BEFORE COMISSIONERS ON BEHALF OF THE CENTRAL OTAGO DISTRICT COUNCIL (CODC)

IN THE MATTER OF the Resource Management Act 1991 (**RMA**).

AND

IN THE MATTER OF Operative Central Otago District Plan: Plan Change 13: River Terrace Developments Limited

STATEMENT OF EVIDENCE OF Michael Jones on behalf of DJ Jones Family Trust and Suncrest Orchards Limited

16 May 2019

1. My name is Michael Jones and I am the Manager and a Director at Suncrest Orchard Limited. I have held the role for 26 years during which time Suncrest Orchard has developed into a 70 hectare horticultural operation that has a long-standing reputation for producing high quality fruit.

2. DJ Jones Family Trust (DJJFT) owns the adjoining orchard to the west of the subject plan change property which fronts onto Kawarau Gorge Road/SH6. Suncrest Orchard (SOL) leases and operates the orchard. The Orchard consists predominantly of plantings of Cherries, but also includes plantings of Nectarines, Peaches, Apples, Pears and Plums. These plantings have been undertaken to utilize the unique micro climate and soil conditions. Horticultural activities involve long hours, many workers, loud noise, agrichemical spraying, tree drying and bird scaring. These activities are all acceptable and expected within the rural environment and the existing District Plan provides for them.

3. Orcharding activities play a significant role in the local district, providing significant employment and generating significant value for the Central Otago economy as a whole. New Zealand summerfruit exports totaled $88 million in the 2017-18 season of which $84 million amounted from cherry exports[1]. As 85% of New Zealand cherries are grown in Central Otago[2], cherry production is a significant driver of the Central Otago economy. Orcharding is significant in this region because of the unique combination of climate, soils, water availability and topography which produces high quality fruit that is a valuable product in both New Zealand and international markets.

4. The DJJFT and SOL have serious concerns with the proposed plan change eroding the ability to continue the lawful horticultural activities currently undertaken at this location. DJJFT and SOL support the Cromwell Community Board lead Master Planning Process, which when complete will create a resource for the District Council to use to help guide the next iteration of the District Plan.

5. Our property represents a specific mix of local soil conditions, available water supply and an ideal micro climate that provides suitable winter chilling and hot summer conditions that are essential for summer fruit growing. High-class agricultural land is our most productive and versatile land in terms of a combination of favourable soils, climate and slope that can support a wide range of crops for food production. Nationally, this land amounts to only about 5.5% of our total land area [3] and there is a limited amount of land such as this within our District, so careful consideration is needed to ensure that we protect the unique and valuable resource for future generations, so that Cromwell can continue to be major contributor to the economy.

6. Mr Meehan's evidence contends that other interests had the same opportunity to purchase the subject plan change property when it was on the market. From our perspective, the land is zoned Rural Resource Area - identified as distinct from the urban areas of the District on the basis of its environmental character, and it was therefore anticipated that any potential purchaser would be developing the land with that in mind and any potential development would not jeopardize the future of our horticultural operation. Whilst it was envisaged that the property could be subdivided, as per the rules pertaining to the Rural

Resource area, it was never envisaged that someone would propose siting an urban development of 900 houses on the subject plan change property.

7. There is also the question of the relative value of the underlying land as rurally zoned land compared to urban uses. As has been demonstrated in other parts of the country, high value growing areas are increasingly coming under pressure from expanding urban areas, and rely on the District Plans to protect their zoning and their value to the local economies. DJJFT and SOL feel that the applicants evidence is attempting to classify the subject site as a lower class of soil, and hence not worth special protection through the District Plan. However, the issue for DJJFT and SOL is the problems that arise with urban sprawl and reverse sensitivity effects that can be extremely detrimental to maximising productive land use. DJJFT and SOL have a serious concern that the current application will create an environment that is inherently incompatible with Horticulture and other established activities in the local environment and therefore threaten the viability of existing operations in the immediate surrounds.

8. The use of no complaints covenants are not seen as practical as a method of controlling the inherent reverse sensitivity issues between urban residential areas and horticultural activities. Spray notification requirements for some chemicals mean that neighbouring properties must be given advance notification of spraying. Included in the Appendix is the label of one of the chemicals used on the orchard which requires advance spray notification. Notifying all the potential neighbours in RTDL would be a considerable undertaking. Sometimes it would be necessary to do this multiple times due to changing weather conditions, which dictate when spraying can occur. The mitigations, including the 3m high solid fence do not mitigate against this necessary practice. Equally a solid fence at 3m is not going to stop the sound of frost machines or helicopters or even the considerable noise created by the general orchard maintenance activities and it will prevent cold air drainage from the orchard potentially increasing frost fighting requirements.

9. Included in the Appendix is a history of use of frost fans and helicopters on the orchard. Also included is a list the sprays that have been used on our adjoining orchard in the last 2 years. These are all activities that have the potential to cause offense to an urban environment due the increased additional receptors that this application would introduce to this environment. Whereas a rural residential or smaller rural lots are more likely to have an appreciation of the activities that can be undertaken on adjoining land, urban houseowners, even with covenants, are likely to have different expectations of what is offensive.

10. SOL has a Code of Compliance to operate a helicopter for the purpose of undertaking frost protection. There are 8 frost fans located on the orchard adjacent to the subject plan change property which are positioned on the basis of a westerly air drift. Each frost fan protects an egg-shaped zone (see attached diagram). If the air drift is from any direction other than westerly, there are pockets of the orchard that require additional frost protection and a helicopter is used for this purpose. If the wind drift is easterly, then the eastern area of the orchard requires additional frost protection which results in the helicopter operating immediately adjacent to the orchard's eastern boundary.

11. SOL also uses a helicopter for tree drying to protect the cherry crop from splitting. Cherries that are nearly ripe have a high natural sugar content and this draws in rainwater sitting on the fruit, causing it to swell until it breaks open, or splits. A helicopter, is utilized for flying over the orchard, at low levels, and blowing the water off the fruit. The objective is to remove the water as quickly as possible to prevent or reduce any damage to the cherry crop. This can be undertaken any time day or night and during showery days this can be repeated several times within the same day.

12. The Styles Group Report for RTDL states that helicopter use for crop drying is infrequent as the cherry season coincides with the traditionally dry weather in the Cromwell basin. However, NIWA data for the period 1981-2010 indicates that whilst rainfall totals are low, December and January have the two highest monthly rainfall totals for Cromwell[4]. In our experience helicopter use for cherry drying can be frequent as reflected by our records which indicate during the 2017-18 season SOL utilized the helicopter for cherry drying on 22 separate occasions between late November and early February.

Date	Helicopter Cherry Drying (Hours)
22/12/2018	0.8
25/11/2018	0.6
03/12/2018	1.2
04/12/2018	0.9
8/12/2018	1.1
11/12/2018	0.75
12/12/2018	1.4
12/12/2018	1.15
12/12/2018	1.7
14/12/2018	1.7
19/12/2018	0.9
21/12/2018	1.7
21/12/2018	1.75
22/12/2018	1.15
22/12/2018	1.2
22/12/2018	2.15
23/12/2018	1.3
07/01/2019	3.25
08/01/2019	1.4
19/01/2019	0.6
28/01/2019	1.1
01/02/2019	0.35

Table 1: Hours Spent Drying Cherry Trees on Suncrest Orchard during 2018/19 season. Source: ZKHMV Log Book

13. The Styles Group Report for RTDL notes that bird scaring is a primary horticultural noise that needs to be considered when assessing the effects on the RTRA arising from PC13. However, the Styles Group Report for RTDL fails to provide any assessment of the noise effects associated with bird scaring. SOL implements bird control from late November until early February between the hours of 6am and 9pm. We utilize a number of different methods for bird control including, drones, gas guns, shot guns, quad bikes and horns all of which will result in reverse sensitivity issues if PC13 is approved.

14. DJJFT and SOL consider that the current application focuses on housing as a measure of wellbeing in our district at the expense of local employment and production of crops that can only be grown in a limited number of areas in New Zealand.

15. DJJFT and SOL have asked that Walt Denley of Landpro, presents on our behalf in regards to some of the specific planning provisions raised by the applicant.

1. Figures from Summerfruit New Zealand Website
2. INVESTMENT OPPORTUNITIES IN THE NEW ZEALAND CHERRY INDUSTRY Part of Emerging Growth Opportunities, Food and Beverage Information Project, 2018 FINAL REPORT; v1.00; completed late 2017; released March 2018
3. Protecting Our Land, Otago Daily Times, Monday 10th July 2017
4. Macara, G.R. 2015. The Climate and Weather of Otago. NIWA Science and Technology Series 67, 44 pp.

Agrichemicals currently used by Suncrest Orchards in last 3 years on land adjacent to the Plan Change 13 site

Insecticides
Aphidex
Caltex dc tron oil
Lorsban 50EC Success Naturalyte
Prodigy
Sevin Flo
Mavrik Flo

Fungicides
Bravo
Prolific
Rovral Flo
Pristine
Folicur WG
Kumulus DF
Captan 80W
Luna Sensation
Chorus
Syllit Plus
Fontelis
Polyram DF
Talendo
Copper OxyChloride

Fertilizer
Bortrac
Zinctrac
Geomar
Kiwi-K
Stopit
Hydromag
Phoztrac

Sunscreen
Vaporgard

Growth Regulators
Retain
Progibb

Other
Ezy-Thinn

* Note * Weed sprays have not been included in the above list

Frost Fans and Helicopter Operation times on the Suncrest Orchard

2018

04/0918 FROST FANS ON	02;07	OFF 06.55	
05/0918	00.55	07.19	
06/09/18	23.45	08.30	
07/09/18	23.30	08.30	
08/09/18	00.31	08.07	
09/09/18	02.55	08.00	
20/09/18	06.00	06.30	
28/09/18	02.30	07.20	
06/10/18	06.10	08.10	
10/10/18	02.20	07.30	
13/10/18	12.20	08.20	+ 1 Helicopter working 1hr + Sprinkler pumps running
15/10/18	02.00	07.30	
30/10/18	12.30	07.00	
02/11/18	03.10	07.10	
21/11/18	01.55	07.30	

2018 was a normal Frost season

2017

02/09/17	23.00	07.30	
03/09/17	23.00	07.30	
08/09/17	06.00	07.30	
19/09/17	04.30	07.30	Helicopter Only
30/09/17	04.00	07.30	
1/10/17	04;00	07.30	
05/10/17	04.30	07.30	
12/10/17	06.00	07.00	

2017 was a very Light Frost year and the first year we had wind machines

2016

09/09/16	01.30	07.30	Helicopters 2 operating at Times plus sprinkler pumps
10/09/16	01.30	07.15	Helicopters 2 operating at Times plus sprinkler pumps
11/09/16	02.00	07.30	Helicopters 2 operating at Times plus sprinkler pumps
14/09/16	02.30	07.30	Helicopters 2 operating at Times plus sprinkler pumps
21/09/16	05.00	08.00	Helicopter 1 operating plus sprinkler pumps
22/09/16	05.30	07.30	Helicopter 1 operating plus sprinkler pumps
07/10/16	05.45	07.30	Helicopter 1 operating plus sprinkler pumps
10/10/16	03.00	07.30	Helicopter 1 operating plus sprinkler pumps
13/10/16	06.00	07.30	Helicopter 1 operating plus sprinkler pumps
15/10/16	05.00	07.30	Helicopter 1 operating plus sprinkler pumps
21/10/16	02.30	07.30	Helicopter 1 operating plus sprinkler pumps
30/10/16	03.00	07.00	Helicopter 1 operating plus sprinkler pumps
31/10/16	03.30	07.00	Helicopter 1 operating plus sprinkler pumps

2016 was a slightly below average Frost season

2015

14/09/15	12.20	07.30 Helicopters 2 operating at Times plus sprinkler pumps
20/09/15	03.00	07.30 Helicopters 2 operating at Times plus sprinkler pumps
21/09/15	12.30	07.30 Helicopters 2 operating at Times plus sprinkler pumps
22/09/15	02.30	07.30 Helicopters 2 operating at Times plus sprinkler pumps
25/09/15	05.00	07.00 Helicopter x 1 plus sprinkler pumps
27/09/15	02.00	07.00 Helicopter x 2 at times plus sprinkler pumps
14/10/15	05.00	07.00 Helicopter x 1 plus sprinkler pumps
22/10/15	06.00	07.00 Helicopter x 1 plus sprinkler pumps
24/10/15	04.30	07.00 Helicopter x 1 plus sprinkler pumps
26/10/15	06.00	07.00 Helicopter x 1 plus sprinkler pumps
28/10/15	03.30	07.00 Helicopter x 1 plus sprinkler pumps
30/10/15	06.00	07.00 Helicopter x 1 plus sprinkler pumps
31/10/15	02.00	07.00 Helicopter x 2 at times plus sprinkler pumps
05/11/15	04.00	07.00 Helicopter x 1 plus sprinkler pumps
16/11/15	01.00	07.00 Helicopter x 2 at times plus sprinkler pumps
19/11/15	03.00	07.00 Helicopter x 2 at times plus sprinkler pumps

2015 was a normal Frost year

2014

18/09/14	02.00	07.30 Helicopter x 2 at times plus sprinkler pumps
20/09/14	03.00	07.30 Helicopter x 1 plus sprinkler pumps
22/09/14	05.30	07.30 Helicopter x 1 plus sprinkler pumps
28//09/14	01.30	07.30 Helicopter x 1 plus sprinkler pumps
10/10/14	02.30	07.30 Helicopter x 1 plus sprinkler pumps
21/10/14	02.00	07.30 Helicopter x 1 plus sprinkler pumps
25/10/14	02.00	07.30 Helicopter X 2 at Times plus sprinkler pumps
27/10/14	05.00	07.00 Helicopter x 1 plus sprinkler pumps
28/10/14	01.00	07.00 Helicopter X 2 at times plus sprinklers pumps
04/11/14	04.00	07.00 Helicopter x 1 plus sprinkler pumps
05/11/14	04.00	07.00 Helicopter x 1 plus sprinkler pumps
07/11/14	01.00	07.00 Helicopter x 2 at Times plus sprinkler pumps
12/11/14	02.30	07.00 Helicopter x 1 and sprinkler pumps
17/11/14	05.00	07.00 Helicopter x 1 plus sprinkler pumps

2014 was a normal frost year

Google Maps

Imagery ©2019 CNES / Airbus, DigitalGlobe, Map data ©2019 Google 100 m

Record of Spraying Times for the 2015-16 Growing Season on land adjacent to Plan Change 13 site

	Block 4,7,8		
Date	Start	Time taken	Block
19/08/2015	9:45	3	4
19/08/2015	11:00	0.5	7
20/08/2015	10:00	0.5	7
28/08/2015	12:45	4.75	4
29/08/2015	10:45	2	7
31/08/2015	8:30	3.5	4
31/08/2015	8:30	6	8
31/08/2015	8:30	1	3
31/08/2015	8:30	0.5	7
1/09/2015	8:30	1.9	7
1/09/2015	11:00	2	7
3/09/2015	8:00	1.75	7
9/09/2015	11:30	1	4
9/09/2015	12:00	1	7
10/09/2015	8:30	4	8
10/09/2015	9:00	1.75	7
11/09/2015	8:00	1	4
11/09/2015	9:30	1	8
12/09/2015	9:30	3.75	7
12/09/2015	9:30	2.25	8
17/09/2015	6:30	0.5	7
17/09/2015	6:30	0.5	4
17/09/2015	7:00	1	4
17/09/2015	7:00	1.5	7
23/09/2015	6:45	1	7
23/09/2015	6:45	1.5	4
23/09/2015	9:45	2	4
24/09/2015	9:00	3.5	7
24/09/2015	9:00	1	8
25/09/2015	9:00	0.5	7
25/09/2015	9:00	2	4
28/09/2015	8:20	0.25	8
29/09/2015	8:00	1	7
29/09/2015	11:40	1	7
29/09/2015	11:40	1.75	4
1/10/2015	8:00	1.75	8
1/10/2015	8:00	1.75	4
1/10/2015	8:00	1.5	7
2/10/2015	8:50	2	8
3/10/2015	7:30	0.75	8
5/10/2015	8:00	3	7
5/10/2015	8:00	1	8

8/10/2015	6:15	1.25	7
8/10/2015	6:15	1.75	4
8/10/2015	8:00	5	8
9/10/2015	7:45	0.5	7
9/10/2015	7:45	4	2.75
9/10/2015	15:00	1.25	4
12/10/2015	6:30	1	4
13/10/2015	8:45	4.5	7
13/10/2015	8:45	1	8
15/10/2015	6:30	1.75	7
15/10/2015	11:00	4	8
16/10/2015	6:30	0.5	8
20/10/2015	6:30	4.5	7
20/10/2015	6:30	0.5	8
21/10/2015	6:30	1	8
22/10/2015	7:00	0.25	8
22/10/2015	9:45	1	8
22/10/2015	9:45	1.75	7
22/10/2015	10:00	2	4
22/10/2015	12:00	0.5	7
22/10/2015	12:00	2	4
23/10/2015	10:30	3.5	8
27/10/2015	14:00	1	4
28/10/2015	8:00	3	8
28/10/2015	8:00	3	7
28/10/2015	8:30	4	8
28/10/2015	8:30	1	7
29/10/2015	6:30	1.5	7
30/10/2015	7:30	1.75	4
31/10/2015	7:15	0.5	7
31/10/2015	9:30	0.75	4
31/10/2015	9:30	0.25	7
3/11/2015	6:30	3	7
4/11/2015	2:30	1.5	7
5/11/2015	10:45	1	7
9/11/2015	7:00	1	4
10/11/2015	8:00	5	8
10/11/2015	8:00	2	4
10/11/2015	8:00	1	7
11/11/2015	3:00	1.25	7
11/11/2015	10:15	4.75	8
12/11/2015	6:30	4	7
12/11/2015	6:30	1	8
12/11/2015	6:30	2	4
12/11/2015	8:30	1	7
12/11/2015	8:30	0.5	8

16/11/2015	8:30	0.5	8
16/11/2015	8:30	1	7
16/11/2015	11:30	1.5	4
16/11/2015	11:30	0.25	7
21/11/2015	12:00	0.5	7
23/11/2015	6:30	1	7
23/11/2015	6:30	0.5	8
23/11/2015	9:00	2	8
23/11/2015	10:00	1	8
25/11/2015	6:30	6.5	7
25/11/2015	7:30	3	8
26/11/2015	8:00	0.75	7
26/11/2015	8:00	1.25	4
30/11/2015	6:00	0.75	8
30/11/2015	8:30	0.75	4
1/12/2015	6:00	3	7
2/12/2015	6:00	3	8
2/12/2015	9:00	2	4
7/12/2015	6:00	1	8
8/12/2015	6:00	3.25	7
9/12/2015	6:00	3	8
14/12/2015	6:00	4.5	8
15/12/2015	6:00	1.5	8
15/12/2015	6:00	1.75	7
15/12/2015	6:00	2	4
17/12/2015	10:30	1.5	4
22/12/2015	6:00	1.5	7
22/12/2015	6:00	2	8
23/12/2015	6:15	2	4
29/12/2015	6:00	3.5	7
29/12/2015	6:00	3.5	8
6/01/2016	8:30	1	4
11/01/2016	6:00	1.75	8
11/01/2016	6:00	0.75	4
18/01/2016	7:00	1	7
29/01/2016	8:00	0.5	4
10/02/2016	6:30	0.5	7
11/02/2016	6:00	0.25	4
11/02/2016	6:30	2	4
19/02/2016	7:00	3.5	8
19/02/2016	7:00	3.75	7
22/02/2016	7:00	1.25	4
24/02/2016	11:15	0.5	4
3/03/2016	8:45	0.25	4
3/03/2016	8:45	0.25	7
16/03/2016	8:00	5.75	7

16/03/2016	8:00	6.5	8
21/03/2016	9:15	1.25	7
21/03/2016	9:15	0.5	4
7/04/2016	8:00	3	7
21/04/2016	8:00	0.75	7
21/04/2016	8:00	0.5	4
21/04/2016	8:00	1	8
26/04/2016	8:00	3	8
27/04/2016	9:00	5.5	7
10/05/2016	13:45	1.5	8
10/05/2016	13:45	5	4
17/05/2016	9:45	0.5	4
10/01/2017	6:00	3	8

Record of Spraying Times for the 2016-17 Growing Season on land adjacent to Plan Change 13 site

	Block 4,7,8		
Date	**Start**	**Time taken**	**Block**
15/08/2016	13:00	1	7
15/08/2016	13:00	1	4
16/08/2016	10:30	0.5	4
22/08/2016	15:15	0.5	4
23/08/2016	9:30	3.5	7
24/08/2016	13:00	0.75	7
24/08/2016	13:00	0.25	8
24/08/2016	13:00	3	4
25/08/2016	11:00	2.75	8
25/08/2016	11:00	1.25	4
25/08/2016	14:30	1	4
30/08/2016	11:00	2	7
31/08/2016	9:30	0.5	7
8/09/2016	8:00	0.5	4
8/09/2016	8:00	0.25	7
12/09/2016	8:00	0.5	7
12/09/2016	8:00	1	4
12/09/2016	10:30	4	8
12/09/2016	14:00	1	8
13/09/2016	7:00	1.5	8
13/09/2016	7:00	2.5	7
13/09/2016	7:00	2.25	4
13/09/2016	7:00	2.75	7
15/09/2016	9:15	0.25	7
15/09/2016	9:15	0.5	4
19/09/2016	7:00	1	7

19/09/2016	7:00	1.5	4
20/09/2016	8:00	14	7
20/09/2016	8:00	0.25	4
20/09/2016	11:00	0.25	7
21/09/2016	8:30	3	7
21/09/2016	10:15	2	4
23/09/2016	9:30	6.25	8
23/09/2016	9:30	2.75	4
23/09/2016	9:30	2	7
26/09/2016	7:00	3.25	7
26/09/2016	7:00	1	8
26/09/2016	7:00	1.5	7
27/09/2016	7:00	1	7
27/09/2016	7:00	2	4
27/09/2016	11:00	2.5	8
27/09/2016	12:00	3	8
27/09/2016	12:00	1	4
28/09/2016	7:00	1.25	7
28/09/2016	7:00	1	4
28/09/2016	9:00	1	4
28/09/2016	9:45	1	8
3/10/2016	7:00	5.5	7
3/10/2016	7:00	3.5	8
3/10/2016	9:30	1	7
3/10/2016	9:30	2	4
3/10/2016	12:30	0.5	7
4/10/2016	7:00	2.5	8
4/10/2016	10:00	2.25	4
6/10/2016	9:15	0.75	8
6/10/2016	11:30	0.25	8
7/10/2016	7:30	4.5	7
7/10/2016	14:15	0.25	4
10/10/2016	15:45	1	8
12/10/2016	10:15	0.5	7
12/10/2016	10:15	2	4
12/10/2016	14:00	0.75	8
12/10/2016	14:15	2	8
13/10/2016	7:30	2	8
13/10/2016	7:30	1.5	7
13/10/2016	7:30	2	4
14/10/2016	12:00	0.5	8
14/10/2016	12:00	4.5	7
15/10/2016	8:00	2	4
19/10/2016	7:00	0.5	7
19/10/2016	7:00	2	4
19/10/2016	10:30	3	8

20/10/2016	7:00	1.5	7
20/10/2016	7:00	2	4
20/10/2016	7:00	2	8
20/10/2016	9:00	1	8
21/10/2016	9:30	3	7
21/10/2016	10:00	1.5	7
25/10/2016	13:30	0.75	7
25/10/2016	13:30	2.25	4
27/10/2016	10:00	1.33	4
31/10/2016	8:00	4.25	7
31/10/2016	8:00	0.5	8
31/10/2016	8:00	3.25	8
31/10/2016	13:00	1.75	8
1/11/2016	12:00	1	7
2/11/2016	12:00	0.5	7
2/11/2016	12:00	2.25	4
2/11/2016	12:00	0.5	8
7/11/2016	12:00	0.75	8
7/11/2016	12:00	1	8
8/11/2016	6:00	3	7
8/11/2016	6:00	1.75	7
8/11/2016	10:30	2.25	8
8/11/2016	10:30	0.75	4
8/11/2016	11:30	1	8
8/11/2016	11:30	1.5	4
10/11/2016	6:00	1	7
10/11/2016	8:30	1	4
16/11/2016	8:00	1	8
16/11/2016	9:15	3	8
16/11/2016	9:15	1	4
16/11/2016	9:15	2	7
16/11/2016	9:30	2	8
16/11/2016	9:30	1	4
16/11/2016	9:30	3	7
22/11/2016	6:00	0.5	8
22/11/2016	8:00	1	7
22/11/2016	8:00	1	8
24/11/2016	9:30	1	7
24/11/2016	10:30	2	7
25/11/2016	8:45	1	8
25/11/2016	9:30	2	8
28/11/2016	6:00	2	8
28/11/2016	8:00	0.5	7
28/11/2016	8:00	1.5	4
28/11/2016	9:30	0.75	4
28/11/2016	10:30	1	4

29/11/2016	7:00	1	8
1/12/2016	6:00	3.5	7
1/12/2016	6:00	1.25	8
2/12/2016	10:00	1	8
5/12/2016	7:00	1	4
5/12/2016	7:00	0.5	8
5/12/2016	7:00	2	4
5/12/2016	7:00	1	8
6/12/2016	6:00	3	8
6/12/2016	7:00	0.33	7
6/12/2016	7:45	1	7
6/12/2016	9:30	1	7
9/12/2016	10:15	0.25	7
12/12/2016	6:00	2	8
12/12/2016	6:00	2	4
13/12/2016	9:15	3	8
19/12/2016	8:45	0.5	8
20/12/2016	6:00	2.5	8
20/12/2016	6:00	2	4
20/12/2016	6:00	1.5	7
21/12/2016	8:30	2	7
30/12/2016	6:00	3.5	7
16/01/2017	8:00	1.75	4
16/01/2017	8:00	1	7
17/01/2017	6:00	2	8
17/01/2017	8:00	0.75	4
23/01/2017	12:00	1	7
1/02/2017	7:00	2	8
3/02/2017	7:00	4	8
3/02/2017	7:00	4.5	7
3/02/2017	7:00	2.5	4
7/02/2017	7:00	0.25	8
8/02/2017	7:00	1.25	7
13/02/2017	7:00	0.5	7
13/02/2017	12:00	0.5	4
16/02/2017	7:00	2	4
10/03/2017	8:30	1	4
14/03/2017	8:00	1.25	8
14/03/2017	8:00	5.75	7
14/03/2017	8:00	2	4
14/03/2017	8:30	1	8
15/03/2017	8:30	4	8
4/04/2017	9:30	1	7
4/04/2017	9:30	2	4
26/04/2017	8:00	1.75	7
1/05/2017	9:30	2	8

1/05/2017	9:45	4.75	8
2/05/2017	11:15	2	4
9/05/2017	10:00	4.25	7
2/05/2018	11:00	4.5	4

Record of Spraying Times for the 2017-18 Growing Season on land adjacent to Plan Change 13 site

Blocks 4,7,8			
Date	Start time	Time Taken	Block
16/08/2019	8	0.50	7
21/08/2017	8	1.50	4
18/08/2017	8	3.00	8
21/08/2017	12	1.50	7
19/08/2017	11.15	3.00	8
19/08/2017	1.30	2.25	4
19/08/2017	2.15	0.75	7
20/08/2017	11.30	3.50	7
28/08/2017	11.15	4.00	4
29/08/2017	8	3.00	8
29/08/2017	11	2.00	7
29/08/2017	1	2.00	7
29/08/2017	8	3.00	8
29/08/2017	11.30	3.50	7
11/09/2017	11.45	3.75	7
11/09/2017	3.30	0.50	8
14/09/2019	7.30	4.00	8
11/09/2017	1.30	2.00	7
11/09/2017	3.30	1.50	4
11/09/2017	5.00	1.50	8
19/09/2017	7.30	1.25	8
19/09/2017	10.00	4.50	7

21/09/2017	8.30	2.00	4
21/09/2017	10.30	5.00	8
21/09/2017	12.00	1.50	7
26/09/2017	2.30	0.25	8
27/09/2017	7.30	0.50	8
26/09/2017	9.45	1.25	4
26/09/2017	11.00	0.75	8
27/09/2017	8.30	2.50	7
27/09/2017	11.00	0.50	8
27/09/2017	1.30	1.00	7
27/09/2017	2.30	0.25	8
28/09/2017	8.30	1.25	4
28/09/2017	9.45	1.75	8
28/09/2017	10.00	1.00	7
28/09/2017	11.00	1.00	8
3/10/2017	8.45	0.25	7
4/10/2017	7.30	0.50	8
4/10/2017	8.00	0.50	7
4/10/2017	7.30	1.00	7
5/10/2017	7.00	1.25	7
5/10/2017	7.30	1	7
5/10/2017	8.45	1.25	8
5/10/2017	10.00	0.75	7
5/10/2017	11.30	1.25	4
5/10/2017	12.45	1.75	8
10/10/2017	8.25	1.75	8
12/10/2017	8.30	0.75	8
16/10/2017	8.00	2.25	7
16/10/2017	11.30	0.75	8
17/10/2017	7.00	1.50	4
18/10/2017	7.45	0.75	7
18/10/2017	12.00	1.75	8
18/10/2017	10.25	0.75	8
24/10/2017	7.00	0.25	7
24/10/2017	10.00	2.00	8
24/10/2017	6.00	1.00	4
24/10/2017	7.00	1.00	7
25/10/2017	6.00	1.00	8
26/10/2017	7.00	1.50	7
26/10/2017	6.30	1.00	7
30/10/2017	6.30	0.50	8
1/11/2017	6.30	2.75	7
1/11/2017	9.15	2.25	8
1/11/2017	9.45	0.75	4

2/11/2017	6.00	0.75	7
2/11/2017	6.45	0.25	4
2/11/2017	7.00	0.75	8
2/11/2017	7.30	0.25	7
2/11/2017	7.45	0.25	8
6/11/2017	6.30	0.75	7
6/11/2017	7.15	2.25	8
6/11/2017	6.30	1.75	7
6/11/2017	8.15	1.25	8
7/11/2017	8.00	0.50	4
9/11/2017	7.30	0.25	4
7/11/2017	8.00	0.50	8
7/11/2017	8.30	0.50	7
14/11/2017	7.00	0.75	8
14/11/2017	8.00	0.25	8
14/11/2017	8.00	0.50	7
14/11/2017	9.00	0.50	8
15/11/2017	6.30	1.25	8
17/11/2017	6.00	2.00	7
17/11/2017	7.00	1.00	7
21/11/2017	6.00	2.75	8
17/11/2017	10.30	2.50	8
21/11/2017	9.00	5.75	7
22/11/2017	9.00	0.75	7
22/11/2017	10.30	2.75	8
22/11/2017	9.00	0.50	7
23/11/2017	6.45	2.00	4
23/11/2017	5.30	0.25	8
23/11/2017	6.00	1.00	8
24/11/2017	6.00	2.50	7
24/11/2017	6.30	1.00	7
27/11/2017	6.00	1.50	8
27/11/2017	8.30	1.00	7
27/11/2017	5.30	2.00	4
28/11/2017	6.30	1.00	7
28/11/2017	5.30	1.00	8
28/11/2017	5.30	2.00	8
29/11/2017	5.30	1.25	8
8/12/2017	11.00	1.00	7
12/12/2017	5.30	1.50	8
12/12/2017	7.00	2.25	4
12/12/2017	9.15	1.75	7
14/12/2017	8.15	1.25	8
28/12/2017	10.00	2.00	4

28/12/2017	12.00	3.00	8
29/12/2017	10.00	1.75	7
29/12/2017	6.00	2.00	8
20/12/2017	6.30	4.00	7
5/02/2018	7.00	3.50	8
5/02/2018	11.00	0.50	7
6/02/2018	7.00	2.50	7
7/02/2018	7.00	1.00	4
7/03/2018	10.45	2.75	7
7/03/2018	12.45	2.25	8
7/03/2018	11.00	3.00	7
7/03/2018	2.00	3.00	8
8/03/2018	7.30	2.00	8
8/03/2018	7.30	1.00	7
9/03/2018	11.30	2.00	4
10/03/2018	11.30	2.00	4
4/04/2018	7.30	2.00	7
5/04/2018	7.30	1.50	7
18/04/2018	10.30	1.00	8
18/04/2018	11.30	0.25	4
18/04/2018	7.30	3.00	8
18/04/2018	10.30	1.00	4
23/04/2018	7.30	3.50	4
24/04/2018	12.30	1.50	8
27/04/2018	1.15	1.25	7
27/04/2018	11.30	2.00	7
28/04/2018	11.30	1.00	7
10/08/2017	2.15	1.75	4
10/08/2017	4.00	0.25	7
11/08/2017	8.00	0.75	7
11/08/2017	8.45	1.25	4
5/08/2017	9.00	1.00	4
5/08/2017	8.00	0.50	7
7/09/2017	8.00	1.75	4
7/09/2017	10.45	0.75	7
11/09/2017	10.45	0.50	7
11/09/2017	11.15	0.25	4
11/09/2017	2.45	1.00	4
11/09/2017	3.45	0.75	7
14/09/2017	7.30	0.50	4
14/09/2017	8.00	0.25	7
18/09/2017	7.45	1.25	7
18/09/2017	9.00	1.75	4
27/09/2017	1.00	1.00	4

27/09/2017	3.15	0.50	7
28/09/2017	7.00	7.50	7
9/10/2017	9.00	0.25	7
9/10/2017	10.00	1.00	4
19/10/2017	12.15	1.00	4
20/10/2017	6.30	1.00	7
23/11/2017	9.00	0.75	7
23/11/2017	7.45	0.25	4
24/11/2017	8.45	1.50	4
8/01/2018	6.30	2.00	4
9/01/2018	6.00	1.00	7
2/02/2018	1.00	0.50	4
2/02/2018	1.30	0.50	7
19/09/2017	2.30	1.00	4
20/09/2017	7.30	0.75	4
19/09/2017	4.30	1.00	4
7/10/2017	7.00	1.25	4
6/10/2017	8.30	0.50	4
10/11/2017	9.45	0.50	4
4/11/2017	8.30	0.75	4
23/11/2017	8.30	2.00	4
30/11/2017	5.30	1.00	4
30/11/2017	5.30	1.00	4
1/02/2018	9.30	2.25	4

Record of Spraying Times for the 2018-19 Growing Season on land adjacent to Plan Change 13 site

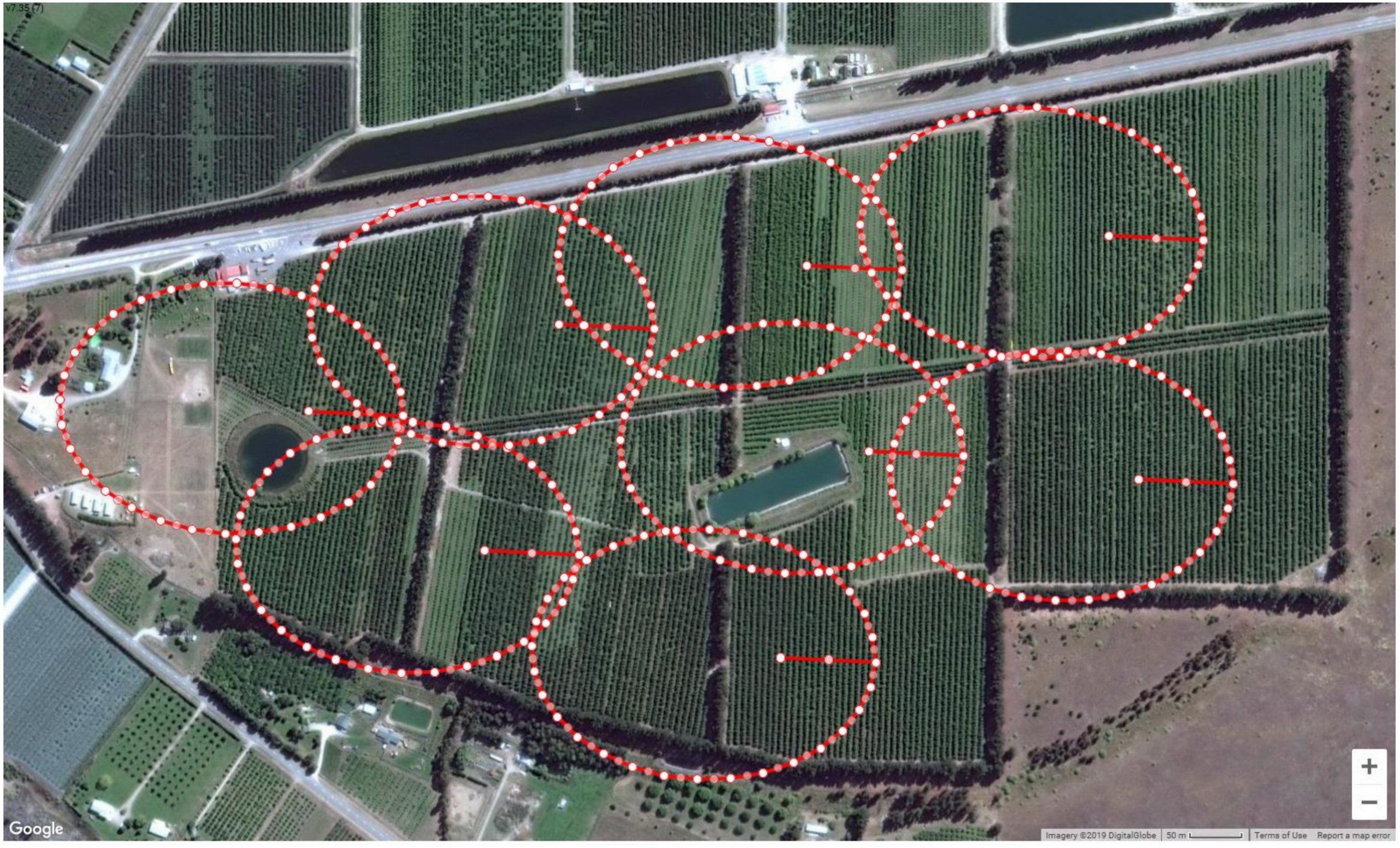
Block 4,7,8

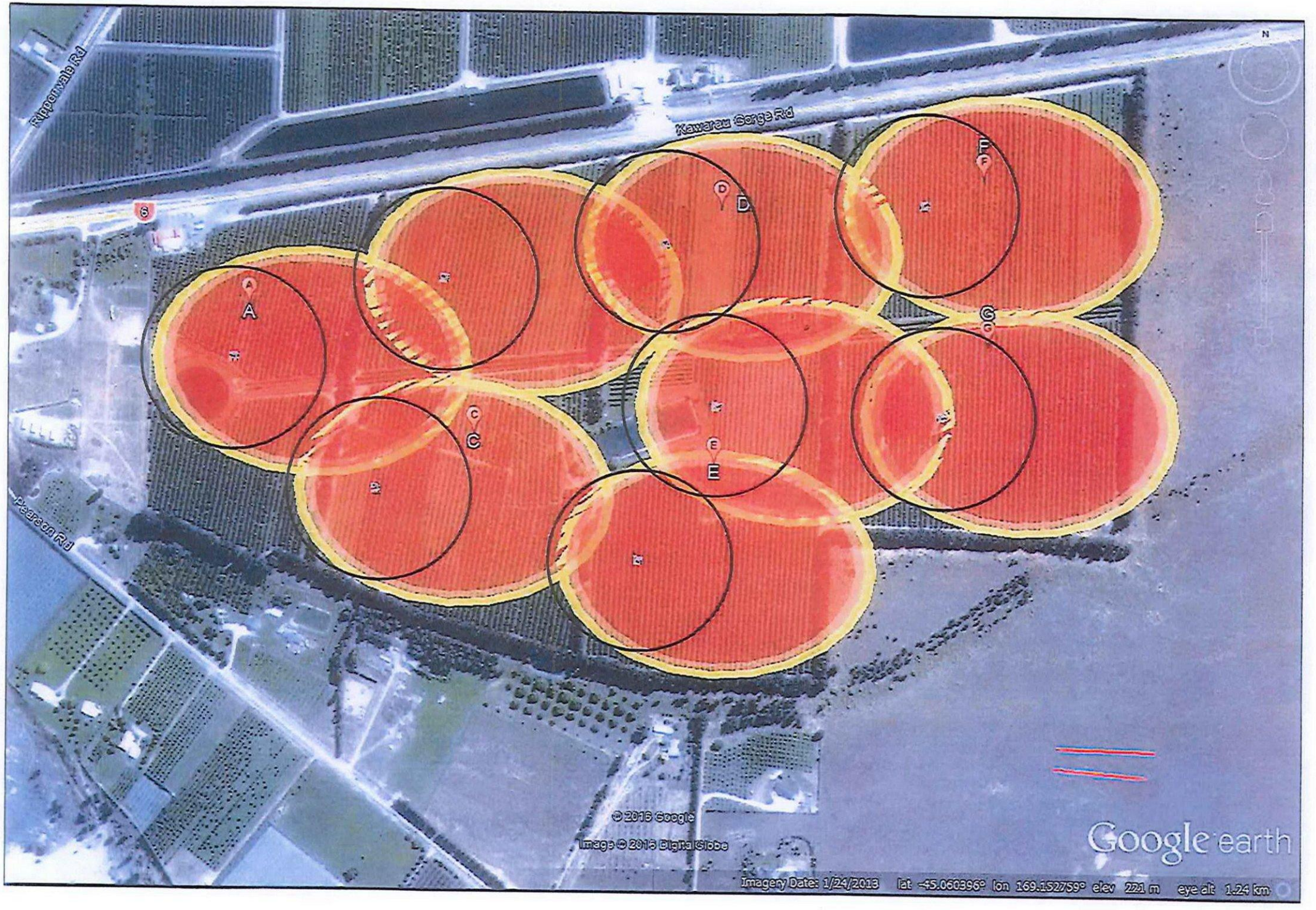
Date	Start	Time taken	Block
30/01/2017	7:00	0.5	4
7/01/2018	9:00	3.75	7
7/01/2018	9:00	5	8
7/01/2018	9:00	2	4
7/01/2018	13:40	1.75	7
30/01/2018	9:00	1	4
9/08/2018	8:00	5	4
9/08/2018	8:00	1	7
27/08/2018	8:00	6	7
28/08/2018	8:00	1	4
29/08/2018	8:00	3.75	8
29/08/2018	8:00	2	8
29/08/2018	8:00	4	4
30/08/2018	7:30	0.25	7
30/08/2018	11:30	1	4

30/08/2018	11:30	0.5	7
31/08/2018	8:00	0.5	4
7/09/2018	3:00	0.25	7
7/09/2018	3:00	0.25	4
7/09/2018	8:00	0.33	4
7/09/2018	8:00	0.33	7
10/09/2018	11:20	3	8
10/09/2018	11:20	2	7
10/09/2018	11:30	3	8
10/09/2018	11:30	2	7
11/09/2018	9:30	1.5	7
13/09/2018	9:30	0.25	7
13/09/2018	9:30	1.75	4
14/09/2018	9:00	1.5	4
15/09/2018	7:30	0.5	4
15/09/2018	7:30	1	7
15/09/2018	14:30	0.5	4
19/09/2018	10:00	0.25	7
21/09/2018	7:30	3.25	7
21/09/2018	7:30	1.5	8
21/09/2018	7:30	1.25	4
25/09/2018	7:30	0.5	7
25/09/2018	7:30	0.5	4
25/09/2018	9:15	0.75	8
25/09/2018	9:15	0.25	4
27/09/2018	7:30	1	8
28/09/2018	8:30	1	7
28/09/2018	8:30	1	4
28/09/2018	8:30	0.5	8
1/10/2018	7:30	3.25	7
1/10/2018	7:30	3.5	8
1/10/2018	7:30	1	4
3/10/2018	9:30	0.5	7
3/10/2018	9:30	0.5	4
3/10/2018	11:30	1.5	4
5/10/2018	7:30	0.5	8
8/10/2018	7:30	3	8
8/10/2018	7:30	0.5	7
8/10/2018	10:20	0.25	4
9/10/2018	7:30	3	7
11/10/2018	11:30	0.5	7
11/10/2018	11:30	0.5	4
15/10/2018	9:00	2.5	7
15/10/2018	9:00	0.75	8
19/10/2018	11:00	1	4
19/10/2018	11:00	2.75	8

19/10/2018	11:00	1	7
20/10/2018	10:45	0.5	4
20/10/2018	10:45	0.5	7
24/10/2018	7:00	0.25	7
24/10/2018	7:00	0.5	8
24/10/2018	7:00	2.5	7
26/10/2018	7:00	2.5	8
26/10/2018	7:00	1.5	4
26/10/2018	7:00	1	7
28/10/2018	7:00	0.25	8
29/10/2018	12:00	0.5	4
6/11/2018	7:00	3.25	7
6/11/2018	7:00	1.75	8
6/11/2018	11:15	1.25	4
6/11/2018	11:15	0.75	8
7/11/2018	7:00	0.75	8
12/11/2018	8:00	0.5	7
12/11/2018	10:30	0.5	7
13/11/2018	7:30	0.5	8
13/11/2018	7:30	0.75	7
13/11/2018	8:30	1	7
13/11/2018	9:30	0.5	7
14/11/2018	6:00	0.75	7
14/11/2018	8:00	0.5	7
14/11/2018	8:00	1.5	8
14/11/2018	8:00	1.25	4
16/11/2018	13:00	3	7
17/11/2018	7:00	1	7
21/11/2018	2:00	0.5	4
21/11/2018	8:30	1.25	8
21/11/2018	12:45	1	7
21/11/2018	15:15	0.5	4
23/11/2018	7:00	0.33	7
26/11/2018	7:00	3.5	7
26/11/2018	9:20	0.25	8
26/11/2018	10:00	1	7
26/11/2018	14:45	2	8
26/11/2018	15:00	1	7
26/11/2018	15:15	1	8
26/11/2018	15:45	1.75	4
27/11/2018	7:00	1	8
27/11/2018	7:00	2.5	7
27/11/2018	10:15	2.25	8
27/11/2018	10:15	2.25	7
28/11/2018	7:00	1.25	8
28/11/2018	11:00	0.25	4

30/11/2018	7:15	1	4
3/12/2018	6:00	2	8
3/12/2018	7:00	1	8
3/12/2018	8:00	1	7
3/12/2018	8:20	1	7
3/12/2018	11:50	1.5	4
6/12/2018	6:00	1.5	7
6/12/2018	6:00	2	4
6/12/2018	8:00	1.5	8
6/12/2018	8:00	1.5	7
10/12/2018	6:00	3	8
13/12/2018	6:00	1.75	8
13/12/2018	6:00	1.5	7
13/12/2018	6:00	1.5	7
13/12/2018	6:00	1.25	4
13/12/2018	7:00	2	4
13/12/2018	10:50	1.5	7
14/12/2018	6:00	2	7
14/12/2018	6:00	2	8
14/12/2018	6:00	1	4
15/12/2018	6:00	1	7
17/12/2018	6:00	4.5	8
17/12/2018	6:00	2	4
17/12/2018	6:00	2	7
21/12/2018	6:00	2	4
21/12/2018	6:00	0.5	4
24/12/2018	8:30	3	7
24/12/2018	10:00	0.5	7
28/12/2018	6:00	1.25	8
8/01/2019	8:30	1	7
8/01/2019	8:30	1	4
30/01/2019	7:00	1	7
13/12/2048	6:00	3	8


V7.35 (7)
Google
Imagery ©2019 DigitalGlobe
50 m
Terms of Use
Report a map error


Ripponvale Rd
Kawarau Gorge Rd
6
A
C
D
E
F
G
Pearson Rd
© 2016 Google
Image © 2016 DigitalGlobe
Google earth
Imagery Date: 1/24/2013 lat -45.060396° lon 169.152759° elev 221 m eye alt 1.24 km

TOXIC

KEEP OUT OF REACH OF CHILDREN

Read the Label Carefully Before Use.

Sevin® Flo

INSECTICIDE

Broad spectrum insecticide for the control of certain chewing and sucking pests and for the chemical thinning of apples.

Contains:
500g/litre carbaryl in the form of a suspension concentrate

Group 1 Insecticide

AGRECOVERY
Rural Recycling Programme

NovaSource

Registered to:
Tessenderlo Kerley, Inc.
2255N. 44th Street, Suite 300
Phoenix, Arizona 85008 USA
Distributed by:
Etec Crop Solutions Limited
PO Box 51584, Pakuranga
Auckland, New Zealand
Phone: 0800 100 325
www.etec.co.nz

NET CONTENTS: **10** Litres

Etec CROP SOLUTIONS

190 Wide X 200 High

This product must be under control of an approved handler during use.

Tracking: A record must be kept of the use and disposal of this product.

HSNO Classifications:
6.1C, 6.7B, 6.9B, 9.1A, 9.2B, 9.3B, 9.4A

WARNING: Toxic - May be harmful if swallowed. **Harmful** – suspected of causing cancer. **Harmful** – presumed to may cause organ damage from repeated oral exposure at high doses. **Toxic to aquatic organisms** – must not be applied directly onto or into water. **Toxic to the soil environment. Toxic to terrestrial vertebrates. Very toxic to terrestrial invertebrates.**

Toxic to bees: Spray must not contact plants in flower if they are likely to be visited by bees.

PRECAUTIONS:

PERSONAL PROTECTION: Do not eat, drink or smoke while using. Wear protective clothing such as impervious gloves, waterproof hat, coat and trousers when using. Remove protective clothing and wash hands and face thoroughly before meals and after work. May be harmful if swallowed, inhaled or absorbed through the skin.

RESTRICTED RE-ENTRY INTERVAL: The REI for Sevin-Flo is 12 hours after application. The person in charge of the application area is responsible for making sure that no person re-enters the treated area until the end of the REI. A person may re-enter the treated area before the end of the REI if full PPE and RPE is worn as if that person is applying the substance.

SPRAY DRIFT: The person applying this substance must not cause adverse effects beyond the boundary of the treated property, and must also avoid adverse effects from spray drift occurring. Mitigation measures employed must be recorded as part of the application records (i.e. in spray diaries).

STORAGE: Store in original container tightly closed and in a locked dry, cool, well ventilated area, away from foodstuffs. When stored appropriately this product should show no significant degradation for 2 years.

SPILLS AND DISPOSAL: When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Clean up spilled material, collect and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled, contain and absorb in suitable inert absorbent material and collect in drums as above. Deal with all spills immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

DISPOSAL: Dispose of this product only by using according to the label or at an approved landfill. Avoid contamination of any water supply with product or empty container.

CONTAINER DISPOSAL: Triple rinse container and add residue to mixture. Take to an Agrecovery collection site. If this is not possible bury in an approved landfill.

FIRST AID: If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately. If skin contact occurs, remove contaminated clothing and flush skin with running water. If splashed in eyes, wash out immediately with water. If inhaled move the victim to fresh air immediately.

Sevin Flo is a carbamate insecticide recommended for the control of certain chewing and sucking insects and for the chemical thinning of apples. If thinning is **NOT** required, **Sevin Flo** should **NOT** be applied for 28 days after petal fall in apples.

IT IS AN OFFENCE TO USE THIS PRODUCT ON ANIMALS.

NOTIFICATION OF USE

Written notice must be given to anyone likely to be directly affected by the application, these persons include occupiers and owners of land, dwellings or buildings or property that is immediately abutting the application area.

Notice must be given at least two working days but not more than four weeks in advance of the application.

The notice must specify the following:

1.Where the product will be applied.
2.The date and approximate duration of the application.
3.Steps that notified parties should take to avoid exposure.
4.Name of the organisation applying the product.
5.Contact details of the person in charge of the application – e.g. phone numbers, email address, postal address including a contact number for immediate contact during application.

DIRECTIONS FOR USE

The rates suggested are for high volume spraying to the point of run-off. For concentrate spraying adjust dilution rates accordingly.

RESISTANCE MANAGEMENT

SEVIN FLO is a carbamate (Group 1) insecticide. Excessive use of any insecticide may lead to the development of resistant pests. Follow label directions and use in programmes with insecticides from a different action group. Consult http://resistance.nzpps.org/ for alternate modes of action.

Thinning – Apples only:

Apply as a separate application during the 14 day period following petal fall. Coverage of the fruitlets is essential to obtain maximum thinning.

Delicious, Red Delicious:	80 ml/100L
Braeburn:	80–120 ml/100L
Granny Smith:	Use only 25–40 ml / 100L (Use with caution. This apple is easily over-thinned)
Fuji:	120–160 ml l/ 100L
Gala (and strains), Dougherty, Red Dougherty:	Use 160 ml / 100L. Two applications may be necessary, the first at petal fall, the second 7–10 days later.

DO NOT USE UNDER FROST CONDITIONS

(ie. TEMPERATURES NEAR FREEZING POINT) as this may cause russet. Use on Golden Delicious may cause russet. For further advice on rates or use on cultivars not listed, consult your local advisor.

PEST CONTROL:

All food Crops: The maximum application rate is 6L of product/ha and this product must not be applied more than three times per crop cycle.

Apple, Pears and Nashi: Leafroller caterpillars 160-240 ml / 100L; codling moth 120 ml / 100L; leaf hopper, apple and pear midge 160 ml / 100L; mealy bug and scale insects (crawlers) 240 ml / 100L.

NOTE: Best results are obtained when used for the prevention of mealy bug and scale rather than attempting to eradicate established infestations.

Avocados: Leafroller caterpillars, mealy bug, thrips and scale insects. Use 160 ml / 100L. **Sevin Flo** is best combined in a regular preventative spray programme with Diazinon 50W (100g / 100L). Thorough tree coverage is essential. Increased spraying volumes will probably be required for close planted trees.

Bushfruit & Canefruit: (Blackberries, blueberries, boysenberries, black & red currants, gooseberries, loganberries, raspberries – main and Autumn crop types). Leafroller caterpillars, other caterpillars and raspberry bud moth, use 240 ml / 100L at 14 day intervals from 100% petal fall (flowering finished) until immediately before harvest. Repeat spraying, if required, may be made during the harvest period. Observe the withholding period and maximum application frequency.

Maize & Sweetcorn: Army caterpillar and corn earworm, use 1.6-2.4 L/ha (240 ml / 100L).

Ornamental Flowers: Leafroller and other caterpillars; crawler stages of scale insects, use 240 ml / 100L.

Persimmons: Leafroller caterpillars, mealy bug, thrips and scale crawlers, use 240 ml / 100L. Thorough coverage is essential.

NOTE: To control mealy bug, and scale, **Sevin Flo** is best used in a preventative programme, rather than used to eradicate established infestations.

Stonefruit: Leafroller caterpillars, use 160-240 ml / 100L; Oriental fruit moth, use 240 ml / 100L; thrips, use 120 ml / 100L. Apply from fruit set to harvest at 14 day intervals up to maximum application frequency.

Strawberries: Leafroller caterpillars, other caterpillars and thrips, use 240 ml / 100L. Use on first appearance of the insect pest. Repeat as necessary up to maximum application frequency.

Tamarillos: Grass grub beetles, leafroller caterpillars and other caterpillars, use 240 ml / 100L. Thorough plant coverage is essential for best results. Use on appearance of the insect pest. Repeat as necessary up to maximum application frequency.

Cabbages and Tomatoes: Tomato fruitworm, loopers and other caterpillars, use 2.4–4.8 L / ha (240 ml / 100L).

For motorized mist blower knapsacks: Use 70 ml / 10L of water on middle restrictor and throttle settings. Lightly move all foliage in the airstream.

IT IS AN OFFENCE FOR USERS OF THIS PRODUCT TO CAUSE RESIDUES EXCEEDING THE RELEVANT MRL IN THE FOOD NOTICE: MAXIMUM RESIDUE LEVELS FOR AGRICULTURAL COMPOUNDS.

WITHOLDING PERIOD:

When used as directed, **Sevin Flo** can be applied to fruit, cabbages and tomatoes up to one day from harvest.

Do not allow stock to graze treated crops for 3 days after spraying.

COMPATIBILITY:

Compatible with most known sprays, but incompatible with alkaline materials such as lime sulphur and Bordeaux mixture and spraying oils.

Batch No.
DOM

EL87C

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