Evidence C.

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Private Plan Change P026, by Westpark Rangiora Ltd.

STATEMENT OF EVIDENCE BY STUART CAMP
NOISE

1 Introduction

1.1 My name is Stuart Camp. I am a Principal in the national acoustical consulting firm of Marshall Day Acoustics. I hold a Science degree from Auckland University, majoring in Mathematics and Acoustics. I have worked in the field of acoustics with Marshall Day Acoustics for the last 32 years. I established the Christchurch office in 1997.

1.2 A large percentage of my work involves environmental noise, and I have completed assessments for numerous projects in New Zealand, Australia, and Malaysia. I have presented expert evidence at both Council and Environment Court hearings many times.

1.3 Whilst this is a Council Hearing, I acknowledge that I have prepared my evidence in accordance with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court Practice Note 2014. Other than where I state that I am relying on the advice of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

1.4 I have been engaged by Westpark Rangiora Ltd to address potential reverse sensitivity noise issues associated with Rangiora Airfield as a result of the proposed Westpark Plan Change.

1.5 My specific experience relating to aircraft noise and reverse sensitivity noise issues includes;

- Christchurch International Airport. I have undertaken noise monitoring around Christchurch Airport at various times over the past 18 years, and have provided advice on noise effects for a number of proposed residential proposals near the airport,

- Ashburton Airport. I reviewed a proposal by Ashburton Airport to allow for significant growth by way of including aircraft noise contours and appropriate sound insulation rules in the District Plan. Of particular concern was potential reverse sensitivity effects on existing rural-residential neighbours,

- Selwyn Dairy Processing Management Area. I was engaged by Synlait Milk during the plan change application for the now operative Dairy Area, which includes noise contours around the Synlait Dairy Factory to limit noise emissions from the site and control reverse sensitivity issues,

- Hurunui Frost Fan Noise Rules. I undertook a comprehensive assessment of reverse sensitivity effects around existing frost fans in the Hurunui District, and assisted Council in preparing a plan change which developed a series of rules to control frost fan noise and reverse sensitivity effects.

1.6 I am familiar with the application area. Although I have not directly visited the site, I have recently spent several days at Rangiora Airfield, and as a result, have driven past the site a number of times. I have some understanding of the Airfield operations from my days on-site.

2 Reverse Sensitivity Effects

2.1 A number of submitters on P026 have raised the issue of the potential impact that allowing the development to proceed would have on the existing operations and future development of the Rangiora Airfield. These submissions directly raise the issue of potential reverse sensitivity effects.

2.2 Land use planning to control reverse sensitivity noise effects around airports is generally managed by reference to New Zealand Standard NZS 6805:1992 *Airport Noise Management and Land Use Planning*.

2.3 Under this Standard, the **Outer Control Boundary** is defined as being equivalent to a noise level of 55 dB L_{dn}.

2.4 Clause 1.4.2.1 states that "*...the outer control boundary defines an area... within which there shall be no new incompatible land uses...*". Residential activity is included in the list of incompatible land uses.

2.5 Most District Plans in New Zealand have adopted this approach. As a result, it is common for plan rules to control new residential development inside the Outer Control Boundary. It is rare for there to be building controls beyond this boundary.

2.6 As far as I am aware, noise contours have never been prepared for Rangiora Airfield. For the purposes of my assessment on this project, I therefore propose to use contours for a busier airport as a conservative example.

3 Ardmore Airport Noise Contours

3.1 Ardmore Airport in South Auckland, proclaims itself to be "*...the country's premier facility for general aviation and flight training...*" (http://www.ardmoreairport.co.nz/).

3.2 APPENDIX A shows the airport noise contours around Ardmore Airport. These contours became operative by way of a consent order, and are now included in the Operative Papakura Section of the Auckland Council District Plan. I have included the contours from the consent order because they are drawn on a single plan, whereas the District Plan maps result in them being split multiple planning maps. I have checked and confirm that as far as I can tell, the contours in APPENDIX A are the same as those on the planning maps. I have added annotations in red showing the location of the two runways and the distance from the end of the main runway to the outer control boundary (2 km).

3.3 APPENDIX B shows a document available on line, discussing the characteristics of a number of Auckland's airports. I have highlighted in red a cell showing that Ardmore Airport has "...currently 230,000 aircraft movements per year...". As best I can determine, this document was produced in 2010, and hence current usage may actually be slightly higher than this.

4 Rangiora Airfield Usage

4.1 APPENDIX C provides a copy of usage information for Rangiora Airfield received from Waimakariri District Council.

4.2 This suggests that a typical busy month may involve up to 3500 movements, or a total of around 40,000 movements per year.

4.3 In other words, available data shows that Rangiora currently caters for about 17% of the aircraft movements that Ardmore handles.

5 Ardmore Contours at Rangiora

5.1 To provide a simple visual comparison, I have superimposed the Ardmore contours from APPENDIX A onto an aerial photo of the Rangiora Airfield and have indicated the location of the proposed Westpark Plan Change. The results of this are shown in APPENDIX D. I have indicated the location and extent of the existing Rangiora Runways in red on the same figure.

5.2 As can be seen from APPENDIX D, even if the small grass cross-runway at Rangiora was as busy as the primary sealed runway at Ardmore, the outer noise control boundary does not extend as far as the Westpark site.

5.3 Given the disparity in scale of these two airfields, I expect that the noise contours at Rangiora are actually at least 5 dB smaller than Ardmore, and hence the existing outer noise control boundary at Rangiora Airfield will be even further from Westpark than my conservative analysis suggests.

Section 42A Officer's report

5.4 The potential impact on the operation and development of Rangiora Airfield are addressed at paragraph 14.3 of Mr. Blay's s 42A Report.

5.5 Mr Blay broadly concludes that noise from existing operations is "...unlikely to exceed permitted limits due to the distance between the two activities...". This finding is consistent with my conservative analysis already discussed, and I therefore agree with Mr Blay's comments.

5.6 I also agree with Mr Blay with respect to ongoing development when he concludes that "...I would consider the separation distance to be sufficient to mitigate the effects of any realistic development...". As shown in my analysis, the operation of Rangiora Airfield could expand significantly without any risk of reverse sensitivity noise issues arising.

Conclusion

5.7 On the basis of the analysis set out above, I conclude that this plan change will not result in any reverse sensitivity effects on the Rangiora Airfield. Not only would this subdivision allow the existing airfield activity to continue unhindered, it allows for a significant expansion of the airfield to occur without creating any reverse sensitivity effects.

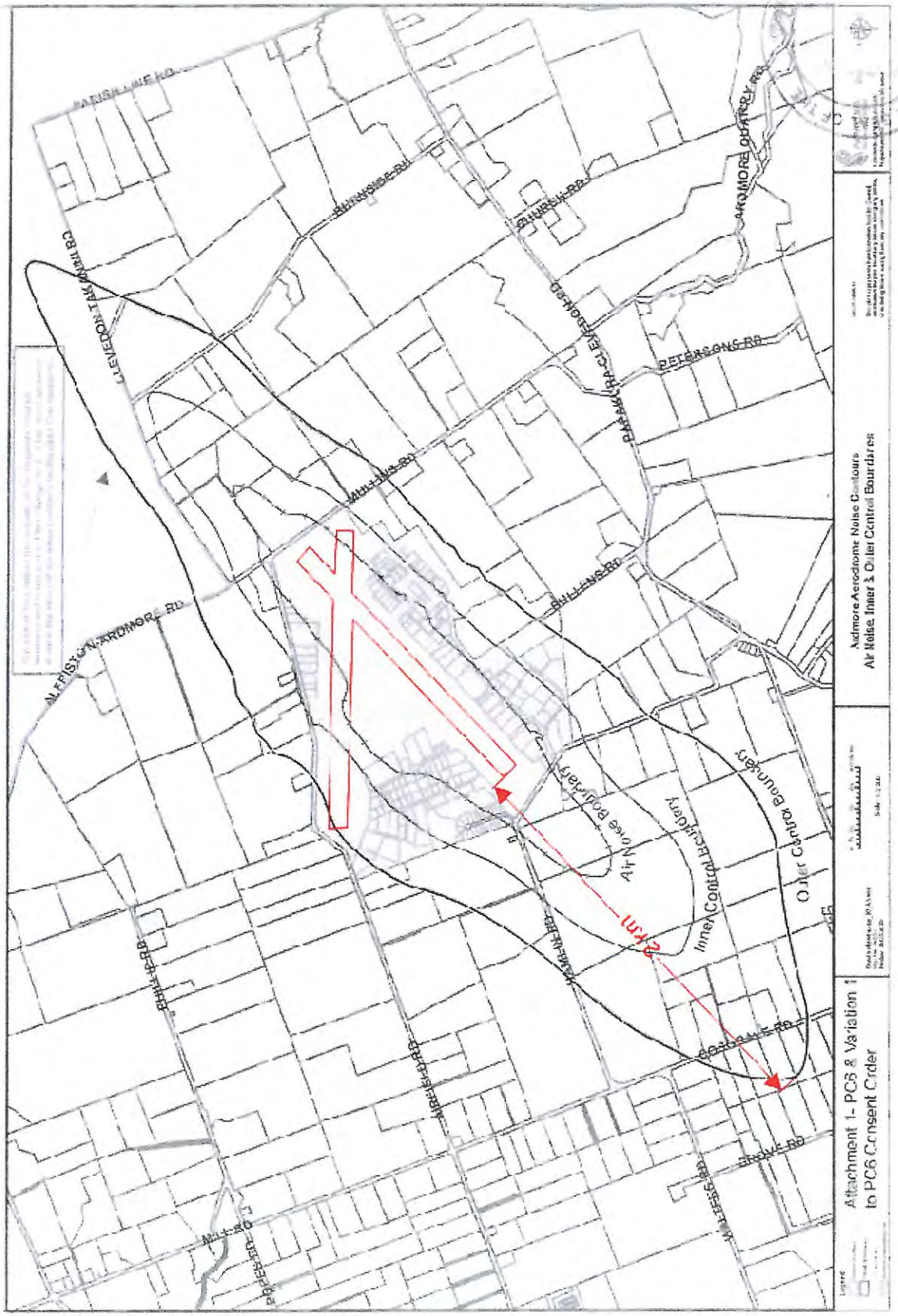
Stuart Camp

16 July 2015

APPENDIX A ARDMORE AIRPORT NOISE CONTOURS

ATTACHMENT 1 TO SCHEDULE 2 - ARDMORE AERODROME NOISE CONTOURS

(Annotations in Red added by Stuart Camp)



APPENDIX B ARDMORE AIRPORT USAGE DATA

From: *www.waitakere.govt.nz/abtcit/whenuapai/pdf/**cdemcompartbl**.pdf*

Annexe 1 Airport Information Table

	Auckland International Airport	Whenuapai	Ardmore	Dairy Flat (North Shore Aerodrome)
Physical Information				
Airport Runway length (metres)	Main runway (05R-23L) - 3635 x 45m Main taxiway/runway (05L-23R) - 2910 x 45m (designated a non-precision runway)	Main runway 2031 x 45m (03/21) Additional runways 1. 1681 x 45m 2. 850 x 45m 3. 635 x 45m	Main runway 1411 x 45m (03/21) Additional runways 1. 507 x 18m 2. 518 x 18m	Main runway 811 x 60m (03/21) Additional runway 570x 60m (09/27) (Grassed area of runway is slightly longer than concrete/gravel centre strip)
Type of runway	Main runway Concrete PCN 65[1] Rigid pavement Medium strength No max tyre pressure limit Main taxiway/runway Concrete/bitumen PCN 65 Rigid pavement Medium strength No max tyre pressure limit Central 24m of runway surface is concrete, outer 11m of surface on each side is bitumen	Main runway Bitumen PCN 40 Rigid pavement Ultra-low strength No max tyre pressure limit Additional runways 1. Concrete PCN 36 Rigic pavement Ultra-low strength No max tyre pressure limit 2. Grass, firm ESWL 9080 3. Grass ESWL 1270	Main runway Bitumen PCN 14 Flexible pavement Ultra low strength Max allowable tyre pressure: 1500 kPa Additional runways 1. Grass ESWL 820 2. Grass ESWL 820	Main runway Concrete and Grass (concrete centre strip 9m wide flanked by grass). Grass soft when wet. ESWL 2500 Additional runway Grave and grass (gravel centre strip 9m wide flanked by grass). Grass soft when wet ESWL 1005
Physical size of airport (hectares)	1,497 hectares (3,700 acres)	31[illegible] hectares	262 hectares	*Information currently not available*
Fuel capacity and type	Avgas 100, Jet A1, AERO 100, AERO D100, Mobil Jet Oil	Jet A1. Small quantity of AVGAS.	Jet A1, Avgas 100	Jet A1, Avgas 100
Method of fuel delivery	On site storage	Tanker delivered with storage on site	Direct from pump, or trucked from the facility to the aircraft. Carnet card.	On site storage
On site facilities/equipment	Rescue equipment: 1 x jet boat 2 x inflatable Zodiac-type dinghies 1 x hovercraft Capability for removal of disabled aircraft for aircraft up to 140,000 kg equipment available locally (over 140 000 kg ex Sycney) Cargo handling facilities Repair facilities for visiting aircraft	Rescue Fire Facility providing up to Airfield Category 7. Customs and Immigration Maintenance Limited hangarage	Rescue Fire Shed contains: 3 x wall mounted 25kg dry powder/BCF extinguisher 1 x first aid kit 2 x stretchers 1 x wheele bin of sand 6 x Day-Glo jackets Incident tape and standards 37 fire hydrants on mains supply	Basic parking and storage facilities.
Capability				
Current capability (approx flights p.a)	145,000 annual aircraft movements 9.4 million passengers each year Average: <24,000 passengers per day 77 international flights per day 313 domestic flights per day Airport operational 24 hours a day	Currently about 18,000 movements per annum.	Currently 230,000 aircraft movements per year.	In the order of thousands per year Great Barrier Airlines operates out of the airport and currently has 5 flights per day to the Barrier.

APPENDIX C RANGIORA AIRFIELD USAGE DATA

Information supplied by Craig Sargison, Waimakariri District Council, by email 30 June 2015.

1.1. Usage Data

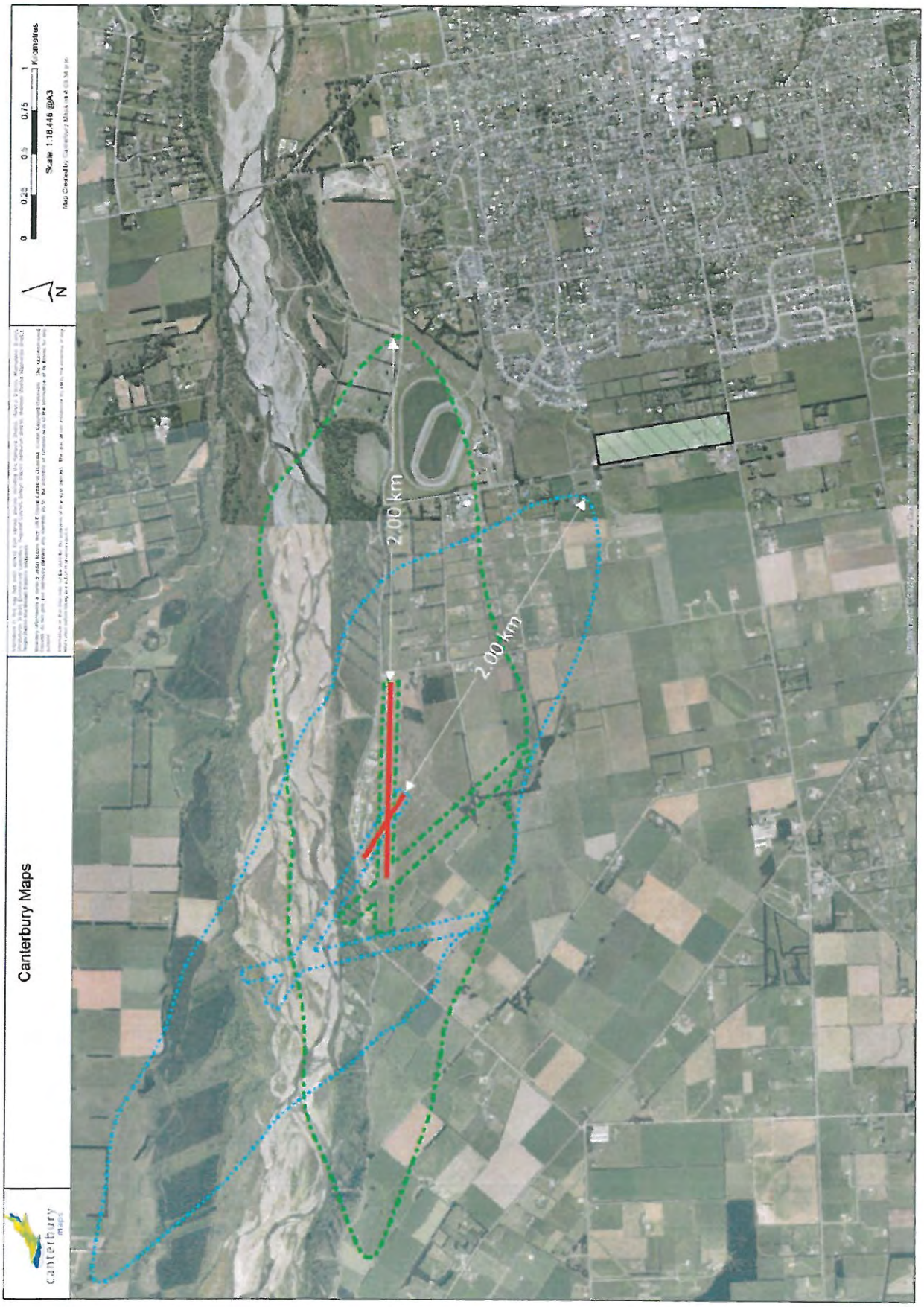
1.1.1. One of the challenges of an unmanned airfield with no control tower is assessing how many aircraft movements that occur on any day.

1.1.2. An aircraft movement is defined as any take off, landing or missed approach

1.1.3. In 2010 we succeeded in getting Rangiora Airfield designated by the Civil Aviation Authority as a Mandatory Broadcast Zone (MBZ).

1.1.4. After discussion with the Airfield Advisory Group we set up a system whereby we could record each broadcast and thereby get an accurate record of aircraft movements.

1.1.5. Three samples of one month each were undertaken to get a fair picture of activity at different months of the year and the following table summarises the results:

Sample period	Aircraft Movements	Notes
1 July – 6 August 2012	3,297	
8 March – 8 April 2013	1,287	7 non flying days due to weather conditions
17 Oct – 16 Nov 2013	2,223	

APPENDIX D ARDMORE CONTOURS AT RANGIORA