

Condition XX. Turbidity

- a. Turbidity is to be continuously measured at four locations, 1) the Mararoa River at Weir Road, 2) at a 'Representative Site' in the existing and 3) new channels as defined in General Condition 15(d), and 4) Site 1.*
- b. If turbidity at the Mararoa River at Weir Road either exceeds 28 NTU, or exceeds 11 NTU when the Mararoa River flow is 40 m³/s or more, a turbidity flushing flow of Mararoa flow + 5 m³/s will be released through the MLC. The MLC gate setting must be further adjusted whenever the Mararoa flow changes by ± 5 m³/s**.
- c. If the turbidity at either of the Representative Sites or the Site 1 exceed 2 NTU***, a turbidity flushing flow of Mararoa flow + 15 m³/s**** will be released through the MLC. The MLC gate setting must be further adjusted whenever the Mararoa flow changes by ± 5 m³/s.
- d. Turbidity flushing flows will stay in effect until the turbidity site(s) registers <2NTU.
- e. Records of continuous turbidity monitoring and the magnitude and duration of any turbidity flushing flows, are to be provided in real time to the Consent Authority by 31 July.

NOTES:

*Two of these sites are the existing monitoring sites, and the other two are new. From Dr Hoyle's evidence, we assume that Site 1 is the existing Waiau Arm turbidity monitoring site, map below. It appears that Site 1 is 2.3 km upstream of the MLC.

**This measure is derived from the Turbidity Flood Rules of the Gate Operating Procedures for Lake Manapouri, prepared by Meridian Energy Ltd and the Guardians of the Lakes.

***This is the 95% turbidity value for the Waiau Arm as described in para 54 of Dr Hoyle's evidence. Using the 95th percentile for turbidity in the Waiau arm provides a high degree of protection of the high quality state of the water quality in the Waiau Arm of Lake Manapouri, a natural state water body.

****15 m³/s is designed to achieve a flow of 5 m³/s in the existing channel specified in the Turbidity Flood Rules of the Gate Operating Procedures for Lake Manapouri once the new channel has been constructed, as the existing channel will reduce to carrying 1/3 of the Waiau Arm flow.

