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Ministry of Environment
Mining Operations Environmental Protection
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WEEKLY POST-TSF BREACH REPORT – WEEK OF APRIL 15 – 21, 2015

Water Management

Polley Lake Dewatering	Polley Lake water elevation = 922.64 m (April 21 st) In order to maintain the Polley Lake water level, water from Polley Lake continued to discharge through the completed outlet structure into Hazeltine Creek this week at a rate of approximately 0.30 to 0.35 m ³ /s.
TSF Water Management	All water from the TSF water collection system continues to be transferred to the Springer Pit via the Central Collection Sump. No releases of water to the environment occurred this week. Please refer to previous weekly reports, such as the December 31 st , 2014 report, for an overview map of the water management system.

Government, First Nations and Stakeholder Engagement

Publication of Monitoring Results and Rehabilitation Updates	Mount Polley will continue to present interpreted environmental monitoring results and updates on remediation work on the Mount Polley Updates page of the Imperial Metals website (www.imperialmetals.com). On April 16 th a video update on Hazeltine Creek rehabilitation was posted.
Engagement Activities and Communications with Regulators	Activities relating to government, First Nations, and stakeholder communication and engagement this week included: <ul style="list-style-type: none">• The weekly Ministry of Environment (MoE) update meeting on April 15th.• A Community Open House is scheduled for 6:30pm on April 22nd at the Gibraltar Room in Williams Lake.• A Community Meeting is scheduled at Sugar Cane First Nations Reserve on April 23rd.

Sediment and Erosion Control Measures

Silt Curtain	The turbidity barrier (silt curtain) installed in Quesnel Lake near the outlet of the new Edney (Hazeltine) Creek channel, downstream from the Lower Hazeltine Creek sedimentation ponds, is in good condition.
General	<p>Environmental monitors are monitoring sediment and erosion control and rehabilitation work in Upper, Middle, and Lower Hazeltine Creek. This monitoring is now being conducted by MPMC staff.</p> <p>27,080 tonnes of rock, including angular rock and spawning gravel, were hauled to the Hazeltine Creek area this week for use in rehabilitation work. Screening of material for creation of fish habitat features at an on-site gravel pit continued this week.</p> <p>Rock liner material being used is low sulphur rock from the Cariboo Pit and a sampling program is in place to verify the chemistry of the rock. A sampling program to verify chemistry of creek subgrade material after tailings have been removed is also in place.</p>
Bootjack Creek	Construction of a channel that allows Bootjack Creek to flow into Polley Lake was completed this week.
Upper Hazeltine Creek	<p>In Reach 1, a secondary fish fence was installed upstream of the weir. Test holes to the east of Hazeltine Creek in Reach 1 were dug to assess volumes of deposited material, and pulling back of the tailings adjacent to the creek in this area commenced.</p> <p>In Reach 2 a ramp down to the creek by the Gavin Lake Road bridge was constructed to allow larger equipment to access Reach 3.</p>
Middle Hazeltine Creek	<p>In Reach 3 (downstream of the Gavin Lake Road bridge), 2300m of channel has been constructed and armoured, and preliminary grading of the adjacent floodplain is complete. Preparation of the channel and floodplain in the 800m downstream of this point is ongoing. Hazeltine Creek is flowing in the reconstructed channel all the way from Polley Lake to 1900m downstream of the Gavin Lake Road bridge (4600m total).</p> <p>Upgrade work on a logging road to access the ~6100m mark of Hazeltine Creek commenced this week. This is anticipated to be the last access road required for this phase of rehabilitation.</p>
Lower Hazeltine and Edney Creeks	<p>Preparations are being made for dewatering the Lower Hazeltine Creek sedimentation ponds in anticipation of removing the accumulated material next week.</p> <p>A crew from the Soda Creek First Nation continued to plant live willow stakes and wattles and seed native red fescue species this week. A second planting crew went through site orientation on April 21st.</p>

Water Quality Monitoring Program

Water Quality Monitoring Sites	The current water quality monitoring program is outlined in the table below. Quesnel Lake has now turned over, and sampling frequency of sites QUL-2a and QUL-18 has been reduced to monthly, as per the monitoring program submitted to and approved by MoE.			
	All monitoring was completed as scheduled. Supplemental field parameter profiles were completed at sites QUL-2, QUL-21, and QUL-22.			
	Area	Monitoring Type	Frequency	Stations
	Polley Lake	Samples	Monthly	P1, P2
		Profiles	Bi-monthly	P1, P2
	Hazeltine Creek	Samples	Weekly	HAC-01b, HAC-08, HAC-05, HAC-10
	Edney Creek	Samples	Weekly	EDC-01, EDC-02
	Quesnel Lake	Profiles	Weekly	QUL-21a, QUL-18, QUL-66a, QUL-54, QUL-55, QUL-56, QUL-2a, QUL-79, QUL-40a, QUL-120a
		Samples	Weekly	QUL-55
		Samples	Monthly	QUL-2a, QUL-18, QUL-40a, QUL-120a
Quesnel River	Samples	Weekly	QUR-1	
Attachment 1 to this report provides a map of these sampling locations.				
Continuous Monitoring	The monitoring program also includes a sonde (datalogger) that is deployed in the Quesnel River at monitoring site QUR-1. The sonde measures field parameters (turbidity, pH, specific conductance, dissolved oxygen, and temperature) every 15 minutes. A second sonde, which measures the same parameters at the same frequency, is deployed at the outlet of the Lower Hazeltine Creek sedimentation ponds.			
Results	<p>Figure 1 shows a time series graph for this week of daily field turbidity readings for Upper Hazeltine Creek (at the Gavin Lake bridge, HAC-05), Lower Hazeltine Creek (upstream and downstream of the sedimentation ponds), and Edney Creek (upstream and downstream of the confluence with Hazeltine Creek). Figure 2 shows turbidity at these same sites over a longer period to provide context for this week’s data.</p> <p>Figure 3 shows a turbidity and temperature profile from April 21st at site QUL-120 (approximately 5km east of Cariboo Island) in Quesnel Lake.</p> <p>Figure 4 shows a time series graph of turbidity at site QUR-1. Turbidity data are from laboratory analysis completed by ALS Environmental.</p> <p>Note: Mount Polley is currently working with their hydrology contractor to refine the Hazeltine Creek rating curves so that data can be presented in this weekly report. This week the Upper Hazeltine Creek station was reinstalled (now that the creek channel has been reconstructed in this area) and upgrades to the Lower Hazeltine Creek station were completed to address aggradation that was affecting the rating curve.</p>			

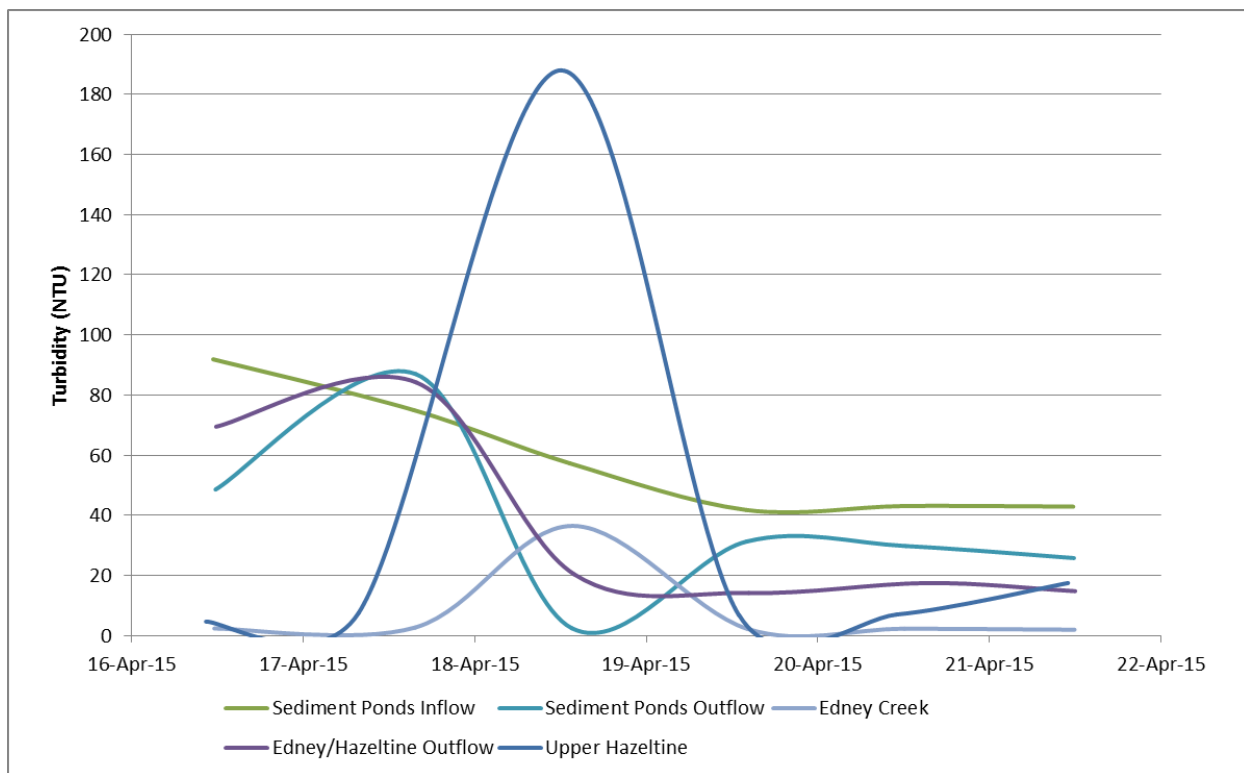


Figure 1. Time series graph for April 16th to 21st showing turbidity levels at monitoring locations in Hazeltine and Edney Creeks

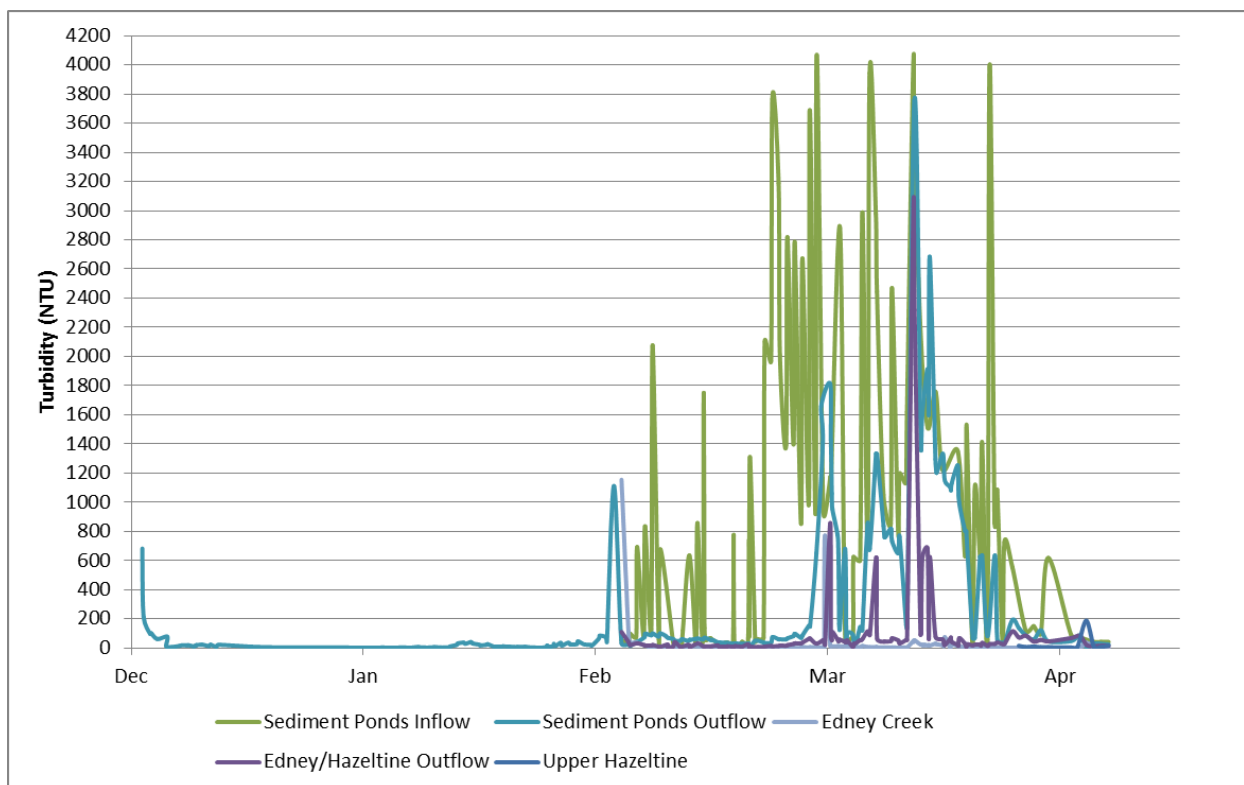


Figure 2. Time series graph for December 12th to April 21st showing turbidity levels at monitoring locations in Hazeltine and Edney Creeks

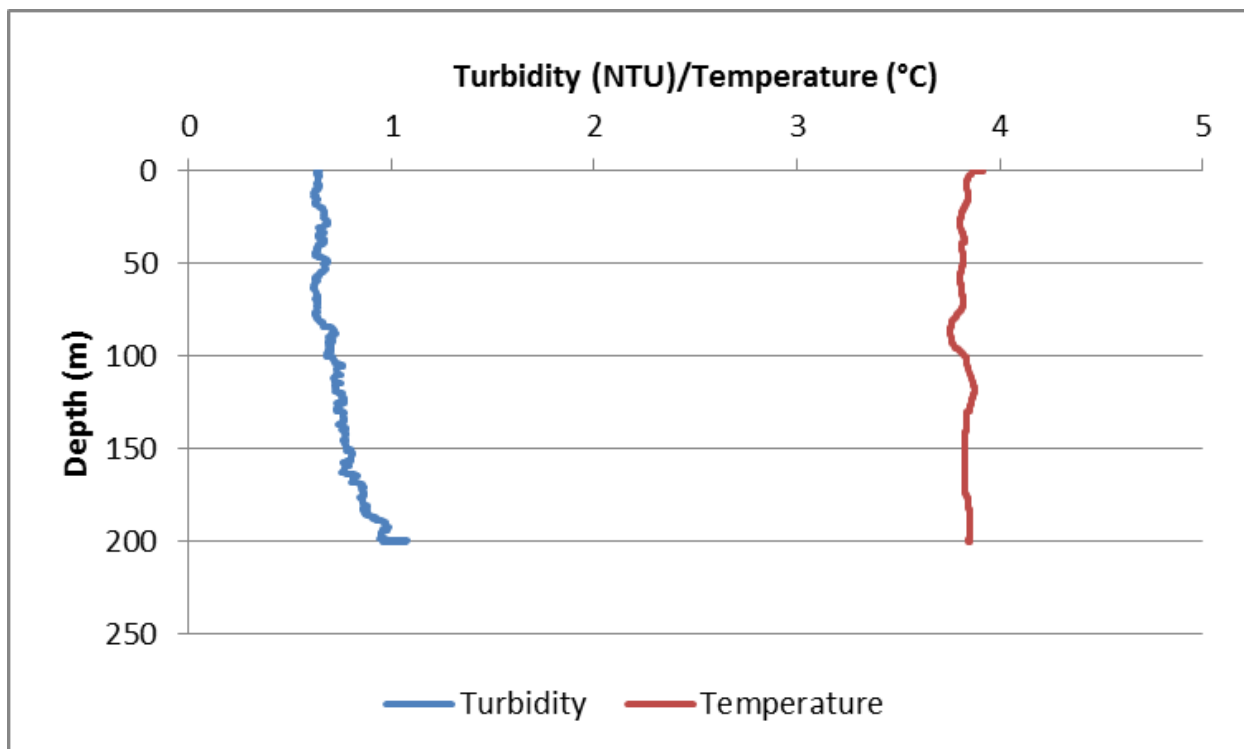


Figure 3. Turbidity and temperature profiles at station QUL-120 from April 21st

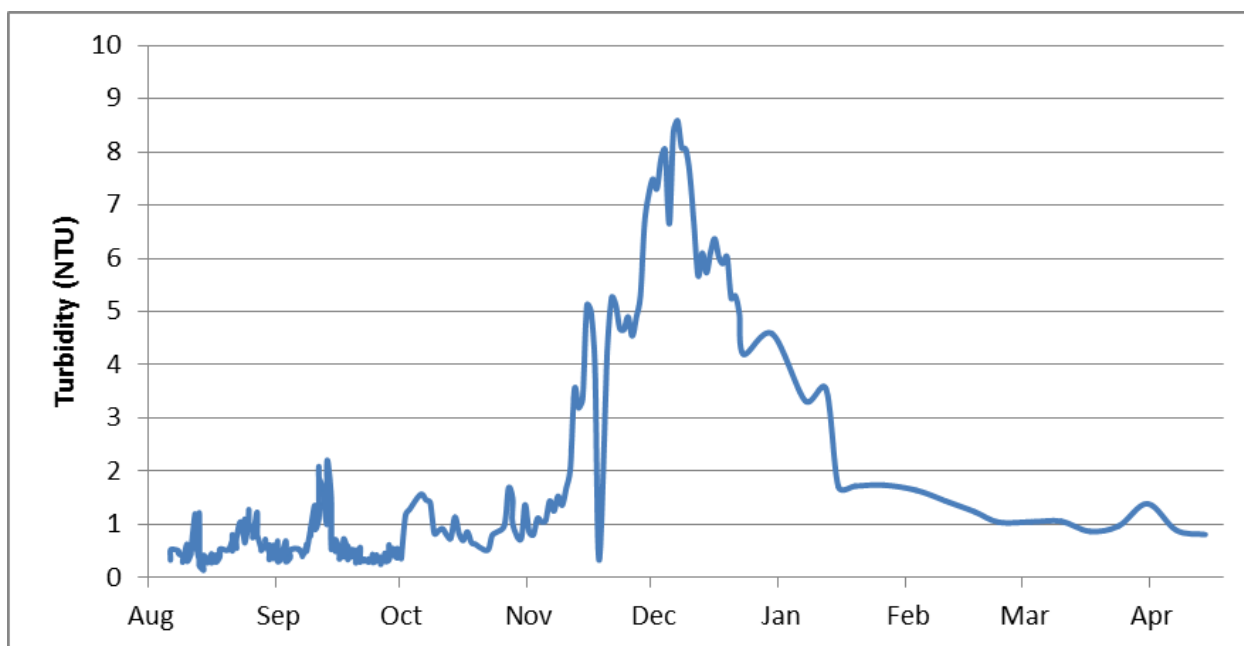


Figure 4. Turbidity time series at station QUR-1 (August 6th – April 14th)

TSF Construction

TSF Construction	<p>The amendment to permit M-200 approving repair of the TSF breach to manage 2015 freshet was received from the Ministry of Mines on December 17th, 2014. An update on work being completed under this approval is as follows:</p> <ul style="list-style-type: none">• Foundation preparation and material placement for Perimeter Embankment buttressing is ongoing.• Upstream Fill material placement for the cut-off wall is ongoing.• CSM (cutter soil mixing) Wall construction is ongoing.• Foundation preparation and placement immediately downstream of the cut-off wall (Phase 2 footprint) is ongoing. <p>Project components that have been completed to date under this approval are detailed in the March 26th, 2015 report.</p>
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Attachments

Attachment 1: Monitoring Locations Map

