

Otago Regional Council  
File: RM18.345

Via email to; Alexandra.King@orc.govt.nz

Dear Madam

**Request for further information under section 92(1) of the Resource Management Act 1991 (the Act) – Consent Number RM18.345 – surface water take**

Further to your letter of the 30<sup>th</sup> January we reply as follows see *intellects*

**1. Irrigation**

- a. Which block will the 50 hectares of horticulture be located?  
*This block has now been deleted from the plan ( see Appendix 111*
- b. Complete section E.3 of Form 4.  
*See attached Plan entitled "LMS- LIC Current and Future Irrigation Areas". and attached in Appendix 111*

**2. Stock Water**

- a. Justification why there is need for 3.1 litres per second (L/s) for stock water? When 45,000 L/day is needed for stock and taking continuously for 24 hours this is 0.5 L/s.  
*As per Form 4 we have reworked the livestock water requirements now based on stockwater supply schemes to 3 separate areas.*

**3. Community Supply**

- a. Which block will the domestic lifestyle blocks be located? Is this currently irrigated?  
*On Lake McKay Station on a terrace on the NW side of Luggate. The area is not currently irrigated*
  - b. Justification why domestic houses require 3000 litres per day (L/day)? Council would consider that a residential dwelling would require up to 3000 L/day<sup>1</sup> during the summer months and 1000 L/day during the winter months. This would be an
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average of 2000 L/day throughout the year.

*The application includes the volume of 3000 l/day in the instantaneous amount of take (424 l/s) as it is expected that the larger volume will be required during the dry periods when it is likely that the water permits will be operating at the maximum take. This would also apply to the monthly volume applied for which is taken as a month in mid-summer with no rainfall when it is possible that the maximum take could be required for the duration of the month. The average amount of 2000 l/day has been used in the calculation of the annual volume required.*

#### 4. Water use

- a. Provide a water management plan, including but not limited to:
  - i. A detailed map indicating which land is to be irrigated;
  - ii. An irrigation plan that outline current and any future infrastructure.  
*See LM-LIC Irrigation Plan attachment in Appendix III*
- b. Confirmation that Luggate Irrigation water race will supply water for irrigation to Big River and future domestic use for 250 houses?  
*Yes this water race will supply both schemes and will supply the Home Block*
- c. Confirmation that Lake McKay currently supplies Stage 1 and Stage 2 irrigation. Can you confirm where the water is sourced from for irrigation of Home Block, Stage 3, East Extension, and stock water?  
*. The Lake McKay take (97803 and 2008.519) from the south branch of Luggate Creek supplies Stage 1 and 2 K lines and will supply Stage 3 , the Home Block will be irrigated from the Luggate Irrigation Co. takes in the south and north branch of Luggate Creek.Ltd .*
- d. It is noted in C.2 of the application that you intend to take 7 months per year, with the amended application to include community supply will you be taking 12 months per year?  
*Yes that is correct*
- e. Do you intend to take community and stock water under the current and any future minimum flow? If so, please provide rates and volumes.

*Community use will take priority in any rationing in the future. The proposed water requirement for the Community Scheme is 9 l/s during a dry period and the stockwater Scheme requirement is assessed as 6 l/s. With the proposed rationing scheme the water taken for irrigation would be scaled back as the Creek flows approach the minimum flow level. At such times the water taken for Community and stockwater supply would have priority.*

- f. **Intakes***“The Lake McKay upper intake in the Alice burn is a piped intake that is set up to take the full 170 litres per second. At around 200m from the intake the pipeline runs into a balancing/ bywash tank where any excess flow is bywash back to the Aliceburn. So since stage area was installed our use is in the range of 80 to 120 l/s ( refer Appendix VIII) depending on how many k line pods are set up at the time. ( this is dependent on some areas being under cultivation or possible not requiring irrigation in the shoulder seasons or following rainfall). So water from the pipeline is bywashed back to the south branch around 200m downstream from the intake. The amount of water being bywashed back to the creek will decrease as we bring Stage 3 into development and irrigation demand increases up to the level where the full 170 l/s, as under*
- g. *the current permits, will be required*  
*The Luggate Irrigation takes are from the North and South Branches, The North*

*Branch has a control gate but water volumes in this branch of the Creek as so low this is not used. Most water comes from an open take from the South Branch which is carried in a pipe over the South Branch. This is feed from Lake McKay at the top of the Pisa Range, Water flows naturally into the take so volumes vary from 100 to 180 l/sec( refer Appendix VIII ) through the measurement device. Use is controlled by a by pass gate further down the race. There are soil moisture probes installed, this ensures efficient use of water and means that over watering doesn't occur through the irrigation season. The by wash would be used in part for the Pittaway development.*

h. Fill in the blanks on the two tables below.

### Lake McKay Station and Luggate Irrigation Company Water Use

Current use:

Block	Use	Irrigated area (ha)	LIC Irrigation req (l/s)	LMS Irrigation req (l/s)
Big River	Pasture (0.7 l/s/ha)	108	75.5	
Loss in water race (10%)			8	
Stage 1	Pasture (0.6 l/s/ha)	85		51.
Stage 2	Pasture (0.6 l/s/ha)	83		46.6
Stage 1&2	stockwater			2
Big River	stockwater		1.5	
Sub Total		276	85	98.6

**Future development:**

<b>Block</b>	<b>Use</b>	<b>Irrigated area</b>	<b>Water requirements from LIC permits</b>	<b>Water requirements from LMS permits</b>
Pittaway (incl 8 ha of Big River and 22ha by SH6)	Pasture (0.7 l/s/ ha)	100	70	
stockwater			1.5	
Stage 3	Pasture (0.6 l/s/ ha)	115		69
Stage 3 stockwater	1.5 l/s			15
Home Block	Pasture (0.7 l/s/ha)	85	60	
Lifestyle blocks in residential development	Pasture (0.7 l/s/ha)	40 ha	28	
Home Block	Residential (3000 l/day/ household)	250 houses	9	
Sub Total			140.5	70
Total Current + Future Total on Permits			253.5	169.1
Available			254.7 l/s	169.8 l/s
			1.2 l/s	0.7 l/s

**5. Additional background information**

As noted in the Application Lake McKay Station and the properties supplied by Luggate Irrigation Ltd have been following a land development programme that spans the last 25 years. The installation of modern spray irrigation systems has been integral to this development. However there is a large cost involved in the irrigation infrastructure for this development and the development has been staged over a number of years. The continuation of the development programme is now dependent on securing the replacement of the water permits. The programme started with the previous land owners (the Mathewsons) entering into the pastoral land tenure review process around 1992. The land tenure review process was completed in February 2002 and resulted in 2,800 ha of the high country land going to the Department of Conservation and 5,600 ha of the lower altitude land being freeholded. Under the pastoral lease the development of land to exotic pasture and irrigation was limited by the lease.

agreement. So the justification in the tenure review process for giving up the high country grazing land was that freeholding of the lower country would allow the land to be developed and irrigated with the Luggate Creek water permits. The Mathewsons began the development process by converting the Tin Hut terrace lands to pasture. This included pest eradication and fencing costs. *See attached letter to ORC dated 3 Sept 2008 with further explanation on the early phase of the development programme.*

The Harveys purchased Lake McKay Station in 2008 and began the development of the irrigation scheme on the improved pasture areas. The original water take for permit 97803 from the south branch of Luggate Creek (also referred to as the Aliceburn or the Fall burn ) was via a 5km long water race and the first stage of the development of the Scheme was the installation of pipeline in this water race. Piping the race has saved us around 30 to 40 litres per second in losses in the race and this water is now used for irrigation. The installation of the pipeline and the distribution lines for the Stage 1 area was completed by 2012 and the Stage 2 area was commissioned in 2014 with a total cost of \$1.5M. (See attached reports from Waterforce with details of the Scheme and cost estimates.)

In the same period the Harveys purchased the Big River property on the north side of SH6 and completed a full conversion of the land to modern pasture and spray irrigation with the installation of 2 centre pivots and accessory K line. The cost of the irrigation on its own was around \$1.5M and the conversion of the land installation of an underpass under the highway additional to this. This property is irrigated with allocation from the Luggate Irrigation scheme and was previously irrigated by contour flood irrigation methods.

The Big River property was sold to Crystal Rivers Ltd in 2017. The new owners have extended the irrigation of the Big River block with K lines on the 8 ha at the north end of the block. They are also working on a conversion to spray irrigation on the neighbouring Umbers block (*see attached Plan "Irrigation Concept V1 – PGG Wrightsons Feb 2019*)

On Lake McKay Station the next stages for the irrigation development programme are the Home Block, supplied from the Luggate Irrigation water permits and the Stage 3 and Stage 3 Extn areas supplied from the Alice Burn permits. See attached reports from Waterforce for more detail on the proposed irrigation for these areas;;

*Ocmis Hose and K Line Irrigation Scheme – 1 Feb 2011 – for the Home Block.  
And  
Stage 2 K Line and Stock water & Upgrade to Stage 3 Water supply Option - 1 July 2013.*

These plans represent the continual development of Lake McKay Station and the properties associated with Luggate Irrigation Ltd. The development are costly and therefore has to be done in stages with planned investment for the properties. Hence the 25 year development period to date.

The option of taking the Luggate Irrigation Ltd requirements from the Clutha has been investigated twice, When the original Pivot scheme was developed and again in 2017. This part of the Clutha has been investigated as part of the once proposed hydro scheme, Drilling in the area has shown that at this point the Clutha is flowing on the old lake bed which is very impervious. For this reason it

is not possible to extract water by the normal bore beside the river, extraction would only be possible by an expensive buried pipe intake on the bed of the river.

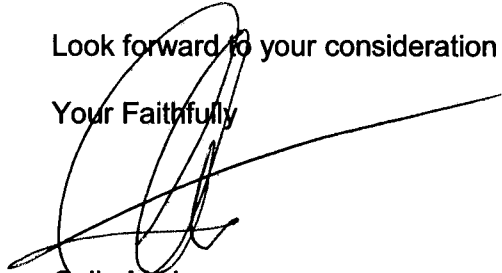
Part of Lake McKay is being subdivided off for residential development. This is purchased by Minaret Resources Ltd formed by Murray Frost. The 12 ha area on the outskirts of Luggate has recently been approved in the proposed QLDC District Plan for residential zoning. The Upper Clutha area has experienced rapid growth in the last few years and there is a shortage of land for residential development. The 70 hectare block on the terrace on the terrace to the north west of Luggate has access to SH6 and is considered suitable for residential Development.

**Affected Parties**

A copy of this response will be sent to the identified Affected parties> We are working on a response to NZTA but have not any formal response from Fish and Game ; DOC; Aukaha; or Te Ao Marama.

Look forward to your consideration

Your Faithfully

A handwritten signature in black ink, appearing to read 'Colin M Harvey', is written over the typed name and extends across the typed address below.

Colin M Harvey  
Lake McKay Station Ltd  
PO Box 36240 Northcote