

19 November 2020

To Whom It May Concern,

Saltwater Creek Flow Measurements

Last season I was contracted by Greg Morriss to measure the flow in Saltwater Creek (Sefton) at sites relevant to his resource consent. Gaugings were undertaken in January and March 2020 with a further scheduled visit in April cancelled due to COVID-19 restrictions.

Measurements were undertaken over the period of low tide to negate any tidal effects. Results of flow measurements are shown in Table 1.

Table 1 – Flow measurement results, Saltwater Creek 2019/20 season

Site	Grid Ref.	Date	Time (NZST)	Flow (L/s)
Saltwater Creek at Toppings Rd	E2483165 N5772326	28/01/2020	13:33	137
Saltwater Creek at Factory Rd	E2484373 N5772452	28/01/2020	14:50	236
Saltwater Creek below Morriss pump	E2485688 N5772814	28/01/2020	15:42	249

*Morriss irrigation abstraction (between gauging site at Factory Rd and gauging site downstream of pumps) was ~44 L/s.

Site	Grid Ref.	Date	Time (NZST)	Flow (L/s)
Saltwater Creek at Toppings Rd	E2483165 N5772326	12/03/2020	12:32	76
Saltwater Creek at Factory Rd	E2484373 N5772452	12/03/2020	13:39	183
Saltwater Creek below Morriss pump	E2485688 N5772814	12/03/2020	14:28	238

*Note that there was no irrigation abstraction from the Morriss pumps.

Both gauging runs show a significant increase in flow between the Toppings Road and Factory Road sites. Visual observations and aerial images indicate at least three tributaries discharging into Saltwater Creek between the two gauging sites. The limited record of concurrent gaugings by Environment Canterbury (ECan) is also consistent in showing increased flow at the downstream site (ECan flow gauging results attached – as provided by ECan when requested 27 January 2020).

The Morriss/Eder irrigation takes are the only abstractions from Saltwater Creek that are below Factory Road and they are currently tied to a minimum flow restriction at Factory Road. As flow measurement results indicate there is a significantly increased flow regime through the Factory Road reach compared with that at Toppings Road, which gives basis to retain the Factory Road minimum flow site rather than adopting the proposed change to Toppings Road. Moving to the Toppings Road minimum flow site would likely significantly reduce the reliability of irrigation water for the Morriss' farming operation without achieving any direct environmental benefit. All other

takes from the main stem of Saltwater Creek are above Toppings Road and therefore directly influence the flow at the Toppings Road minimum flow site.

If you have any queries, please feel free to contact me.

Regards



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