

## Mine Water Pollution in Canada: Are Waters & Fish Habitat Protected?

Response to the Canada's Commissioner on Environment & Sustainable Development's (CESD) Audit released on April 2, 2019

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### Our Response to Commissioner's (CESD) Audit: Canada Fails To Protect Waters & Fish

"MiningWatch Canada urges the federal Environment Minister to take immediate actions to beef up inspections and enforcement for the thousands of active and abandoned mine sites affecting waterways across the country."

Alarming findings (CESD Audit, April 2, 2019):

- Too sparse inspections done at each mine site (every 1.5 years on average)
- 35% of 138 metal mines out of compliance: not reporting pollutant release data
- 117 non-metal mine sites not subject to a mandatory monitoring of effects on fish
- Lack of enforcement measures when mines show effects on fish and fish habitat
- Lack of transparency on pollution, spills, and effects to fish on a mine-by-mine basis, to inform the public and affected communities

2017 Environment Canada Report indicates that 76% metal mines show effects to fish or habitat (*referred indirectly in this audit*) <u>https://www.ec.gc.ca/esee-eem/default.asp?lang=En&n=F2078C08-1&offset=7&toc=show</u>

### Canada's Metals & Diamond Mining Effluent Regulations (MDMER) under *Fisheries Act*

(non-metal mines covered by Fisheries Act, but not by MDMER)



## Scope of the Commissioner's (CESD) Audit on Mine Water Pollution Issues in Canada

http://www.oag-bvg.gc.ca/internet/English/parl\_cesd\_201904\_02\_e\_43308.html

#### What was covered:

- Environment Canada's and Fisheries & Oceans' <u>application</u> of the Metal Mines Effluent Regulations (MMER) & Fisheries Act from 2013 to 2018
- 138 active metal mines & 117 active non-metal mines (total 255 active sites)

#### Some high-level conclusions of audit:

- effective 'monitoring' of effects for metal mines
- effective 'review' of plans to compensate fish loss
- poor assessment of effectiveness of plans
- poor enforcement measures
- poorer oversight for non-metal mines





## Scope of the Commissioner's (CESD) Audit on Mine Water Pollution Issues in Canada

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#### What was not covered:

- Abandoned sites & exploration sites (thousands in Canada)
- Scope & adequacy of MDMER pollutant limits (only application)
- Scope & adequacy of Environmental Effects Monitoring program
- Scope & adequacy of Schedule 2 permitting destruction of water bodies





- Adequacy 'Initial Dilution Zone' (IDZ) wide use in industry
- Drinking & underground water pollution issues
- Transboundary water pollution issues (Canada / USA)
- Scope, adequacy & effectiveness of enforcement measures and fines to stop or prevent pollution



### 1. End-of-Pipe Limits: Too Few, Too Permissive, Not Science-Based

Schedule 4 for Metal & Diamond Mines: https://laws-lois.justice.gc.ca/eng/Regulations/SOR-2002-222/page-10.html#h-44

		MDMER Limits Current and in 2021 (ug/L)	CCME Guidelines Aquatic Life (ug/L)	Most Stringent International Standards Aquatic Life (ug/L)	MDMER vs CCME
	Arsenic	500 / 100	5.0	5.0 – 100	20 - 100 X
	Copper*	300 / 100	2.4	0.5 – 100	40 - 125 X
	Cyanide	1000 / 500	5.0	4.0 - 7.0	100 - 200 X
	Lead	200 / 80	3.2	0.5 – 10	25 - 60 X
	Nickel*	500 / 250	96	4.0 – 52	2.6 - 5.2 X
	Zinc	500 / 400	30	3.6 – 120	13 - 17 X
	Total Suspended Solids	15,000	15 000	15 000	
	Radium 226	0.37 Bq/L	-	-	-
	Un-ionized Ammonia	500	-	-	-

Main sources: US EPA Aquatic Life Criteria; Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for Aquatic Life; Australian and New Zealand Guidelines for Fresh and Marine Water Quality; Directive 2013/39/EU of the European Parliament and Council; South African Water Quality Guidelines Volume 7 Aquatic Ecosystems, 1996; International Finance Corporation, 2007; Peru, National Standards of Environmental Quality for Water, 2015; Philippines, Water Quality Guidelines and General Effluent Standards of 2016; Brazil <a href="http://www.iwa-network.org/filemanager-uploads/WQ\_Compendium/Database/Selected\_guidelines/007-11.pdf">http://www.iwa-network.org/filemanager-uploads/WQ\_Compendium/Database/Selected\_guidelines/007-11.pdf</a>; EPA approved water quality standards for specific Indigenous peoples: Laguna Pueblo in 2017, Coeur d'Alene in 2014-2017, Mole Lake Band in 1996, Lummi Nation in 2008.

### 2. Reporting "95-99%" Compliance Rate on Lax End-of-Pipe Limits is Misleading

"Although the metal mining sector is achieving over 95% compliance with the prescribed discharge limits, a decade of EEM results have shown that impacts do occur on fish and fish habitat downstream from metal mines" -- EC 2017 National Assessment of EEM <a href="https://www.ec.gc.ca/esee-eem/default.asp?lang=En&n=F2078C08-1&offset=7&toc=show">https://www.ec.gc.ca/esee-eem/default.asp?lang=En&n=F2078C08-1&offset=7&toc=show</a>

National Environmental Effects Monitoring (2017)

- 76% of mines (62 of 82) confirmed effects to fish
- 23% (19 of 82) no conclusive results (unknown)
  - 92% (57 of 62)"may be indicative of a higher risk to the environment"
- 76% (20 of 26) Investigation of Cause (IOC) identified mine effluent as primary or contributing cause



Many mines did not report or investigate – why?

### 3. No or Weak Enforcement: Polluters Are Not Afraid of Fines or Consequences - No Real Deterrence

Environment Canada Enforcement Registry <u>https://www.canada.ca/en/environment-</u> <u>climate-change/services/environmental-enforcement/notifications.html</u>

#### Since 2008:

- Over 20 slurry or liquid mine waste spills in Canadian waters
- 686 <u>self-reported</u> exceedances of regulated pollutant limits
- > 30%+ metal mines out of compliance: incomplete data on pollution
- > 76% of assessed mines (62 of 82) show effects to fish & habitat

Little Consequence, Pitiful Fines (for multi-billions companies):

- Only 20 enforcement fines for 97 counts (85% after guilty pleas...)
- All under \$7.5 million (Cliff Resources in 2014 multiple spills)
- ➢ 5 above \$1.0 million (Cliff, Teck(2), Prairie Mines, Sherritt)
- 9 above \$100,000 (Lupin, Bakerville, Rio Tinto, Nyrstar, Wesdome, Hope Bay, Century, Teck(2))
- 6 below \$100,000 (Banks Islands, Agnico, Wabush, CaNickel, Vale, IOC)



### Case 1: Mount Polley Mine Disaster 2014-present (Imperial Metals)

- 24 billion litres of mine waste slurry spilled
- Large swaths of fish habitat destroyed
- Ongoing degradation of Quesnel Lake's waters
- Copper, selenium and contaminated sediments
- No charges, no fines, to date. Zero.
- August 4, 2019 = deadline for ECCC to bring charges

Sources: The Nature Group, Hatam et al. 2019, Scientific Reportsvolume 9, <u>https://www.nature.com/articles/s41598-019-38909-9;</u> The Narwhal 2018 <u>https://thenarwhal.ca/four-years-in-still-no-fines-charges-for-mount-polley-mine-disaster/</u>, The Star 2018 <u>https://www.thestar.com/vancouver/2018/08/03/four-years-since-mount-polley-mine-disaster-and-no-charges.html</u>, Global News 2018, <u>https://globalnews.ca/news/4415453/mount-polley-tailing-pond-disaster/</u>, MiningWatch Canada 2017 <u>https://miningwatch.ca/sites/default/files/the\_lawsuit\_0.pdf</u>, Polley Expert Review Panel (2015): <u>www.mountpolleyreviewpanel.ca/final-report</u>; BC Chief Inspector of Mines (2015): <u>http://mssi.nrs.gov.bc.ca/1\_CIMMountPolley/BCMEM-report-3\_04-web.pdf</u>; BC Auditor General (2016): <u>www.bcauditor.com/pubs/2016/audit-compliance-and-enforcement-mining-sector</u>

### Case 2: Chronic Selenium Pollution in Elk Valley (Teck Resources)

- Chronic toxic selenium pollution by Teck's coal mines in Elk Valley watershed
- Levels 5 to 35 higher than recommended water quality guidelines
- Out of compliance with Fisheries Act, B.C. guidelines, & Water Quality Management Plan
- Polluting transboundary waters flowing into the USA
- Current draft Mining Effluent Regulations for Coal Mines being stalled & weakened by industry push-back

Sources: The Narwhal 2018a https://thenarwhal.ca/for-decades-b-c-failed-to-address-selenium-pollution-in-the-elk-valley-now-no-one-knows-how-to-stop-it/; The Narwhal 2018b, https://thenarwhal.ca/coal-valley-the-story-of-b-c-s-quiet-water-contamination-crisis/; The Narwhal 2018c, https://thenarwhal.ca/canada-suppressing-data-on-coal-mine-pollution-say-u-s-officials/; University of Montana Flathead Lake Biological Station https://flbs.umt.edu/newflbs

### Case 3: Tulsequah Chief Mine Site (Chieftain Metals until 2016)

- Mine closed in 1957, releasing acid drainage & metal contamination ever since
- Last owners were Redfern Resources (bankrupt 2009) & Chieftain Metals (bankrupt 2016)
- No federal intervention since 2009 & 2011, despite clear evidence of contamination to waters, in violation of federal Fisheries Act, B.C. standards, and mine permits
- B.C. now shows willingness to fix problem (remediation plan due in 2020... We'll see!)
- Tulsequah River flows into the Taku River

Sources: Rivers Without Border http://riverswithoutborders.org/, Dogwood 2019 https://dogwoodbc.ca/news/public-on-hook-mount-polley-clean-up/, CBC 2018 ttps://www.cbc.ca/news/canada/north/tulsequah-chief-mine-closure-bc-1.4907645, Vancouver Sun 2018; BC Tulsequah Chief Overview https://www2.gov.bc.ca/gov/content/environment/air-land water/site-permitting-compliance/tulsequah-mine & http://mines.nrs.gov.bc.ca/p/tulsequah-chief/compliance

### Case 4: Faro Abandoned Mine Site (Federal/Yukon Governments)

- One of the largest and most polluting mine waste sites in Canada for devades
- Abandoned in 1997, total costs to taxpayers more \$900 million (\$350 million spent to date)
- 390 million tonnes of mine wastes, including 70 million tonnes of slurry tailings
- Acid drainage contamination in surface & underground waters, including Rose Creek
- Clean-up plan to be assessed by environmental authorities in 2019-2020
- Traditional territories of Selkirk, Ross River Dena, Kaska Dena, and Liard First Nations

Sources: Yukon Conservation Society, 2019, Abandoned Mines in the Yukon: The Financial Picture. http://yukonconservation.org/docs/Abandoned\_Mines\_In\_The\_Yukon\_FINAL\_Jan\_30\_Reduced.pdf, https://www.cbc.ca/news/canada/north/faro-mineremediation-1.4179016, https://www.cbc.ca/news/canada/north/yukon-s-ketza-mine-abandoned-by-veris-gold-1.3041984

### Cases 5, 6 & 7: Keno, Mount Nansen, Clinton Creek (Federal/Yukon Governments) Keno:

- Abandoned 1989, costs to taxpayers estimated \$112 millions
- Zinc remains a water quality issue of toxicity to fish
- Remediation plan currently under environmental assessment <u>Mount Nansen:</u>
- Abandoned 1999, ongoing water pollution cyanide, arsenic, etc.
- No remediation plan, \$20-25 million spent to date

### **Clinton Creek**

- Ongoing selenium & aluminium contamination in Clinton Creek
- No remediation plan, \$3 million spent to date

Sources: Yukon Conservation Society, 2019, Abandoned Mines in the Yukon: The Financial Picture. http://yukonconservation.org/docs/Abandoned\_Mines\_In\_The\_Yukon\_FINAL\_Jan\_30\_Reduced.pdf, https://www.cbc.ca/news/canada/north/faro-mineremediation-1.4179016, https://www.cbc.ca/news/canada/north/yukon-s-ketza-mine-abandoned-by-veris-gold-1.3041984

### Case 8: Exploration Drill Hole Leak, Warwick Mountain, N.S. (Sugarloaf Resources, 2011)

#### **CBC INVESTIGATES**

Arsenic-leaking drillhole deliberately left unfixed by province, documents show

- Discovered in 2018 with arsenic & iron levels 10-25 times higher drinking & aquatic guidelines
- More than 27,000 'legacy' mining drill holes in Nova Scotia
- No federal intervention, no action planed yet by NS Ministry of Energy & Mines & Government

Sources: CBC 2019 https://www.cbc.ca/news/canada/nova-scotia/drillhole-warwick-mountain-arsenic-iron-gold-exploration-1.4989546



# **Merci! Thank You!**

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