054.4	579.4	396.1	267.4	194.6	147.9	127.2	82.1	65.4
312	13/6/2012	860	3.75	1130.5	679.3	458.7	301.4	222.6	171	133.6	95.4	83.3
313	13/6/2012	890	3.75	1022.4	564.1	358.8	231.6	165.3	122.4	98.8	64.6	47.6
314	13/6/2012	920	3.75	1005	520.1	335.6	218.5	151.9	115.4	89.3	59.6	45.9
315	13/6/2012	940	3.75	846	464.7	300.1	198.3	144.2	109	85	53.4	39
316	13/6/2012	970	3.75	956.1	479.7	298.2	172	112.8	80.2	57.6	34.3	24.3
317	13/6/2012	1000	3.75	1362	852.5	568.5	319.1	215.2	158.8	131.3	86.1	56.5
318	13/6/2012	1020	3.75	1357.1	686.2	382.7	198.6	131.4	94.5	73.1	44.5	26
319	13/6/2012	1050	3.75	1357	728.9	424.1	234.8	148.4	92.9	80.5	44.4	12.4
320	13/6/2012	1080	3.75	1134	612	399.9	250.5	169.4	117.4	88.5	50	31.9
321	13/6/2012	1100	3.75	905.8	483.3	331.1	227	174.1	132.9	108.5	73	52
322	13/6/2012	1130	3.75	759.6	393.6	269	186.4	142.3	108.4	89.9	58.5	40.9
323	13/6/2012	1160	3.75	762.6	431.1	295.6	203.6	144.4	111.4	91.1	56.2	37.3
324	13/6/2012	1180	3.75	908.3	504.9	336.7	233.9	176.1	137.1	119.8	77.2	54.8
325	13/6/2012	1210	3.75	923.3	527.3	365.3	236.9	170.6	125.8	97.5	62.3	43.1
326	13/6/2012	1240	3.75	879.9	533.3	362.9	242.5	180	138.1	112.2	72.2	51.1
327	13/6/2012	1260	3.75	1061.5	621.1	421.3	272.8	195.7	150	117.6	75.1	48.7
328	13/6/2012	1290	3.75	848.4	455	294.1	186.8	131.2	95.3	72.9	50	42.9
329	13/6/2012	1320	3.75	1302.5	716.9	368.9	141.1	99.6	80.2	67.8	52.8	43.8
330	13/6/2012	1340	3.75	1138.1	619.5	402.1	248.5	178.9	135.9	121.8	87	66.1
331	13/6/2012	1370	3.75	1281.1	628.9	365.3	206.3	129.5	88.5	68.6	50	37.7
332	13/6/2012	1400	3.75	734.8	342.8	211.7	124.6	85.2	67.2	53.8	41.7	33.5
333	13/6/2012	1420	3.75	891.9	420.8	267.1	165.6	114.8	86.1	70.8	45.4	38.2
334	13/6/2012	1450	3.75	1300.6	638.5	376.4	205.9	135.8	96.4	73.2	51.8	43.3
335	13/6/2012	1480	3.75	886.3	457.6	265.3	157	109.2	80.1	62.2	43.2	32.6
336	13/6/2012	1500	3.75	670.7	297.6	176.3	109.2	75.5	54.6	44.1	30.8	24.4
337	13/6/2012	1530	3.75	938.3	485.3	299	178.2	120.8	87.4	57.5	50.3	37.2
338	13/6/2012	1560	3.75	1043	482.1	277.9	151.9	100.6	73.5	61	42.3	34
339	13/6/2012	1580	3.75	804.3	391	231.4	127.9	76.1	54.5	42.7	30.4	24.8
340	13/6/2012	1610	3.75	2079.4	1117.5	519.2	82.6	13.9	45.5	56.5	46.1	40.2
341	13/6/2012	1620	3.75	1669.6	951.6	455.9	133.6	52	31.8	40.3	37.7	30.8
342	13/6/2012	1630	3.75	1037.1	516.4	295.3	157.2	97.4	67.5	55.9	36.1	29.2

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
343	13/6/2012	1640	3.75	1057.3	546.5	293.9	147.4	91.1	63.5	49	33.9	28.9
344	13/6/2012	1650	3.75	1120.8	598	350.4	177.3	91.2	61	58	42.1	29
345	13/6/2012	1660	3.75	1137.5	638.1	369.8	155.5	82.5	63	50.1	43.1	35.5
346	13/6/2012	1670	3.75	1164.1	630.2	332.8	141.1	73.3	53.4	47.9	35.8	25.2
347	13/6/2012	1680	3.75	1518.5	663	370.4	154.2	74.1	53.2	49.8	37.2	29.1
348	13/6/2012	1690	3.75	1325.9	734.7	423.1	189.2	97.5	65.9	55.6	42.7	27.4
349	13/6/2012	1700	3.75	832	456.3	261.7	144.6	86.2	61	50.1	35.4	27.3
350	13/6/2012	1710	3.75	1197.2	589.7	349.5	186	110.4	77.9	57.9	40.8	31.8
351	13/6/2012	1720	3.75	1141.2	607.1	353.8	187.8	111.4	77.7	56.4	40.4	34.1
352	13/6/2012	1740	3.75	1296.9	775.8	380.3	180.6	103.5	70.8	59.9	37.9	35.2
353	13/6/2012	1760	3.75	1848.7	834	395.2	190.4	100.9	60.5	42.7	34.5	33.6
354	14/6/2012	-60	7.5	1681.1	965.4	586.1	317.7	190.7	117.6	77.6	45.7	40.2
355	14/6/2012	-50	7.5	1695.8	710.4	429	241.1	152.9	97.5	66.6	39.5	30.4
356	14/6/2012	-30	7.5	1513.5	780.5	443	256.1	169.7	117.5	89.3	51.2	36
357	14/6/2012	-10	7.5	1784.4	811.4	375.8	210.3	155.1	110.8	73.3	48.6	36.7
358	14/6/2012	10	7.5	1543.7	738.1	417.5	216.5	145.9	105.6	85.4	51.8	36.5
359	14/6/2012	20	7.5	1368.9	649.7	380.4	237.8	173.2	128.8	101.1	59.3	38.8
360	14/6/2012	30	7.5	1345.6	645.7	374.6	223.2	152.1	112	88.7	51.5	32.6
361	14/6/2012	40	7.5	1328.2	645.8	377.1	221.8	154.7	111	88.1	51.6	36.4
362	14/6/2012	50	7.5	1447.3	651.4	374.5	211.6	144.8	113.7	93.8	56.4	37.6
363	14/6/2012	60	7.5	1329.7	654	383.7	238.4	172	128.9	103.5	66.8	44.2
364	14/6/2012	70	7.5	1402.4	672.2	395	239.9	174.5	129.4	98.1	61.4	43.3
365	14/6/2012	80	7.5	1509	776.4	458.3	269.5	188.3	137.5	109.5	67	44
366	14/6/2012	90	7.5	1495.3	753.3	469.5	272.8	185.7	134.2	104.3	65.9	46.4
367	14/6/2012	100	7.5	1363.6	697.9	403	247.6	172.2	127	102.9	67.5	49.9
368	14/6/2012	130	7.5	1409.4	759.1	460.2	286.5	201.2	149.6	118.7	74.8	49.9
369	14/6/2012	160	7.5	1253.1	651.2	408.6	252.6	181.4	137.5	106.7	66.5	46.3
370	14/6/2012	180	7.5	1365.6	732.5	447.7	262.9	179.2	129.9	99.5	64.4	43.9
371	14/6/2012	210	7.5	1253.1	654.5	399.5	252.5	180.1	128.9	101.3	60.1	38.2
372	14/6/2012	240	7.5	1177.4	641.1	403.1	251.2	179.5	132.4	102.4	67.5	48.5
373	14/6/2012	260	7.5	1282.5	696.3	459.1	291.7	205.9	155.1	124.2	75.8	55.4
374	14/6/2012	290	7.5	1053.1	496	294.7	175.5	119.9	90.9	70.9	43.9	37.5
375	14/6/2012	320	7.5	1050.5	519.4	315.5	190.4	124.7	91.8	78.5	49.5	35.5
376	14/6/2012	340	7.5	1067.7	506.4	308	186.9	127	101.3	73.1	55.5	39.6
377	14/6/2012	370	7.5	938	395.1	225.7	140.3	104.7	82.8	72.1	53	39.2
378	14/6/2012	400	7.5	1035.4	483.8	296.3	180.6	122.6	89.2	65.8	46.2	32.9
379	14/6/2012	420	7.5	1244.6	569.8	351.3	212.4	148.2	111.3	89.8	56.6	44.5
380	14/6/2012	450	7.5	1057.3	497.1	295.6	169.2	112.7	80.1	62.4	39.5	27.6

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
381	14/6/2012	480	7.5	1075.6	559.7	360.8	238.7	171.4	131.5	103	65.4	45.5
382	14/6/2012	500	7.5	938	486	327.2	214.2	150.6	113	87.8	53.9	37
383	14/6/2012	530	7.5	853.8	424.9	274.4	183.7	138.4	98.8	76.6	50.4	35.3
384	14/6/2012	560	7.5	998.2	493.6	345.9	245.8	185.1	145.1	108.5	76	48.4
385	14/6/2012	580	7.5	907	485.3	337.5	227.6	168	127.8	100.7	63.8	42.5
386	14/6/2012	610	7.5	884.2	477.2	319.4	220.7	162.5	122.5	95.8	60.1	41.2
387	14/6/2012	640	7.5	863.7	467	332.3	232.3	171.8	130.6	108.3	69.9	49.6
388	14/6/2012	660	7.5	921.3	445.9	317.5	233.2	182.8	145.1	101.3	82.1	66.5
389	14/6/2012	690	7.5	707.8	394.8	269.1	193.9	148.2	114.4	90.4	59.3	42.6
390	14/6/2012	720	7.5	823.6	421.9	293.7	204.4	153.3	115.4	93.9	61.8	47
391	14/6/2012	740	7.5	738.8	348.3	250	183.9	141	108.9	88.8	59.4	40.3
392	14/6/2012	770	7.5	934	480.9	326	214.5	161.8	113.3	89.5	59.5	45.9
393	14/6/2012	800	7.5	782.9	375.3	239.8	146.8	103.3	75	58.2	41	31.3
394	14/6/2012	820	7.5	918	457.1	314.2	218.8	161.4	126.8	97.1	62.9	41.7
395	14/6/2012	850	7.5	833	434.7	308.3	217.6	161.6	121.4	98	63.4	44.3
396	14/6/2012	880	7.5	1102.5	589.4	381	257.9	191.8	147.4	117.3	80.8	59.4
397	14/6/2012	900	7.5	1064.5	565.7	362.3	236.3	165.9	121.2	93.9	62.3	46
398	14/6/2012	930	7.5	1011.5	511.2	355.2	240.1	173.2	134.6	105.9	71.5	54.3
399	14/6/2012	960	7.5	1037.1	500	333.7	210.5	151.7	111.7	87.6	57.9	41.3
400	14/6/2012	980	7.5	1013.2	540.7	360.9	239.7	173.6	130.1	100	60.8	40
401	14/6/2012	1010	7.5	1257.9	620.8	368.1	202	130.3	90.1	68.4	40.5	28.4
402	14/6/2012	1040	7.5	1537.4	829.9	555.7	352.2	255.7	188.3	150.1	96.5	67.1
403	14/6/2012	1060	7.5	1588	904.5	604.5	379.9	262.4	190.9	139.8	81.4	42.4
404	14/6/2012	1090	7.5	1498.9	697.6	386.7	200.6	123.8	71.1	42	17	14.1
405	14/6/2012	1120	7.5	1457.4	778.3	478.2	284.5	182.7	129.4	94	45.7	27.9
406	14/6/2012	1140	7.5	1359.5	736.5	484.5	307.1	207.3	153.6	112.6	70.1	46.4
407	14/6/2012	1170	7.5	932.8	469.7	322.2	227.3	173.9	131.3	110.2	74.8	52.6
408	14/6/2012	1200	7.5	971.3	502.9	342.6	225.1	163.5	123.5	99.7	64.3	43.7
409	14/6/2012	1220	7.5	1097.9	590.5	377.9	258	188.6	142.5	115.9	77.3	51.9
410	14/6/2012	1250	7.5	1053.1	515	329.4	218.4	162.5	126.4	103.4	70.3	47.9
411	14/6/2012	1280	7.5	1086.5	609.9	400.1	268.1	198	150.9	125.3	80.9	60
412	14/6/2012	1300	7.5	1031.8	553.4	355.3	236.1	168.5	127.7	105.5	65.1	45.9
413	14/6/2012	1330	7.5	1009.3	474.9	300.8	185.3	126.3	91.3	71.4	50.2	38.3
414	14/6/2012	1360	7.5	1257	638.8	374.6	220	145.3	107.6	93.7	62.1	42.2
415	14/6/2012	1380	7.5	1308.6	681.8	435.4	263.6	202.5	143.3	109.9	73.3	71.4
416	14/6/2012	1410	7.5	1588.3	814.4	477.8	256.1	153.5	99.5	72.7	51.2	41.5
417	14/6/2012	1440	7.5	728.3	380.4	222.7	128.3	93.4	68.6	58.4	44.4	36.7
418	14/6/2012	1460	7.5	1395.6	757	441.4	279.4	198.5	147.8	114.2	78.2	56.9

FLINDERS ISLAND AERODROME
14/32 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
419	14/6/2012	1490	7.5	1333.5	703.2	368.4	203.6	137	91.2	80.6	51.5	45.6
420	14/6/2012	1520	7.5	820	347.3	212.8	132.2	91.7	68.3	52.3	37.2	31.1
421	14/6/2012	1540	7.5	699.5	299.2	180.2	112.6	85.8	69.2	49	37.6	28.9
422	14/6/2012	1570	7.5	948.8	500.9	282.3	172.7	118.7	86	68.5	48.3	34.8
423	14/6/2012	1600	7.5	1073.3	520.8	292.4	158.8	95.6	68.5	54.9	40.5	33.6
424	14/6/2012	1620	7.5	929.3	530.8	288.3	146.8	87.6	62.9	48.6	35.4	28.3
425	14/6/2012	1630	7.5	2275.4	1104.7	429.1	14.1	0	12	46.2	38.5	28.4
426	14/6/2012	1640	7.5	998.4	488.3	269.9	152.4	96.9	70.2	56.7	37.6	30.8
427	14/6/2012	1650	7.5	1165.2	526.6	284.1	146.6	87.9	61.7	51.4	35.4	28.2
428	14/6/2012	1660	7.5	1374.1	695.1	354.6	156.9	79.7	57.4	43.4	33	28.5
429	14/6/2012	1670	7.5	1153.7	645.9	377.9	172.3	95.8	69.6	59	43.9	33
430	14/6/2012	1680	7.5	1361.2	734.1	428.7	197.4	102	66.5	56	39.6	28.8
431	14/6/2012	1690	7.5	1319.4	709.4	394.6	156.1	81.9	58.6	49.4	39.4	32.5
432	14/6/2012	1700	7.5	1650.5	956.3	523.3	217.2	99.8	59	52.5	40.8	38
433	14/6/2012	1710	7.5	1259.2	690.1	390.7	185.4	99.3	64.5	57.4	41.9	29.9
434	14/6/2012	1720	7.5	1834.7	1157.7	687.8	315.1	125.6	55.4	63.6	40.5	39.7
435	14/6/2012	1730	7.5	1613.6	675	380.4	190	112	76.5	60.8	43.2	34.7
436	14/6/2012	1740	7.5	1551.2	756.5	384	190.4	115.8	80.1	64.1	45.2	32
437	14/6/2012	1750	7.5	1615.2	841.8	466.2	259.6	173.7	127.3	106.8	71.4	56.6
438	14/6/2012	1760	7.5	2363.7	1314.2	609.4	304.9	161.5	78.3	34.4	44.6	51.3

Appendix D
FWD Test Deflections – 05/23 Runway

FLINDERS ISLAND AERODROME
05/23 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
439	15/6/2012	70	-15.00	734.8	385.5	233.5	133.1	83.9	59.6	45.7	32.3	25.4
440	15/6/2012	-50	-7.50	2162.5	964	468.5	205.3	105.2	69.8	56.2	45.6	35.4
441	15/6/2012	-30	-7.50	1068	570.1	282.4	143.6	87.5	61.6	45.5	32.9	29.7
442	15/6/2012	-20	-7.50	1128.3	499.3	261.6	135.2	85.4	60.2	48	33.3	27.7
443	15/6/2012	0	-7.50	1328.1	687.6	367.9	184.9	107.7	70.3	57.5	45.2	40.9
444	15/6/2012	10	-7.50	1151.9	534.8	295.5	165.9	108.6	77.4	62.5	45.9	37.2
445	15/6/2012	20	-7.50	1006.4	497.2	269.8	152.2	99.5	68.8	54.5	35.8	39.5
446	15/6/2012	35	-7.50	809.4	444.8	277.8	169	110.8	76.2	62.9	42.3	31.8
447	15/6/2012	90	-7.50	683.7	322	183.8	99.9	62.1	46	39.3	28.2	22
448	15/6/2012	110	-7.50	761.9	325.7	175.2	102.7	66.5	50.8	41.1	30.2	24.1
449	15/6/2012	120	-7.50	852.9	388.9	207.2	111.6	73.6	54.9	45.8	33.5	26.3
450	15/6/2012	140	-7.50	1080.2	569.6	308.4	155.1	100	73.6	61.1	49.1	40.7
451	15/6/2012	170	-7.50	1384.3	681.8	331.3	174.4	108.3	74.7	57.4	48.1	35.9
452	15/6/2012	200	-7.50	812.6	411.3	243.6	138.8	91.2	64.2	50	37.4	28.5
453	15/6/2012	220	-7.50	730.3	358.3	189.8	107.5	77.5	54.5	44.3	33.5	28.4
454	15/6/2012	250	-7.50	583.4	243.8	138.4	82.8	59.2	46.4	38.3	27.8	23.8
455	15/6/2012	280	-7.50	573.5	280.2	168.4	102.9	72.3	56.4	46.2	33.8	26.8
456	15/6/2012	300	-7.50	669.7	286.9	176.8	108.2	77.8	57.1	47.1	36.2	29
457	15/6/2012	330	-7.50	706.4	331.4	195.7	114.5	78.1	55	48.6	36.2	26.3
458	15/6/2012	360	-7.50	715	281.6	167.9	106.4	79.3	65	53.1	38	30.3
459	15/6/2012	380	-7.50	619.3	266.7	160.1	97	71.5	54.5	48.3	37.3	29.9
460	15/6/2012	410	-7.50	570	285.2	174.2	104.1	74.6	55.9	47.2	35.5	29.6
461	15/6/2012	440	-7.50	1016.7	418.6	262.3	168.4	124.5	96.1	79.3	59.1	47
462	15/6/2012	460	-7.50	636.7	292.5	173	101.1	65.5	48.5	41.3	31.7	26.9
463	15/6/2012	490	-7.50	715.2	272.4	168.4	105.5	78.3	61.2	52.6	38.8	33.2
464	15/6/2012	520	-7.50	616	251.3	154.3	98.5	70.3	55.3	47.4	34.5	27.4
465	15/6/2012	540	-7.50	599.5	276.2	176.2	113.5	83	63.7	52.7	36.7	31.9
466	15/6/2012	570	-7.50	812.6	398	247.2	164.2	120.5	95.1	75.7	52.9	41.7
467	15/6/2012	600	-7.50	669.5	333.4	194.5	114.4	77.5	57.6	47.8	35.3	30.3
468	15/6/2012	620	-7.50	574.7	273.1	152.5	92.9	71.9	54.9	47.3	35.7	30.9
469	15/6/2012	650	-7.50	582.4	276.9	173.1	107.9	77.5	59.9	48.4	36.3	32
470	15/6/2012	680	-7.50	612	274.4	159.9	101	70	52.9	42.5	32.9	27.7
471	15/6/2012	700	-7.50	644.8	295.8	180.4	115.8	76.2	63.2	45.5	30.2	27.2
472	15/6/2012	730	-7.50	539.4	278.6	170.4	107.1	70.7	52.1	40.4	30.2	25.1
473	15/6/2012	760	-7.50	668	322.7	196.5	119.5	80.5	58.3	50	33.8	26.2
474	15/6/2012	780	-7.50	607.3	283.6	178.9	118.5	85.2	62.8	53.8	36.1	28.9
475	15/6/2012	810	-7.50	760.3	366	242.9	162.5	120.7	94.4	78	56.7	44.9
476	15/6/2012	840	-7.50	697.3	350.2	213.6	134.5	95.1	72	55.4	39.7	30.2

FLINDERS ISLAND AERODROME
05/23 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
477	15/6/2012	860	-7.50	778.4	383.1	235.8	154.8	107.3	77.5	54.2	45.4	30.5
478	15/6/2012	890	-7.50	504	230.6	150.4	99.5	73	58.1	48.1	34.7	27.8
479	15/6/2012	910	-7.50	606.9	239.3	153.5	97.1	73.8	58.5	50.2	34.9	27.9
480	15/6/2012	920	-7.50	586.2	275.3	164.3	106.5	80.1	61.7	48.2	33.6	25.8
481	15/6/2012	940	-7.50	623.6	281	177.2	109.1	82.8	62.5	44.1	35.2	29.8
482	15/6/2012	950	-7.50	688	297.3	184.4	115.3	82.9	63.2	50	33.2	25.8
483	15/6/2012	970	-7.50	604	315.1	200	128.7	91.2	69.4	55.8	37.3	30.1
484	15/6/2012	990	-7.50	1163	511.4	274.3	129.9	76.8	55.6	45.5	32.4	28.3
485	15/6/2012	1000	-7.50	1164.1	519.7	283.1	136.5	81	56.2	46	35.8	30.4
486	15/6/2012	1020	-7.50	954.3	392.4	209.4	111.6	73.4	53.9	42.2	29.8	22.4
487	15/6/2012	1030	-7.50	927.2	443.8	242.6	130.1	82.3	55	44	31	23.9
488	15/6/2012	1050	-7.50	990	472.1	285.9	161.1	100.6	64.9	47.7	35.1	29.1
489	15/6/2012	1070	-7.50	946.2	400.6	215	108.1	66.6	51.2	39.8	32.6	25.1
490	15/6/2012	1080	-7.50	688.4	348.9	202.8	107.2	70.9	55.4	48.6	38.3	27.7
491	15/6/2012	1100	-7.50	774.8	354.3	206.4	119.9	77.8	54.6	41.5	30.9	23.8
492	15/6/2012	1110	-7.50	748.5	336.8	195.9	96.1	62.1	52.1	53.1	26.5	18.3
493	15/6/2012	1125	-7.50	1289.7	669.2	344.3	176.8	95.1	64.5	57.9	0	51.2
494	14/6/2012	-40	-3.75	1270	534.2	280.4	149.1	85.6	55.8	43.7	33.8	28.7
495	14/6/2012	-10	-3.75	1314.6	560.6	272.7	139.9	83.8	58.8	46.6	32.7	27
496	14/6/2012	30	-3.75	1057.6	530.4	316	170.6	102.2	74.4	56.4	40	33.1
497	14/6/2012	80	-3.75	566.2	340.1	227.7	136.6	88.6	58.9	43.9	28.8	22.6
498	14/6/2012	100	-3.75	706.8	366.8	219.4	126.7	85	61.5	48.2	34.2	26.2
499	14/6/2012	130	-3.75	676.9	322.5	181.7	108.4	76.5	57	44	31	23.3
500	14/6/2012	160	-3.75	807.9	439	263.6	162.1	110.9	84.1	64.7	44.2	35.8
501	14/6/2012	170	-3.75	848.1	448.2	268.2	162.5	105.7	79.5	61.4	37.6	30.5
502	14/6/2012	210	-3.75	708.2	360.7	228.1	135.6	92.1	65.6	50.6	35.3	28.1
503	14/6/2012	240	-3.75	722.1	335.4	197.6	104.8	68.9	48.6	41.2	30.7	26.9
504	14/6/2012	260	-3.75	704	350	191.6	115.6	79.9	58.2	48.7	36	28.8
505	14/6/2012	290	-3.75	545.4	291.1	175.2	108.1	79.3	60.4	51.4	39	30.3
506	14/6/2012	320	-3.75	639.3	309.5	186.4	112.8	81	60.4	50	39.7	32
507	14/6/2012	340	-3.75	597.5	304.6	187.1	119.6	87	66.3	55.4	42.1	35.4
508	14/6/2012	370	-3.75	559.5	260.7	166	104.2	74	57.2	47.3	36	27.6
509	14/6/2012	400	-3.75	623.6	271	160.8	95.1	65.7	48.8	42.2	31.5	27.3
510	14/6/2012	420	-3.75	486.1	246	148.9	87.7	61.9	44.3	38.8	28.9	24.4
511	14/6/2012	450	-3.75	575.5	307.9	185.7	108.9	75.8	56.3	44.8	33.1	27.9
512	14/6/2012	480	-3.75	548.4	271.5	173.6	108.6	75.1	58.7	46.6	39.7	24.6
513	14/6/2012	500	-3.75	596.8	289	179.8	103.8	73	58.4	49.3	37.5	29.8
514	14/6/2012	530	-3.75	549	256.7	162.9	100.8	68.8	52.6	44.8	32.1	26.2

FLINDERS ISLAND AERODROME
05/23 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
515	14/6/2012	560	-3.75	498.7	253	168.4	121.4	91.4	71.5	56.9	42.4	32.9
516	14/6/2012	580	-3.75	561	232.7	161.7	108.8	79.4	60.6	51.5	36	30
517	14/6/2012	610	-3.75	549.3	248.5	164.7	105	77.5	55.2	45.8	32.2	26.3
518	14/6/2012	640	-3.75	660.8	246.6	146.3	96.6	69	56.1	52.6	31.3	28.2
519	14/6/2012	660	-3.75	586.5	255.2	158.2	104.4	73.6	57	46.8	35.3	25.8
520	14/6/2012	690	-3.75	573.4	257.7	158.7	101.6	67.9	51.9	42.8	28.5	21.9
521	14/6/2012	720	-3.75	468	234.8	145.7	91.2	61.2	43.5	35.3	28	19.5
522	14/6/2012	740	-3.75	563	266.1	174.7	109.6	79	58.9	49.8	34	24.7
523	14/6/2012	770	-3.75	544.5	278.5	174.2	115.4	85.4	63.5	50.1	34.1	29.2
524	14/6/2012	800	-3.75	621.2	302.1	155.4	92	62.6	47.1	39.9	31	26.5
525	14/6/2012	820	-3.75	697.5	368.3	246.9	167	124	97	77.9	55.3	43.3
526	14/6/2012	850	-3.75	560.3	289.9	187.3	121.3	86.6	65.4	53.7	37.5	28.7
527	14/6/2012	880	-3.75	513.5	219.8	159.5	102	77.7	63.2	55.8	40.4	30.5
528	14/6/2012	900	-3.75	510	276.3	164.6	110.9	78.9	62.5	55.2	38.3	26.4
529	14/6/2012	930	-3.75	474.3	244	156.6	109.2	74.6	55.6	47.3	31.7	26
530	14/6/2012	960	-3.75	2165.4	932.6	419.4	146	78.1	54	42.7	31.1	32.6
531	14/6/2012	980	-3.75	793.5	365.4	221.3	136.9	95.9	72.2	58	40.5	31.2
532	14/6/2012	1010	-3.75	887.3	410.2	235.1	121.3	77.9	57.7	45.2	31.9	24.2
533	14/6/2012	1040	-3.75	978.9	467.4	265.2	118.3	75.3	53.9	41.2	29.6	22.8
534	14/6/2012	1060	-3.75	1102.9	547.9	322.5	166.1	105.3	73.9	56.4	38.3	31
535	14/6/2012	1090	-3.75	715.8	309.1	158.7	80	53.5	37.8	41.8	23.9	21.9
536	14/6/2012	1120	-3.75	988.5	452.5	252.6	132.2	81.5	55.2	42.3	31.6	23.2
537	14/6/2012	1140	-3.75	1819.9	896.6	349.1	79.7	68.5	54.6	45.6	40.2	31.3
538	14/6/2012	-30	0.00	1324.9	577.8	309.6	160.6	95.4	63.5	48.5	38	35.6
539	14/6/2012	10	0.00	858.7	457.9	267.6	147.5	97.6	68.9	50.6	41.2	30.2
540	14/6/2012	70	0.00	645.6	367	250.1	159.8	107.6	76.8	56.8	38.9	31.3
541	14/6/2012	110	0.00	753.8	360.6	216.3	125.3	84.5	60.1	48	33.6	23.4
542	14/6/2012	150	0.00	729.2	409.2	246.9	148.4	101.8	71.6	57.9	38.4	29.6
543	14/6/2012	190	0.00	649.6	397.8	238.3	143.2	94.4	65.1	53.7	36.6	27.8
544	14/6/2012	230	0.00	630	339.2	187.3	105.6	73.3	55.4	45.1	32.5	25.7
545	14/6/2012	270	0.00	762.6	365.9	228.4	137.8	95.7	70.3	54.5	37.2	28
546	14/6/2012	310	0.00	603.5	315.3	180.2	107.8	72.5	57.3	43.9	31.1	27.6
547	14/6/2012	350	0.00	687.8	301.8	187	118	82.5	61.6	50.5	39.2	28.9
548	14/6/2012	390	0.00	676.2	316.4	180.3	103.2	69.2	53.1	44.5	33.4	27.5
549	14/6/2012	430	0.00	599.2	301.3	185.9	125.5	94.2	75.2	63.9	46.1	37.5
550	14/6/2012	470	0.00	548.4	277	159.1	93.7	66.1	50.6	41.9	30.7	25
551	14/6/2012	510	0.00	558.6	284.5	178.1	121.5	89.3	69	58	40.2	33
552	14/6/2012	550	0.00	607.5	267.8	156.8	101.7	73.9	55	44.7	34	28.2

FLINDERS ISLAND AERODROME
05/23 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
553	14/6/2012	590	0.00	570.5	275.5	158.6	98	73.8	56.9	44.4	35	27.1
554	14/6/2012	630	0.00	717.7	312.8	177.2	103.9	69.6	53	46.5	33.8	28.3
555	14/6/2012	670	0.00	623.1	302.9	182.1	113.3	83.3	59.3	47.8	33.2	27.1
556	14/6/2012	710	0.00	572	274.4	161	91.4	64.7	49	38.6	28.3	26.7
557	14/6/2012	750	0.00	724.2	319.4	188.9	111.8	76.7	57.3	47.5	35.7	28.4
558	14/6/2012	790	0.00	819	389	243.6	160.7	117	91.4	74.3	48.4	36.8
559	14/6/2012	830	0.00	643.7	309.3	206.9	139.3	105.3	81.4	69	48.4	37
560	14/6/2012	870	0.00	630.2	262.9	153.3	96.2	69.1	55.8	45.3	31.4	23.1
561	14/6/2012	910	0.00	619.8	325.9	184.5	117.2	84.9	64.7	53.4	38.7	30.4
562	14/6/2012	950	0.00	598.5	309.4	183.2	108.1	73.8	51.6	41.9	26.3	23.6
563	14/6/2012	990	0.00	667.2	344.7	190.7	112.3	76.7	54.8	44.5	34.1	25.6
564	14/6/2012	1030	0.00	1363.9	512.7	283	152.6	93	62.2	47	31.7	26.6
565	14/6/2012	1070	0.00	1631.3	802.2	430	207.2	111.9	71.6	52.2	34.4	26.7
566	14/6/2012	1110	0.00	796.6	437.5	266.2	146.8	92.3	65.8	49.1	33.4	26.9
567	14/6/2012	-50	3.75	1924.2	850.5	466.8	210.9	120.5	76.7	63.2	47.3	40.4
568	14/6/2012	-20	3.75	1255.3	603.5	289.4	134.4	78.2	53.6	42.1	31.5	25.6
569	14/6/2012	0	3.75	1251.8	624.3	323.8	163.2	97.2	69.6	61.6	34.4	33.2
570	14/6/2012	20	3.75	1151.9	563.2	286.8	155.8	96.8	65.7	52.5	36.7	28.3
571	14/6/2012	35	3.75	940.2	460.3	288	159.5	98.3	68.2	51.6	37.9	31.8
572	14/6/2012	90	3.75	560.2	316.1	196.4	120.2	80.4	59.9	42.9	32	25.2
573	14/6/2012	120	3.75	663.4	371.6	209.2	118.4	77.6	56.7	44.3	29.5	23.5
574	14/6/2012	140	3.75	750	417.4	250.4	147.2	99.1	69.3	53.5	39.4	31
575	14/6/2012	170	3.75	785.4	445	275.4	159.8	103.1	69.9	53.3	39	30.5
576	14/6/2012	200	3.75	767.7	401.1	240.5	138	86.8	59.4	41.6	31.1	22.1
577	14/6/2012	220	3.75	699.2	332.7	192.9	104.1	69.8	50.3	41.8	29.7	24.9
578	14/6/2012	250	3.75	867.4	419.1	252.1	144.4	94.7	65.7	53	37.3	27.3
579	14/6/2012	280	3.75	685.2	345.2	210.1	129.2	95.2	71.2	57.2	42.2	34.1
580	14/6/2012	300	3.75	689	309.2	178	97.1	64.8	48.2	39.6	22.4	17.9
581	14/6/2012	330	3.75	670.7	325.8	197.3	119.4	84	64.9	53.9	40.5	33.9
582	14/6/2012	360	3.75	643.5	318.3	191.2	111.2	77.5	57.4	48.3	35.5	29.6
583	14/6/2012	380	3.75	673.5	371.1	228.4	147	109.3	82.8	71.5	47.5	38.1
584	14/6/2012	410	3.75	657.2	319.7	195.7	129.2	95.5	74.6	61.5	44.2	34.6
585	14/6/2012	440	3.75	658.6	305.5	168.6	98.7	64.9	48.6	53	33	24.8
586	14/6/2012	460	3.75	597.9	282.9	166.7	96.4	66.9	51.8	43.5	32.3	27
587	14/6/2012	490	3.75	699.2	316.7	173.8	105.3	75.9	59.3	49.2	37.3	30.3
588	14/6/2012	520	3.75	678.3	272.9	151	93.3	66.6	51.4	43.1	36.6	29.7
589	14/6/2012	540	3.75	700.7	278.8	152.9	93.5	66.4	56.2	50.7	36.3	25.8
590	14/6/2012	570	3.75	659.8	293.6	173.9	108.8	77.9	62.7	51.3	38.8	31.5

FLINDERS ISLAND AERODROME
05/23 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
591	14/6/2012	600	3.75	728.1	340	186.8	110.9	77.3	57.7	48.2	36.4	26.7
592	14/6/2012	630	3.75	737.2	321	188.8	111.4	76.3	58.4	50.3	38	26.3
593	14/6/2012	650	3.75	651	311.6	178.3	102.9	75.4	57.2	48.6	34.6	27.3
594	14/6/2012	680	3.75	667.3	288.9	157	93.9	66.5	50.1	40.7	29.4	24.6
595	14/6/2012	700	3.75	678.4	312.1	156.3	95.9	68.6	50.4	42.4	31.3	24.3
596	14/6/2012	730	3.75	661.2	309.6	160.4	89.2	57.9	42.1	35.5	27.5	22.4
597	14/6/2012	760	3.75	650.7	305.9	187.3	119	87.3	64.9	57	38.6	28.2
598	14/6/2012	780	3.75	668.9	306.3	173.4	102.3	73.2	55.8	43	33	25.7
599	14/6/2012	810	3.75	592.2	289.4	173.7	102.8	72.9	55.5	46.7	34.5	31.5
600	14/6/2012	840	3.75	1143.9	657.9	387.4	221	148.9	108.9	82.4	59.2	48.2
601	14/6/2012	860	3.75	574.3	270.5	152.6	94.4	68.6	52.6	45.1	31.7	24.3
602	14/6/2012	890	3.75	662.8	332.3	197.4	119.5	84.1	61.5	49.4	36	28.2
603	14/6/2012	920	3.75	503.3	273.6	155.1	93.2	65	48.8	39.1	29.2	21.7
604	14/6/2012	940	3.75	578	324	217.8	127.9	84.9	58.6	46.7	32.8	25.5
605	14/6/2012	970	3.75	891.3	408.6	228.9	117.9	80.8	57.3	37.6	33.8	29.1
606	14/6/2012	1000	3.75	675.8	363.2	219.4	120.3	78.2	54.7	44.1	29.5	23.6
607	14/6/2012	1020	3.75	940.2	446	260.5	141.7	90.9	59.9	44.7	29.1	23
608	14/6/2012	1050	3.75	923.9	435.8	260.5	140.5	85.1	60.4	47.6	32.4	23.3
609	14/6/2012	1080	3.75	991.1	495.2	293.8	154.7	92.9	60.4	46.8	33	27.6
610	14/6/2012	1100	3.75	673.4	355.2	203	123.9	83.4	57.9	43.3	31	28.4
611	14/6/2012	1130	3.75	1402.6	684.5	366.2	225.4	96.5	61.1	51.2	35.8	33.4
612	15/6/2012	-40	7.50	1112.9	518.2	285	148.6	88.8	63.3	53.6	38.6	36.2
613	15/6/2012	-30	7.50	1045.4	497.4	267.6	138.9	84.6	61.5	48.7	36.8	32.5
614	15/6/2012	-10	7.50	1539.5	785.6	384.2	176.3	97.7	65.5	50.8	39.1	28.3
615	15/6/2012	10	7.50	1129.1	536.9	294.9	150.7	96.9	68.8	56.7	42.3	32.9
616	15/6/2012	30	7.50	1112.6	569.8	312.9	163.8	103.4	69.5	53.7	38.9	33.3
617	15/6/2012	80	7.50	671	339.8	238	152	106	77.9	60.8	39.1	32.7
618	15/6/2012	100	7.50	792.9	388.5	248	152.4	105	75.2	60	37.1	32.4
619	15/6/2012	110	7.50	815.2	369.4	222	137.1	90.8	66.6	52.2	36.7	28.7
620	15/6/2012	130	7.50	791.8	372	227.1	135.1	91.9	65	53.1	35.3	26.5
621	15/6/2012	160	7.50	764	418.4	251.9	158.1	105.7	75.6	60.8	38.7	31.2
622	15/6/2012	170	7.50	903.6	436.3	266.1	154.8	99.9	69.7	54.1	37.5	26.8
623	15/6/2012	210	7.50	718.8	342.1	212.8	133.3	90.3	65.3	58.2	39.1	34.2
624	15/6/2012	240	7.50	798.5	363.4	215.4	125.5	87.7	60.9	46.7	35.4	29.1
625	15/6/2012	260	7.50	771.4	362.6	203.2	113.3	75.5	52.3	46	34.3	31.8
626	15/6/2012	290	7.50	624.4	324.2	190	115.6	80.2	57.9	46.2	32.8	25.5
627	15/6/2012	320	7.50	716.4	329.2	190.1	108.4	76.1	59.1	46.2	33.4	25.9
628	15/6/2012	340	7.50	691.4	347.6	212.4	134.2	95.6	69.7	68.2	45.1	32

FLINDERS ISLAND AERODROME
05/23 RUNWAY MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
629	15/6/2012	370	7.50	600.7	289.8	171.4	117.6	91.4	72.1	62.9	47.7	39.2
630	15/6/2012	400	7.50	798.8	349.9	228.5	149.3	111	89.2	75.9	53.5	42.5
631	15/6/2012	420	7.50	620.5	295.8	182.4	122.4	85	68	56.4	34.4	26.7
632	15/6/2012	450	7.50	596.7	276.3	159.2	90	62.6	48.8	41.7	32.1	23.9
633	15/6/2012	480	7.50	657.2	294.6	175.4	106.4	75.2	55	45	34.4	28.9
634	15/6/2012	500	7.50	696.1	322	186.9	115.9	77.3	62.8	48	37.4	28.7
635	15/6/2012	530	7.50	838.8	399	252.8	152.5	101.8	73.3	58.5	40.7	32.9
636	15/6/2012	560	7.50	610.2	249.7	149	92.1	67.4	52	48.4	36.8	28.8
637	15/6/2012	580	7.50	555	256.6	159.8	103.8	77.6	56.5	49.2	35.8	28.5
638	15/6/2012	610	7.50	657.7	287.4	180.9	109.6	75.6	55.9	48.4	38	28.1
639	15/6/2012	640	7.50	715.5	313.4	175.8	102.1	65.4	48.6	46.1	34.8	26.1
640	15/6/2012	660	7.50	647.9	279.1	173.3	105.2	74.9	57	47.9	36.1	27.4
641	15/6/2012	690	7.50	654.6	299.2	168.8	99.1	70.1	50.6	41.9	30.5	26.1
642	15/6/2012	720	7.50	671.8	313.3	180.9	103.7	69.3	50.9	41.5	31.3	25.1
643	15/6/2012	740	7.50	585.3	287.3	173	111.5	76.1	60.4	54	34	27.1
644	15/6/2012	770	7.50	717.9	321	200.8	133	95.9	73	60	40.9	29.3
645	15/6/2012	800	7.50	632	292.1	180.8	109.7	77.6	56.4	47.4	34.1	27
646	15/6/2012	820	7.50	711.8	375.4	235.2	147.8	105	79.8	67	48.8	37.3
647	15/6/2012	850	7.50	1026.4	527.9	321	197.6	136.4	102.3	84.6	57	39.9
648	15/6/2012	880	7.50	506.6	250.3	152.3	95.9	68.9	53.9	48.4	35.3	25.2
649	15/6/2012	900	7.50	568.2	298.4	177.7	115.4	82.5	62.3	51.8	37.8	27.9
650	15/6/2012	910	7.50	538.9	279.6	171.9	105.1	80.9	55.6	45	30.1	31.7
651	15/6/2012	930	7.50	569.3	242.3	159.2	101.9	74.1	56.1	47.9	32.1	23.7
652	15/6/2012	950	7.50	581.1	300.5	177.8	103.5	68.5	49.2	38.7	27.6	21.5
653	15/6/2012	960	7.50	739.9	392.2	216.1	117.9	74.9	54.2	42.8	28.4	23.1
654	15/6/2012	980	7.50	642	365.4	198.8	110	73.3	55.6	43.3	30.1	24.6
655	15/6/2012	990	7.50	587	318.9	203.7	127.1	88.4	64.9	53.9	38	30
656	15/6/2012	1010	7.50	745.4	338	203.5	117.3	75.2	52.6	40.8	28.9	21.5
657	15/6/2012	1030	7.50	785.1	399.9	248.7	146	93.5	65.9	47.7	31.4	24.8
658	15/6/2012	1040	7.50	826	374.4	204.7	114.9	72.8	50.7	39.2	27.8	23.8
659	15/6/2012	1060	7.50	1252.7	613.2	333.3	150.1	80.2	51.8	49.9	35.8	28.4
660	15/6/2012	1070	7.50	814.9	440.3	277.9	164.9	103.2	63.8	55.5	30.1	24.4
661	15/6/2012	1090	7.50	857.5	375.7	223.9	117.8	74.7	52.6	42.4	32.9	25.5
662	15/6/2012	1110	7.50	892.8	380.2	214.1	118	76.2	55.4	45.2	31.5	24.6
663	15/6/2012	1120	7.50	1018.5	480.5	278.9	156.7	104.2	72.6	51	35.3	26.5
664	15/6/2012	1135	7.50	1585	754.1	414.2	177.4	91.6	59	43.1	32.2	44.6

Appendix E
FWD Test Deflections – Taxiway A

FLINDERS ISLAND AERODROME
TAXIWAY A MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
665	15/6/2012	16	-16.00	1080.4	562.1	294.5	154.2	93	65.3	51.2	38.6	31.5
666	15/6/2012	20	-14.00	1134.3	533.9	273.9	151.7	102.5	73.8	54.1	40	36.5
667	15/6/2012	16	-12.00	926.7	448.3	280.8	148.1	93.8	68.4	53.7	39.8	32.4
668	15/6/2012	20	-10.00	1325.1	755.3	344.5	151.5	106.2	76	67.6	46.4	33.4
669	15/6/2012	16	-8.00	931	421.1	223.4	127.3	88.4	64.2	47.6	39.9	39.1
670	15/6/2012	25	-8.00	1282.2	681.6	341	145.3	88.6	61.7	58.6	38.6	30.6
671	15/6/2012	20	-6.00	1109.3	572.2	300.3	154.6	101.5	87.5	79.4	45.7	33.7
672	15/6/2012	30	-6.00	2259.3	1032.4	433.5	135.3	51.2	33.3	38.7	41.8	28
673	15/6/2012	16	-4.00	906.5	362.1	202.6	120	80.6	60.9	50	35.8	25.3
674	15/6/2012	25	-4.00	1183	583	287.8	148.5	93.5	67.5	54.2	37	30
675	15/6/2012	35	-4.00	1063.5	510.5	256	127	86.7	68.9	60.2	45.2	40.2
676	15/6/2012	45	-4.00	1297.8	614.9	297.9	129.3	76.2	55.6	46.3	35.3	29.1
677	15/6/2012	55	-4.00	1100.3	517.5	272.1	138.3	93	72.3	63.2	50.4	36.5
678	15/6/2012	65	-4.00	1000.6	597	385.5	214.3	137.5	92.4	71.3	51.9	42.8
679	15/6/2012	75	-4.00	911.8	568.9	355	189.9	128.8	97	80.1	58	46.1
680	15/6/2012	85	-4.00	1254.8	820.3	508.8	240.1	134.9	80.5	61.6	46.9	34
681	15/6/2012	95	-4.00	1126	655.7	365.2	153.6	65.8	38.2	39.5	35.6	15
682	15/6/2012	20	-2.00	1330.4	587.2	311.4	170.4	111.7	82.8	66.8	47.7	35.3
683	15/6/2012	30	-2.00	996.1	496.3	248.6	133.2	93.8	67.3	61.6	42.1	37.7
684	15/6/2012	40	-2.00	937.9	476.3	255.7	119.5	72.7	55	42.7	30.3	22.6
685	15/6/2012	50	-2.00	1067.1	514.2	271.4	133.7	84.2	65.1	54.4	40.6	31.5
686	15/6/2012	60	-2.00	898.2	473.5	268.1	143.3	92.7	72.7	55.1	36.5	26.8
687	15/6/2012	70	-2.00	854.6	535.1	330.4	196.6	130.2	92.8	81.3	63.3	49.1
688	15/6/2012	80	-2.00	904.2	553.6	303.5	138.2	74.7	55	47	40.1	33.2
689	15/6/2012	90	-2.00	1038.3	626.4	360.3	184.5	108.6	71.5	55.4	46.5	28
690	15/6/2012	16	0.00	1175	555.4	290.8	149.8	92.7	63.1	60.7	42	25.7
691	15/6/2012	20	0.00	909.3	486.4	246.7	137.4	91.6	68.3	57.4	42.3	33.5
692	15/6/2012	25	0.00	1081.8	566.6	297.9	139.9	86.5	60.6	50.3	32.7	25.3
693	15/6/2012	30	0.00	1107.5	575.9	312.6	148.5	92	69.6	57.5	42.4	31.6
694	15/6/2012	35	0.00	866	429.9	220.3	109.2	75.4	56	46.6	36.6	31
695	15/6/2012	40	0.00	951.4	407.3	191.7	88.5	51.1	38.4	34.5	26.2	22.8
696	15/6/2012	45	0.00	1007.8	475.4	244.8	118.7	64.1	47.7	38.5	29.4	23.9
697	15/6/2012	50	0.00	1180	587.6	324	144.2	87.3	68	54.7	42.1	34.1
698	15/6/2012	55	0.00	947.4	468.1	256.6	137.8	92.1	67.2	52.5	42	35.3
699	15/6/2012	60	0.00	1006.7	483.9	274.1	148.7	94.8	67.3	49.8	37.4	34.3
700	15/6/2012	65	0.00	855.1	530.8	357.1	214.2	141.1	101.9	88.8	68.2	53.2
701	15/6/2012	70	0.00	903.7	526	342.3	195.4	121.9	91.9	75.7	58.5	45.3
702	15/6/2012	75	0.00	1034.4	640.6	409	219.1	127.8	85.7	64.8	46.9	36.8

FLINDERS ISLAND AERODROME
TAXIWAY A MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
703	15/6/2012	80	0.00	1374.2	965.6	603.8	292.1	151.9	89.2	66.7	44.4	35.3
704	15/6/2012	85	0.00	1148.2	723.5	415.2	175.5	88.8	52.5	41.1	34.9	30.2
705	15/6/2012	90	0.00	1095.6	611.2	386.6	209.1	111.2	73.8	54.2	41.5	50.7
706	15/6/2012	95	0.00	1058.6	632.4	359.2	165.8	88.9	50.9	38.8	31.1	32.3
707	15/6/2012	30	2.00	1146	531.5	290.4	139.3	92.4	67.7	59.7	42.5	30.7
708	15/6/2012	40	2.00	932.2	453.5	207.1	93	60.8	47.1	39.6	29.4	23.3
709	15/6/2012	50	2.00	1099.1	526.6	286.4	139.9	87.7	66.4	55.9	42.4	34.9
710	15/6/2012	60	2.00	922	590.3	321.7	160.3	102.2	71.4	52.1	39.1	35.5
711	15/6/2012	70	2.00	984	596.8	368.4	211	137.9	96.2	69.3	60.9	49.6
712	15/6/2012	80	2.00	1496.1	1022.6	621.5	239.6	114.7	59.2	41.2	33.9	29.4
713	15/6/2012	90	2.00	1090.9	670.3	381.6	167.4	68.3	34.4	29.4	32.2	31.8
714	15/6/2012	200	2.00	1016.4	480	243.9	128.5	87.5	66.6	53.9	38.4	31.4
715	15/6/2012	16	4.00	856.1	296.5	155.9	85	62.9	48	41.5	34.6	25.2
716	15/6/2012	25	4.00	1226.3	540.7	284.9	150.5	95.8	70.4	56.5	42.2	32.3
717	15/6/2012	35	4.00	1023.6	419	208.5	90.1	56	44.1	38	29.4	25.4
718	15/6/2012	45	4.00	1304.3	722.2	346.3	168.2	107.7	81.9	69.8	50.7	41.9
719	15/6/2012	55	4.00	1189.9	648.4	334.4	162.4	101.6	71.7	57.2	41.7	36.9
720	15/6/2012	65	4.00	936.7	556.1	340.3	198	127.2	94.3	77.5	59.8	44.8
721	15/6/2012	75	4.00	1459.4	989.7	666.4	358.5	183.4	99.6	61	41.4	37.3
722	15/6/2012	85	4.00	987	598.2	368.1	178.3	97.2	61.3	46.2	33.7	28.7
723	15/6/2012	95	4.00	1994.4	994.4	483.2	145.8	23.4	0	14.9	30.6	22.7
724	15/6/2012	20	6.00	967.2	410.3	222.8	114.9	72.5	52.7	39.5	24.9	20.3
725	15/6/2012	30	6.00	1161.2	563.5	294.4	135.6	87.5	60.1	61.5	48.7	24.6
726	15/6/2012	40	6.00	1663.5	817	366.8	119.7	62.4	50.4	44.2	37	32.7
727	15/6/2012	50	6.00	1938.3	959.2	447.3	167.8	77.3	67.6	52.2	47.7	38.5
728	15/6/2012	60	6.00	1644.7	942.1	498.6	220.7	121.7	89.2	72.3	50.2	41.5
729	15/6/2012	70	6.00	970.3	590	388.9	230.4	144.3	105	87.6	68.1	57.5
730	15/6/2012	80	6.00	1404.5	826.9	477.7	227	115.9	75.3	60.6	43.4	36.2
731	15/6/2012	90	6.00	1190.2	634.2	366.5	161.5	70.4	40.4	40.4	36	32.1
732	15/6/2012	16	8.00	780.8	387.3	181	86.3	60.4	48.2	38.4	29.5	25.3
733	15/6/2012	25	8.00	1136.4	600.2	285	129.3	83	63.6	54.8	42.8	38.8
734	15/6/2012	35	8.00	2384.2	1200.9	367.7	46.3	15.5	45.2	33.4	32.6	25.9
735	15/6/2012	45	8.00	1295.4	808.3	529.4	293.1	172.6	89.7	66.5	53.3	48.8
736	15/6/2012	55	8.00	1220.7	710.1	498.7	317.7	197.4	124	96.9	62.8	57.7
737	15/6/2012	65	8.00	1313.1	857.1	583.2	344.9	215.1	132	96.2	62.7	52.4
738	15/6/2012	75	8.00	1425.1	822.1	572.1	315.1	188.2	100.3	71.8	48.4	40.9
739	15/6/2012	85	8.00	1998	1103.4	623.6	215	46	35.6	34.2	29.7	33.6
740	15/6/2012	95	8.00	1238.2	687	433.3	185	82	39.8	31.8	32.3	22.8

FLINDERS ISLAND AERODROME
TAXIWAY A MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
741	15/6/2012	20	10.00	1098.4	524.4	251.6	113.2	74.7	57.8	50.7	36.4	27.5
742	15/6/2012	30	10.00	1626.8	873.7	524.6	249.4	109.4	67.3	66.3	53.1	36.7
743	15/6/2012	40	10.00	1033.5	603	408.1	253.1	159.3	99.6	74.5	49.6	38.7
744	15/6/2012	16	12.00	892.8	382.9	194.5	109.8	70.9	51	39.4	28.9	26.1
745	15/6/2012	25	12.00	1343.4	667.6	312.4	132.3	81.9	63.6	65.2	43.5	29.1
746	15/6/2012	35	12.00	1055.6	703.8	470.5	279.6	185.7	108.8	78	62.1	43.5
747	15/6/2012	45	12.00	1057.3	672.3	433	242.7	146.7	93.6	68.3	48.8	31
748	15/6/2012	25	14.00	1155.5	708.1	447.3	264.8	160	107.8	86.8	56.9	45.6
749	15/6/2012	35	14.00	1104.7	583.8	363.3	210.6	135.2	95	76.7	53.9	43.6
750	15/6/2012	40	14.00	1357.6	775.7	489.2	273	153.7	90.8	70.6	52.7	44.6
751	15/6/2012	16	16.00	972	508.9	253.7	135.2	75.1	55.6	46.1	27.9	18.7
752	15/6/2012	25	16.00	1112.2	672.7	419.1	252.1	156.1	102.6	82.8	52.7	40.8
753	15/6/2012	35	16.00	1215.1	676.6	427	236.3	151.5	100.9	70	54.6	46.8
754	15/6/2012	20	18.00	1201	773.5	494.4	276.6	174	109.9	68.7	50.5	52.2
755	15/6/2012	30	18.00	1079.2	617.3	402.7	241.5	156.2	107.7	85.5	59.3	46.6
756	15/6/2012	16	20.00	2127.6	897.8	410.4	143.2	63.9	50.1	41.7	38.3	30.1
757	15/6/2012	25	20.00	1137.1	679.8	453.1	265.4	167	104.5	74.5	46	40.8
758	15/6/2012	25	22.00	1085.8	591.3	389.5	222.2	145.1	98.1	71.7	49	40.5
759	15/6/2012	16	24.00	1703.8	1031.8	556.6	277.4	163.1	91.4	65.4	61.6	48.1
760	15/6/2012	25	24.00	1084.5	620.2	399.3	233.1	154.7	107.1	84.9	51.9	42.4
761	15/6/2012	20	26.00	1033.4	649.5	414.1	244.1	167.4	113.4	83.9	52.4	40.4
762	15/6/2012	16	28.00	1021.7	549.7	365	231.4	158.9	113	73.2	48.3	48.5
763	15/6/2012	20	30.00	927	504.5	348.3	242.7	174.7	105.7	85.9	56.8	41.6
764	15/6/2012	16	32.00	919.4	571.5	382.6	227.9	155	110	86.2	55.2	46.6

Appendix F
FWD Test Deflections – RPT Apron

FLINDERS ISLAND AERODROME
RPT APRON MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
765	15/6/2012	135	-30.00	1468.8	830.4	345.5	141.5	69.4	46.7	39.8	29.2	25.6
766	15/6/2012	140	-30.00	656.3	287.3	155.9	88.8	58.4	41.2	33.5	25.1	21.5
767	15/6/2012	145	-30.00	749.4	319.5	179	96.6	60.9	41.3	33.6	24.2	21.4
768	15/6/2012	150	-30.00	752.1	320.5	191.6	98.6	65.3	47.2	43	29.5	23.5
769	15/6/2012	155	-30.00	935.9	442.7	246.6	125.6	78.3	54.8	47	33.4	29
770	15/6/2012	160	-30.00	942	448.3	266.7	149.3	99.9	71.6	56.8	42.4	30.1
771	15/6/2012	165	-30.00	877.7	398.7	236.8	122.1	75	53.4	43.5	30.7	23.7
772	15/6/2012	170	-30.00	669	309.4	185.6	103.6	70.5	53.3	46.8	31.6	26.5
773	15/6/2012	175	-30.00	1024.4	524.7	271.3	134.3	84.9	61.9	52.4	38.9	30
774	15/6/2012	135	-25.00	1790.6	730.1	362.9	147.2	71.5	43.1	28.5	28	26.4
775	15/6/2012	140	-25.00	675.3	276.2	143	75.4	50.7	38	31.9	24.2	18.6
776	15/6/2012	145	-25.00	672.3	295.4	168.6	95.1	57.4	41.3	30.8	22.3	17
777	15/6/2012	150	-25.00	607.1	279.2	177.8	102.6	69.1	50.9	41.9	30.6	26
778	15/6/2012	155	-25.00	633.4	284.2	177.3	100	67.7	48.1	37.1	27.4	23.8
779	15/6/2012	160	-25.00	730.8	321	200.8	122.7	86.1	67.5	55.4	37.8	29.6
780	15/6/2012	165	-25.00	705.9	296.3	173.1	102.7	68.6	51.7	40.4	27.6	23.7
781	15/6/2012	170	-25.00	676.7	262.7	159.3	100	71.6	51.7	43.7	31.5	22.9
782	15/6/2012	175	-25.00	930.9	430.1	229.4	126	82.8	62.4	52.4	37.5	31.3
783	15/6/2012	135	-20.00	2275	940.7	441.4	151.8	47.2	21.2	22.1	19.3	24.7
784	15/6/2012	140	-20.00	706.8	312.2	169.9	86.8	56.1	38.3	32.3	23.7	22
785	15/6/2012	145	-20.00	848.5	392.5	215.1	103.9	64.4	46.5	33.7	25.1	22.4
786	15/6/2012	150	-20.00	888.3	381.2	200.8	99.4	59.9	45.9	37.7	27.3	21.6
787	15/6/2012	155	-20.00	680	339	195.6	106.6	64.3	45.1	36.4	27.1	21.7
788	15/6/2012	160	-20.00	691.2	336.5	217	136.9	102.9	73.6	56	33.1	28
789	15/6/2012	165	-20.00	641.8	309.7	181.9	97.6	65.6	47.9	39.4	28.7	24.1
790	15/6/2012	170	-20.00	748.5	360.7	183.1	100.5	71.5	52.8	43.3	31.5	25.5
791	15/6/2012	175	-20.00	903.2	424	224	117	75.6	58.1	43.7	35.1	31
792	15/6/2012	135	-15.00	1646.1	880.4	404.2	155.5	69.9	42.9	37.1	29	23
793	15/6/2012	140	-15.00	828.6	298.6	164.3	85.4	54.4	42	34.7	26.1	21.2
794	15/6/2012	145	-15.00	590.7	268.9	147.7	82.9	52.9	42.8	34.7	28.2	18.9
795	15/6/2012	150	-15.00	749.3	351.8	204.1	107.1	70.8	51.1	41.7	30	21.5
796	15/6/2012	155	-15.00	767.4	359.3	211.4	118.4	75.4	51.5	39.1	29.4	25.8
797	15/6/2012	160	-15.00	755.2	361.7	217.5	129.3	84.6	63.3	51.7	33.6	22.6
798	15/6/2012	165	-15.00	714.5	327.5	194.5	107.5	72.2	52.7	41.7	30.7	23.2
799	15/6/2012	170	-15.00	882	395.4	205.9	113.1	72.8	54.8	47.2	33.6	25
800	15/6/2012	175	-15.00	1001.2	444.4	226.7	118.5	75.1	60.7	51.8	37	28.7
801	15/6/2012	135	-10.00	1767.1	792	273.7	67.6	16.9	26.7	29.2	26.3	21
802	15/6/2012	140	-10.00	731.9	321.3	178.1	86.5	55.5	42.9	37.3	24.4	18.5

FLINDERS ISLAND AERODROME
RPT APRON MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
803	15/6/2012	145	-10.00	596.8	271.8	151.3	88.3	60.6	42.4	39.4	30.1	17.3
804	15/6/2012	150	-10.00	641.3	322.9	202.4	131.6	90.2	73.1	52.4	35.1	18.7
805	15/6/2012	155	-10.00	743.6	371.6	219	120.5	71.7	51.4	39.5	29.6	24.9
806	15/6/2012	160	-10.00	757.9	370.8	216.5	130.6	89	64.6	51.8	37.5	28.4
807	15/6/2012	165	-10.00	762.2	346.9	212.2	114.8	73.8	56.6	44.8	34.2	26.3
808	15/6/2012	170	-10.00	960.9	474.2	261.8	135.1	86.8	61.1	47.6	34.9	28.5
809	15/6/2012	175	-10.00	1153.7	496.4	269.9	136.9	81.7	57.7	47.2	36.1	30.2
811	15/6/2012	105	-5.00	1037.7	521.3	247.1	116.8	67.4	52.1	41.1	30.1	25.7
812	15/6/2012	110	-5.00	870.2	422.8	199	103.7	68.6	51.6	41.5	32.2	25.1
813	15/6/2012	115	-5.00	1015.1	472	217	102.7	67.1	46.9	41.6	30.6	22.5
814	15/6/2012	120	-5.00	795.1	321.4	163.9	84.7	59.8	47.4	36.5	28	17.8
815	15/6/2012	125	-5.00	872	400.2	202.1	94.5	59.3	42.3	34	25.3	19.9
816	15/6/2012	130	-5.00	922.2	461.4	224.2	117.6	73.6	47.8	40.7	27.4	20.9
817	15/6/2012	135	-5.00	971.6	428.2	194.2	88.5	56.3	41.6	34.2	26.5	19.9
818	15/6/2012	140	-5.00	948	447.3	233.2	105.7	69.5	51	41.5	30.9	28.2
819	15/6/2012	145	-5.00	1124.6	529.5	280.1	136.6	83.6	61	48.6	32.8	26.1
820	15/6/2012	150	-5.00	1070.6	510.1	261.1	138.7	96.8	67.4	71.9	40.9	28.4
821	15/6/2012	155	-5.00	1113.3	491.7	263.9	136.9	89.8	66.7	54.6	39.7	31.7
822	15/6/2012	160	-5.00	1249.4	535.7	259.7	117.3	75.7	60.8	54.8	36	31.7
823	15/6/2012	165	-5.00	1140.4	630.5	279.8	133.1	82.8	63.1	52.7	40.5	25.3
824	15/6/2012	170	-5.00	1949.4	1014.7	478.5	196.6	108.5	77.8	58.1	40.8	28.5
826	15/6/2012	105	0.00	774.9	315.7	173.2	90	59.9	46.8	36.9	26.5	20.1
827	15/6/2012	110	0.00	679.3	307.8	146.4	82.2	54.7	45	34	25.6	19.8
828	15/6/2012	115	0.00	681.3	298.3	149.5	77.3	55.7	43.3	35.7	25.7	21.6
829	15/6/2012	120	0.00	692.6	264.5	143	84.1	58.3	45.1	37.7	27.3	20.2
830	15/6/2012	125	0.00	881.9	370.1	179.5	86.3	53.2	43	38.3	24.4	17.9
831	15/6/2012	130	0.00	895.8	381.5	191.3	95	65.3	48.9	39.3	28.7	23.3
832	15/6/2012	135	0.00	819.9	353.8	181.8	95.6	64.9	47.3	40.4	29.4	22
833	15/6/2012	140	0.00	995.7	472.3	250.4	138.1	90.9	65.7	52.7	35.5	28.2
834	15/6/2012	145	0.00	871.4	436.5	244.1	132	92.1	66.7	53.1	36.3	30
835	15/6/2012	150	0.00	912.4	397.7	223.5	123.6	83.8	61	51.2	37.4	27.8
836	15/6/2012	155	0.00	894.5	438.4	228.5	122.8	85.1	66.4	55.9	37.3	25.5
837	15/6/2012	160	0.00	968.3	411.9	215.2	113.9	76.6	57.7	49.9	36.4	29.9
838	15/6/2012	165	0.00	1284.9	561.6	270.7	137.3	83.7	58.6	47.4	36	30.2
839	15/6/2012	170	0.00	1508.4	753	349.6	142.4	90.7	65	46.9	33.7	38.3
841	15/6/2012	105	5.00	781.6	366.9	195	104.7	74	54.4	35.1	27	28.4
842	15/6/2012	110	5.00	689.7	285.7	149.7	85	60.2	47.9	44.6	30.1	22.9
843	15/6/2012	115	5.00	739.8	318.6	150.7	79.1	54.4	43.6	38.8	25.8	23

FLINDERS ISLAND AERODROME
RPT APRON MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
844	15/6/2012	120	5.00	1008.7	434	182.8	91.4	69.3	54.7	37.9	35.5	30.2
845	15/6/2012	125	5.00	868.8	354.5	159.4	75.4	52.8	40.5	33.8	26.4	27
846	15/6/2012	130	5.00	924.4	381.4	184.6	88.6	53.7	39.2	28.9	22.2	19.8
847	15/6/2012	135	5.00	869.2	368.8	178	91.2	59.4	43.3	33	26.1	20.8
848	15/6/2012	140	5.00	856.4	368	191	91.9	60.8	44.2	36.9	26	20.7
849	15/6/2012	145	5.00	825.2	464.9	246.4	145.4	101.9	65	53	37.6	28.2
850	15/6/2012	150	5.00	783.6	381.1	213	125.9	88.8	65.1	50.9	35.7	28.4
851	15/6/2012	155	5.00	881.8	427.2	229.6	118.8	80.2	60	48.7	34.5	28.8
852	15/6/2012	160	5.00	1162.9	475.9	235.6	125.2	83.3	64.8	52.9	38.9	29.9
853	15/6/2012	165	5.00	1280.5	599.3	297.6	135.1	74.2	52.3	47.7	34	22
854	15/6/2012	170	5.00	2431	1172.6	579.5	223	90.5	55.4	64.3	39	0
855	15/6/2012	105	10.00	1130.6	445.5	229.3	125.9	81.5	57.1	45	32.6	28.4
856	15/6/2012	110	10.00	869.5	377.6	198.8	102.6	68.2	49.8	43.4	28.8	21.9
857	15/6/2012	115	10.00	768.4	361.1	163.4	91.4	66.4	53.6	44.6	32.2	23.8
858	15/6/2012	120	10.00	806.8	392.2	210.6	101	60.6	46.3	37.2	30.7	32.8
859	15/6/2012	125	10.00	912.7	416	183.4	84.7	55.4	38.7	34.2	24.7	21.3
860	15/6/2012	130	10.00	898.6	467.1	215.6	104.7	69.3	48.5	38.7	26.6	23.2
861	15/6/2012	135	10.00	889.9	398.2	195.8	98.2	63.5	48.7	38.5	28.8	22.1
862	15/6/2012	140	10.00	895.3	408.5	209.2	107.9	66.5	48	38.4	26.8	19.9
863	15/6/2012	145	10.00	854	381.8	214.4	118.4	80	59.1	46.6	29.8	25.1
864	15/6/2012	150	10.00	1070.9	423.1	224.8	120.1	81.3	61.6	49.3	34.3	25.8
865	15/6/2012	155	10.00	986.1	471	245.3	130	83.9	62.2	51.4	37.2	29.3
866	15/6/2012	160	10.00	1068.3	554	278.8	140.8	88.2	62.8	52.7	36.6	27.3
867	15/6/2012	165	10.00	1236	560.8	277	122.8	67.1	48.1	39.8	29.7	23.9
868	15/6/2012	170	10.00	1838.6	823.5	425.1	174.9	96.2	63.6	60.8	37.2	23.2
869	15/6/2012	110	15.00	1152.9	443.2	217.6	110.4	60.7	41.1	36.4	27	23.8
870	15/6/2012	115	15.00	706.7	317.9	181.6	105.5	75.3	58.6	47.7	32.6	24.9
871	15/6/2012	120	15.00	706	327.7	177.8	103.1	70.8	56.8	48	34.1	26.4
872	15/6/2012	125	15.00	936.8	404.1	200.4	96.8	65.6	42.5	34.6	26.6	22.5
873	15/6/2012	130	15.00	960.9	454.4	253.1	124.3	80.6	54.2	55.6	27.4	23.5
874	15/6/2012	135	15.00	895.5	413.4	206.2	98.1	60.2	43.6	34.3	25.8	21.6
875	15/6/2012	140	15.00	1066	453.9	221.5	104.9	63.4	43.6	36.3	25.7	20.2
876	15/6/2012	145	15.00	964.1	483.2	239.3	128.9	93.6	67.3	48.9	41.2	32.4
877	15/6/2012	150	15.00	1037.8	432.4	223.5	117.9	76.3	57.2	48.2	32.8	27.6
878	15/6/2012	155	15.00	993.5	423.4	232.3	120.3	78.9	61.4	48	35.9	34.6
879	15/6/2012	160	15.00	1057.2	526.8	262.8	120.9	78.4	58.6	50	34.2	24.6
880	15/6/2012	165	15.00	1200.5	573.1	276.3	117.9	69.3	51.8	42.8	31.2	26.3
881	15/6/2012	170	15.00	1956.6	944.5	431.3	184.1	95.1	65.7	45.9	33.9	40.4

FLINDERS ISLAND AERODROME
RPT APRON MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
882	15/6/2012	115	20.00	860.1	417.2	211.7	106.9	70.1	56	47	34.5	27.7
883	15/6/2012	120	20.00	879.3	370.2	187.3	102.9	74	58.4	47.3	41.1	35.4
884	15/6/2012	125	20.00	873.8	352.1	172.7	89.2	59.7	42.7	34.8	25	21
885	15/6/2012	130	20.00	878.9	434.5	221.2	119.2	73.9	51.5	39	27.8	21
886	15/6/2012	135	20.00	964	376.5	200.7	101.1	61.8	44.6	39.3	26.6	17.1
887	15/6/2012	140	20.00	1005.4	448.7	244.8	120.2	77.7	53.7	41.3	28.1	24.8
888	15/6/2012	145	20.00	1011.9	410.8	218.6	115.9	78.1	58.6	46.8	31	24.8
889	15/6/2012	150	20.00	896.5	435.4	220.5	110.6	73.6	56.2	47.7	32.3	28.8
890	15/6/2012	155	20.00	1032	461.5	232.6	115.9	76.7	56.9	47.5	32.9	26.7
891	15/6/2012	160	20.00	1054.8	462.7	229.6	114.5	74.7	56.1	46.9	31.9	26.4
892	15/6/2012	165	20.00	1331.3	651.4	350.4	164.6	100.3	69.9	55.6	37.3	31.6
893	15/6/2012	170	20.00	1725.3	740.3	349.7	144.4	89.8	66.7	41.3	37.9	29.7
894	15/6/2012	115	25.00	1170.6	411.8	205.5	114.8	80.5	62.7	51.7	37.3	30.4
895	15/6/2012	120	25.00	842	380.9	197.8	93.6	63.1	49	41.8	32	25.8
896	15/6/2012	125	25.00	846.5	417.8	200.2	97	65.6	45.5	34.1	27.3	24.5
897	15/6/2012	130	25.00	976.1	462.4	207.7	92.8	56.7	44.1	36.9	28.1	20.9
898	15/6/2012	135	25.00	990	375.6	194.4	92.7	63	44.8	33	24.3	20
899	15/6/2012	140	25.00	861	382.3	210.8	111.3	74.7	53.3	43.2	28.9	22.2
900	15/6/2012	145	25.00	916	436.6	220.4	107.5	73	55.8	45.7	33.5	27
901	15/6/2012	150	25.00	869.8	412.5	208.1	108.2	72.6	55.4	46.5	32.1	25.5
902	15/6/2012	155	25.00	1132.9	515.7	270.7	138.1	89.9	67.2	53	38.1	30.2
903	15/6/2012	160	25.00	923	434.3	215.9	106.9	67.9	50.3	39.6	29.5	23
904	15/6/2012	165	25.00	1256.6	541	243	115.3	76.2	54.9	45	32.9	25.1
905	15/6/2012	170	25.00	2323.6	1211.1	619.9	271.9	155.6	86.1	55.7	48.6	32.1
906	15/6/2012	120	30.00	1183.5	597.8	264.3	131.2	71.5	45	41.4	30.3	26.2
907	15/6/2012	125	30.00	1073.8	460.2	215.9	106.2	67.5	50.8	38.2	29	23.9
908	15/6/2012	130	30.00	1007.2	560.8	253.7	107.4	66.7	53.1	39.2	24.7	17.7
909	15/6/2012	135	30.00	988.2	435.9	199.3	101.2	70.4	49.4	35.4	28.6	23
910	15/6/2012	140	30.00	965.6	383.7	211.6	117.2	83.8	61	48.4	33.8	25.9
911	15/6/2012	145	30.00	1041.2	439.2	200.3	101.2	71.8	53.4	43.5	32	24.9
912	15/6/2012	150	30.00	879.1	391.1	188.7	99.4	71.3	53.7	42.6	31.3	26.8
913	15/6/2012	155	30.00	926.4	461.8	231.3	117.9	77.4	57.7	49.6	34.6	28
914	15/6/2012	160	30.00	1029.5	484.9	208	82.8	60.7	49.5	46.7	27	29.1
915	15/6/2012	165	30.00	1023.6	426.1	203.3	98.5	66.8	52.9	43.4	32.7	24.7
916	15/6/2012	170	30.00	2274.8	1318.7	517	78.1	44.5	59	57.8	36.4	28
917	15/6/2012	125	35.00	1109.4	453.6	212.4	101.6	62.7	45.6	37.4	29	23.1
918	15/6/2012	130	35.00	1023.9	431.9	208.3	98.3	67.2	48.7	39.6	28.6	22.7
919	15/6/2012	135	35.00	864.2	397.7	217.4	115.3	72	50.9	37.1	29.3	24.3

FLINDERS ISLAND AERODROME
RPT APRON MEASURED DEFLECTIONS

Test No.	Date	Chainage	Offset	Measured Deflection (mm * 10^{-3}) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
920	15/6/2012	140	35.00	881.1	404.1	206	112	76.8	58.4	48.1	33.6	25.4
921	15/6/2012	145	35.00	1124.7	465	221	106.2	75.1	56.5	45.1	31.6	24.1
922	15/6/2012	150	35.00	929.5	396.6	201.1	109.5	77.5	59.8	50	36	29.5
923	15/6/2012	155	35.00	928.3	382.5	206.2	113.2	79.3	58.4	47.8	33.6	29.8
924	15/6/2012	160	35.00	990.1	380.9	179.4	97.2	72	48.6	40	31.3	28.9
925	15/6/2012	165	35.00	1059.7	400.3	192.7	106.4	70.4	57.2	46.2	33.8	25.9
926	15/6/2012	170	35.00	1694.3	726.1	333.1	150.9	94.3	68.3	59.4	41.3	28.3
927	15/6/2012	135	40.00	1812.5	885.7	362.8	146.5	89.9	63.6	44.2	37.3	34.4
928	15/6/2012	140	40.00	1382.2	569	263.4	131.4	85.4	62.8	49.8	35	28.9
929	15/6/2012	145	40.00	1591.7	713.8	319	139	85.3	64.1	51.8	36.2	27.1
930	15/6/2012	150	40.00	2350.8	1126.2	475	175.9	103.4	73.9	53.8	45	33.1
931	15/6/2012	155	40.00	1824.1	673	299.7	141.5	91.1	71	58.9	44	33.5
932	15/6/2012	160	40.00	1799.9	731.4	290.8	117.1	80.4	60.7	51.3	36.8	30
933	15/6/2012	165	40.00	1149.3	494.6	213.3	114.8	84.2	56.8	45	32.9	33.6
934	15/6/2012	170	40.00	1377.7	582.9	254.6	125.4	84.9	61.1	50.2	35.8	28.7

Appendix G
Unit Deflections – 14/32 Runway

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
1	14/6/2012	1545	-18.75	1.453	0.835	0.530	0.333	0.219	0.152	0.116	0.081	0.074
2	14/6/2012	1585	-15.00	2.208	1.233	0.670	0.309	0.197	0.142	0.134	0.093	0.071
3	14/6/2012	1535	-11.25	2.066	0.999	0.588	0.339	0.230	0.164	0.136	0.089	0.070
4	14/6/2012	1550	-11.25	1.440	0.728	0.445	0.241	0.157	0.111	0.089	0.062	0.047
5	14/6/2012	-70	-7.50	4.360	2.322	1.153	0.519	0.248	0.134	0.085	0.045	0.067
6	14/6/2012	-50	-7.50	3.007	1.464	0.899	0.494	0.313	0.204	0.146	0.073	0.045
7	14/6/2012	-40	-7.50	2.766	1.777	0.939	0.501	0.335	0.215	0.164	0.086	0.066
8	14/6/2012	-20	-7.50	2.917	1.402	0.702	0.386	0.262	0.190	0.143	0.075	0.046
9	14/6/2012	-10	-7.50	3.329	1.607	0.694	0.393	0.257	0.179	0.117	0.065	0.074
10	14/6/2012	10	-7.50	2.871	1.308	0.760	0.437	0.287	0.198	0.147	0.094	0.071
11	14/6/2012	20	-7.50	2.490	1.327	0.758	0.431	0.294	0.211	0.160	0.094	0.066
12	14/6/2012	30	-7.50	2.309	1.234	0.732	0.437	0.292	0.209	0.163	0.091	0.064
13	14/6/2012	40	-7.50	2.301	1.245	0.708	0.427	0.296	0.215	0.169	0.097	0.088
14	14/6/2012	50	-7.50	2.352	1.241	0.756	0.469	0.330	0.239	0.185	0.114	0.071
15	14/6/2012	60	-7.50	2.449	1.135	0.724	0.450	0.311	0.237	0.192	0.115	0.063
16	14/6/2012	70	-7.50	2.607	1.282	0.804	0.504	0.352	0.272	0.208	0.115	0.097
17	14/6/2012	80	-7.50	2.830	1.384	0.829	0.477	0.347	0.241	0.187	0.093	0.074
18	14/6/2012	90	-7.50	2.749	1.412	0.846	0.521	0.340	0.255	0.185	0.109	0.073
19	14/6/2012	100	-7.50	2.588	1.313	0.828	0.508	0.354	0.263	0.207	0.124	0.087
20	14/6/2012	110	-7.50	2.594	1.295	0.831	0.529	0.381	0.271	0.227	0.139	0.071
21	14/6/2012	120	-7.50	2.568	1.328	0.888	0.575	0.404	0.286	0.237	0.141	0.078
22	14/6/2012	140	-7.50	2.315	1.187	0.762	0.501	0.361	0.268	0.216	0.147	0.090
23	14/6/2012	150	-7.50	2.186	1.219	0.776	0.509	0.357	0.262	0.204	0.127	0.080
24	14/6/2012	170	-7.50	2.043	1.136	0.755	0.506	0.368	0.270	0.244	0.152	0.112
25	14/6/2012	190	-7.50	2.257	1.223	0.776	0.511	0.368	0.278	0.227	0.138	0.097
26	14/6/2012	200	-7.50	2.175	1.035	0.695	0.454	0.320	0.233	0.193	0.114	0.090
27	14/6/2012	220	-7.50	2.348	1.149	0.736	0.474	0.344	0.249	0.195	0.129	0.081
28	14/6/2012	230	-7.50	2.104	1.132	0.695	0.443	0.317	0.240	0.189	0.119	0.086
29	14/6/2012	250	-7.50	1.963	1.058	0.660	0.420	0.297	0.220	0.166	0.108	0.077
30	14/6/2012	270	-7.50	2.385	1.268	0.826	0.530	0.375	0.285	0.220	0.128	0.091
31	14/6/2012	280	-7.50	2.435	1.350	0.866	0.563	0.394	0.285	0.226	0.144	0.094
32	14/6/2012	300	-7.50	1.788	0.863	0.551	0.344	0.248	0.182	0.144	0.089	0.065
33	14/6/2012	310	-7.50	2.187	0.956	0.612	0.370	0.262	0.190	0.152	0.104	0.082
34	14/6/2012	330	-7.50	2.046	1.012	0.643	0.401	0.284	0.207	0.162	0.108	0.079
35	14/6/2012	350	-7.50	1.846	0.912	0.566	0.343	0.233	0.162	0.128	0.085	0.065
36	14/6/2012	360	-7.50	1.807	0.883	0.520	0.332	0.238	0.168	0.128	0.098	0.066
37	14/6/2012	380	-7.50	1.820	0.832	0.518	0.314	0.209	0.151	0.118	0.082	0.064
38	14/6/2012	390	-7.50	2.021	1.017	0.587	0.346	0.227	0.153	0.116	0.084	0.060

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
39	14/6/2012	410	-7.50	2.167	1.090	0.720	0.449	0.312	0.215	0.167	0.103	0.076
40	14/6/2012	430	-7.50	1.865	0.961	0.626	0.402	0.280	0.206	0.164	0.100	0.070
41	14/6/2012	440	-7.50	1.879	1.006	0.636	0.403	0.283	0.209	0.162	0.107	0.078
42	14/6/2012	460	-7.50	1.589	0.797	0.551	0.358	0.270	0.202	0.158	0.103	0.074
43	14/6/2012	470	-7.50	1.661	0.844	0.579	0.393	0.286	0.217	0.169	0.111	0.073
44	14/6/2012	490	-7.50	1.587	0.871	0.578	0.389	0.295	0.221	0.182	0.122	0.089
45	14/6/2012	510	-7.50	1.481	0.806	0.523	0.358	0.271	0.215	0.175	0.118	0.083
46	14/6/2012	520	-7.50	1.393	0.767	0.520	0.345	0.256	0.200	0.162	0.113	0.082
47	14/6/2012	540	-7.50	1.390	0.705	0.481	0.331	0.245	0.186	0.143	0.097	0.069
48	14/6/2012	550	-7.50	1.462	0.769	0.499	0.349	0.259	0.197	0.155	0.095	0.065
49	14/6/2012	570	-7.50	1.304	0.722	0.501	0.367	0.292	0.234	0.197	0.131	0.085
50	14/6/2012	590	-7.50	1.584	0.770	0.517	0.342	0.248	0.191	0.165	0.099	0.077
51	14/6/2012	600	-7.50	1.227	0.711	0.463	0.329	0.250	0.199	0.149	0.106	0.073
52	14/6/2012	620	-7.50	1.430	0.724	0.475	0.334	0.253	0.198	0.167	0.109	0.080
53	14/6/2012	630	-7.50	1.435	0.711	0.470	0.330	0.244	0.195	0.156	0.105	0.092
54	14/6/2012	650	-7.50	1.475	0.737	0.501	0.344	0.262	0.202	0.176	0.121	0.086
55	14/6/2012	670	-7.50	1.342	0.666	0.440	0.314	0.238	0.185	0.152	0.102	0.072
56	14/6/2012	680	-7.50	1.267	0.628	0.421	0.289	0.211	0.160	0.128	0.085	0.063
57	14/6/2012	700	-7.50	1.268	0.637	0.394	0.259	0.181	0.134	0.110	0.071	0.055
58	14/6/2012	710	-7.50	1.309	0.609	0.383	0.238	0.166	0.112	0.104	0.070	0.047
59	14/6/2012	730	-7.50	1.770	0.850	0.522	0.323	0.219	0.165	0.129	0.086	0.071
60	14/6/2012	750	-7.50	1.573	0.694	0.405	0.251	0.173	0.130	0.101	0.069	0.052
61	14/6/2012	760	-7.50	1.504	0.724	0.463	0.315	0.240	0.179	0.143	0.096	0.083
62	14/6/2012	780	-7.50	1.381	0.670	0.435	0.303	0.234	0.184	0.141	0.107	0.084
63	14/6/2012	790	-7.50	1.500	0.737	0.442	0.291	0.208	0.156	0.120	0.078	0.056
64	14/6/2012	810	-7.50	1.444	0.747	0.492	0.317	0.227	0.174	0.142	0.096	0.068
65	14/6/2012	830	-7.50	1.388	0.787	0.540	0.354	0.266	0.208	0.174	0.120	0.089
66	14/6/2012	840	-7.50	1.536	0.768	0.529	0.351	0.269	0.205	0.175	0.122	0.088
67	14/6/2012	860	-7.50	1.448	0.722	0.495	0.344	0.262	0.211	0.179	0.131	0.099
68	14/6/2012	870	-7.50	1.380	0.655	0.449	0.321	0.254	0.206	0.177	0.126	0.086
69	14/6/2012	890	-7.50	1.783	1.588	0.631	0.397	0.279	0.210	0.165	0.110	0.083
70	14/6/2012	910	-7.50	2.218	1.163	0.740	0.461	0.316	0.230	0.183	0.112	0.086
71	14/6/2012	920	-7.50	2.154	1.137	0.686	0.431	0.291	0.205	0.168	0.105	0.073
72	14/6/2012	940	-7.50	2.071	1.035	0.590	0.337	0.221	0.156	0.119	0.076	0.053
73	14/6/2012	950	-7.50	2.109	0.981	0.569	0.322	0.210	0.148	0.113	0.070	0.049
74	14/6/2012	970	-7.50	2.364	1.141	0.566	0.292	0.190	0.128	0.091	0.050	0.033
75	14/6/2012	990	-7.50	2.747	1.299	0.746	0.379	0.223	0.132	0.080	0.040	0.018
76	14/6/2012	1000	-7.50	2.973	1.502	0.844	0.471	0.284	0.195	0.147	0.067	0.045

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
77	14/6/2012	1020	-7.50	2.664	1.414	0.818	0.467	0.317	0.227	0.177	0.100	0.071
78	14/6/2012	1030	-7.50	2.505	1.329	0.633	0.308	0.202	0.140	0.090	0.032	0.015
79	14/6/2012	1050	-7.50	2.227	1.102	0.623	0.333	0.210	0.136	0.103	0.052	0.033
80	14/6/2012	1070	-7.50	2.483	1.283	0.804	0.484	0.326	0.223	0.164	0.079	0.026
81	14/6/2012	1080	-7.50	1.885	0.953	0.534	0.296	0.182	0.114	0.080	0.034	0.018
82	14/6/2012	1100	-7.50	1.789	0.766	0.418	0.212	0.117	0.074	0.046	0.021	0.014
83	14/6/2012	1110	-7.50	1.937	0.913	0.562	0.314	0.202	0.136	0.101	0.060	0.044
84	14/6/2012	1130	-7.50	2.397	1.337	0.875	0.551	0.379	0.276	0.212	0.131	0.086
85	14/6/2012	1150	-7.50	2.142	1.226	0.793	0.522	0.382	0.289	0.235	0.155	0.104
86	14/6/2012	1170	-7.50	2.150	1.117	0.739	0.468	0.350	0.263	0.214	0.148	0.100
87	14/6/2012	1180	-7.50	2.012	1.087	0.689	0.445	0.319	0.235	0.179	0.124	0.091
88	14/6/2012	1190	-7.50	2.103	1.154	0.757	0.484	0.360	0.265	0.203	0.135	0.103
89	14/6/2012	1210	-7.50	1.735	0.922	0.622	0.418	0.317	0.251	0.199	0.146	0.107
90	14/6/2012	1230	-7.50	1.872	1.055	0.676	0.442	0.331	0.243	0.199	0.131	0.095
91	14/6/2012	1240	-7.50	2.182	1.134	0.733	0.471	0.332	0.250	0.197	0.134	0.091
92	14/6/2012	1260	-7.50	1.889	1.033	0.651	0.428	0.311	0.232	0.188	0.129	0.092
93	14/6/2012	1270	-7.50	1.970	0.985	0.635	0.422	0.300	0.224	0.192	0.117	0.078
94	14/6/2012	1290	-7.50	1.897	1.123	0.693	0.430	0.306	0.232	0.181	0.120	0.090
95	14/6/2012	1310	-7.50	1.915	0.979	0.634	0.368	0.254	0.179	0.137	0.086	0.066
96	14/6/2012	1320	-7.50	1.803	0.945	0.575	0.362	0.243	0.169	0.117	0.067	0.043
97	14/6/2012	1340	-7.50	2.088	1.066	0.648	0.378	0.245	0.169	0.134	0.085	0.063
98	14/6/2012	1350	-7.50	2.193	1.076	0.674	0.397	0.271	0.192	0.156	0.100	0.080
99	14/6/2012	1370	-7.50	2.270	1.213	0.770	0.477	0.323	0.225	0.172	0.101	0.071
100	14/6/2012	1390	-7.50	2.366	1.262	0.761	0.459	0.325	0.200	0.148	0.102	0.079
101	14/6/2012	1400	-7.50	1.193	0.638	0.420	0.292	0.215	0.169	0.138	0.090	0.067
102	14/6/2012	1420	-7.50	1.135	0.583	0.338	0.202	0.139	0.101	0.085	0.056	0.043
103	14/6/2012	1430	-7.50	1.112	0.577	0.381	0.251	0.180	0.139	0.110	0.074	0.052
104	14/6/2012	1450	-7.50	2.462	1.211	0.730	0.444	0.294	0.214	0.182	0.115	0.085
105	14/6/2012	1470	-7.50	2.517	1.241	0.699	0.361	0.240	0.167	0.130	0.091	0.082
106	14/6/2012	1480	-7.50	2.326	1.253	0.752	0.416	0.272	0.198	0.171	0.108	0.076
107	14/6/2012	1500	-7.50	1.204	0.596	0.372	0.225	0.154	0.111	0.082	0.060	0.046
108	14/6/2012	1510	-7.50	1.482	0.799	0.475	0.286	0.198	0.145	0.115	0.080	0.059
109	14/6/2012	1530	-7.50	2.021	1.061	0.623	0.319	0.193	0.127	0.100	0.070	0.055
110	14/6/2012	1560	-7.50	1.895	0.913	0.511	0.283	0.181	0.119	0.092	0.061	0.040
111	14/6/2012	1580	-7.50	1.534	0.795	0.481	0.289	0.192	0.135	0.102	0.071	0.053
112	14/6/2012	1590	-7.50	1.745	0.860	0.491	0.261	0.173	0.117	0.084	0.070	0.063
113	14/6/2012	1610	-7.50	1.300	0.688	0.393	0.234	0.155	0.106	0.084	0.054	0.043
114	14/6/2012	1620	-7.50	2.269	1.129	0.667	0.361	0.229	0.151	0.118	0.086	0.067

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
115	14/6/2012	1630	-7.50	2.134	0.990	0.569	0.278	0.175	0.124	0.092	0.065	0.051
116	14/6/2012	1640	-7.50	2.135	1.124	0.616	0.301	0.173	0.113	0.079	0.055	0.048
117	14/6/2012	1650	-7.50	1.820	1.094	0.659	0.327	0.184	0.128	0.100	0.074	0.059
118	14/6/2012	1660	-7.50	2.136	1.186	0.687	0.318	0.164	0.112	0.094	0.071	0.057
119	14/6/2012	1670	-7.50	3.005	1.714	0.963	0.371	0.145	0.085	0.083	0.064	0.053
120	14/6/2012	1680	-7.50	2.234	1.279	0.678	0.304	0.176	0.112	0.083	0.069	0.059
121	14/6/2012	1690	-7.50	2.488	1.442	0.770	0.273	0.133	0.099	0.113	0.055	0.047
122	14/6/2012	1700	-7.50	2.471	1.465	0.897	0.410	0.202	0.114	0.099	0.064	0.048
123	14/6/2012	1710	-7.50	1.831	0.846	0.521	0.308	0.204	0.140	0.106	0.075	0.057
124	14/6/2012	1720	-7.50	2.115	0.971	0.544	0.303	0.199	0.141	0.110	0.077	0.061
125	14/6/2012	1740	-7.50	2.345	1.160	0.734	0.408	0.250	0.167	0.126	0.081	0.064
126	14/6/2012	1750	-7.50	3.506	2.303	1.201	0.512	0.255	0.134	0.080	0.084	0.098
127	13/6/2012	-60	-3.75	3.177	1.743	1.046	0.596	0.375	0.233	0.178	0.091	0.061
128	13/6/2012	-30	-3.75	2.967	1.614	0.898	0.534	0.364	0.260	0.181	0.128	0.092
129	13/6/2012	0	-3.75	2.318	1.148	0.674	0.392	0.283	0.201	0.168	0.096	0.068
130	13/6/2012	10	-3.75	2.834	1.342	0.723	0.402	0.279	0.203	0.154	0.099	0.075
131	13/6/2012	20	-3.75	2.441	1.180	0.739	0.468	0.312	0.217	0.157	0.104	0.088
132	13/6/2012	30	-3.75	2.405	1.076	0.605	0.372	0.263	0.191	0.151	0.096	0.066
133	13/6/2012	40	-3.75	2.491	1.288	0.785	0.461	0.313	0.226	0.186	0.116	0.078
134	13/6/2012	50	-3.75	2.179	1.077	0.641	0.383	0.261	0.187	0.145	0.095	0.065
135	13/6/2012	60	-3.75	2.438	1.237	0.747	0.447	0.312	0.223	0.175	0.107	0.073
136	13/6/2012	70	-3.75	2.335	1.229	0.717	0.413	0.281	0.207	0.172	0.106	0.075
137	13/6/2012	80	-3.75	2.208	1.249	0.704	0.443	0.324	0.242	0.185	0.113	0.078
138	13/6/2012	90	-3.75	2.096	1.140	0.667	0.429	0.308	0.225	0.189	0.113	0.081
139	13/6/2012	100	-3.75	2.196	1.061	0.667	0.415	0.304	0.220	0.178	0.108	0.076
140	13/6/2012	130	-3.75	2.522	1.356	0.821	0.503	0.365	0.273	0.217	0.140	0.088
141	13/6/2012	160	-3.75	1.947	1.105	0.694	0.457	0.334	0.256	0.202	0.139	0.105
142	13/6/2012	180	-3.75	2.092	1.071	0.687	0.429	0.311	0.240	0.190	0.129	0.091
143	13/6/2012	210	-3.75	1.984	1.019	0.661	0.427	0.323	0.238	0.188	0.126	0.090
144	13/6/2012	240	-3.75	2.062	1.165	0.750	0.475	0.333	0.246	0.192	0.129	0.093
145	13/6/2012	260	-3.75	1.805	0.955	0.643	0.419	0.312	0.241	0.186	0.119	0.080
146	13/6/2012	290	-3.75	2.184	1.185	0.783	0.473	0.344	0.246	0.196	0.126	0.089
147	13/6/2012	320	-3.75	1.569	0.769	0.520	0.339	0.248	0.180	0.142	0.093	0.070
148	13/6/2012	340	-3.75	1.940	1.007	0.609	0.365	0.246	0.188	0.156	0.107	0.084
149	13/6/2012	370	-3.75	1.710	0.928	0.573	0.366	0.260	0.188	0.157	0.100	0.082
150	13/6/2012	400	-3.75	1.777	0.919	0.571	0.373	0.265	0.201	0.157	0.106	0.079
151	13/6/2012	420	-3.75	1.729	0.891	0.561	0.339	0.233	0.165	0.132	0.088	0.065
152	13/6/2012	450	-3.75	1.888	1.001	0.657	0.428	0.309	0.225	0.177	0.111	0.075

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
153	13/6/2012	480	-3.75	1.538	0.846	0.538	0.357	0.263	0.199	0.156	0.106	0.076
154	13/6/2012	500	-3.75	1.521	0.815	0.574	0.388	0.285	0.217	0.169	0.113	0.080
155	13/6/2012	530	-3.75	1.450	0.837	0.536	0.368	0.268	0.208	0.164	0.119	0.075
156	13/6/2012	560	-3.75	1.289	0.674	0.464	0.316	0.241	0.183	0.168	0.096	0.085
157	13/6/2012	580	-3.75	1.214	0.642	0.458	0.322	0.250	0.194	0.166	0.112	0.074
158	13/6/2012	610	-3.75	1.393	0.683	0.498	0.357	0.279	0.218	0.174	0.120	0.086
159	13/6/2012	640	-3.75	1.264	0.666	0.465	0.314	0.239	0.175	0.140	0.101	0.080
160	13/6/2012	660	-3.75	1.171	0.698	0.501	0.355	0.277	0.208	0.166	0.113	0.084
161	13/6/2012	690	-3.75	1.112	0.688	0.454	0.324	0.247	0.195	0.164	0.111	0.082
162	13/6/2012	720	-3.75	1.273	0.686	0.486	0.327	0.246	0.191	0.152	0.103	0.076
163	13/6/2012	740	-3.75	1.232	0.643	0.413	0.265	0.196	0.148	0.120	0.076	0.064
164	13/6/2012	770	-3.75	1.246	0.695	0.437	0.286	0.209	0.159	0.126	0.084	0.064
165	13/6/2012	800	-3.75	1.456	0.769	0.533	0.374	0.287	0.223	0.184	0.130	0.099
166	13/6/2012	820	-3.75	1.464	0.711	0.470	0.301	0.218	0.153	0.121	0.080	0.061
167	13/6/2012	850	-3.75	1.159	0.631	0.446	0.317	0.249	0.200	0.169	0.112	0.082
168	13/6/2012	880	-3.75	1.591	0.860	0.575	0.390	0.296	0.220	0.185	0.134	0.095
169	13/6/2012	900	-3.75	1.456	0.750	0.526	0.359	0.271	0.211	0.172	0.121	0.091
170	13/6/2012	930	-3.75	1.643	0.827	0.557	0.367	0.273	0.199	0.155	0.107	0.082
171	13/6/2012	960	-3.75	1.857	0.946	0.575	0.355	0.245	0.174	0.134	0.094	0.075
172	13/6/2012	980	-3.75	1.745	1.020	0.631	0.379	0.263	0.187	0.149	0.091	0.057
173	13/6/2012	1010	-3.75	2.779	1.467	0.778	0.380	0.240	0.164	0.141	0.083	0.060
174	13/6/2012	1040	-3.75	2.464	1.281	0.705	0.360	0.225	0.172	0.137	0.086	0.057
175	13/6/2012	1060	-3.75	2.273	1.232	0.747	0.466	0.334	0.260	0.217	0.151	0.112
176	13/6/2012	1090	-3.75	1.919	0.950	0.521	0.280	0.176	0.126	0.093	0.052	0.027
177	13/6/2012	1120	-3.75	1.918	1.121	0.706	0.439	0.298	0.206	0.153	0.092	0.058
178	13/6/2012	1140	-3.75	2.092	1.191	0.767	0.492	0.351	0.265	0.210	0.136	0.095
179	13/6/2012	1170	-3.75	1.559	0.860	0.570	0.374	0.283	0.214	0.169	0.116	0.089
180	13/6/2012	1200	-3.75	1.976	0.970	0.680	0.454	0.341	0.255	0.197	0.132	0.100
181	13/6/2012	1220	-3.75	1.750	0.877	0.597	0.410	0.308	0.241	0.194	0.135	0.097
182	13/6/2012	1250	-3.75	1.500	0.819	0.555	0.384	0.287	0.221	0.180	0.121	0.088
183	13/6/2012	1280	-3.75	1.605	0.843	0.593	0.393	0.306	0.235	0.189	0.136	0.095
184	13/6/2012	1300	-3.75	1.807	1.034	0.689	0.448	0.322	0.233	0.188	0.126	0.091
185	13/6/2012	1330	-3.75	1.512	0.757	0.487	0.309	0.226	0.163	0.136	0.090	0.053
186	13/6/2012	1360	-3.75	1.961	1.038	0.659	0.385	0.260	0.183	0.148	0.107	0.080
187	13/6/2012	1380	-3.75	1.822	0.996	0.646	0.397	0.283	0.215	0.158	0.106	0.106
188	13/6/2012	1410	-3.75	2.131	1.103	0.662	0.399	0.268	0.195	0.150	0.103	0.082
189	13/6/2012	1440	-3.75	1.213	0.635	0.368	0.226	0.154	0.109	0.085	0.065	0.052
190	13/6/2012	1460	-3.75	1.910	1.046	0.706	0.445	0.317	0.236	0.184	0.130	0.099

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
191	13/6/2012	1490	-3.75	2.014	1.063	0.653	0.388	0.264	0.190	0.155	0.106	0.084
192	13/6/2012	1520	-3.75	1.297	0.606	0.360	0.223	0.162	0.121	0.094	0.068	0.053
193	13/6/2012	1540	-3.75	1.437	0.709	0.434	0.264	0.179	0.134	0.103	0.077	0.058
194	13/6/2012	1570	-3.75	1.920	1.142	0.659	0.348	0.238	0.158	0.119	0.091	0.086
195	13/6/2012	1600	-3.75	1.786	0.911	0.550	0.309	0.194	0.131	0.099	0.065	0.053
196	13/6/2012	1620	-3.75	2.585	1.568	0.852	0.296	0.094	0.094	0.075	0.075	0.063
197	13/6/2012	1630	-3.75	2.215	1.396	0.809	0.364	0.207	0.145	0.146	0.117	0.088
198	13/6/2012	1640	-3.75	2.024	0.982	0.538	0.294	0.185	0.133	0.115	0.064	0.065
199	13/6/2012	1650	-3.75	2.077	1.096	0.605	0.320	0.191	0.130	0.102	0.064	0.048
200	13/6/2012	1660	-3.75	1.846	1.095	0.665	0.348	0.199	0.139	0.109	0.078	0.062
201	13/6/2012	1670	-3.75	1.781	1.098	0.639	0.285	0.161	0.115	0.085	0.072	0.056
202	13/6/2012	1680	-3.75	1.994	1.117	0.654	0.307	0.154	0.116	0.090	0.070	0.044
203	13/6/2012	1690	-3.75	2.026	1.084	0.609	0.283	0.161	0.114	0.093	0.077	0.062
204	13/6/2012	1700	-3.75	2.222	1.242	0.748	0.344	0.193	0.128	0.101	0.076	0.063
205	13/6/2012	1710	-3.75	1.741	0.966	0.608	0.337	0.200	0.133	0.103	0.076	0.059
206	13/6/2012	1720	-3.75	2.112	1.091	0.628	0.347	0.216	0.145	0.105	0.069	0.069
207	13/6/2012	1730	-3.75	1.916	1.121	0.615	0.339	0.221	0.145	0.115	0.081	0.075
208	13/6/2012	1760	-3.75	4.306	2.541	1.351	0.567	0.264	0.112	0.053	0.076	0.097
209	13/6/2012	-50	0.00	3.057	1.603	0.918	0.508	0.328	0.233	0.163	0.098	0.083
210	13/6/2012	-10	0.00	3.045	0.850	0.587	0.338	0.240	0.173	0.135	0.087	0.071
211	13/6/2012	10	0.00	2.577	1.248	0.719	0.414	0.286	0.208	0.160	0.106	0.083
212	13/6/2012	20	0.00	2.629	1.234	0.764	0.452	0.307	0.226	0.182	0.107	0.076
213	13/6/2012	30	0.00	2.245	1.101	0.635	0.373	0.258	0.189	0.160	0.096	0.061
214	13/6/2012	40	0.00	2.291	1.117	0.647	0.366	0.243	0.190	0.151	0.089	0.070
215	13/6/2012	50	0.00	2.590	1.248	0.728	0.421	0.283	0.207	0.164	0.117	0.080
216	13/6/2012	60	0.00	2.428	1.214	0.736	0.448	0.319	0.236	0.191	0.122	0.087
217	13/6/2012	70	0.00	2.125	1.048	0.625	0.385	0.275	0.217	0.174	0.114	0.082
218	13/6/2012	80	0.00	2.658	1.258	0.733	0.447	0.313	0.237	0.189	0.126	0.094
219	13/6/2012	90	0.00	2.228	1.126	0.702	0.431	0.307	0.231	0.184	0.116	0.088
220	13/6/2012	100	0.00	2.644	1.227	0.720	0.414	0.286	0.207	0.165	0.106	0.093
221	13/6/2012	110	0.00	2.703	1.394	0.877	0.519	0.355	0.264	0.208	0.142	0.099
222	13/6/2012	150	0.00	2.091	1.081	0.709	0.472	0.342	0.261	0.204	0.133	0.096
223	13/6/2012	190	0.00	2.096	1.120	0.671	0.429	0.314	0.229	0.180	0.115	0.087
224	13/6/2012	230	0.00	2.029	1.043	0.661	0.429	0.314	0.241	0.188	0.120	0.084
225	13/6/2012	270	0.00	2.172	1.104	0.729	0.477	0.342	0.255	0.203	0.132	0.093
226	13/6/2012	310	0.00	1.761	0.832	0.543	0.327	0.228	0.163	0.137	0.091	0.069
227	13/6/2012	350	0.00	1.761	0.807	0.528	0.344	0.247	0.182	0.130	0.096	0.072
228	13/6/2012	390	0.00	1.952	0.857	0.527	0.321	0.233	0.175	0.143	0.100	0.084

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
229	13/6/2012	430	0.00	1.911	0.941	0.591	0.370	0.258	0.191	0.156	0.104	0.070
230	13/6/2012	470	0.00	1.632	0.811	0.547	0.371	0.273	0.207	0.175	0.105	0.075
231	13/6/2012	510	0.00	1.553	0.839	0.568	0.370	0.276	0.216	0.173	0.117	0.088
232	13/6/2012	550	0.00	1.417	0.729	0.503	0.336	0.257	0.200	0.152	0.109	0.076
233	13/6/2012	590	0.00	1.265	0.669	0.470	0.325	0.252	0.197	0.159	0.109	0.081
234	13/6/2012	630	0.00	1.432	0.739	0.490	0.340	0.255	0.198	0.157	0.106	0.081
235	13/6/2012	670	0.00	1.302	0.665	0.462	0.323	0.243	0.188	0.152	0.099	0.089
236	13/6/2012	710	0.00	1.236	0.638	0.462	0.315	0.239	0.183	0.153	0.097	0.066
237	13/6/2012	750	0.00	1.304	0.663	0.459	0.318	0.238	0.179	0.149	0.102	0.074
238	13/6/2012	790	0.00	1.397	0.735	0.480	0.327	0.238	0.172	0.145	0.097	0.076
239	13/6/2012	830	0.00	1.120	0.593	0.400	0.289	0.224	0.182	0.148	0.105	0.078
240	13/6/2012	870	0.00	1.669	0.877	0.572	0.386	0.285	0.228	0.187	0.129	0.097
241	13/6/2012	910	0.00	1.331	0.714	0.495	0.339	0.254	0.199	0.157	0.109	0.080
242	13/6/2012	950	0.00	1.550	0.829	0.534	0.359	0.252	0.197	0.144	0.096	0.068
243	13/6/2012	990	0.00	2.258	1.158	0.670	0.337	0.208	0.143	0.115	0.078	0.049
244	13/6/2012	1030	0.00	1.998	1.040	0.639	0.392	0.261	0.190	0.144	0.082	0.050
245	13/6/2012	1070	0.00	2.317	1.235	0.775	0.488	0.345	0.258	0.191	0.123	0.075
246	13/6/2012	1110	0.00	1.464	0.767	0.515	0.354	0.262	0.211	0.176	0.121	0.091
247	13/6/2012	1150	0.00	1.497	0.837	0.562	0.376	0.279	0.205	0.171	0.111	0.081
248	13/6/2012	1190	0.00	1.664	0.932	0.606	0.391	0.290	0.215	0.174	0.112	0.095
249	13/6/2012	1230	0.00	1.525	0.775	0.525	0.360	0.267	0.212	0.163	0.103	0.081
250	13/6/2012	1270	0.00	1.720	0.957	0.646	0.429	0.314	0.235	0.192	0.130	0.102
251	13/6/2012	1310	0.00	1.473	0.794	0.506	0.335	0.235	0.170	0.129	0.089	0.066
252	13/6/2012	1350	0.00	1.913	1.040	0.627	0.368	0.238	0.173	0.139	0.102	0.079
253	13/6/2012	1390	0.00	2.202	1.064	0.700	0.396	0.265	0.183	0.140	0.093	0.082
254	13/6/2012	1430	0.00	1.318	0.619	0.363	0.236	0.164	0.118	0.088	0.061	0.060
255	13/6/2012	1470	0.00	2.019	1.051	0.626	0.363	0.228	0.164	0.145	0.081	0.064
256	13/6/2012	1510	0.00	1.218	0.520	0.311	0.203	0.152	0.116	0.097	0.068	0.054
257	13/6/2012	1550	0.00	1.932	1.112	0.595	0.318	0.209	0.148	0.130	0.093	0.074
258	13/6/2012	1590	0.00	1.582	0.849	0.495	0.269	0.171	0.117	0.090	0.063	0.050
259	13/6/2012	1620	0.00	1.388	0.810	0.502	0.283	0.184	0.128	0.097	0.068	0.050
260	13/6/2012	1630	0.00	1.812	0.907	0.527	0.286	0.184	0.124	0.089	0.066	0.059
261	13/6/2012	1640	0.00	2.051	0.928	0.522	0.274	0.168	0.115	0.090	0.064	0.051
262	13/6/2012	1650	0.00	1.810	1.043	0.624	0.301	0.181	0.126	0.104	0.076	0.060
263	13/6/2012	1660	0.00	2.029	1.068	0.649	0.334	0.177	0.119	0.095	0.078	0.062
264	13/6/2012	1670	0.00	2.235	1.249	0.715	0.335	0.174	0.119	0.095	0.072	0.053
265	13/6/2012	1680	0.00	2.331	1.520	0.899	0.444	0.230	0.143	0.117	0.083	0.076
266	13/6/2012	1690	0.00	2.205	1.249	0.752	0.365	0.200	0.128	0.104	0.075	0.065

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
267	13/6/2012	1700	0.00	2.091	1.018	0.608	0.308	0.194	0.142	0.110	0.078	0.066
268	13/6/2012	1710	0.00	1.882	0.948	0.601	0.341	0.225	0.150	0.104	0.076	0.060
269	13/6/2012	1720	0.00	2.054	1.094	0.682	0.388	0.237	0.152	0.113	0.077	0.065
270	13/6/2012	1750	0.00	2.914	1.508	0.752	0.399	0.223	0.143	0.116	0.110	0.111
271	13/6/2012	-70	3.75	3.107	1.685	1.050	0.616	0.374	0.235	0.169	0.086	0.085
272	13/6/2012	-40	3.75	3.073	1.603	0.907	0.533	0.369	0.237	0.197	0.109	0.093
273	13/6/2012	-20	3.75	2.796	1.197	0.645	0.377	0.263	0.189	0.136	0.098	0.069
274	13/6/2012	10	3.75	2.477	1.327	0.750	0.428	0.285	0.209	0.165	0.110	0.077
275	13/6/2012	20	3.75	2.069	1.130	0.667	0.393	0.271	0.193	0.152	0.090	0.068
276	13/6/2012	30	3.75	2.382	1.176	0.671	0.397	0.276	0.203	0.163	0.105	0.074
277	13/6/2012	40	3.75	2.401	1.381	0.771	0.450	0.317	0.231	0.191	0.128	0.082
278	13/6/2012	51	3.75	2.797	1.423	0.776	0.429	0.305	0.224	0.170	0.107	0.085
279	13/6/2012	60	3.75	2.876	1.490	0.856	0.504	0.357	0.272	0.208	0.132	0.087
280	13/6/2012	70	3.75	2.411	1.096	0.628	0.385	0.281	0.217	0.173	0.115	0.090
281	13/6/2012	81	3.75	2.501	1.243	0.744	0.474	0.342	0.256	0.209	0.125	0.086
282	13/6/2012	90	3.75	2.525	1.386	0.812	0.474	0.338	0.251	0.202	0.120	0.085
283	13/6/2012	100	3.75	2.502	1.471	0.869	0.534	0.375	0.277	0.217	0.143	0.099
284	13/6/2012	120	3.75	2.874	1.711	1.029	0.584	0.408	0.290	0.215	0.127	0.093
285	13/6/2012	140	3.75	2.399	1.332	0.833	0.515	0.362	0.266	0.215	0.129	0.096
286	13/6/2012	170	3.75	1.985	1.078	0.676	0.427	0.310	0.227	0.190	0.121	0.083
287	13/6/2012	200	3.75	2.150	1.208	0.726	0.446	0.312	0.240	0.165	0.121	0.105
288	13/6/2012	220	3.75	2.068	1.134	0.716	0.442	0.302	0.228	0.177	0.110	0.080
289	13/6/2012	250	3.75	2.077	1.152	0.723	0.460	0.337	0.242	0.193	0.120	0.089
290	13/6/2012	280	3.75	1.628	0.876	0.545	0.338	0.226	0.164	0.128	0.077	0.056
291	13/6/2012	300	3.75	2.047	1.116	0.679	0.419	0.297	0.219	0.173	0.116	0.089
292	13/6/2012	330	3.75	1.869	0.948	0.578	0.352	0.249	0.177	0.141	0.094	0.071
293	13/6/2012	360	3.75	1.763	0.714	0.406	0.238	0.168	0.134	0.116	0.089	0.068
294	13/6/2012	380	3.75	1.941	0.982	0.567	0.334	0.233	0.172	0.137	0.093	0.072
295	13/6/2012	410	3.75	1.882	0.980	0.617	0.383	0.262	0.196	0.148	0.094	0.065
296	13/6/2012	440	3.75	1.893	1.041	0.640	0.368	0.259	0.180	0.138	0.081	0.060
297	13/6/2012	460	3.75	1.892	0.991	0.646	0.406	0.298	0.220	0.169	0.114	0.078
298	13/6/2012	490	3.75	1.645	0.859	0.576	0.395	0.289	0.209	0.169	0.109	0.067
299	13/6/2012	520	3.75	1.460	0.756	0.506	0.327	0.233	0.181	0.145	0.093	0.065
300	13/6/2012	550	3.75	1.532	0.793	0.521	0.343	0.256	0.200	0.167	0.107	0.073
301	13/6/2012	570	3.75	1.589	0.898	0.612	0.414	0.308	0.237	0.193	0.122	0.086
302	13/6/2012	600	3.75	1.684	0.951	0.658	0.443	0.319	0.260	0.210	0.134	0.096
303	13/6/2012	620	3.75	1.552	0.881	0.587	0.405	0.298	0.230	0.192	0.122	0.084
304	13/6/2012	650	3.75	1.443	0.721	0.506	0.358	0.278	0.219	0.179	0.123	0.091

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
305	13/6/2012	680	3.75	1.212	0.664	0.465	0.324	0.250	0.201	0.162	0.111	0.079
306	13/6/2012	700	3.75	1.390	0.721	0.486	0.336	0.257	0.206	0.174	0.119	0.085
307	13/6/2012	730	3.75	1.285	0.722	0.480	0.334	0.251	0.193	0.152	0.103	0.069
308	13/6/2012	760	3.75	1.536	0.832	0.543	0.350	0.255	0.192	0.158	0.108	0.082
309	13/6/2012	780	3.75	1.256	0.607	0.395	0.259	0.194	0.148	0.118	0.080	0.056
310	13/6/2012	810	3.75	1.416	0.745	0.499	0.336	0.252	0.189	0.155	0.106	0.075
311	13/6/2012	840	3.75	1.865	1.025	0.701	0.473	0.344	0.262	0.225	0.145	0.116
312	13/6/2012	860	3.75	2.000	1.202	0.811	0.533	0.394	0.302	0.236	0.169	0.147
313	13/6/2012	890	3.75	1.809	0.998	0.635	0.410	0.292	0.217	0.175	0.114	0.084
314	13/6/2012	920	3.75	1.778	0.920	0.594	0.387	0.269	0.204	0.158	0.105	0.081
315	13/6/2012	940	3.75	1.497	0.822	0.531	0.351	0.255	0.193	0.150	0.094	0.069
316	13/6/2012	970	3.75	1.691	0.849	0.527	0.304	0.200	0.142	0.102	0.061	0.043
317	13/6/2012	1000	3.75	2.409	1.508	1.006	0.564	0.381	0.281	0.232	0.152	0.100
318	13/6/2012	1020	3.75	2.401	1.214	0.677	0.351	0.232	0.167	0.129	0.079	0.046
319	13/6/2012	1050	3.75	2.400	1.289	0.750	0.415	0.263	0.164	0.142	0.079	0.022
320	13/6/2012	1080	3.75	2.006	1.083	0.707	0.443	0.300	0.208	0.157	0.088	0.056
321	13/6/2012	1100	3.75	1.602	0.855	0.586	0.402	0.308	0.235	0.192	0.129	0.092
322	13/6/2012	1130	3.75	1.344	0.696	0.476	0.330	0.252	0.192	0.159	0.103	0.072
323	13/6/2012	1160	3.75	1.349	0.763	0.523	0.360	0.255	0.197	0.161	0.099	0.066
324	13/6/2012	1180	3.75	1.607	0.893	0.596	0.414	0.312	0.243	0.212	0.137	0.097
325	13/6/2012	1210	3.75	1.633	0.933	0.646	0.419	0.302	0.223	0.172	0.110	0.076
326	13/6/2012	1240	3.75	1.556	0.943	0.642	0.429	0.318	0.244	0.198	0.128	0.090
327	13/6/2012	1260	3.75	1.878	1.099	0.745	0.483	0.346	0.265	0.208	0.133	0.086
328	13/6/2012	1290	3.75	1.501	0.805	0.520	0.330	0.232	0.169	0.129	0.088	0.076
329	13/6/2012	1320	3.75	2.304	1.268	0.653	0.250	0.176	0.142	0.120	0.093	0.077
330	13/6/2012	1340	3.75	2.013	1.096	0.711	0.440	0.316	0.240	0.215	0.154	0.117
331	13/6/2012	1370	3.75	2.266	1.112	0.646	0.365	0.229	0.157	0.121	0.088	0.067
332	13/6/2012	1400	3.75	1.300	0.606	0.374	0.220	0.151	0.119	0.095	0.074	0.059
333	13/6/2012	1420	3.75	1.578	0.744	0.472	0.293	0.203	0.152	0.125	0.080	0.068
334	13/6/2012	1450	3.75	2.301	1.129	0.666	0.364	0.240	0.171	0.129	0.092	0.077
335	13/6/2012	1480	3.75	1.568	0.809	0.469	0.278	0.193	0.142	0.110	0.076	0.058
336	13/6/2012	1500	3.75	1.186	0.526	0.312	0.193	0.134	0.097	0.078	0.054	0.043
337	13/6/2012	1530	3.75	1.660	0.858	0.529	0.315	0.214	0.155	0.102	0.089	0.066
338	13/6/2012	1560	3.75	1.845	0.853	0.492	0.269	0.178	0.130	0.108	0.075	0.060
339	13/6/2012	1580	3.75	1.423	0.692	0.409	0.226	0.135	0.096	0.076	0.054	0.044
340	13/6/2012	1610	3.75	3.678	1.977	0.918	0.146	0.025	0.080	0.100	0.082	0.071
341	13/6/2012	1620	3.75	2.953	1.683	0.806	0.236	0.092	0.056	0.071	0.067	0.054
342	13/6/2012	1630	3.75	1.835	0.913	0.522	0.278	0.172	0.119	0.099	0.064	0.052

FLINDERS ISLAND AERODROME
14/32 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
343	13/6/2012	1640	3.75	1.870	0.967	0.520	0.261	0.161	0.112	0.087	0.060	0.051
344	13/6/2012	1650	3.75	1.983	1.058	0.620	0.314	0.161	0.108	0.103	0.074	0.051
345	13/6/2012	1660	3.75	2.012	1.129	0.654	0.275	0.146	0.111	0.089	0.076	0.063
346	13/6/2012	1670	3.75	2.059	1.115	0.589	0.250	0.130	0.094	0.085	0.063	0.045
347	13/6/2012	1680	3.75	2.686	1.173	0.655	0.273	0.131	0.094	0.088	0.066	0.051
348	13/6/2012	1690	3.75	2.345	1.300	0.748	0.335	0.172	0.117	0.098	0.076	0.048
349	13/6/2012	1700	3.75	1.472	0.807	0.463	0.256	0.152	0.108	0.089	0.063	0.048
350	13/6/2012	1710	3.75	2.118	1.043	0.618	0.329	0.195	0.138	0.102	0.072	0.056
351	13/6/2012	1720	3.75	2.019	1.074	0.626	0.332	0.197	0.137	0.100	0.071	0.060
352	13/6/2012	1740	3.75	2.294	1.372	0.673	0.319	0.183	0.125	0.106	0.067	0.062
353	13/6/2012	1760	3.75	3.270	1.475	0.699	0.337	0.178	0.107	0.076	0.061	0.059
354	14/6/2012	-60	7.50	2.974	1.708	1.037	0.562	0.337	0.208	0.137	0.081	0.071
355	14/6/2012	-50	7.50	3.000	1.257	0.759	0.426	0.270	0.172	0.118	0.070	0.054
356	14/6/2012	-30	7.50	2.677	1.381	0.784	0.453	0.300	0.208	0.158	0.091	0.064
357	14/6/2012	-10	7.50	3.156	1.435	0.665	0.372	0.274	0.196	0.130	0.086	0.065
358	14/6/2012	10	7.50	2.731	1.306	0.739	0.383	0.258	0.187	0.151	0.092	0.065
359	14/6/2012	20	7.50	2.421	1.149	0.673	0.421	0.306	0.228	0.179	0.105	0.069
360	14/6/2012	30	7.50	2.380	1.142	0.663	0.395	0.269	0.198	0.157	0.091	0.058
361	14/6/2012	40	7.50	2.349	1.142	0.667	0.392	0.274	0.196	0.156	0.091	0.064
362	14/6/2012	50	7.50	2.560	1.152	0.662	0.374	0.256	0.201	0.166	0.100	0.067
363	14/6/2012	60	7.50	2.352	1.157	0.679	0.422	0.304	0.228	0.183	0.118	0.078
364	14/6/2012	70	7.50	2.481	1.189	0.699	0.424	0.309	0.229	0.174	0.109	0.077
365	14/6/2012	80	7.50	2.669	1.373	0.811	0.477	0.333	0.243	0.194	0.119	0.078
366	14/6/2012	90	7.50	2.645	1.333	0.831	0.483	0.328	0.237	0.184	0.117	0.082
367	14/6/2012	100	7.50	2.412	1.235	0.713	0.438	0.305	0.225	0.182	0.119	0.088

Appendix H
Unit Deflections – 05/23 Runway

FLINDERS ISLAND AERODROME
05/23 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
439	15/6/2012	70	-15.00	1.300	0.682	0.413	0.235	0.148	0.105	0.081	0.057	0.045
440	15/6/2012	-50	-7.50	3.825	1.705	0.829	0.363	0.186	0.123	0.099	0.081	0.063
441	15/6/2012	-30	-7.50	1.889	1.008	0.500	0.254	0.155	0.109	0.080	0.058	0.053
442	15/6/2012	-20	-7.50	1.996	0.883	0.463	0.239	0.151	0.106	0.085	0.059	0.049
443	15/6/2012	0	-7.50	2.349	1.216	0.651	0.327	0.191	0.124	0.102	0.080	0.072
444	15/6/2012	10	-7.50	2.038	0.946	0.523	0.293	0.192	0.137	0.111	0.081	0.066
445	15/6/2012	20	-7.50	1.780	0.880	0.477	0.269	0.176	0.122	0.096	0.063	0.070
446	15/6/2012	35	-7.50	1.432	0.787	0.491	0.299	0.196	0.135	0.111	0.075	0.056
447	15/6/2012	90	-7.50	1.209	0.570	0.325	0.177	0.110	0.081	0.070	0.050	0.039
448	15/6/2012	110	-7.50	1.348	0.576	0.310	0.182	0.118	0.090	0.073	0.053	0.043
449	15/6/2012	120	-7.50	1.509	0.688	0.367	0.197	0.130	0.097	0.081	0.059	0.047
450	15/6/2012	140	-7.50	1.911	1.008	0.546	0.274	0.177	0.130	0.108	0.087	0.072
451	15/6/2012	170	-7.50	2.449	1.206	0.586	0.308	0.192	0.132	0.102	0.085	0.064
452	15/6/2012	200	-7.50	1.437	0.728	0.431	0.246	0.161	0.114	0.088	0.066	0.050
453	15/6/2012	220	-7.50	1.292	0.634	0.336	0.190	0.137	0.096	0.078	0.059	0.050
454	15/6/2012	250	-7.50	1.032	0.431	0.245	0.146	0.105	0.082	0.068	0.049	0.042
455	15/6/2012	280	-7.50	1.014	0.496	0.298	0.182	0.128	0.100	0.082	0.060	0.047
456	15/6/2012	300	-7.50	1.185	0.508	0.313	0.191	0.138	0.101	0.083	0.064	0.051
457	15/6/2012	330	-7.50	1.250	0.586	0.346	0.203	0.138	0.097	0.086	0.064	0.047
458	15/6/2012	360	-7.50	1.265	0.498	0.297	0.188	0.140	0.115	0.094	0.067	0.054
459	15/6/2012	380	-7.50	1.095	0.472	0.283	0.172	0.126	0.096	0.085	0.066	0.053
460	15/6/2012	410	-7.50	1.008	0.504	0.308	0.184	0.132	0.099	0.083	0.063	0.052
461	15/6/2012	440	-7.50	1.798	0.740	0.464	0.298	0.220	0.170	0.140	0.105	0.083
462	15/6/2012	460	-7.50	1.126	0.517	0.306	0.179	0.116	0.086	0.073	0.056	0.048
463	15/6/2012	490	-7.50	1.265	0.482	0.298	0.187	0.139	0.108	0.093	0.069	0.059
464	15/6/2012	520	-7.50	1.090	0.445	0.273	0.174	0.124	0.098	0.084	0.061	0.048
465	15/6/2012	540	-7.50	1.060	0.489	0.312	0.201	0.147	0.113	0.093	0.065	0.056
466	15/6/2012	570	-7.50	1.437	0.704	0.437	0.290	0.213	0.168	0.134	0.094	0.074
467	15/6/2012	600	-7.50	1.184	0.590	0.344	0.202	0.137	0.102	0.085	0.062	0.054
468	15/6/2012	620	-7.50	1.017	0.483	0.270	0.164	0.127	0.097	0.084	0.063	0.055
469	15/6/2012	650	-7.50	1.030	0.490	0.306	0.191	0.137	0.106	0.086	0.064	0.057
470	15/6/2012	680	-7.50	1.083	0.485	0.283	0.179	0.124	0.094	0.075	0.058	0.049
471	15/6/2012	700	-7.50	1.141	0.523	0.319	0.205	0.135	0.112	0.080	0.053	0.048
472	15/6/2012	730	-7.50	0.954	0.493	0.301	0.189	0.125	0.092	0.071	0.053	0.044
473	15/6/2012	760	-7.50	1.182	0.571	0.348	0.211	0.142	0.103	0.088	0.060	0.046
474	15/6/2012	780	-7.50	1.074	0.502	0.316	0.210	0.151	0.111	0.095	0.064	0.051
475	15/6/2012	810	-7.50	1.345	0.647	0.430	0.287	0.214	0.167	0.138	0.100	0.079
476	15/6/2012	840	-7.50	1.233	0.619	0.378	0.238	0.168	0.127	0.098	0.070	0.053

FLINDERS ISLAND AERODROME
05/23 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
477	15/6/2012	860	-7.50	1.377	0.678	0.417	0.274	0.190	0.137	0.096	0.080	0.054
478	15/6/2012	890	-7.50	0.892	0.408	0.266	0.176	0.129	0.103	0.085	0.061	0.049
479	15/6/2012	910	-7.50	1.074	0.423	0.272	0.172	0.131	0.103	0.089	0.062	0.049
480	15/6/2012	920	-7.50	1.037	0.487	0.291	0.188	0.142	0.109	0.085	0.059	0.046
481	15/6/2012	940	-7.50	1.103	0.497	0.313	0.193	0.146	0.111	0.078	0.062	0.053
482	15/6/2012	950	-7.50	1.217	0.526	0.326	0.204	0.147	0.112	0.088	0.059	0.046
483	15/6/2012	970	-7.50	1.068	0.557	0.354	0.228	0.161	0.123	0.099	0.066	0.053
484	15/6/2012	990	-7.50	2.057	0.905	0.485	0.230	0.136	0.098	0.080	0.057	0.050
485	15/6/2012	1000	-7.50	2.059	0.919	0.501	0.241	0.143	0.099	0.081	0.063	0.054
486	15/6/2012	1020	-7.50	1.688	0.694	0.370	0.197	0.130	0.095	0.075	0.053	0.040
487	15/6/2012	1030	-7.50	1.640	0.785	0.429	0.230	0.146	0.097	0.078	0.055	0.042
488	15/6/2012	1050	-7.50	1.751	0.835	0.506	0.285	0.178	0.115	0.084	0.062	0.051
489	15/6/2012	1070	-7.50	1.674	0.709	0.380	0.191	0.118	0.091	0.070	0.058	0.044
490	15/6/2012	1080	-7.50	1.218	0.617	0.359	0.190	0.125	0.098	0.086	0.068	0.049
491	15/6/2012	1100	-7.50	1.371	0.627	0.365	0.212	0.138	0.097	0.073	0.055	0.042
492	15/6/2012	1110	-7.50	1.324	0.596	0.347	0.170	0.110	0.092	0.094	0.047	0.032
493	15/6/2012	1125	-7.50	2.281	1.184	0.609	0.313	0.168	0.114	0.102	0.000	0.091
494	14/6/2012	-40	-3.75	2.247	0.945	0.496	0.264	0.151	0.099	0.077	0.060	0.051
495	14/6/2012	-10	-3.75	2.325	0.992	0.482	0.247	0.148	0.104	0.082	0.058	0.048
496	14/6/2012	30	-3.75	1.871	0.938	0.559	0.302	0.181	0.132	0.100	0.071	0.059
497	14/6/2012	80	-3.75	1.002	0.602	0.403	0.242	0.157	0.104	0.078	0.051	0.040
498	14/6/2012	100	-3.75	1.250	0.649	0.388	0.224	0.150	0.109	0.085	0.060	0.046
499	14/6/2012	130	-3.75	1.197	0.570	0.321	0.192	0.135	0.101	0.078	0.055	0.041
500	14/6/2012	160	-3.75	1.429	0.777	0.466	0.287	0.196	0.149	0.114	0.078	0.063
501	14/6/2012	170	-3.75	1.500	0.793	0.474	0.287	0.187	0.141	0.109	0.067	0.054
502	14/6/2012	210	-3.75	1.253	0.638	0.403	0.240	0.163	0.116	0.090	0.062	0.050
503	14/6/2012	240	-3.75	1.277	0.593	0.350	0.185	0.122	0.086	0.073	0.054	0.048
504	14/6/2012	260	-3.75	1.245	0.619	0.339	0.204	0.141	0.103	0.086	0.064	0.051
505	14/6/2012	290	-3.75	0.965	0.515	0.310	0.191	0.140	0.107	0.091	0.069	0.054
506	14/6/2012	320	-3.75	1.131	0.547	0.330	0.200	0.143	0.107	0.088	0.070	0.057
507	14/6/2012	340	-3.75	1.057	0.539	0.331	0.212	0.154	0.117	0.098	0.074	0.063
508	14/6/2012	370	-3.75	0.990	0.461	0.294	0.184	0.131	0.101	0.084	0.064	0.049
509	14/6/2012	400	-3.75	1.103	0.479	0.284	0.168	0.116	0.086	0.075	0.056	0.048
510	14/6/2012	420	-3.75	0.860	0.435	0.263	0.155	0.109	0.078	0.069	0.051	0.043
511	14/6/2012	450	-3.75	1.018	0.545	0.328	0.193	0.134	0.100	0.079	0.059	0.049
512	14/6/2012	480	-3.75	0.970	0.480	0.307	0.192	0.133	0.104	0.082	0.070	0.044
513	14/6/2012	500	-3.75	1.056	0.511	0.318	0.184	0.129	0.103	0.087	0.066	0.053
514	14/6/2012	530	-3.75	0.971	0.454	0.288	0.178	0.122	0.093	0.079	0.057	0.046

FLINDERS ISLAND AERODROME
05/23 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
515	14/6/2012	560	-3.75	0.882	0.448	0.298	0.215	0.162	0.126	0.101	0.075	0.058
516	14/6/2012	580	-3.75	0.992	0.412	0.286	0.192	0.140	0.107	0.091	0.064	0.053
517	14/6/2012	610	-3.75	0.972	0.440	0.291	0.186	0.137	0.098	0.081	0.057	0.047
518	14/6/2012	640	-3.75	1.169	0.436	0.259	0.171	0.122	0.099	0.093	0.055	0.050
519	14/6/2012	660	-3.75	1.037	0.451	0.280	0.185	0.130	0.101	0.083	0.062	0.046
520	14/6/2012	690	-3.75	1.014	0.456	0.281	0.180	0.120	0.092	0.076	0.050	0.039
521	14/6/2012	720	-3.75	0.828	0.415	0.258	0.161	0.108	0.077	0.062	0.050	0.034
522	14/6/2012	740	-3.75	0.996	0.471	0.309	0.194	0.140	0.104	0.088	0.060	0.044
523	14/6/2012	770	-3.75	0.963	0.493	0.308	0.204	0.151	0.112	0.089	0.060	0.052
524	14/6/2012	800	-3.75	1.099	0.534	0.275	0.163	0.111	0.083	0.071	0.055	0.047
525	14/6/2012	820	-3.75	1.234	0.651	0.437	0.295	0.219	0.172	0.138	0.098	0.077
526	14/6/2012	850	-3.75	0.991	0.513	0.331	0.215	0.153	0.116	0.095	0.066	0.051
527	14/6/2012	880	-3.75	0.908	0.389	0.282	0.180	0.137	0.112	0.099	0.071	0.054
528	14/6/2012	900	-3.75	0.902	0.489	0.291	0.196	0.140	0.111	0.098	0.068	0.047
529	14/6/2012	930	-3.75	0.839	0.432	0.277	0.193	0.132	0.098	0.084	0.056	0.046
530	14/6/2012	960	-3.75	3.830	1.650	0.742	0.258	0.138	0.096	0.076	0.055	0.058
531	14/6/2012	980	-3.75	1.404	0.646	0.391	0.242	0.170	0.128	0.103	0.072	0.055
532	14/6/2012	1010	-3.75	1.570	0.726	0.416	0.215	0.138	0.102	0.080	0.056	0.043
533	14/6/2012	1040	-3.75	1.732	0.827	0.469	0.209	0.133	0.095	0.073	0.052	0.040
534	14/6/2012	1060	-3.75	1.951	0.969	0.570	0.294	0.186	0.131	0.100	0.068	0.055
535	14/6/2012	1090	-3.75	1.266	0.547	0.281	0.142	0.095	0.067	0.074	0.042	0.039
536	14/6/2012	1120	-3.75	1.749	0.800	0.447	0.234	0.144	0.098	0.075	0.056	0.041
537	14/6/2012	1140	-3.75	3.219	1.586	0.618	0.141	0.121	0.097	0.081	0.071	0.055
538	14/6/2012	-30	0.00	2.344	1.022	0.548	0.284	0.169	0.112	0.086	0.067	0.063
539	14/6/2012	10	0.00	1.519	0.810	0.473	0.261	0.173	0.122	0.090	0.073	0.053
540	14/6/2012	70	0.00	1.142	0.649	0.442	0.283	0.190	0.136	0.100	0.069	0.055
541	14/6/2012	110	0.00	1.333	0.638	0.383	0.222	0.149	0.106	0.085	0.059	0.041
542	14/6/2012	150	0.00	1.290	0.724	0.437	0.263	0.180	0.127	0.102	0.068	0.052
543	14/6/2012	190	0.00	1.149	0.704	0.422	0.253	0.167	0.115	0.095	0.065	0.049
544	14/6/2012	230	0.00	1.114	0.600	0.331	0.187	0.130	0.098	0.080	0.057	0.045
545	14/6/2012	270	0.00	1.349	0.647	0.404	0.244	0.169	0.124	0.096	0.066	0.050
546	14/6/2012	310	0.00	1.068	0.558	0.319	0.191	0.128	0.101	0.078	0.055	0.049
547	14/6/2012	350	0.00	1.217	0.534	0.331	0.209	0.146	0.109	0.089	0.069	0.051
548	14/6/2012	390	0.00	1.196	0.560	0.319	0.183	0.122	0.094	0.079	0.059	0.049
549	14/6/2012	430	0.00	1.060	0.533	0.329	0.222	0.167	0.133	0.113	0.082	0.066
550	14/6/2012	470	0.00	0.970	0.490	0.281	0.166	0.117	0.090	0.074	0.054	0.044
551	14/6/2012	510	0.00	0.988	0.503	0.315	0.215	0.158	0.122	0.103	0.071	0.058
552	14/6/2012	550	0.00	1.075	0.474	0.277	0.180	0.131	0.097	0.079	0.060	0.050

FLINDERS ISLAND AERODROME
05/23 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
553	14/6/2012	590	0.00	1.009	0.487	0.281	0.173	0.131	0.101	0.079	0.062	0.048
554	14/6/2012	630	0.00	1.270	0.553	0.313	0.184	0.123	0.094	0.082	0.060	0.050
555	14/6/2012	670	0.00	1.102	0.536	0.322	0.200	0.147	0.105	0.085	0.059	0.048
556	14/6/2012	710	0.00	1.012	0.485	0.285	0.162	0.114	0.087	0.068	0.050	0.047
557	14/6/2012	750	0.00	1.281	0.565	0.334	0.198	0.136	0.101	0.084	0.063	0.050
558	14/6/2012	790	0.00	1.449	0.688	0.431	0.284	0.207	0.162	0.131	0.086	0.065
559	14/6/2012	830	0.00	1.139	0.547	0.366	0.246	0.186	0.144	0.122	0.086	0.065
560	14/6/2012	870	0.00	1.115	0.465	0.271	0.170	0.122	0.099	0.080	0.056	0.041
561	14/6/2012	910	0.00	1.096	0.576	0.326	0.207	0.150	0.114	0.094	0.068	0.054
562	14/6/2012	950	0.00	1.059	0.547	0.324	0.191	0.131	0.091	0.074	0.047	0.042
563	14/6/2012	990	0.00	1.180	0.610	0.337	0.199	0.136	0.097	0.079	0.060	0.045
564	14/6/2012	1030	0.00	2.413	0.907	0.501	0.270	0.165	0.110	0.083	0.056	0.047
565	14/6/2012	1070	0.00	2.886	1.419	0.761	0.367	0.198	0.127	0.092	0.061	0.047
566	14/6/2012	1110	0.00	1.409	0.774	0.471	0.260	0.163	0.116	0.087	0.059	0.048
567	14/6/2012	-50	3.75	3.404	1.504	0.826	0.373	0.213	0.136	0.112	0.084	0.071
568	14/6/2012	-20	3.75	2.221	1.068	0.512	0.238	0.138	0.095	0.074	0.056	0.045
569	14/6/2012	0	3.75	2.214	1.104	0.573	0.289	0.172	0.123	0.109	0.061	0.059
570	14/6/2012	20	3.75	2.038	0.996	0.507	0.276	0.171	0.116	0.093	0.065	0.050
571	14/6/2012	35	3.75	1.663	0.814	0.509	0.282	0.174	0.121	0.091	0.067	0.056
572	14/6/2012	90	3.75	0.991	0.559	0.347	0.213	0.142	0.106	0.076	0.057	0.045
573	14/6/2012	120	3.75	1.173	0.657	0.370	0.209	0.137	0.100	0.078	0.052	0.042
574	14/6/2012	140	3.75	1.327	0.738	0.443	0.260	0.175	0.123	0.095	0.070	0.055
575	14/6/2012	170	3.75	1.389	0.787	0.487	0.283	0.182	0.124	0.094	0.069	0.054
576	14/6/2012	200	3.75	1.358	0.710	0.425	0.244	0.154	0.105	0.074	0.055	0.039
577	14/6/2012	220	3.75	1.237	0.589	0.341	0.184	0.123	0.089	0.074	0.053	0.044
578	14/6/2012	250	3.75	1.534	0.741	0.446	0.255	0.168	0.116	0.094	0.066	0.048
579	14/6/2012	280	3.75	1.212	0.611	0.372	0.229	0.168	0.126	0.101	0.075	0.060
580	14/6/2012	300	3.75	1.219	0.547	0.315	0.172	0.115	0.085	0.070	0.040	0.032
581	14/6/2012	330	3.75	1.186	0.576	0.349	0.211	0.149	0.115	0.095	0.072	0.060
582	14/6/2012	360	3.75	1.138	0.563	0.338	0.197	0.137	0.102	0.085	0.063	0.052
583	14/6/2012	380	3.75	1.191	0.656	0.404	0.260	0.193	0.146	0.126	0.084	0.067
584	14/6/2012	410	3.75	1.163	0.566	0.346	0.229	0.169	0.132	0.109	0.078	0.061
585	14/6/2012	440	3.75	1.165	0.540	0.298	0.175	0.115	0.086	0.094	0.058	0.044
586	14/6/2012	460	3.75	1.058	0.500	0.295	0.171	0.118	0.092	0.077	0.057	0.048
587	14/6/2012	490	3.75	1.237	0.560	0.307	0.186	0.134	0.105	0.087	0.066	0.054
588	14/6/2012	520	3.75	1.200	0.483	0.267	0.165	0.118	0.091	0.076	0.065	0.053
589	14/6/2012	540	3.75	1.239	0.493	0.270	0.165	0.117	0.099	0.090	0.064	0.046
590	14/6/2012	570	3.75	1.167	0.519	0.308	0.192	0.138	0.111	0.091	0.069	0.056

FLINDERS ISLAND AERODROME
05/23 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
591	14/6/2012	600	3.75	1.288	0.601	0.330	0.196	0.137	0.102	0.085	0.064	0.047
592	14/6/2012	630	3.75	1.304	0.568	0.334	0.197	0.135	0.103	0.089	0.067	0.047
593	14/6/2012	650	3.75	1.152	0.551	0.315	0.182	0.133	0.101	0.086	0.061	0.048
594	14/6/2012	680	3.75	1.180	0.511	0.278	0.166	0.118	0.089	0.072	0.052	0.044
595	14/6/2012	700	3.75	1.200	0.552	0.276	0.170	0.121	0.089	0.075	0.055	0.043
596	14/6/2012	730	3.75	1.170	0.548	0.284	0.158	0.102	0.074	0.063	0.049	0.040
597	14/6/2012	760	3.75	1.151	0.541	0.331	0.211	0.154	0.115	0.101	0.068	0.050
598	14/6/2012	780	3.75	1.183	0.542	0.307	0.181	0.129	0.099	0.076	0.058	0.045
599	14/6/2012	810	3.75	1.048	0.512	0.307	0.182	0.129	0.098	0.083	0.061	0.056
600	14/6/2012	840	3.75	2.023	1.164	0.685	0.391	0.263	0.193	0.146	0.105	0.085
601	14/6/2012	860	3.75	1.016	0.478	0.270	0.167	0.121	0.093	0.080	0.056	0.043
602	14/6/2012	890	3.75	1.172	0.588	0.349	0.211	0.149	0.109	0.087	0.064	0.050
603	14/6/2012	920	3.75	0.890	0.484	0.274	0.165	0.115	0.086	0.069	0.052	0.038
604	14/6/2012	940	3.75	1.022	0.573	0.385	0.226	0.150	0.104	0.083	0.058	0.045
605	14/6/2012	970	3.75	1.577	0.723	0.405	0.209	0.143	0.101	0.067	0.060	0.051
606	14/6/2012	1000	3.75	1.195	0.642	0.388	0.213	0.138	0.097	0.078	0.052	0.042
607	14/6/2012	1020	3.75	1.663	0.789	0.461	0.251	0.161	0.106	0.079	0.051	0.041
608	14/6/2012	1050	3.75	1.634	0.771	0.461	0.249	0.151	0.107	0.084	0.057	0.041
609	14/6/2012	1080	3.75	1.753	0.876	0.520	0.274	0.164	0.107	0.083	0.058	0.049
610	14/6/2012	1100	3.75	1.191	0.628	0.359	0.219	0.148	0.102	0.077	0.055	0.050
611	14/6/2012	1130	3.75	2.481	1.211	0.648	0.399	0.171	0.108	0.091	0.063	0.059
612	15/6/2012	-40	7.50	1.969	0.917	0.504	0.263	0.157	0.112	0.095	0.068	0.064
613	15/6/2012	-30	7.50	1.849	0.880	0.473	0.246	0.150	0.109	0.086	0.065	0.057
614	15/6/2012	-10	7.50	2.723	1.390	0.680	0.312	0.173	0.116	0.090	0.069	0.050
615	15/6/2012	10	7.50	1.997	0.950	0.522	0.267	0.171	0.122	0.100	0.075	0.058
616	15/6/2012	30	7.50	1.968	1.008	0.553	0.290	0.183	0.123	0.095	0.069	0.059
617	15/6/2012	80	7.50	1.187	0.601	0.421	0.269	0.188	0.138	0.108	0.069	0.058
618	15/6/2012	100	7.50	1.403	0.687	0.439	0.270	0.186	0.133	0.106	0.066	0.057
619	15/6/2012	110	7.50	1.442	0.653	0.393	0.243	0.161	0.118	0.092	0.065	0.051
620	15/6/2012	130	7.50	1.401	0.658	0.402	0.239	0.163	0.115	0.094	0.062	0.047
621	15/6/2012	160	7.50	1.351	0.740	0.446	0.280	0.187	0.134	0.108	0.068	0.055
622	15/6/2012	170	7.50	1.598	0.772	0.471	0.274	0.177	0.123	0.096	0.066	0.047
623	15/6/2012	210	7.50	1.271	0.605	0.376	0.236	0.160	0.116	0.103	0.069	0.060
624	15/6/2012	240	7.50	1.412	0.643	0.381	0.222	0.155	0.108	0.083	0.063	0.051
625	15/6/2012	260	7.50	1.365	0.641	0.359	0.200	0.134	0.093	0.081	0.061	0.056
626	15/6/2012	290	7.50	1.105	0.573	0.336	0.204	0.142	0.102	0.082	0.058	0.045
627	15/6/2012	320	7.50	1.267	0.582	0.336	0.192	0.135	0.105	0.082	0.059	0.046
628	15/6/2012	340	7.50	1.223	0.615	0.376	0.237	0.169	0.123	0.121	0.080	0.057

FLINDERS ISLAND AERODROME
05/23 RUNWAY UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Distance (mm)								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
629	15/6/2012	370	7.50	1.063	0.513	0.303	0.208	0.162	0.128	0.111	0.084	0.069
630	15/6/2012	400	7.50	1.413	0.619	0.404	0.264	0.196	0.158	0.134	0.095	0.075
631	15/6/2012	420	7.50	1.098	0.523	0.323	0.217	0.150	0.120	0.100	0.061	0.047
632	15/6/2012	450	7.50	1.056	0.489	0.282	0.159	0.111	0.086	0.074	0.057	0.042
633	15/6/2012	480	7.50	1.163	0.521	0.310	0.188	0.133	0.097	0.080	0.061	0.051
634	15/6/2012	500	7.50	1.231	0.570	0.331	0.205	0.137	0.111	0.085	0.066	0.051
635	15/6/2012	530	7.50	1.484	0.706	0.447	0.270	0.180	0.130	0.103	0.072	0.058
636	15/6/2012	560	7.50	1.079	0.442	0.264	0.163	0.119	0.092	0.086	0.065	0.051
637	15/6/2012	580	7.50	0.982	0.454	0.283	0.184	0.137	0.100	0.087	0.063	0.050
638	15/6/2012	610	7.50	1.163	0.508	0.320	0.194	0.134	0.099	0.086	0.067	0.050
639	15/6/2012	640	7.50	1.266	0.554	0.311	0.181	0.116	0.086	0.082	0.062	0.046
640	15/6/2012	660	7.50	1.146	0.494	0.307	0.186	0.132	0.101	0.085	0.064	0.048
641	15/6/2012	690	7.50	1.158	0.529	0.299	0.175	0.124	0.090	0.074	0.054	0.046
642	15/6/2012	720	7.50	1.188	0.554	0.320	0.183	0.123	0.090	0.073	0.055	0.044
643	15/6/2012	740	7.50	1.035	0.508	0.306	0.197	0.135	0.107	0.096	0.060	0.048
644	15/6/2012	770	7.50	1.270	0.568	0.355	0.235	0.170	0.129	0.106	0.072	0.052
645	15/6/2012	800	7.50	1.118	0.517	0.320	0.194	0.137	0.100	0.084	0.060	0.048
646	15/6/2012	820	7.50	1.259	0.664	0.416	0.261	0.186	0.141	0.119	0.086	0.066
647	15/6/2012	850	7.50	1.816	0.934	0.568	0.350	0.241	0.181	0.150	0.101	0.071
648	15/6/2012	880	7.50	0.896	0.443	0.269	0.170	0.122	0.095	0.086	0.062	0.045
649	15/6/2012	900	7.50	1.005	0.528	0.314	0.204	0.146	0.110	0.092	0.067	0.049
650	15/6/2012	910	7.50	0.953	0.495	0.304	0.186	0.143	0.098	0.080	0.053	0.056
651	15/6/2012	930	7.50	1.007	0.429	0.282	0.180	0.131	0.099	0.085	0.057	0.042
652	15/6/2012	950	7.50	1.028	0.532	0.315	0.183	0.121	0.087	0.068	0.049	0.038
653	15/6/2012	960	7.50	1.309	0.694	0.382	0.209	0.132	0.096	0.076	0.050	0.041
654	15/6/2012	980	7.50	1.136	0.646	0.352	0.195	0.130	0.098	0.077	0.053	0.044
655	15/6/2012	990	7.50	1.038	0.564	0.360	0.225	0.156	0.115	0.095	0.067	0.053
656	15/6/2012	1010	7.50	1.319	0.598	0.360	0.207	0.133	0.093	0.072	0.051	0.038
657	15/6/2012	1030	7.50	1.389	0.707	0.440	0.258	0.165	0.117	0.084	0.056	0.044
658	15/6/2012	1040	7.50	1.461	0.662	0.362	0.203	0.129	0.090	0.069	0.049	0.042
659	15/6/2012	1060	7.50	2.216	1.085	0.590	0.266	0.142	0.092	0.088	0.063	0.050
660	15/6/2012	1070	7.50	1.441	0.779	0.492	0.292	0.183	0.113	0.098	0.053	0.043
661	15/6/2012	1090	7.50	1.517	0.665	0.396	0.208	0.132	0.093	0.075	0.058	0.045
662	15/6/2012	1110	7.50	1.579	0.673	0.379	0.209	0.135	0.098	0.080	0.056	0.044
663	15/6/2012	1120	7.50	1.802	0.850	0.493	0.277	0.184	0.128	0.090	0.062	0.047
664	15/6/2012	1135	7.50	2.804	1.334	0.733	0.314	0.162	0.104	0.076	0.057	0.079

Appendix I
Unit Deflections – Taxiway A

FLINDERS ISLAND AERODROME
TAXIWAY A UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
665	16/1/1900	-16	-25	1.911	0.994	0.521	0.273	0.165	0.116	0.091	0.068	0.056
666	20/1/1900	-14	-20	2.006	0.944	0.485	0.268	0.181	0.131	0.096	0.071	0.065
667	16/1/1900	-12	-15	1.639	0.793	0.497	0.262	0.166	0.121	0.095	0.070	0.057
668	20/1/1900	-10	-10	2.344	1.336	0.609	0.268	0.188	0.134	0.120	0.082	0.059
669	16/1/1900	-8	-5	1.647	0.745	0.395	0.225	0.156	0.114	0.084	0.071	0.069
670	25/1/1900	-8	0	2.268	1.206	0.603	0.257	0.157	0.109	0.104	0.068	0.054
671	20/1/1900	-6	5	1.962	1.012	0.531	0.273	0.180	0.155	0.140	0.081	0.060
672	30/1/1900	-6	-25	3.997	1.826	0.767	0.239	0.091	0.059	0.068	0.074	0.050
673	16/1/1900	-4	-25	1.604	0.641	0.358	0.212	0.143	0.108	0.088	0.063	0.045
674	25/1/1900	-4	-20	2.093	1.031	0.509	0.263	0.165	0.119	0.096	0.065	0.053
675	4/2/1900	-4	-20	1.881	0.903	0.453	0.225	0.153	0.122	0.106	0.080	0.071
676	14/2/1900	-4	-15	2.296	1.088	0.527	0.229	0.135	0.098	0.082	0.062	0.051
677	24/2/1900	-4	-15	1.946	0.915	0.481	0.245	0.165	0.128	0.112	0.089	0.065
678	5/3/1900	-4	-10	1.770	1.056	0.682	0.379	0.243	0.163	0.126	0.092	0.076
679	15/3/1900	-4	-10	1.613	1.006	0.628	0.336	0.228	0.172	0.142	0.103	0.082
680	25/3/1900	-4	-5	2.220	1.451	0.900	0.425	0.239	0.142	0.109	0.083	0.060
681	4/4/1900	-4	0	1.992	1.160	0.646	0.272	0.116	0.068	0.070	0.063	0.027
682	20/1/1900	-2	5	2.353	1.039	0.551	0.301	0.198	0.146	0.118	0.084	0.062
683	30/1/1900	-2	-40	1.762	0.878	0.440	0.236	0.166	0.119	0.109	0.074	0.067
684	9/2/1900	-2	-35	1.659	0.843	0.452	0.211	0.129	0.097	0.076	0.054	0.040
685	19/2/1900	-2	-30	1.888	0.910	0.480	0.237	0.149	0.115	0.096	0.072	0.056
686	29/2/1900	-2	-25	1.589	0.838	0.474	0.253	0.164	0.129	0.097	0.065	0.047
687	10/3/1900	-2	-20	1.512	0.947	0.584	0.348	0.230	0.164	0.144	0.112	0.087
688	20/3/1900	-2	-15	1.599	0.979	0.537	0.244	0.132	0.097	0.083	0.071	0.059
689	30/3/1900	-2	-10	1.837	1.108	0.637	0.326	0.192	0.126	0.098	0.082	0.050
690	16/1/1900	0	-5	2.078	0.982	0.514	0.265	0.164	0.112	0.107	0.074	0.045
691	20/1/1900	0	0	1.608	0.860	0.436	0.243	0.162	0.121	0.102	0.075	0.059
692	25/1/1900	0	5	1.914	1.002	0.527	0.247	0.153	0.107	0.089	0.058	0.045
693	30/1/1900	0	-45	1.959	1.019	0.553	0.263	0.163	0.123	0.102	0.075	0.056
694	4/2/1900	0	-40	1.532	0.760	0.390	0.193	0.133	0.099	0.082	0.065	0.055
695	9/2/1900	0	-35	1.683	0.720	0.339	0.157	0.090	0.068	0.061	0.046	0.040
696	14/2/1900	0	-30	1.783	0.841	0.433	0.210	0.113	0.084	0.068	0.052	0.042
697	19/2/1900	0	-25	2.087	1.039	0.573	0.255	0.154	0.120	0.097	0.074	0.060
698	24/2/1900	0	-20	1.676	0.828	0.454	0.244	0.163	0.119	0.093	0.074	0.062
699	29/2/1900	0	-15	1.781	0.856	0.485	0.263	0.168	0.119	0.088	0.066	0.061
700	5/3/1900	0	-10	1.513	0.939	0.632	0.379	0.250	0.180	0.157	0.121	0.094
701	10/3/1900	0	-5	1.599	0.930	0.605	0.346	0.216	0.163	0.134	0.103	0.080
702	15/3/1900	0	0	1.830	1.133	0.723	0.388	0.226	0.152	0.115	0.083	0.065

FLINDERS ISLAND AERODROME
TAXIWAY A UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
703	20/3/1900	0	5	2.431	1.708	1.068	0.517	0.269	0.158	0.118	0.079	0.062
704	25/3/1900	0	-60	2.031	1.280	0.734	0.310	0.157	0.093	0.073	0.062	0.053
705	30/3/1900	0	-55	1.938	1.081	0.684	0.370	0.197	0.131	0.096	0.073	0.090
706	4/4/1900	0	-50	1.873	1.119	0.635	0.293	0.157	0.090	0.069	0.055	0.057
707	30/1/1900	2	-45	2.027	0.940	0.514	0.246	0.163	0.120	0.106	0.075	0.054
708	9/2/1900	2	-40	1.649	0.802	0.366	0.165	0.108	0.083	0.070	0.052	0.041
709	19/2/1900	2	-35	1.944	0.932	0.507	0.247	0.155	0.117	0.099	0.075	0.062
710	29/2/1900	2	-30	1.631	1.044	0.569	0.284	0.181	0.126	0.092	0.069	0.063
711	10/3/1900	2	-25	1.741	1.056	0.652	0.373	0.244	0.170	0.123	0.108	0.088
712	20/3/1900	2	-20	2.646	1.809	1.099	0.424	0.203	0.105	0.073	0.060	0.052
713	30/3/1900	2	-15	1.930	1.186	0.675	0.296	0.121	0.061	0.052	0.057	0.056
714	18/7/1900	2	-10	1.798	0.849	0.431	0.227	0.155	0.118	0.095	0.068	0.056
715	16/1/1900	4	-5	1.514	0.524	0.276	0.150	0.111	0.085	0.073	0.061	0.045
716	25/1/1900	4	0	2.169	0.956	0.504	0.266	0.169	0.125	0.100	0.075	0.057
717	4/2/1900	4	5	1.811	0.741	0.369	0.159	0.099	0.078	0.067	0.052	0.045
718	14/2/1900	4	-115	2.307	1.278	0.613	0.298	0.191	0.145	0.123	0.090	0.074
719	24/2/1900	4	-110	2.105	1.147	0.592	0.287	0.180	0.127	0.101	0.074	0.065
720	5/3/1900	4	-105	1.657	0.984	0.602	0.350	0.225	0.167	0.137	0.106	0.079
721	15/3/1900	4	-100	2.582	1.751	1.179	0.634	0.324	0.176	0.108	0.073	0.066
722	25/3/1900	4	-95	1.746	1.058	0.651	0.315	0.172	0.108	0.082	0.060	0.051
723	4/4/1900	4	-90	3.528	1.759	0.855	0.258	0.041	0.000	0.026	0.054	0.040
724	20/1/1900	6	-85	1.711	0.726	0.394	0.203	0.128	0.093	0.070	0.044	0.036
725	30/1/1900	6	-80	2.054	0.997	0.521	0.240	0.155	0.106	0.109	0.086	0.044
726	9/2/1900	6	-75	2.943	1.445	0.649	0.212	0.110	0.089	0.078	0.065	0.058
727	19/2/1900	6	-70	3.429	1.697	0.791	0.297	0.137	0.120	0.092	0.084	0.068
728	29/2/1900	6	-65	2.909	1.666	0.882	0.390	0.215	0.158	0.128	0.089	0.073
729	10/3/1900	6	-60	1.716	1.044	0.688	0.408	0.255	0.186	0.155	0.120	0.102
730	20/3/1900	6	-55	2.484	1.463	0.845	0.402	0.205	0.133	0.107	0.077	0.064
731	30/3/1900	6	-50	2.105	1.122	0.648	0.286	0.125	0.071	0.071	0.064	0.057
732	16/1/1900	8	-45	1.381	0.685	0.320	0.153	0.107	0.085	0.068	0.052	0.045
733	25/1/1900	8	-40	2.010	1.062	0.504	0.229	0.147	0.113	0.097	0.076	0.069
734	4/2/1900	8	-35	4.217	2.124	0.650	0.082	0.027	0.080	0.059	0.058	0.046
735	14/2/1900	8	-30	2.291	1.430	0.936	0.518	0.305	0.159	0.118	0.094	0.086
736	24/2/1900	8	-25	2.159	1.256	0.882	0.562	0.349	0.219	0.171	0.111	0.102
737	5/3/1900	8	-20	2.323	1.516	1.032	0.610	0.380	0.233	0.170	0.111	0.093
738	15/3/1900	8	-15	2.521	1.454	1.012	0.557	0.333	0.177	0.127	0.086	0.072
739	25/3/1900	8	-10	3.534	1.952	1.103	0.380	0.081	0.063	0.060	0.053	0.059
740	4/4/1900	8	-5	2.190	1.215	0.766	0.327	0.145	0.070	0.056	0.057	0.040

FLINDERS ISLAND AERODROME
TAXIWAY A UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
741	20/1/1900	10	0	1.943	0.928	0.445	0.200	0.132	0.102	0.090	0.064	0.049
742	30/1/1900	10	5	2.878	1.546	0.928	0.441	0.194	0.119	0.117	0.094	0.065
743	9/2/1900	10	-115	1.828	1.067	0.722	0.448	0.282	0.176	0.132	0.088	0.068
744	16/1/1900	12	-110	1.579	0.677	0.344	0.194	0.125	0.090	0.070	0.051	0.046
745	25/1/1900	12	-105	2.376	1.181	0.553	0.234	0.145	0.113	0.115	0.077	0.051
746	4/2/1900	12	-100	1.867	1.245	0.832	0.495	0.328	0.192	0.138	0.110	0.077
747	14/2/1900	12	-95	1.870	1.189	0.766	0.429	0.259	0.166	0.121	0.086	0.055
748	25/1/1900	14	-90	2.044	1.253	0.791	0.468	0.283	0.191	0.154	0.101	0.081
749	4/2/1900	14	-85	1.954	1.033	0.643	0.373	0.239	0.168	0.136	0.095	0.077
750	9/2/1900	14	-80	2.401	1.372	0.865	0.483	0.272	0.161	0.125	0.093	0.079
751	16/1/1900	16	-75	1.719	0.900	0.449	0.239	0.133	0.098	0.082	0.049	0.033
752	25/1/1900	16	-70	1.967	1.190	0.741	0.446	0.276	0.181	0.146	0.093	0.072
753	4/2/1900	16	-65	2.149	1.197	0.755	0.418	0.268	0.178	0.124	0.097	0.083
754	20/1/1900	18	-60	2.124	1.368	0.875	0.489	0.308	0.194	0.122	0.089	0.092
755	30/1/1900	18	-55	1.909	1.092	0.712	0.427	0.276	0.191	0.151	0.105	0.082
756	16/1/1900	20	-50	3.764	1.588	0.726	0.253	0.113	0.089	0.074	0.068	0.053
757	25/1/1900	20	-45	2.011	1.203	0.801	0.469	0.295	0.185	0.132	0.081	0.072
758	25/1/1900	22	-40	1.921	1.046	0.689	0.393	0.257	0.174	0.127	0.087	0.072
759	16/1/1900	24	-35	3.014	1.825	0.985	0.491	0.289	0.162	0.116	0.109	0.085
760	25/1/1900	24	-30	1.918	1.097	0.706	0.412	0.274	0.189	0.150	0.092	0.075
761	20/1/1900	26	-25	1.828	1.149	0.733	0.432	0.296	0.201	0.148	0.093	0.071
762	16/1/1900	28	-20	1.807	0.972	0.646	0.409	0.281	0.200	0.129	0.085	0.086
763	20/1/1900	30	-15	1.640	0.892	0.616	0.429	0.309	0.187	0.152	0.100	0.074
764	16/1/1900	32	-10	1.626	1.011	0.677	0.403	0.274	0.195	0.152	0.098	0.082

Appendix J
Unit Deflections – RPT Apron

FLINDERS ISLAND AERODROME
APRON UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
765	15/6/2012	135	-30.00	2.598	1.469	0.611	0.250	0.123	0.083	0.070	0.052	0.045
766	15/6/2012	140	-30.00	1.161	0.508	0.276	0.157	0.103	0.073	0.059	0.044	0.038
767	15/6/2012	145	-30.00	1.326	0.565	0.317	0.171	0.108	0.073	0.059	0.043	0.038
768	15/6/2012	150	-30.00	1.330	0.567	0.339	0.174	0.116	0.083	0.076	0.052	0.042
769	15/6/2012	155	-30.00	1.656	0.783	0.436	0.222	0.139	0.097	0.083	0.059	0.051
770	15/6/2012	160	-30.00	1.666	0.793	0.472	0.264	0.177	0.127	0.100	0.075	0.053
771	15/6/2012	165	-30.00	1.553	0.705	0.419	0.216	0.133	0.094	0.077	0.054	0.042
772	15/6/2012	170	-30.00	1.183	0.547	0.328	0.183	0.125	0.094	0.083	0.056	0.047
773	15/6/2012	175	-30.00	1.812	0.928	0.480	0.238	0.150	0.109	0.093	0.069	0.053
774	15/6/2012	135	-25.00	3.167	1.291	0.642	0.260	0.126	0.076	0.050	0.050	0.047
775	15/6/2012	140	-25.00	1.195	0.489	0.253	0.133	0.090	0.067	0.056	0.043	0.033
776	15/6/2012	145	-25.00	1.189	0.523	0.298	0.168	0.102	0.073	0.054	0.039	0.030
777	15/6/2012	150	-25.00	1.074	0.494	0.315	0.181	0.122	0.090	0.074	0.054	0.046
778	15/6/2012	155	-25.00	1.120	0.503	0.314	0.177	0.120	0.085	0.066	0.048	0.042
779	15/6/2012	160	-25.00	1.293	0.568	0.355	0.217	0.152	0.119	0.098	0.067	0.052
780	15/6/2012	165	-25.00	1.249	0.524	0.306	0.182	0.121	0.091	0.071	0.049	0.042
781	15/6/2012	170	-25.00	1.197	0.465	0.282	0.177	0.127	0.091	0.077	0.056	0.041
782	15/6/2012	175	-25.00	1.647	0.761	0.406	0.223	0.146	0.110	0.093	0.066	0.055
783	15/6/2012	135	-20.00	4.024	1.664	0.781	0.269	0.083	0.038	0.039	0.034	0.044
784	15/6/2012	140	-20.00	1.250	0.552	0.301	0.154	0.099	0.068	0.057	0.042	0.039
785	15/6/2012	145	-20.00	1.501	0.694	0.380	0.184	0.114	0.082	0.060	0.044	0.040
786	15/6/2012	150	-20.00	1.571	0.674	0.355	0.176	0.106	0.081	0.067	0.048	0.038
787	15/6/2012	155	-20.00	1.203	0.600	0.346	0.189	0.114	0.080	0.064	0.048	0.038
788	15/6/2012	160	-20.00	1.223	0.595	0.384	0.242	0.182	0.130	0.099	0.059	0.050
789	15/6/2012	165	-20.00	1.135	0.548	0.322	0.173	0.116	0.085	0.070	0.051	0.043
790	15/6/2012	170	-20.00	1.324	0.638	0.324	0.178	0.126	0.093	0.077	0.056	0.045
791	15/6/2012	175	-20.00	1.598	0.750	0.396	0.207	0.134	0.103	0.077	0.062	0.055
792	15/6/2012	135	-15.00	2.912	1.557	0.715	0.275	0.124	0.076	0.066	0.051	0.041
793	15/6/2012	140	-15.00	1.466	0.528	0.291	0.151	0.096	0.074	0.061	0.046	0.038
794	15/6/2012	145	-15.00	1.045	0.476	0.261	0.147	0.094	0.076	0.061	0.050	0.033
795	15/6/2012	150	-15.00	1.325	0.622	0.361	0.189	0.125	0.090	0.074	0.053	0.038
796	15/6/2012	155	-15.00	1.357	0.636	0.374	0.209	0.133	0.091	0.069	0.052	0.046
797	15/6/2012	160	-15.00	1.336	0.640	0.385	0.229	0.150	0.112	0.091	0.059	0.040
798	15/6/2012	165	-15.00	1.264	0.579	0.344	0.190	0.128	0.093	0.074	0.054	0.041
799	15/6/2012	170	-15.00	1.560	0.699	0.364	0.200	0.129	0.097	0.083	0.059	0.044
800	15/6/2012	175	-15.00	1.771	0.786	0.401	0.210	0.133	0.107	0.092	0.065	0.051
801	15/6/2012	135	-10.00	3.126	1.401	0.484	0.120	0.030	0.047	0.052	0.047	0.037
802	15/6/2012	140	-10.00	1.295	0.568	0.315	0.153	0.098	0.076	0.066	0.043	0.033

FLINDERS ISLAND AERODROME
APRON UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
803	15/6/2012	145	-10.00	1.056	0.481	0.268	0.156	0.107	0.075	0.070	0.053	0.031
804	15/6/2012	150	-10.00	1.134	0.571	0.358	0.233	0.160	0.129	0.093	0.062	0.033
805	15/6/2012	155	-10.00	1.315	0.657	0.387	0.213	0.127	0.091	0.070	0.052	0.044
806	15/6/2012	160	-10.00	1.341	0.656	0.383	0.231	0.157	0.114	0.092	0.066	0.050
807	15/6/2012	165	-10.00	1.348	0.614	0.375	0.203	0.131	0.100	0.079	0.060	0.047
808	15/6/2012	170	-10.00	1.700	0.839	0.463	0.239	0.154	0.108	0.084	0.062	0.050
809	15/6/2012	175	-10.00	2.041	0.878	0.477	0.242	0.145	0.102	0.083	0.064	0.053
810	15/6/2012	100	-5.00	2.103	0.994	0.476	0.188	0.116	0.094	0.086	0.059	0.052
811	15/6/2012	105	-5.00	1.836	0.922	0.437	0.207	0.119	0.092	0.073	0.053	0.045
812	15/6/2012	110	-5.00	1.539	0.748	0.352	0.183	0.121	0.091	0.073	0.057	0.044
813	15/6/2012	115	-5.00	1.796	0.835	0.384	0.182	0.119	0.083	0.074	0.054	0.040
814	15/6/2012	120	-5.00	1.406	0.569	0.290	0.150	0.106	0.084	0.065	0.050	0.031
815	15/6/2012	125	-5.00	1.542	0.708	0.357	0.167	0.105	0.075	0.060	0.045	0.035
816	15/6/2012	130	-5.00	1.631	0.816	0.397	0.208	0.130	0.085	0.072	0.048	0.037
817	15/6/2012	135	-5.00	1.719	0.757	0.344	0.157	0.100	0.074	0.060	0.047	0.035
818	15/6/2012	140	-5.00	1.677	0.791	0.413	0.187	0.123	0.090	0.073	0.055	0.050
819	15/6/2012	145	-5.00	1.989	0.937	0.495	0.242	0.148	0.108	0.086	0.058	0.046
820	15/6/2012	150	-5.00	1.894	0.902	0.462	0.245	0.171	0.119	0.127	0.072	0.050
821	15/6/2012	155	-5.00	1.969	0.870	0.467	0.242	0.159	0.118	0.097	0.070	0.056
822	15/6/2012	160	-5.00	2.210	0.948	0.459	0.207	0.134	0.108	0.097	0.064	0.056
823	15/6/2012	165	-5.00	2.017	1.115	0.495	0.235	0.146	0.112	0.093	0.072	0.045
824	15/6/2012	170	-5.00	3.448	1.795	0.846	0.348	0.192	0.138	0.103	0.072	0.050
825	15/6/2012	100	0.00	2.045	1.063	0.524	0.196	0.104	0.088	0.082	0.057	0.047
826	15/6/2012	105	0.00	1.371	0.558	0.306	0.159	0.106	0.083	0.065	0.047	0.036
827	15/6/2012	110	0.00	1.202	0.544	0.259	0.145	0.097	0.080	0.060	0.045	0.035
828	15/6/2012	115	0.00	1.205	0.528	0.264	0.137	0.099	0.077	0.063	0.045	0.038
829	15/6/2012	120	0.00	1.225	0.468	0.253	0.149	0.103	0.080	0.067	0.048	0.036
830	15/6/2012	125	0.00	1.560	0.655	0.318	0.153	0.094	0.076	0.068	0.043	0.032
831	15/6/2012	130	0.00	1.585	0.675	0.338	0.168	0.116	0.086	0.070	0.051	0.041
832	15/6/2012	135	0.00	1.450	0.626	0.322	0.169	0.115	0.084	0.071	0.052	0.039
833	15/6/2012	140	0.00	1.761	0.835	0.443	0.244	0.161	0.116	0.093	0.063	0.050
834	15/6/2012	145	0.00	1.541	0.772	0.432	0.233	0.163	0.118	0.094	0.064	0.053
835	15/6/2012	150	0.00	1.614	0.703	0.395	0.219	0.148	0.108	0.091	0.066	0.049
836	15/6/2012	155	0.00	1.582	0.775	0.404	0.217	0.151	0.117	0.099	0.066	0.045
837	15/6/2012	160	0.00	1.713	0.729	0.381	0.201	0.135	0.102	0.088	0.064	0.053
838	15/6/2012	165	0.00	2.273	0.993	0.479	0.243	0.148	0.104	0.084	0.064	0.053
839	15/6/2012	170	0.00	2.668	1.332	0.618	0.252	0.160	0.115	0.083	0.060	0.068
840	15/6/2012	100	5.00	2.319	1.108	0.520	0.196	0.071	0.036	0.042	0.053	0.045

FLINDERS ISLAND AERODROME
APRON UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
841	15/6/2012	105	5.00	1.383	0.649	0.345	0.185	0.131	0.096	0.062	0.048	0.050
842	15/6/2012	110	5.00	1.220	0.505	0.265	0.150	0.106	0.085	0.079	0.053	0.041
843	15/6/2012	115	5.00	1.309	0.564	0.267	0.140	0.096	0.077	0.069	0.046	0.041
844	15/6/2012	120	5.00	1.784	0.768	0.323	0.162	0.123	0.097	0.067	0.063	0.053
845	15/6/2012	125	5.00	1.537	0.627	0.282	0.133	0.093	0.072	0.060	0.047	0.048
846	15/6/2012	130	5.00	1.635	0.675	0.327	0.157	0.095	0.069	0.051	0.039	0.035
847	15/6/2012	135	5.00	1.538	0.652	0.315	0.161	0.105	0.077	0.058	0.046	0.037
848	15/6/2012	140	5.00	1.515	0.651	0.338	0.163	0.108	0.078	0.065	0.046	0.037
849	15/6/2012	145	5.00	1.460	0.822	0.436	0.257	0.180	0.115	0.094	0.067	0.050
850	15/6/2012	150	5.00	1.386	0.674	0.377	0.223	0.157	0.115	0.090	0.063	0.050
851	15/6/2012	155	5.00	1.560	0.756	0.406	0.210	0.142	0.106	0.086	0.061	0.051
852	15/6/2012	160	5.00	2.057	0.842	0.417	0.221	0.147	0.115	0.094	0.069	0.053
853	15/6/2012	165	5.00	2.265	1.060	0.526	0.239	0.131	0.093	0.084	0.060	0.039
854	15/6/2012	170	5.00	4.300	2.074	1.025	0.394	0.160	0.098	0.114	0.069	0.000
855	15/6/2012	105	10.00	2.000	0.788	0.406	0.223	0.144	0.101	0.080	0.058	0.050
856	15/6/2012	110	10.00	1.538	0.668	0.352	0.181	0.121	0.088	0.077	0.051	0.039
857	15/6/2012	115	10.00	1.359	0.639	0.289	0.162	0.117	0.095	0.079	0.057	0.042
858	15/6/2012	120	10.00	1.427	0.694	0.373	0.179	0.107	0.082	0.066	0.054	0.058
859	15/6/2012	125	10.00	1.614	0.736	0.324	0.150	0.098	0.068	0.060	0.044	0.038
860	15/6/2012	130	10.00	1.590	0.826	0.381	0.185	0.123	0.086	0.068	0.047	0.041
861	15/6/2012	135	10.00	1.574	0.704	0.346	0.174	0.112	0.086	0.068	0.051	0.039
862	15/6/2012	140	10.00	1.584	0.723	0.370	0.191	0.118	0.085	0.068	0.047	0.035
863	15/6/2012	145	10.00	1.511	0.675	0.379	0.209	0.142	0.105	0.082	0.053	0.044
864	15/6/2012	150	10.00	1.894	0.748	0.398	0.212	0.144	0.109	0.087	0.061	0.046
865	15/6/2012	155	10.00	1.744	0.833	0.434	0.230	0.148	0.110	0.091	0.066	0.052
866	15/6/2012	160	10.00	1.890	0.980	0.493	0.249	0.156	0.111	0.093	0.065	0.048
867	15/6/2012	165	10.00	2.186	0.992	0.490	0.217	0.119	0.085	0.070	0.053	0.042
868	15/6/2012	170	10.00	3.252	1.457	0.752	0.309	0.170	0.113	0.108	0.066	0.041
869	15/6/2012	110	15.00	2.039	0.784	0.385	0.195	0.107	0.073	0.064	0.048	0.042
870	15/6/2012	115	15.00	1.250	0.562	0.321	0.187	0.133	0.104	0.084	0.058	0.044
871	15/6/2012	120	15.00	1.249	0.580	0.315	0.182	0.125	0.100	0.085	0.060	0.047
872	15/6/2012	125	15.00	1.657	0.715	0.354	0.171	0.116	0.075	0.061	0.047	0.040
873	15/6/2012	130	15.00	1.700	0.804	0.448	0.220	0.143	0.096	0.098	0.048	0.042
874	15/6/2012	135	15.00	1.584	0.731	0.365	0.174	0.106	0.077	0.061	0.046	0.038
875	15/6/2012	140	15.00	1.886	0.803	0.392	0.186	0.112	0.077	0.064	0.045	0.036
876	15/6/2012	145	15.00	1.705	0.855	0.423	0.228	0.166	0.119	0.086	0.073	0.057
877	15/6/2012	150	15.00	1.836	0.765	0.395	0.209	0.135	0.101	0.085	0.058	0.049
878	15/6/2012	155	15.00	1.757	0.749	0.411	0.213	0.140	0.109	0.085	0.064	0.061

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				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
879	15/6/2012	160	15.00	1.870	0.932	0.465	0.214	0.139	0.104	0.088	0.060	0.044
880	15/6/2012	165	15.00	2.124	1.014	0.489	0.209	0.123	0.092	0.076	0.055	0.047
881	15/6/2012	170	15.00	3.461	1.671	0.763	0.326	0.168	0.116	0.081	0.060	0.071
882	15/6/2012	115	20.00	1.521	0.738	0.374	0.189	0.124	0.099	0.083	0.061	0.049
883	15/6/2012	120	20.00	1.555	0.655	0.331	0.182	0.131	0.103	0.084	0.073	0.063
884	15/6/2012	125	20.00	1.546	0.623	0.305	0.158	0.106	0.076	0.062	0.044	0.037
885	15/6/2012	130	20.00	1.555	0.769	0.391	0.211	0.131	0.091	0.069	0.049	0.037
886	15/6/2012	135	20.00	1.705	0.666	0.355	0.179	0.109	0.079	0.070	0.047	0.030
887	15/6/2012	140	20.00	1.778	0.794	0.433	0.213	0.137	0.095	0.073	0.050	0.044
888	15/6/2012	145	20.00	1.790	0.727	0.387	0.205	0.138	0.104	0.083	0.055	0.044
889	15/6/2012	150	20.00	1.586	0.770	0.390	0.196	0.130	0.099	0.084	0.057	0.051
890	15/6/2012	155	20.00	1.826	0.816	0.411	0.205	0.136	0.101	0.084	0.058	0.047
891	15/6/2012	160	20.00	1.866	0.818	0.406	0.203	0.132	0.099	0.083	0.056	0.047
892	15/6/2012	165	20.00	2.355	1.152	0.620	0.291	0.177	0.124	0.098	0.066	0.056
893	15/6/2012	170	20.00	3.052	1.310	0.619	0.255	0.159	0.118	0.073	0.067	0.053
894	15/6/2012	115	25.00	2.071	0.728	0.364	0.203	0.142	0.111	0.091	0.066	0.054
895	15/6/2012	120	25.00	1.489	0.674	0.350	0.166	0.112	0.087	0.074	0.057	0.046
896	15/6/2012	125	25.00	1.497	0.739	0.354	0.172	0.116	0.080	0.060	0.048	0.043
897	15/6/2012	130	25.00	1.727	0.818	0.367	0.164	0.100	0.078	0.065	0.050	0.037
898	15/6/2012	135	25.00	1.751	0.664	0.344	0.164	0.111	0.079	0.058	0.043	0.035
899	15/6/2012	140	25.00	1.523	0.676	0.373	0.197	0.132	0.094	0.076	0.051	0.039
900	15/6/2012	145	25.00	1.620	0.772	0.390	0.190	0.129	0.099	0.081	0.059	0.048
901	15/6/2012	150	25.00	1.539	0.730	0.368	0.191	0.128	0.098	0.082	0.057	0.045
902	15/6/2012	155	25.00	2.004	0.912	0.479	0.244	0.159	0.119	0.094	0.067	0.053
903	15/6/2012	160	25.00	1.633	0.768	0.382	0.189	0.120	0.089	0.070	0.052	0.041
904	15/6/2012	165	25.00	2.223	0.957	0.430	0.204	0.135	0.097	0.080	0.058	0.044
905	15/6/2012	170	25.00	4.110	2.142	1.097	0.481	0.275	0.152	0.099	0.086	0.057
906	15/6/2012	120	30.00	2.094	1.057	0.468	0.232	0.126	0.080	0.073	0.054	0.046
907	15/6/2012	125	30.00	1.899	0.814	0.382	0.188	0.119	0.090	0.068	0.051	0.042
908	15/6/2012	130	30.00	1.782	0.992	0.449	0.190	0.118	0.094	0.069	0.044	0.031
909	15/6/2012	135	30.00	1.748	0.771	0.353	0.179	0.125	0.087	0.063	0.051	0.041
910	15/6/2012	140	30.00	1.708	0.679	0.374	0.207	0.148	0.108	0.086	0.060	0.046
911	15/6/2012	145	30.00	1.842	0.777	0.354	0.179	0.127	0.094	0.077	0.057	0.044
912	15/6/2012	150	30.00	1.555	0.692	0.334	0.176	0.126	0.095	0.075	0.055	0.047
913	15/6/2012	155	30.00	1.639	0.817	0.409	0.209	0.137	0.102	0.088	0.061	0.050
914	15/6/2012	160	30.00	1.821	0.858	0.368	0.146	0.107	0.088	0.083	0.048	0.051
915	15/6/2012	165	30.00	1.811	0.754	0.360	0.174	0.118	0.094	0.077	0.058	0.044
916	15/6/2012	170	30.00	4.024	2.333	0.915	0.138	0.079	0.104	0.102	0.064	0.050

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APRON UNIT DEFLECTIONS

Test No.	Date	Chainage	Offset	Unit Deflection (mm/MPa) at Geophone								
				0 mm	200 mm	300 mm	450 mm	600 mm	750 mm	900 mm	1200 mm	1500 mm
917	15/6/2012	125	35.00	1.962	0.802	0.376	0.180	0.111	0.081	0.066	0.051	0.041
918	15/6/2012	130	35.00	1.811	0.764	0.368	0.174	0.119	0.086	0.070	0.051	0.040
919	15/6/2012	135	35.00	1.529	0.703	0.385	0.204	0.127	0.090	0.066	0.052	0.043
920	15/6/2012	140	35.00	1.559	0.715	0.364	0.198	0.136	0.103	0.085	0.059	0.045
921	15/6/2012	145	35.00	1.989	0.823	0.391	0.188	0.133	0.100	0.080	0.056	0.043
922	15/6/2012	150	35.00	1.644	0.702	0.356	0.194	0.137	0.106	0.088	0.064	0.052
923	15/6/2012	155	35.00	1.642	0.677	0.365	0.200	0.140	0.103	0.085	0.059	0.053
924	15/6/2012	160	35.00	1.751	0.674	0.317	0.172	0.127	0.086	0.071	0.055	0.051
925	15/6/2012	165	35.00	1.875	0.708	0.341	0.188	0.125	0.101	0.082	0.060	0.046
926	15/6/2012	170	35.00	2.997	1.284	0.589	0.267	0.167	0.121	0.105	0.073	0.050
927	15/6/2012	135	40.00	3.206	1.567	0.642	0.259	0.159	0.113	0.078	0.066	0.061
928	15/6/2012	140	40.00	2.445	1.007	0.466	0.232	0.151	0.111	0.088	0.062	0.051
929	15/6/2012	145	40.00	2.816	1.263	0.564	0.246	0.151	0.113	0.092	0.064	0.048
930	15/6/2012	150	40.00	4.158	1.992	0.840	0.311	0.183	0.131	0.095	0.080	0.059
931	15/6/2012	155	40.00	3.227	1.190	0.530	0.250	0.161	0.126	0.104	0.078	0.059
932	15/6/2012	160	40.00	3.184	1.294	0.514	0.207	0.142	0.107	0.091	0.065	0.053
933	15/6/2012	165	40.00	2.033	0.875	0.377	0.203	0.149	0.100	0.080	0.058	0.059
934	15/6/2012	170	40.00	2.437	1.031	0.450	0.222	0.150	0.108	0.089	0.063	0.051

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