



Ministry of Environment
Inspection Record

Environmental Protection Division

Inspection Number: 25206		Inspection Status: FINAL	
EP System: <u>AMS</u>		Inspection Date: 2016-01-28	
EP System Number: 11678		EP System Status: <u>Active</u>	
Region: <u>Cariboo</u>		Office: <u>Williams Lake</u>	
Trigger: <u>Incident</u>		Incidents of Non-Compliance Observed: <u>Yes</u>	
Non-Compliance Decision Matrix Level: <u>Level 1</u>		Non-Compliance Decision Matrix Category: <u>Category B</u>	
Inspector Name(s): Jack Green		CPIX: <u>Over 2 = High</u>	
Audit:		Total Non-Compliance(s): 1	
Regulated Party: Mount Polley Mining Corporation			
Regulated Party Contact(s): Colleen Hughes			
Legal Address: P.O. BOX 12 LIKELY, BC V0L 1N0			
Phone No: (250)790-2617		Fax No:	
Contact Email: chughes@mountpolley.com			
Location Description or Site Address: Mount Polley is an open pit copper/gold mine located near Likely, BC.			
Latitude: 52.54547 N		Longitude: 121.63433 W	
Receiving Environment(s): <u>Surfacewater</u>			

Summary

MONITORING AND REPORTING REQUIREMENTS	
Inspection Period: From: 2016-01-12 To: 2016-02-15	
Requirement Source: Permit	
Activity: <u>On Site</u>	Waste Type: <u>Effluent</u>
Inspection Summary: <p>Lab test results from the sample collected on 12 January 2016 from the outfall of the Veolia Water Treatment Plant were in exceedance of permit limits for Total Suspended Solids (TSS)(result of 20 mg/L against permit limit of 15 mg/L). However, monitoring results collected from the Veolia Water Treatment Plant at the same time gave a reading of 10mg/L.</p> <p>On 19 January 2016, Carla Grimson (MOE Water Quality Technician), collected a side-by-side sample from the Veolia Water Treatment Plant outfall, with MPMC staff. The MOE results for this sample for TSS came back as 26 mg/L and 22 mg/L (replicate). The MPMC sample result for TSS came back as 10 mg/L.</p> <p>Both samples were analysed by Analytical Lab Services (ALS). However, having contacted the lab, it turns out that there were inconsistencies in analysis techniques between the two sets of samples:</p> <p>MOE</p> <ul style="list-style-type: none">- Gets Whole Bottle analysis done (500 ml)- Detection limit of 1 mg/L- Method: For whole bottle TSS, the bottle is shaken vigorously to homogenize. The entire content of the bottle is measured in a grad cylinder and filtered through a pre-weighed filter paper. The client bottle is then rinsed with 50ml of DI water, which gets added through the filter. The grad cylinder is also rinsed with 50ml DI and added through filter. The filter paper is then dried and post-weighed. <p>MPMC</p> <ul style="list-style-type: none">- Gets Routine Analysis done- Detection limit of 3 mg/L- Method: For routine TSS, the process is exactly the same except a subsample of 150ml is used instead of the whole bottle, and there is no client bottle rinsing (the grad cylinders still gets rinsed and added). The bottle is still homogenized well before the subsample is taken. <p>On 28 January 2016, Environmental Protection Officer Jack Green conducted a site inspection, accompanied by Brian Yamelst (MOE EPO Authorisations), Chris Swan (MOE Impact Assessment Biologist), Seline Lee (Williams Lake Indian Band), Colleen Hughes (MPMC Environmental Coordinator), Joe Grant (MPMC General Foreman) and Luke Moger (MPMC Project Engineer).</p> <p>The weather was clear and sunny and due to above freezing temperatures the previous night, significant melting had occurred.</p>	Response: <u>Advisory</u>

Some sediment was observed entering the Springer Pit from the access road, right by the pump station, mobilized by melt water. These pumps discharge to the West Ditch, before flowing down to the Central Collection Sump and on to the Till Borrow Pit, where it is then pumped through the Veolia Water Treatment Plant.

The West Ditch was running cloudy, likely the result of melt water mobilizing sediment, as in the Springer Pit.

At the outfall of the discharge pipe into Hazeltine Creek, I observed a significant amount of sand in the creek bed. This is the sand added in the flocculation stage of the treatment process. The system is designed to retain and recirculate the majority of the sand in the process, although there is expected to be some wastage of sand material either to Hazeltine Creek or the sludge pond, loss of sand in this quantity clearly suggests the system is not operating at optimum levels.

MPMC are experiencing technical difficulties with the Veolia Water Treatment Plant, in particular getting the plant to operate effectively at higher flow rates, without elevating TSS and losing sand to Hazeltine Creek. Veolia technicians were on site the week prior to the inspection. They drained the system and looked at ways to improve the performance of the plant. Some ideas mentioned included use of coarser sand, different polymers and using potable instead of treated water to mix the polymer.

The flow rate at the time of the inspection was approximately 0.17 m³/second. The target flow rate is 0.23 m³/second. The flow rate had been reduced to address the issue of high TSS in the discharge and the sand loss.

MPMC have set up a lab next to the water treatment plant to analyse two samples a day for TSS.

Also discussed the tailings spill from the ruptured line caused by snow removal.

ACTIONS REQUIRED BY REGULATED PARTY:

Sampling and analysis techniques must be consistent between MOE and MPMC. With this in mind, MPMC must start collecting TSS samples as a whole bottle, which can be fully rinsed out and must be sampled to the same Method Detection Limit. This amended sampling technique is necessary to carry out required analytical method for TSS (X332), referenced in the "BC Environmental Laboratory Manual 2013 Edition", as stipulated in section 3.7. Please contact ALS and ensure analysis of samples is carried out as required by this manual.

In order to verify amended sampling and analysis techniques, a split sample audit will be undertaken at the earliest opportunity.

Provide evidence to show what improvements have been made, following the tailings line spill of 23 January 2016, to improve the marking/protection of the pipeline, to prevent future reoccurrence.

Ensure a copy of procedures regarding the operation and emergency shutdown of the Veolia Water Treatment Plant are maintained and available to staff at the Plant.

ADDITIONAL COMMENTS:

You are reminded that all non-compliances must be reported electronically to EnvironmentalNonCompliance@gov.bc.ca, following the requirements of section 3.11 (non-compliance Reporting) of Permit PE11678. See attached letter for further information.

Compliance Summary	In	Out	N/A	N/D
Discharge	1	0	0	1
Operations	7	0	0	1
Reporting	1	0	0	0
Monitoring	0	1	0	0

Inspection Details

Requirement Type: <u>Operations</u>
Requirement Description: 1.2 This section applies to the discharge of effluent from a Copper-Gold Mine and Ore Concentrator to the Springer Pit. The site reference number for this discharge is E302090. 1.2.3 The authorized maximum elevation of the supernatant within the pit is 1030 metres above sea level (masl).
Details/Findings: The water level of the Springer Pit had been recorded at 1025.62 masl on the morning of the inspection.
Compliance: <u>In</u>
Requirement Type: <u>Discharge</u>
Requirement Description: 1.3 This section applies to the discharge of treated effluent from the Springer Pit and site runoff and seepage collection water management systems to Hazeltine Creek (HAD-03), or an alternative location suitable to the Director. The site reference for this discharge is E304230. 1.3.1 The authorized maximum rate of discharge is 0.3 cubic metres per second.
Details/Findings: Rate of discharge at time of inspection was approximately 1.67 cubic metres per second.
Compliance: <u>In</u>
Requirement Type: <u>Discharge</u>
Requirement Description: 1.3.3 The characteristics of the discharge must be equivalent to or better than: Total Suspended Solids (TSS) Maximum: 15 mg/L
Details/Findings: Variability in TSS results between Ministry samples, MPMC samples and the readings from the water treatment plant mean that at this time, compliance cannot be determined.
Compliance: <u>Not Determined</u>
Requirement Type: <u>Operations</u>
Requirement Description: 1.3.5 The Permittee must maintain a diversion and two settling ponds in lower Hazeltine Creek and an associated submerged discharge/diffuser into Quesnel Lake. The Permittee must cease discharging to Hazeltine Creek immediately if the upper settling pond is overflowing.
Details/Findings:

Settling ponds appeared well maintained with in excess of 0.5 metres of freeboard at the spillway to Settling Pond 2, which was empty.

Compliance: In

Requirement Type: Operations

Requirement Description:

1.3.7 The Permittee must cease discharging immediately if the effluent fails to meet the characteristics in Section 1.3.3. The discharge may resume only if a subsequent re-test demonstrates that the effluent meets the characteristics in section 1.3.3. The Permittee must follow-up with a second sample within the same week, suitably set apart from the first pass result, following any failure related to this subsection.

Details/Findings:

The discharge was not ceased following the exceedance of the sample taken on 12 January as the permittee checked the readings at the water treatment plant for the time the sample was taken, which read 10 mg/L and determined that the non-compliant result was erroneous.

Compliance: Not Determined

Requirement Type: Operations

Requirement Description:

2.1 MAINTENANCE OF WORKS AND EMERGENCY PROCEDURES

The authorized works must be inspected regularly and maintained in good working order. In the event of an emergency or condition beyond the control of the permittee which prevents effective operation of the authorized works or leads to an unauthorized discharge, the permittee must take appropriate remedial action and notify the Director immediately. The Director may reduce or suspend operations to protect the environment until the authorized works have been restored, and/or corrective steps taken to prevent unauthorized discharges.

Details/Findings:

The tailings line spill of 23 January 2016 was caused by snow removal equipment rupturing the tailings line. Upon discovery of the breach, the mill was immediately shutdown to stop the flow and the spilled effluent was contained, collected and deposited in the Tailings Storage Facility.

Notification was provided to Emergency Management BC, as required by section 2.11.

Joe Grant discussed plans to improve the marking of the pipeline, so it's location is clearly evident, even in deep snow.

Compliance: In

Requirement Type: Operations

Requirement Description:

2.4.4 The tailings impoundment must provide 1.0 meter of freeboard plus storage for the Probable Maximum Precipitation (PMP), and all other effluent storage ponds, seepage ponds, and surface runoff ponds must provide at least 0.5 meter of freeboard, up to a 1 in 200 year 24-hour storm event. If at any time the freeboard in the tailings impoundment is reduced to less than 1.0 meters plus the PMP, or less than 0.5 meters in any other pond, the Permittee must notify Environmental Protection following procedures in Section 2.1 of this permit.

Details/Findings:

The Central Collection Sump, Till Borrow Pit, Springer Pit and Settling Ponds all had in excess of 0.5 metres of freeboard.

Compliance: In

Requirement Type: Operations**Requirement Description:**

2.4.6 All ponds, ditching, and other runoff or seepage collection and diversion works must be inspected at least twice per year, once in the spring after freshet and once in the fall before freeze-up.

Details/Findings:

Checklists for biannual water control works inspections were up to date.

Compliance: In**Requirement Type: Operations****Requirement Description:**

2.4.7 A sign must be erected along the alignment of the outfall above the high water mark. The sign must identify the nature of works. The wording and size of the sign must be acceptable to the Director. Signs must be posted along the effluent pipeline right-of-way at points of public access and facing Quesnel Lake to identify the right-of-way and provides emergency contact information.

Details/Findings:

Sign has been erected as required (see picture).

Compliance: In**Requirement Type: Reporting****Requirement Description:**

2.11 SPILL REPORTING

All spills to the environment (as defined in the Spill Reporting Regulation) must be reported immediately in accordance with the Spill Reporting Regulation. Notification shall be via Emergency Management BC at 1-800-663-3456.

Details/Findings:

On 23 January the tailings pipeline was ruptured near the mill as a result of snow removal operations. The incident was reported as required.

Compliance: In**Requirement Type: Operations****Requirement Description:**

3.5 OUTFALL AND PIPELINE INSPECTION

The Permittee must develop and implement a routine visual inspection program for the outfall and pipeline by December 31, 2015. Records of inspections must be maintained for review by the Director. Additionally, the Permittee must ensure that comprehensive inspection and testing of the outfall is conducted by a qualified professional at a frequency suitable to the Director.

Details/Findings:

Daily inspections of the pipeline are carried out by the Mill Operations Department.

The outfall into Quesnel Lake is inspected using a remote operated vehicle (ROV). This was carried out during the installation of the outfall and is proposed to be carried out annually for the first two years, then every 5 years thereafter.

Compliance: In**Requirement Type: Monitoring****Requirement Description:**

3.7 SAMPLING AND ANALYSIS PROCEDURES

Sampling is to be carried out in accordance with the procedures described in the "British Columbia Field Sampling Manual For Continuous Monitoring Plus the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples 2013 Edition (Permittee)", or most recent edition, or by suitable alternative procedures as authorized by the Director.

Analyses are to be carried out in accordance with procedures described in the "British Columbia Environmental Laboratory Manual 2013 Edition", or the most recent edition, or by suitable alternative procedures as authorized by the Director. Copies of the above manuals are available on the Ministry web page at www.env.gov.bc.ca/epd/wamr/labsys/lab_meth_manual.html.

Details/Findings:

Page 113 of the "British Columbia Environmental Laboratory Manual 2013 Edition" states the accepted procedure for "Residue, Nonfilterable (TSS)". The Analytical method only mentions whole bottle samples, where the entire sample is filtered, with rinsing, through a pre-weighed glass fibre filter, and the residue on the filter is dried at constant weight at 103 - 105 degrees Celsius. The TSS samples sent by Mount Polley have been partial bottles, meaning only part of the sample is to be analysed for TSS, the rest of the sample is to be analysed for other parameters. This means no rinsing can occur. This could be the source of the discrepancies in sampling results.

In order to effectively compare monitoring results, it is essential for sampling practices and analytical practices to be identical between MOE and MPMC samples.

Compliance: Out

Were the following collected during inspection:

Samples? Photos? EMS Number

Other (please specify)

Is the Inspection related to an EA Project? EA Project Certificate Number:

INSPECTION CONDUCTED BY:

Signature	Date Signed
Jack Green	2016-02-15

ENCLOSURE(S) TO REGULATED PARTY & DESCRIPTION:

Photo record.

[CVIS Archives](#)

REGULATORY CONSIDERATIONS:

DISCLAIMER:

Please note that sections of the permit, regulation or code of practice referenced in this inspection record are for guidance and are not the official version. Please refer to the original permit, regulation or code of practice.

To see the most up to date version of regulations and codes of practices please visit: <http://www.bclaws.ca/>

If you require a copy of the original permit, please contact the inspector noted on this inspection record or visit: <http://www2.gov.bc.ca/gov/topic.page?id=DF89089126D042FD96DF5D8C1D8B1E41&title=Publicly%20Viewable%20Authorizations>

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.

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	Region	400-640 Borland St	Fax: (250) 398-4214
	Environmental Protection Division	Williams Lake, BC V2G 4T1	Website: http://www.gov.bc.ca/env