

QMM's encroachment onto the lake bed - comparing satellite images: 2009 and 2016



Figure 1a Buffer zone area in question in 2009

Figure 1b Buffer zone area in question in 2016

The satellite images were obtained from Google Earth and are dated 1st November 2009 and February 12, 2016.

Using an Ordinary High Water Level (OHWL) provided by Rio Tinto (0.6 masl), defined by the **blue line** in both images, the Ozius study measures that mine encroachment has proceeded 52 metres onto the lake bed (**see blue arrow**).

Emerman, using a more accurate OHWL (4.6 masl) defined by the **red outline**, demonstrates QMM's encroachment of 117metres onto the bed of Lake Besaroy (**red arrow**).

When the 50metre buffer, represented by the **purple line** using an OHWL of 0.6 masl is used (Ozius), the total violation of the buffer is 52 + 50 = 102metres.

Using 4.6 masl as the OHWL, the buffer must be set back from edge of the lake (**red line**) by 50metres, so that total violation equates to 117 + 50 = 167metres (Emerman, 2018). These violations are clear when comparing the two images across the different time periods.

Note:

Dr. Emerman has studied the Lidar mapping data used by Ozius and provided an addendum to his report to address the discrepancies in the respective calculations (Emerman 2018). These are due to Ozius accepting Rio Tinto's assumption of a 0.6-masl OHWL – which is incorrect by RT's own admission; and using different data (Lidar vs. NASA satellite elevation data). The Lidar data (collected in 2012), according to Dr. Emerman, does not measure the water level of the lake or much of the buffer area in question. It is of poor quality, lacking methodological explanation.