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August 20th, 2015

Ministry of Environment
 Mining Operations Environmental Protection
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WEEKLY POST-TSF BREACH REPORT – AUGUST 12TH – 18TH, 2015

Government, First Nations and Stakeholder Engagement

<p>Publications and Website Updates</p>	<p>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). No updates were posted this week.</p>
<p>Engagement Activities and Communications with Regulators</p>	<p>Activities relating to government, First Nations, and stakeholder communication and engagement this week included:</p> <ul style="list-style-type: none"> • The weekly Ministry of Environment (MoE) update call on August 12th. • Submission of Edney Creek habitat rehabilitation design drawings to MoE, the Ministry of Forests, Lands and Natural Resource Operations, Fisheries and Oceans Canada, and First Nations on August 17th. <p>On July 16th Mount Polley Mining Corporation (MPMC) submitted a permit amendment application to MoE for a short-term water discharge to Quesnel Lake. The public comment period will be open until August 23rd. The Environmental Protection Notice can be viewed in the Williams Lake Tribune (July 22nd, page A23). Community meetings are scheduled as follows.</p> <ul style="list-style-type: none"> • August 24th – Likely, Likely Community Hall, 7 – 9pm • August 25th – Xat’sūll First Nation (for the Williams Lake and Soda Creek Indian Bands) • August 26th – Williams Lake, Gibraltar Room, 7 – 9pm • August 27th – Quesnel, Royal Canadian Legion, 7 – 9pm

Water Management

<p>Polley Lake</p>	<p>Polley Lake water elevation = 922.24m (August 18th) The Polley Lake weir valve remained open this week to allow approximately 0.15 m³/s of outflow from Polley Lake into Hazeltine Creek.</p>
<p>Water Management</p>	<p>All water from the Tailings Storage Facility (TSF) water collection system continues to be transferred to the Springer Pit via the Central Collection Sump (CCS). No releases of water to the environment occurred this week. Dewatering from the Springer Pit to the CCS via the West Ditch is ongoing to supply water for: the turbomisters at the Main Seepage Pond; dust suppression sprinklers on the TSF; and, process water to the Mill. Please refer to the May 28th, 2015 weekly report for an overview map of the TSF water management system.</p>
<p>Springer Pit</p>	<p>Permit amendments from MoE and the Ministry of Energy and Mines were received on July 9th allowing MPMC to return to restricted mining and milling operations with tailings deposition into the Springer Pit. Restricted milling operations commenced on August 4th.</p> <p>Total volume of tailings deposited as of August 18th = 148,443 tonnes (107,567 m³ including water retained in tailings)</p> <p>Water Elevations (August 18th/19th):</p> <ul style="list-style-type: none"> • Springer Pit = 1018.10m (+0.17m from last week) • Groundwater well GW12-2a = 1013.22m (+0.10m from last week) • Groundwater well GW12-2b = 1013.30m (+0.08m from last week) • Groundwater well GW15-1a = 1018.92m (+0.35m from last week) • Groundwater well GW15-1b = 1018.81m (+0.34m from last week) • Groundwater well GW15-2a = 1021.83m (-0.03m from last week) • Groundwater well GW15-2b = 1022.13m (-0.06m from last week) <p>A map of the groundwater well locations is included as Figure 1 of the July 23rd weekly report. Note that the suffix “a” indicates the deep well in the pair, and the suffix “b” indicates the shallow well in the pair.</p> <p>Monthly water quality results for parameters of interest from the Springer Pit supernatant and adjacent groundwater wells will be included in this report as they become available.</p>

Rehabilitation Work

<p>Silt Curtain</p>	<p>The turbidity barrier (silt curtain) installed in Quesnel Lake near the outlet of the constructed Edney (Hazeltine) Creek channel remained in place this week and is in good condition. Last week the barrier was moved to better encompass areas undergoing shoreline rehabilitation work.</p>
<p>Monitoring</p>	<p>MPMC staff conduct daily environmental inspections of the rehabilitation works.</p>
<p>Hazeltine Creek Rehabilitation</p>	<p>Phase one of re-contouring in Hazeltine Creek in Reach 3 was completed this week, including spreading of woody debris, with the exception of the canyon “blow-out” zone.</p> <p>This week, setting of minnow traps in the lower Hazeltine Creek sedimentation ponds continued to remove any minnows that have managed to navigate around the installed fish barriers.</p>
<p>Edney Creek and Adjacent Quesnel Lake Shoreline</p>	<p>This week work continued on construction of the new Edney Creek channel outlet and Edney Creek fish habitat features, as well as along the adjacent Quesnel Lake shoreline. Work included:</p> <ul style="list-style-type: none"> • Hauling of rip rap to the work area for use in construction. • Removal of the causeway to the “island”, following sloping and placement of riprap and gravel. • Hardwiring in woody debris habitat features and continued placement of rock features and spawning gravels in Edney Creek. • Removal of dead trees near Edney Creek and Quesnel Lake. • Construction of the Edney Creek overflow channel commenced and progressed, including removal of rip rap at the lower sedimentation pond outflow. <p>Edney Creek continues to be diverted into Hazeltine Creek upstream of the upper sedimentation pond to dewater the channel for construction purposes, and Hazeltine Creek continues to flow into Quesnel Lake via the temporary diversion channel out of the lower sedimentation pond. The temporary diversion channel inlet was further lowered this week to decrease the lower sedimentation pond elevation.</p>

Environmental Monitoring Program

Water Quality Monitoring Program

The current water quality monitoring program is outlined in the table below. Some Quesnel Lake sampling was postponed this week due to boat engine problems. Because of the temporary flow pattern changes associated with the Edney Creek and adjacent Quesnel Lake shoreline habitat rehabilitation work, sampling at some stations has been temporarily adjusted as follows:

- Station EDC-01 is not being monitored because there is no flow in this section of the creek (lower Edney Creek has been diverted into Hazeltine Creek upstream of the upper sedimentation pond).
- Station EDC-02 is not being monitored because there is no outflow into the lake from the Hazeltine/Edney outflow channel (water has been diverted out of a temporary channel from the lower sedimentation pond).
- Stations QUL-54, QUL-55, and QUL-56 have been shifted from the mouth of the combined Edney/Hazeltine outflow channel to the mouth of the temporary outflow channel from the lower sedimentation pond into Quesnel Lake. These temporary stations are named QUL-54a, QUL-55a, and QUL-56a.
- Station HAC-01b at the outflow of the lower sedimentation pond has been moved to station HAC-01c at the temporary diversion channel outflow from the lower sedimentation pond.
- The continuous monitoring sonde at HAC-01b has been temporarily removed.

Area	Monitoring Type	Frequency	Stations
Polley Lake	Samples	Monthly	P1, P2
	Profiles	Bi-monthly	P1, P2
Hazeltine Creek	Samples	Weekly	HAC-01b
		Monthly	HAC-05, HAC-08, HAC-10
	Field Parameters	Continuous	HAC-01b
Edney Creek	Samples	Weekly	EDC-02
		Monthly	EDC-01
Quesnel Lake	Profiles	Weekly	QUL-54, QUL-55, QUL-56
	Profiles	Bi-monthly	QUL-21a, QUL-18, QUL-66a, QUL-2a, QUL-79
	Profiles	Monthly	QUL-40a, QUL-120a
	Samples	Weekly	QUL-55
	Samples	Monthly	QUL-2a, QUL-18, QUL-40a, QUL-120a
Quesnel River	Samples	Bi-monthly	QUR-1
	Field Parameters	Continuous	QUR-1

Please refer to previous weekly reports, such as the [May 7th, 2015](#) report, for a map of these sampling locations.

Water Quality Monitoring Results

Figure 1 shows a time series graph for this week of daily field turbidity readings in lower Hazeltine Creek upstream and downstream of the sedimentation ponds (stations HAC-09 and HAC-01c, respectively). Figure 2 shows turbidity levels at these sites over a longer time period to provide context for this week's data.

Figure 3 shows a turbidity and temperature profile from this week at site QUL-55a, near the mouth of the temporary diversion channel from the lower Hazeltine Creek sedimentation pond to Quesnel Lake.

Figure 4 shows a time series graph of turbidity at site QUR-1. Turbidity data are from laboratory analysis completed by ALS Environmental. This chart will be updated every second week, as per the monitoring frequency of this station in the sampling program.

**Other
Monitoring
Programs**

Following completion of the [Post-Event Impact Assessment Report](#), MPMC has moved on to the next phase of monitoring following the tailings dam failure, which includes carrying out recommendations made in the Post-Event Impact Assessment Report. Minnow Environmental continued a sediment and benthic invertebrate monitoring program on site this week in areas including Polley Lake, Hazeltine Creek, and Quesnel Lake.

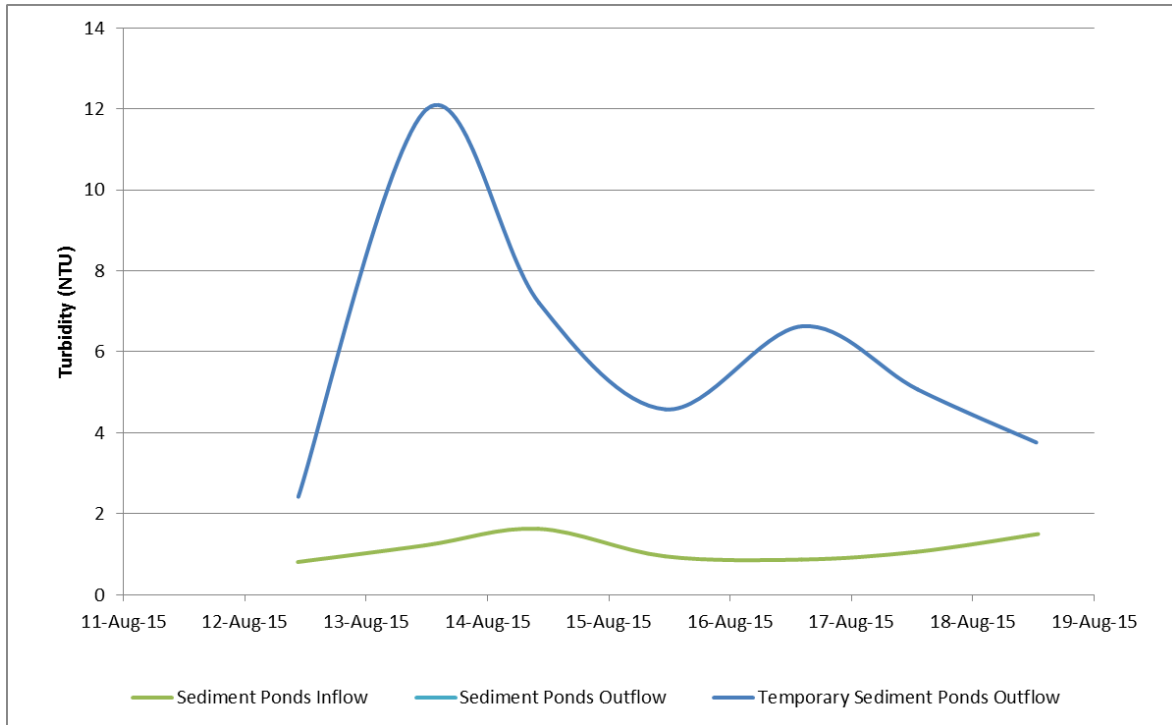


Figure 1. Time series graph for August 12th – August 18th showing turbidity levels at monitoring locations in Hazeltine Creek

Note: Edney Creek has temporarily been diverted into Hazeltine Creek (upstream of the sedimentation ponds) and outflow from the lower sedimentation pond diverted to Quesnel Lake via a temporary channel to allow Edney Creek channel and adjacent shoreline rehabilitation for fish habitat.

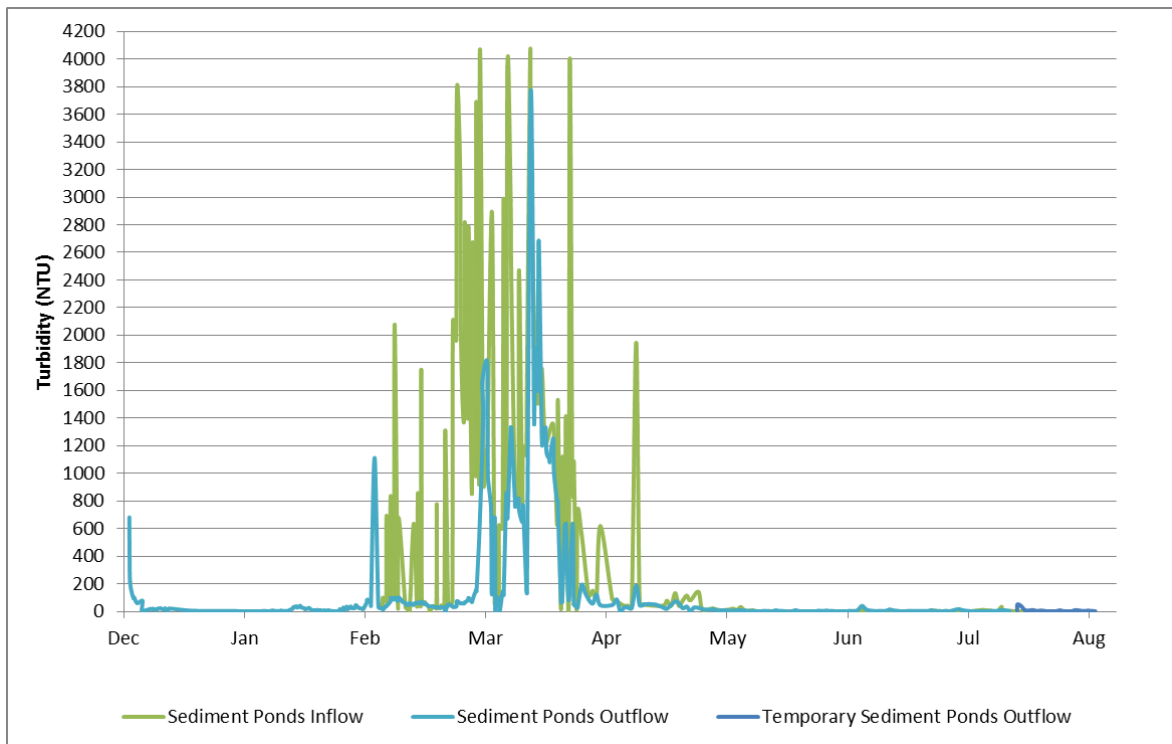


Figure 2. Time series graph for December 12th, 2014 – August 18th, 2015 showing turbidity levels at monitoring locations in Hazeltine Creek

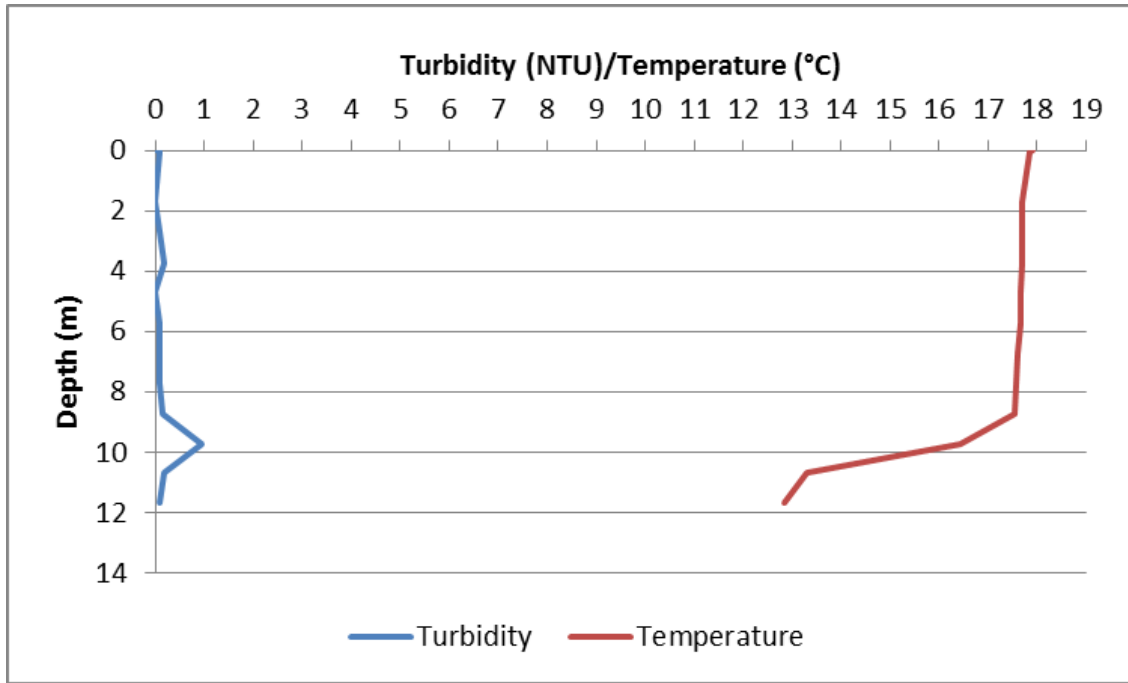


Figure 3. Turbidity and temperature profiles at station QUL-55a on August 17th

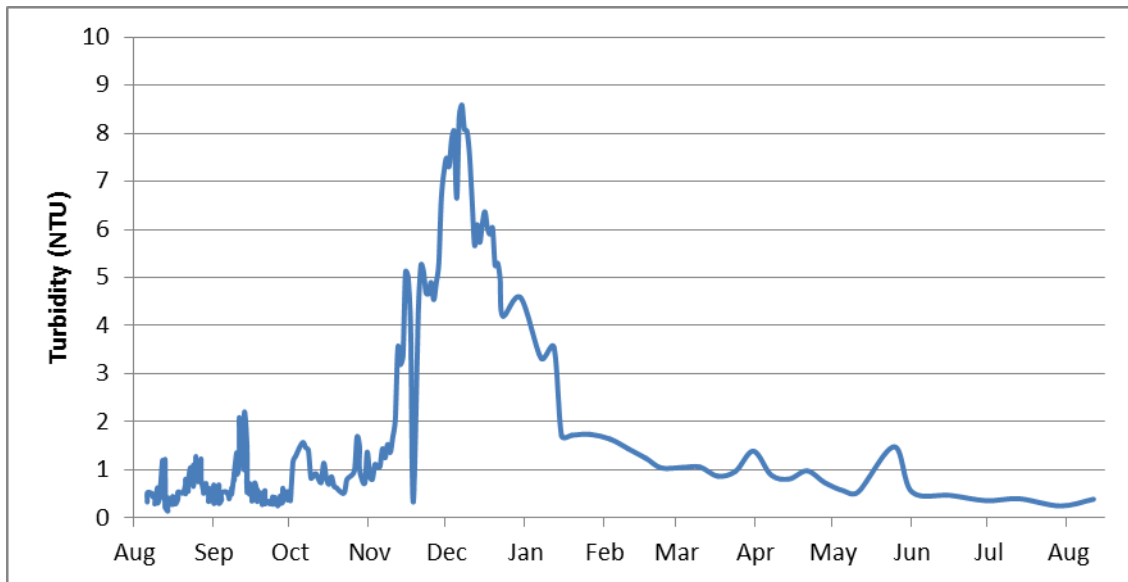


Figure 4. Turbidity time series at station QUR-1 (August 6th, 2014 – August 11th, 2015)