



ALBERTA WILDERNESS ASSOCIATION

"Defending Wild Alberta through Awareness and Action"

March 31, 2017

James Arnott
Mining and Processing Division
Environment and Climate Change Canada
Email: james.arnott@canada.ca

RE: Proposed Regulatory Framework for Coal Mining

Dear Mr. Arnott,

Thank you for the opportunity to comment on the proposed Regulatory Framework for Coal Mining.

Alberta Wilderness Association (AWA) works throughout Alberta towards more representative and connected protection of the unique and vital landscapes that are the source of our clean water, clean air and wildlife habitat. We have been working in Alberta for more than fifty years to raise the profile of Alberta's spectacular wilderness. AWA helps Albertans learn more about the value of our wilderness and wildlife, and participate in opportunities to protect and care for the legacy that we will leave for future generations. With over 7,000 members and supporters in Alberta and across Canada, AWA remains committed to ensuring protection of wildlife and wild places in Alberta for all Canadians.

AWA attended Consultation 3 (Edmonton, Alberta on March 2, 2017) and is pleased to provide written feedback for the Proposed Regulatory Framework for Coal Mining (hereafter, the regulation). This letter addresses AWA's comments and concerns regarding the proposed regulatory framework by section.

3.2.1 Application

AWA agrees that the application of the regulation should apply to all coal mines in Canada discharging effluent which enters, or depositing other mine waste into, waterbodies frequented by fish. AWA recommends that there should be no allowances or site-specific/case-by-case deviations of this regulation based on the naturally occurring levels of the substances of concern in the surrounding environments.

The regulation should include deposition of effluents, not only in waterbodies frequented by fish, but also any place where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water frequented by fish (i.e., any water or place referred to in subsection 36(3) of the Fisheries Act). This is an important provision as substances released into the headwaters of the eastern slopes of the Rocky Mountains have the potential to mobilize into connected waterbodies, including Alberta's major rivers, even if there are no fish present in the immediate receiving waterbody. The health of this water supply is important, not only for fish

habitat, but also because it provides clean drinking water to Alberta, Saskatchewan, and Manitoba. In the consultation session, it was stated that “practically this would include any type of coal mine in Canada with a discharge to surface water” but there are many surface waterbodies that are not fish-bearing that should be afforded the same protection for water quality; for example, ephemeral streams and fishless wetlands. The regulation must consider protection of these non-fish-bearing waterbodies as substances released in coal mining effluents, such as selenium, have a documented effect on water birds and amphibians (Environment Canada 2015). Water-bodies that were formerly fish-bearing but have been extirpated should also be protected as fish-bearing under this regulation. AWA suggests that this regulation apply to all coal mines in Canada discharging effluents which enter, or depositing other mine waste into, any surface waterbody.

The regulation should also apply to activities related to coal mining construction and operation including road construction and use, which contribute significant sediment loads to surrounding waterbodies and increases total suspended solids (TSS).

3.2.2 Deleterious substances and effluent discharge limits

AWA agrees with the proposal to regulate selenium, nitrate, and TSS with national minimum baseline standards.

Selenium has been shown to bioaccumulate and cause toxicity and reproductive failure in fish in water concentrations of greater than 2-5 ppb (Lemly and Smith 1987). In 2016, the United States Environmental Protection Agency (EPA) established a national criterion for selenium in fresh waters to not exceed 3.1 ppb in flowing waters and 1.5 ppb in standing waters.

Research has shown that the long-term (1 to 30 days) maximum induced suspended sediments for aquatic life should not increase by more than i) 5mg/L long-term when the background level is \leq 25mg/L, ii) 25mg/L when the background level is 25mg/L to 250mg/L, and iii) not more than 10 percent of the background level when it is \geq 250mg/L (Caux et al. 1997). The United States EPA has also compiled significant research on TSS in freshwater ecosystems (2003).

Bedrock with high quantities of limestone and shale, commonly found in the Canadian Rockies, are known to cause streambed calcite accumulation (Kuchapski 2008). Water draining through coal mine waste rock piles becomes supersaturated with CO₂ and calcite, which accelerates deposition of calcite in downstream channels (Ford and Pedley 1996). Accumulation of calcite in streambeds can result in significant concretion of the channel, causing detrimental effects to fish habitat (Kuchapski 2008). AWA recommends that Environment and Climate Change Canada (ECCC) implement discharge limits of dissolved CO₂ and calcite at Final Discharge Points (FDPs) and receiving waterbodies. Monitoring the impact of CO₂ and calcite released in coal mining effluent may be achieved through assessment of downstream benthic invertebrate communities. AWA recommends that streambed calcification is monitored during the proposed benthic invertebrate community studies.

AWA recommends that the regulation establish limits on the release of flocculants from coal mine tailings ponds. Flocculants released in coal mine effluent have been shown to combine with nitrates and increase primary production of the receiving water body, negatively affecting fish and fish habitat (Alberta Athabasca Rainbow Trout Recovery Team 2014). Toxic flocculants should be prohibited from use in tailings ponds that release effluent.

There may be other substances of concern that should be managed under this regulation. ECCC should provide a means to update the regulation if other substances of concern are raised in the future. ECCC should review what substances have been released in all Alberta Eastern Slopes coal mining during both regular operations and during accidental spill events to evaluate potential substances of concern.

AWA does not agree with the proposed TSS flexibility mechanism accounting for exceptional precipitation or high flow events. Tailings impoundment areas should be designed, built, and maintained to withstand exceptional precipitation and flood events; these events should not be used as an excuse to exceed the regulation standards.

3.2.3. Mine waste management

3.2.3.1. New mines and expansion projects

AWA agrees with the proposal for new mines and expansion projects to be required to segregate mine wastes containing elevated levels of selenium to areas designed to prevent weathering and mobilization of deleterious substances.

3.2.3.2. Existing mountain mines with legacy issues

3.2.3.2.1. Receiver-Based Compliance Limits

For existing mines where it may not be feasible to collect all effluent and release it through defined FDPs due to historical mine design and practices, AWA supports requirements for water quality monitoring and limits in the receiving environment(s). However, AWA is concerned that existing mine companies may exploit the capacity for negotiation given the provision that collection of effluent “may not be feasible”. AWA believes legacy mines that release effluents in excess of the limits due to historical practices should be held to a higher standard of monitoring because they are relatively uncontrolled and presumably at a higher risk of affecting fish habitat than contemporary mines. If concentrations of deleterious substances in the receiving environment are found to be in excess of a set trigger, the mine should be required to take immediate action to reduce releases of the substance(s). Historical mines must also not be allowed to continue to operate using historical practices that contribute to unmanageable effluent release and contribute to cumulative effects.

Due to the hazardous environmental effects of these mines, AWA recommends ECCC implement increased monitoring schedules for historical mines that are unable to effectively collect and release effluents through a defined FDP, to provide greater incentive to control effluents. AWA suggests that, for historical mines that are unable to collect all effluents and release it through defined FDP's, environmental monitoring of the receiving environment be conducted daily by the proponent. If and when a historical mine is able to collect all effluents and release it through FDPs, they would then be permitted to monitor on the standard schedule outlined in the regulation.

As currently proposed, the regulation does not cover orphaned and abandoned mines. ECCC should consider developing another regulation or action plan to address effluents released by orphaned and abandoned mines. It is of the utmost importance that this regulation acts in a way that prevents the abandonment of future mines.

To date in Alberta, less than 5 percent of functional forest ecosystems have been re-established on the coal mined areas of the Gregg, McLeod, Embarass, and Erith Rivers, negatively affecting the quality and quantity of fish habitat (Alberta Athabasca Rainbow Trout Recovery Team 2014). It is also common practice to divert streams which can result in permanent loss of the channels, displacing kilometers of fish habitat (Alberta Athabasca Rainbow Trout Recovery Team 2014). AWA recommends that ECCC

works with provincial authorities to resolve legacy issues before reclamation certificates are issued; past reclamation of coal mines has shown that the lands and water have historically not been returned to their original productive capacity.

3.2.3.2.2. Long-Term Selenium Reductions

AWA generally agrees with the proposal for managing long-term selenium releases by monitoring fish tissue concentrations and requiring a reduction in selenium concentrations if above a trigger. The trigger should be a national standard and should not be given site-specific/case-by-case reductions based on the amount of selenium in the local rocks.

AWA agrees with the proposal of interim compliance limits, however, AWA recommends a substantial “polluter pays” tax or fee that is levied on offending mines until they are able to achieve the long-term compliance limits. The fee should be paid at recurring regular intervals immediately following enactment of the regulation, into a fund dedicated to restoring the environment that the offender is currently polluting, and escalate the longer a company is unable to achieve the long-term compliance limit. This would create a financial incentive for the company to achieve the limit as quickly as possible, rather than being permitted to release effluent into the environment at higher than regulated rates without penalty for an extended period of time. AWA requests further information as to how enforcement will proceed under the current proposal if a mine does not achieve the final compliance limit after the interim grace period has concluded.

3.2.4. Mine Waste Disposal Areas (i.e., Tailings Impoundment Areas)

Disposal of mine wastes into waterbodies frequented by fish should only be allowed under very specific and strenuous conditions; exemptions should not be easily granted or obtained. Disposal of mine wastes into waterbodies designated as critical habitat or frequented by species at risk is unacceptable and there should be no provisions or deviations in the regulation that allow for this to be permitted. If, for a proposed new or expanded mine, there is no suitable alternative area to dispose of mine wastes other than those frequented by species at risk, this should be a strong indication that the project is not in the public interest and should be rejected at the environmental assessment stage.

Fish habitat compensation plans in Canada have been ineffective. Research has found that only 37 percent of compensation projects achieved the conservation policy of no net loss of habitat productivity under the Fisheries Act (Quigley and Harper 2006a). Non-compliance is also an issue: Quigley and Harper (2006b) found that compensation plans were “at best only slowing the rate of habitat loss” and that “Improvements in monitoring and enforcement are necessary to move towards achieving Canada’s conservation goals.”

For a fish habitat compensation plan to be effective, AWA recommends the following:

1. The ratio of compensated habitat to impacted habitat be set at a level that accounts for the success rate of conserving habitat productivity.
2. The compensated habitat is funded and implemented before the affected habitat is impacted. Temporal lags in implementing offsets have been shown to further exacerbate the loss of habitat function (Quigley and Harper 2006a). Further, this protects Canadians against non-compliance and bankruptcy of mine operators.

In addition, despite being outside of the scope of this regulation, AWA would like to register our concern regarding the lack of sufficient construction standards and requirements for mine waste disposal. Particularly, we believe the current standards are insufficient to prevent waste release during large flood

events that are frequent in the Eastern Slopes and during extreme weather events that are expected to increase due to climate change. AWA believes that the current design, construction, and operation of these features have been insufficient in watersheds of species at risk such as was shown during the Obed Mountain Mine spill (October 31, 2013). Failure of disposal areas has caused significant destruction of fish habitat, including species at risk (Alberta Athabasca Rainbow Trout Recovery Team 2014).

3.2.5. Environmental Effects Monitoring (EEM)

In Alberta, it is common for mountain mines to be located within the same vicinity, creating cumulative impacts to the receiving environment. AWA believes all land and water disturbance should be assessed cumulatively and AWA recommends monitoring for cumulative effects if multiple mines release effluents into the same watershed/sub-watershed. Cumulative effects monitoring could be achieved similarly to the methods proposed in Section 3.2.3.2.1 (Receiver-based Compliance Limits for existing mines with legacy issues): in addition to monitoring the immediate receiving environment(s), a higher order downstream waterbody is also monitored for environmental effects. The cumulative impacts of legacy mines should then be taken into account, using watershed/landscape triggers and limits, when considering the additive effects of effluents released from proposed new or expanded mines.

The EEM monitoring/reporting cycle must be reflective for the life cycle of a coal mine. If the EEM is cyclical and does not adequately represent the life cycle of a coal mine, data gaps may result in environmental effects not being detected.

3.2.6. Reporting requirements

Report submission must follow each iteration of environmental monitoring, be transparent, use a consistent and comparable template across companies, and be publically accessible.

3.2.7. Closure

Mines must be closed in a manner that does not leave the public responsible for restoration or monitoring costs.

Thank you for considering our input on the Regulatory Framework for Coal Mining. We hope your consideration of our feedback strengthens the regulation and we look forward to a reply at your earliest convenience.

Sincerely,
ALBERTA WILDERNESS ASSOCIATION

Nick Pink,
Conservation Specialist

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