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## **Memo – Gauge board setup details, St Dizier Creek above Tunnel and Webber Creek 100 Upstream of Old Rail Line.**

### ***St Dizier Creek above Tunnel***

The purpose of this site is to monitor the flow in St Dizier Creek prior to potential mining in the catchment. The data generated will be important as there maybe river diversion requirements associated with future mine planning options. The flow data generated can be used to verify catchment yield and rates of change in river flow. The flow data will also provide more accurate mass load calculation for water auditing within the catchment.

The site selection for the gauge was made by Entura and further detail is provided in the report, 'St Dizier Creek flow estimate report, September 2014'.

<b>Item Description</b>	<b>Value</b>
Date of Measurements	19-May-2015
Gauge board '0' point below benchmark (m)	0.921
Cease to flow level measured (Gauge Board height m)	+0.017

*Source:* Measurements taken with Laser level

### **Installation Notes**

<b>Item</b>	<b>Rating</b>	<b>Rational</b>
Flow Control	Fair	Flow is restrained by competent rock outcrop in pool where gauge board is placed. There is some loose rock on the base of the control point that may alter the level flow relationship with time. Also makes the measurement of the cease to flow level imprecise. Bend in river after control, not ideal.

Gauge Board stability	Fair	The gauge board is secured to weathered granite with similar consistency to clay. Due to moss the material does appear to be competent rock. There is potential for movement and the height of the gauge board relative to the benchmark should be checked periodically. There is a possibility gauge board will be removed in flood, but is protected by embankment. 5 anchor points have been used to overcome the above issues.
Benchmark	Excellent	The benchmark is installed in solid rock (bottom right of Figure with blue oval around approximate location).
Safety	Reasonable	Due to the presence of the tunnel downstream s gauging during higher flows via wading could be hazardous. Assessment will have to be made prior to each gauging. Entura may need to be contracted for higher flow rating curve development if required.



Figure 1 – St Dizier gauge board with benchmark bottom right on rock outcrop.

## **Webber Creek 100 m upstream of old railway track**

The Webber Creek is located in a valley that is well suited to a tailings dam, given current knowledge.. The site is not ideal as the creek runs through a wooded flood plain with very few rock outcrops. The Creek is named after John's golden retriever (thought this is important to save future historian a lot of trouble).

<b>Item Description</b>	<b>Value</b>
Date of Measurements	20-May-2015
Gauge board '0' point below benchmark (m)	1.085
Cease to flow level measured (Gauge Board height m)	+0.051

*Source:* Measurements taken with Laser level

### **Installation Notes**

<b>Item</b>	<b>Rating</b>	<b>Rational</b>
Flow Control	Poor	Flow is restrained earthen control and is likely to move with time. Gaugings are recommended while this flow station is used.
Gauge Board stability	Fair	The gauge board is driven into rocky ground with pole driver. The pole may move if hit by log during flood. The gauge board has a slight lean, but this is not likely to lead to substantive error in measurement.
Benchmark	Poor	The benchmark is installed in earth as no suitable Rock could be found. The benchmark is a long bolt hammered into the ground in an endeavor to provide stability.
Safety	Requires attention	The nearby rotten tree needs to be cleared to ensure that they do not fall on samplers. Once this work is carried out the site will be relatively safe with normal precautions associated with remote sites.



Figure 2 – Webber Creek gauge board with benchmark top middle on earthen mound.