

**BEFORE COMMISSIONERS APPOINTED ON
BEHALF OF OTAGO REGIONAL COUNCIL**

RM20.005

IN THE MATTER of an application for
resource consent

PISA HOLDINGS LIMITED

Applicant

**BRIEF OF EVIDENCE OF TIMOTHY HAMILTON FRASER JONES ON
BEHALF OF PISA HOLDINGS LIMITED**

**GALLAWAY COOK ALLAN
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DUNEDIN**

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Introduction

1. My name is Timothy Hamilton Fraser Jones. I am a Director of Pisa Holdings Limited. Pisa Holdings owns land that is to be irrigated by water applied for under RM20.005.
2. I am also CEO and a Director of 45 South Management Limited which manages orchards for over 20 clients in the Cromwell Basin. Pisa Holdings is one of those clients and when it reaches peak production, will produce 1000T of cherries with a value exceeding \$20M annually. Pisa Holdings uses water received from DP95789.
3. I have been involved in the Summerfruit industry for nearly 25 years and believe I am well qualified to give evidence regarding fruit production in the Cromwell area.
4. I have a Horticultural Diploma from Massey University completed in 1987.
5. I have been on many industry boards and committees over the years and am presently Chairman of Summerfruit New Zealand. This is the nationally elected board to oversee all Summerfruit matters both domestically and internationally.

Scope of Evidence

6. The purpose of this evidence is to:
 - a. describe the way that we use irrigation water on our property.
 - b. Set out the background of irrigation developments that we have undertaken in anticipation of renewing our deemed permits.
 - c. Set out remaining upgrade plans that we have
 - d. Discuss the importance of the irrigation water for our operation.
7. Pisa Holdings Ltd owns 125 Ha of land of which 44 Ha has been planted in cherries that are irrigated by water sourced from Amisfield Burn. Site selection is a key factor in developing a cherry orchard. The site was identified as a potential cherry site

three years prior to planting the first block. Weather monitoring showed it had superior characteristics over sites at lower elevations with the frost risk being much lower. Frost damage can damage young trees, leading to infection from *Pseudomonas* bacteria and tree death. Frost can also kill buds, flowers and fruit when the trees start cropping.

8. The first cherries were planted in 2012 with development speeding up in recent years in an effort to be completed prior to the 2021 water right renewal, as advised many times at public meetings by the Otago Regional Council.

Year Planted	Hectares
2012	1.60
2013	1.60
2014	5.50
2015	3.40
2016	4.00
2017	7.40
2018	12.00
2019	3.50
2020	5.00
	44.0 Ha

9. The orchard is planted using a highly productive two-dimensional growing system that produces twice the yields of conventional plantings but requires much lower labour inputs. The first commercial yield of 3-5T/ha is achieved in year 4 after planting with full production of 15-20T/ha not realised until year 7. I have attached a realistic financial model that allows for seasonal influences (average 70% yield) that demonstrates it is not until year 10 that a positive return on investment can be achieved.

10. The orchard has been planted predominately in late season varieties, one named Sentennial, which is controlled by 45 South Management and is the latest maturing variety in New Zealand. This planting has been targeted for the lucrative Asian market and the annual Chinese New Year festival.
11. The cherry industry has grown rapidly in recent years with the demand for high quality cherries in Asian markets exceeding supply. The cherry production we get or will get from Pisa Holdings is incredibly important to the viability of our orchard business and is totally dependent on us retaining access to a reliable water supply. I will show that we use this water in a careful and sustainable way and that without this supply we would not be in a position to continue our orcharding operations
12. Without water for irrigation, it would be impossible to grow a commercial crop of cherries in Central Otago. The micro climate we enjoy in Central Otago – cold winters and hot dry summers is close to perfect for high quality cherry production. The soils are generally light but this is a characteristic that cherry trees prefer. This results in the requirement for irrigation throughout the summer to produce high quality cherries.
13. The investment we have made in the Sentennial variety, grown and marketed exclusively by 45 South, and planted on Pisa Holdings gives us a point of difference over other producers and allows us to extend our season by 6 weeks. This spreads our risk from weather events and gives us exclusivity in the market and the ability to offer the only cherries grown in NZ to consumers in SE Asia at the end of the season.
14. Although potentially lucrative in a good year, the Asian cherry market has very specific quality demands in regard to colour, size, and texture (crispness) of fruit. In order to land our fruit in the market at the right time (Chinese New Year is a key target) we need to pre-book air- freight cargo space out of New Zealand early in the season and then tightly control growing conditions to make sure the fruit hits the right specification at exactly the right time. Water plays a critical role in that equation. Growing cherries for export is not for the faint-hearted. A frost event in the

spring or untimely rainfall in the summer can totally destroy a crop which will result in large losses. The 2018/19 and 2019/20 seasons are testament to this.

Water Requirements

15. Cherry trees have a high requirement for water to sustain a good balance within the tree and produce fruit of the quality required by export markets. This is especially critical during early growth stages in October and November and the again prior to and during harvest from mid-December until late January. Water requirements after harvest are much less. Because we do not need water as much after the end of the cherry harvest our demand patterns fit quite well with autumn crops (such as grapes) or grazing pasture and winter fodder crops.
16. If at any stage during the growing season a cherry tree suffers stress due to lack of water it can have a devastating effect on the quality of the fruit harvested. Trees suffering from water stress produce fruit with no commercial value.
17. The fruit will be too small to market if it was not irrigated with the right amount of water at the right time throughout the growing season. If there was a shortage of water immediately pre harvest, the fruit softens and becomes worthless. An export cherry must be as crisp as an apple to meet consumer expectations and survive the rigours of the supply chain.
18. We hold the largest share in DP95789 with approximately 27% of the water allocation. During dry periods and especially leading up to harvest we require our full allocation to keep our trees and fruit hydrated enough to guarantee export quality fruit.
19. We irrigate our trees using advanced irrigation systems. Water is applied only when monitoring of soil moisture levels and daily evapotranspiration rates shows that irrigation is required and is delivered through micro sprinklers or dripline located adjacent to each tree. The amount of water used is such to only replace the deficiency and not to cause run-off. We have two storage dams on our property with capacity for nearly 25 million litres of water. We recognise the importance of water storage and have plans to construct a third dam to increase our storage capacity by another

20 million litres. We predict the cost of this to be around \$250,000. Construction of the third dam is planned for either winter 2021 or 2022.

20. Our orchard is located on some of the higher terraces above the western side of Lake Dunstan and we are totally dependent on water from the Amisfield Burn. We have been advised that ground water would not be available on our property.
21. We have no rights or mechanisms to access water from Lake Dunstan. This would involve huge cost and the need to get easements, consents and agreements from many landowners and government organizations to pump water a long distance. It is not an option for us and if forced down that track, we would have no option but to remove our orchard operations in this location.
22. We have developed our orchard in knowledge that this water supply will vary dependent on the season. We have mitigated the risk of very dry years and low water supply by developing the storage dams, and by planting different varieties with a long harvest window and therefore meaning we don't have the problem of needing large amounts of water over a short period. We have no plans to use water for frost fighting purposes and use helicopters to mitigate this risk as required. As mentioned, cherry trees can suffer some stress after harvest so when water levels traditionally drop in February and March, we can sustain our trees with less water.

Development Costs

23. Development and establishment costs for cherries are very high with full production not achieved until year seven. We spend over \$250,000/Ha to develop a cherry orchard, so far we have invested in excess of \$11.0M in the development of the Pisa Holdings block. This includes cost of land preparation, trees, growing structures, irrigation infrastructure, bird and wind protection nets and roading etc. Annual running costs are at least \$30,000/Ha before any harvest associated costs are accounted for. We don't see a positive return on our investment until year 10.

24. Some of the varieties we have planted have protected intellectual property rights associated that we have negotiated with plant breeders etc. We have spent years developing these varieties to get them right. We then identified the best locations to plant them (having regard to their particular characteristics) and developing marketing arrangements to maximise the return.
25. Cherry production is very labour intensive, and we have to employ both permanent and casual staff to successfully grow our valuable crop. On average we would employ 0.3 of a labour unit per Hectare. Therefore, to develop and run Pisa Holdings, 12 full time staff are employed. During harvest an additional 200 seasonal staff are employed to pick the crop.

Conclusion

26. We have 25 Hectares of producing orchard and another 20 Hectares coming into production over the next few years. The total orchard will not reach full production until 2027. We also have the potential to develop another 12 hectares at higher elevations on the property. The benefit of higher elevations is delayed maturity and the ability to supply export markets for a longer period.
27. We produce some of the best cherries in the world so there certainly remains potential to further develop the sector. However, given the significant upfront costs, long lead times, and other uncontrollable factors that accrue year to year it would not be prudent to continue to invest in this area unless there was certainty with respect to water availability. That is a variable that can be controlled.
28. Our operations generate significant flow on employment within the local economy. We utilise local service providers and suppliers and as described above are a significant employer. With respect to employment, we are currently working with our counterparts in the tourism sector investigating opportunities to employ staff from that sector who are unlikely to have work as a result of Covid-19. This will enable these staff to be retained within the region until the tourism sector begins to recover, and it

will also help us fill the likely staff shortages as a result of border closures.

29. We need the confidence to continue both with a water right that allows us the time and capacity to develop our orchard to its potential. As I have demonstrated, short term permits don't give us any confidence that we will ever get a return on our investment. A short term consent that may expire just as the property is reaching its potential is patently not workable, it gives our investors no confidence, puts many local jobs at risk and places valuable export earnings which are vitally needed by our nation as we recover from the effects of COVID-19 at jeopardy.
30. We are efficient and sustainable with our use of the Amisfield Burn water and it is our only available source. We would strongly request that the full allocation requested by Pisa Holdings be agreed on so we can continue our fruit growing business in Cromwell. We would also request that the term be long enough to give us the confidence to develop more land or restructure established blocks as new varieties are developed. It would also mean that the significant cost in addressing this consent process would not be incurred on a regular basis and it would give confidence to bankers that the property is sustainable.

Tim Jones

Pisa Holdings Limited

21 August 2020

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50.0 Ha Cherry Development - UFO
70% Production Revenue and Expenditure Forecast

20/08/2020

	Value	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Capital											
Land (/ha)	\$75,000	4,500,000									
Land Prep (/ha)	\$10,000	250,000	250,000								
Irrigation (/ha)	\$20,000	500,000	500,000								
Bird Net/Wind Protection	\$50,000	1,250,000	1,250,000								
Wind machines	\$75,000				375,000	375,000					
Trees (/tree)	\$22.00	733,150	733,150								
Planting Cost (/tree)	\$3.00	99,975	99,975								
Trellis/ha	\$15,000	375,000	375,000								
Pump per ha	\$2,500	125,000									
Dam	\$15,000	750,000									
Weed Matting	\$15,000	375,000									
Total Capital Expenditure		8,958,125	3,583,125	0	375,000	375,000	0	0	0	0	0
Revenue											
Area Year 1	25.00										
Area Year 2	25.00										
Area Year 3	0										
Trees/Ha	1333										
Yield T/ha Year 1 Planting					5	10	15	20	20	20	20
Gross Yield Year 1					88	175	263	350	350	350	350
Yield T/ha Year 2 Planting						5	10	15	20	20	20
Gross Yield Year 2						88	175	263	350	350	350
Gross Yield					88	263	438	613	700	700	700
Export %	70%				61.3	183.8	306.3	428.8	490.0	490.0	490.0
Local %	15%				13.1	39.4	65.6	91.9	105.0	105.0	105.0
Process %	10%				8.8	26.3	43.8	61.3	70.0	70.0	70.0
Waste %	5%				4.4	13.1	21.9	30.6	35.0	35.0	35.0
Export \$/tonne	\$14,000				857,500	2,572,500	4,287,500	6,002,500	6,860,000	6,860,000	6,860,000
Local \$/tonne	\$6,000				78,750	236,250	393,750	551,250	630,000	630,000	630,000
Process \$/tonne	\$1,000				8,750	26,250	43,750	61,250	70,000	70,000	70,000
Waste \$/tonne					0	0	0	0	0	0	0
					945,000	2,835,000	4,725,000	6,615,000	7,560,000	7,560,000	7,560,000
Gross Income					945,000	2,835,000	4,725,000	6,615,000	7,560,000	7,560,000	7,560,000
Expenditure											
Tree Maintenance											
Pruning /tree	\$3,000	49,988	99,975	199,950	199,950	199,950	199,950	199,950	199,950	199,950	199,950
Sum Prune /tree	\$0.50	16,663	33,325	33,325	33,325	33,325	33,325	33,325	33,325	33,325	33,325
Tree Train /tree	\$2,000	66,650	133,300	133,300	0						
Total		133,300	266,600	366,575	233,275	233,275	233,275	233,275	233,275	233,275	233,275
Pesticides/Fertiliser											
Pesticides /ha	\$2,500	25,000	50,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000
Herbicides /ha	\$0	0	0	0	0	0	0	0	0	0	0
Fertiliser /ha	\$1,000	25,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Foliar Nutrients /ha	\$500	12,500	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Total		62,500	125,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Irrigation/Frost Control											
Maintenance	\$200	5,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Fuel frost	\$300				7,500	15,000	15,000	15,000	15,000	15,000	15,000
Power/Fuel Irr	\$400	10,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Total Irrig/Frost		15,000	30,000	30,000	37,500	45,000	45,000	45,000	45,000	45,000	45,000
Machinery Operation											
Spraying /ha *20	\$100	25,000	50,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Mowing /ha *6	\$75	11,250	22,500	22,500	22,500	22,500	22,500	22,500	22,500	22,500	22,500
Net Retraction/ha	\$2,500				62,500	125,000	125,000	125,000	125,000	125,000	125,000
Mulching /ha *4	\$125			25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Weedspray /ha	\$200	20,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Fert Spread /ha	\$100	5,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Total		61,250	122,500	197,500	260,000	322,500	322,500	322,500	322,500	322,500	322,500
Harvest											
Cherries /kg	\$1,500			0	131,250	262,500	393,750	525,000	525,000	525,000	525,000
Total Harvest				0	131,250	262,500	393,750	525,000	525,000	525,000	525,000
Post Harvest											
Pack	\$2.50			0	185,938	557,813	929,688	1,301,563	1,487,500	1,487,500	1,487,500
Packaging	\$0.80			0	59,500	178,500	297,500	416,500	476,000	476,000	476,000
Freight	\$0.25			0	18,594	55,781	92,969	130,156	148,750	148,750	148,750
Commission (NZ Mkt)	12%			0	9,450	28,350	47,250	66,150	75,600	75,600	75,600
Levy (SummerfruitNZ)	0.75%			0	7,088	21,263	35,438	49,613	56,700	56,700	56,700
Total Post Harvest				0	280,569	841,706	1,402,844	1,963,981	2,244,550	2,244,550	2,244,550
General											
Pollination/ha	\$1,000			25,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Tree replacements	2%		14,663	29,326	29,326	29,326	29,326	29,326	29,326	29,326	29,326
Orchard Requisites/ha	\$1,000	25,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Total General Costs		25,000	64,663	104,326	129,326	129,326	129,326	129,326	129,326	129,326	129,326
Overheads											
Contingency	\$2,000	50,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Management/Consultancy		25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Total Overheads		75,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000
Total Expenditure		372,050	733,763	1,023,401	1,396,920	2,159,307	2,851,695	3,544,082	3,824,651	3,824,651	3,824,651
OPERATING SURPLUS (DEFICIT)		-\$372,050	-\$733,763	-\$1,023,401	-\$451,920	\$675,693	\$1,873,305	\$3,070,918	\$3,735,349	\$3,735,349	\$3,735,349
Capital Expenditure from above		8,958,125	3,583,125	0	375,000	375,000	0	0	0	0	0
Accumulated Cash Flow		-\$9,330,175.00	-\$13,647,063	-\$14,670,464	-\$15,497,384	-\$15,196,691	-\$13,323,386	-\$10,252,468	-\$6,517,119	-\$2,781,770	\$953,579

This financial projection is made for the exclusive use of the addressee.

The financial projection has been completed by 45 South Management Ltd on

the basis of the information in their possession and assumptions of

future events, and is an opinion of potential financial projection only.

45 South Management Ltd does not accept any loss suffered by the

Addressee in respect of or arising out of reliance on this financial

projection.