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March 30, 2018

Carol Bellringer
Auditor General of British Columbia
623 Fort Street
Victoria, BC V8W 1G1

Dear Ms. Bellringer:

RE: Request for an audit and examination of the Government of British Columbia's failure to adequately regulate placer mining

On behalf of the Fair Mining Collaborative, we hereby request that you undertake an examination of the apparent failure of the government of British Columbia to adequately regulate placer mining.

We urge you to undertake this examination pursuant to:

- Section 11 (8) of the *Auditor General Act* ("the *Act*"),[1] which authorizes you to assess and report on whether government is operating economically, efficiently, and effectively;
- Section 13 of the *Act*, under your authority to conduct an examination respecting government, if it is in the public interest to do so; and
- Section 12 of the *Act*, which grants you the broad general power to report to government, as you deem fit.

Introduction

Placer mining activity has increased dramatically in recent years, with approved machine-excavation operations almost tripling since 2005.[2] As fully documented below, placer mining – the excavation of ancient and current stream beds to retrieve minerals deposited in sand and gravel by water – poses a serious risk to watersheds across British Columbia. Such mining can gut invaluable riparian areas and can severely and permanently damage streams, devastate

[1] *Auditor General Act*, SBC 2003, c 2.

[2] Placer mines that use machinery to excavate and require a provincial Notice of Work to operate almost tripled in a decade, from 187 mines with an active permit in 2005 to 542 in 2016. Smaller-scale placer hand mining has also increased, from 1888 claims reporting work in 2005 to 2917 claims reporting work in 2015. The prevalence of hand panning, which requires no mineral claim or permit, is unclear. See pp 9-10 of this letter for further discussion. See also Fair Mining Collaborative, "BC Placer Mining: High Environmental Impacts vs Low Economic Return" (March 2017), online: <www.fairmining.ca/wp-content/uploads/2018/03/BCPlacer_Environment_Economic.pdf> [FMC, "BC Placer Mining"].

fish, and threaten human health. It can interfere with traditional hunting, fishing and gathering practices and infringe Indigenous rights.

Yet, the regulation of placer mining is rooted in 19th century gold rush laws and remains hopelessly outdated.[3] Recent studies by Fair Mining Collaborative document the grievous under-regulation of placer mining in the province.[4] For example, in sharp contrast to the Yukon, BC placer mines do not undergo environmental assessment before they are approved. Government seldom inspects placer mine operations to ensure existing rules are enforced, and rule-breaking is epidemic. Moreover, placer-mined areas are rarely reclaimed.

Among other things, the BC government does not protect critically-important riparian areas by enforcing an adequate 'setback' from stream banks, and is allowing some placer mines to discharge their tailings directly into streams instead of settling ponds. Smaller placer mines are allowed to operate without a *Water Sustainability Act* authorization. Government has even gone so far as to suspend normal province-wide pollution rules in the placer mining area around Atlin, BC. Residents of that area do not enjoy the same rights to environmental protection measures that apply everywhere else.

Collectively, these regulatory shortcomings jeopardize valuable public assets like waterways, fish, riparian habitat and wildlife and, by extension, human health and Indigenous rights. Impacts on Indigenous peoples are of particular concern. First Nations feel the industry's effects on ecologically sensitive and productive riparian areas, wildlife and fish most keenly. They are routinely excluded from riparian zones by placer mines, and are not given adequate notice of proposed mines or of proposed placer mining "zones" in their territories. Indigenous rights to consultation, accommodation, and consent are being systematically ignored.

In light of the costs imposed by placer mining, the benefits to the Province seem remarkably small. It is arguable that the industry generates minimal revenue for the BC government, and does not adequately compensate BC taxpayers for the environmental, cultural, and health risks it creates.

We urge you to investigate whether the BC government's inadequate regulation of placer mining constitutes a failure to properly steward public resources of great importance to British Columbians, and a failure to operate "economically, efficiently, and effectively" as per s.11(8) of

[3] Tara Lamothe-Ammerlaan et al, "The New Gold Rush: Placer Mining in the Fraser Watershed" (Winter 2017/18) 196 BC Studies 115 at 117.

[4] Fair Mining Collaborative, "The New Gold Rush: Placer Mining in the Fraser Watershed" (April 2017), online: <www.fairmining.ca/wp-content/uploads/2018/03/NewGoldRush.pdf> [FMC, "New Gold"]; FMC, "BC Placer Mining", *supra* note 2; Fair Mining Collaborative, "Stirring Up the Sentiment: An Overview of Placer Mining in British Columbia" (September 2016) [unpublished draft report, on file with the University of Victoria Environmental Law Centre] at 1, 7 [FMC, "Stirring Up"]; Fair Mining Collaborative, "Lost Creeks: the Atlin Watershed and Placer Mine Reclamation" (2017) [unpublished draft report, on file with the University of Victoria Environmental Law Centre] [FMC, "Lost Creeks"].

the *Auditor General Act*.[5] An examination is necessary to determine if the public interest is served by current regulatory practices and government management – and, if not, how the situation may be rectified.

The argument for why the Auditor General should investigate this matter is presented below as follows:

1. The Environmental and Human Effects of Placer Mining
2. The Negligible Economic Benefits of Placer Mining
3. The Under-Regulation of Placer Mining
4. The Auditor General's Legal Authority to Investigate
5. Conclusion

Note that the following submission relies heavily on the research on placer mining done by Fair Mining Collaborative.

1. The Environmental and Human Effects of Placer Mining

Past and present placer mining activities have far-reaching negative effects on riparian areas and streams, fish, human health, and Indigenous rights.

Effects on Riparian Areas and Streams

Placer mining commonly involves excavation and shoveling of sand and gravel along streams. The problem is that such placer mining seriously disrupts riparian areas – nature's most biologically productive terrestrial systems. These unique waterside zones are critical to wildlife, and harbour almost two thirds of Canada's rare and endangered species. Riparian areas form important corridors for animal movement and plant dispersal, and are absolutely essential to healthy streams. Riparian vegetation shades streams, cooling the water and preventing fish kills. Such vegetation provides food inputs for streams, controls erosion and, along with intact soils, filters out water-borne pollutants. In sum, the quality and integrity of streams depends on the 'ribbon of life' found in the riparian zone.[6]

Yet placer mining clears riparian vegetation, disturbs soils and bankside integrity, and often damages the stream itself. Insufficient site reclamation can result in lasting erosion and habitat destruction.[7] For example, a Yukon study concluded that historical placer mining caused "extensive changes to stream channel morphology and instability", and increased the ongoing

[5] *Auditor General Act*, *supra* note 1.
[6] Calvin Sandborn, *Green Space and Growth: Conserving Natural Areas in BC Communities* (Victoria: Commission on Resources and Environment, 1996) at 91; Cows and Fish, "Fact Sheet: Biodiversity and Riparian Areas: Life in the Green Zone" (February 2002), online: <cowsandfish.org/pdfs/biodiversity.pdf>; FMC, "BC Placer Mining", supra note 2 at 4.
[7] FMC, "BC Placer Mining", supra note 2 at 4-5.

sediment load of watersheds.[8] Current placer mining activities across the province may exacerbate the industry's cumulative effects on watersheds and landscapes that have yet to recover from intensive gold rush-era placer mining.[9]

Between 1858 and 1909, placer mining added approximately 58 million cubic metres of sediment to the Fraser River – more than seven times the solids released by the 2014 Mount Polley mine disaster – with lasting landscape-scale effects.[10] Historical placer mining added even more sediment to the Quesnel River than it did the Fraser.[11] Near the gold rush town of Atlin, long-term placer mining has seriously degraded stream health and left riparian scars that are visible from space.[12]

Effects on Fish

Placer mining can cause serious long-term damage to fish populations. It directly kills fish by introducing fish-killing sediments and metals into water. Multiple studies have shown that even at low levels, suspended sediments have "significant effects on fish health, including decreased fish movement into sediment laden streams, reduced egg survival, reduced numbers of fish, and impaired feeding activity and growth."[13] Improper excavation and other in-stream activities can also destroy fish spawning grounds.[14] When placer miners damage fish habitat by clearing riparian vegetation, digging in streambeds, and allowing sediment to enter streams, the effects on fish populations can be devastating.[15] A 1992 study noted that unmined streams "support a standing stock of fish 40 times that of placer-mined streams".[16]

Historic placer mining activity in watersheds like the Fraser reverberates through to the present day, as increased sediment loads continue to affect spawning and rearing habitat and flow

[8] FMC, "Stirring Up", supra note 4 at 13; M Miles & Associates, "Restoration of Placer Mined Streams: Identification of Strategies to Expedite Recovery" (May 2003) at 1, online: <https://web.archive.org/web/20151009215734/yukonriverpanel.com/salmon/wp-content/uploads/2011/02/cre-86-02-restoration-of-placer-mined-streams-identification-of-strategies-to-expedite-recovery.pdf>.

[9] FMC, "Stirring Up", supra note 4 at 3, 13, 37. BC-focused research on placer mining's cumulative effects is lacking.

[10] FMC, "New Gold", *supra* note 4 at 2, 4, 12 at n 2.

[11] *Ibid* at 4.

[12] FMC, "Lost Creeks", *supra* note 4 at 4, 6; British Columbia, Ministry of Forests, Lands, and Natural Resource Operations, *Water Quality, Stream Sediments, and Hydrology in the Atlin Placer Mining Area – A Pilot Study* by Eric W Smith & Dave Wilford (Smithers, BC: 2013), online: <a100.gov.bc.ca/appsdata/acat/documents/r48553/Smith_Wilford_2013_WaterQualitySedimentandHydrolo_1431727552401_1726872381.pdf> [Smith & Wilford].

[13] Yukon Conservation Society, "Fish Are Worth Their Weight in Gold: A Review of The Effectiveness of the Yukon Placer Authorization" (2002) at 7, cited in FMC, "Stirring Up", supra note 4 at 19.

[14] FMC, "Stirring Up", supra note 4 at pp 16-17, 21, 33.

[15] FMC, "BC Placer Mining", supra note 2 at 4; Seakem Group Ltd, "Yukon Placer Mining Study: Vol 1 Executive Summary" (Sidney, BC: Yukon Placer Mining Implementation Review Committee, 1992), cited in Canada, Department of Fisheries and Oceans, "The Effects of Sediment on Fish and their Habitat" by Ian K Birtwell, Canadian Stock Assessment Secretariat Document 99/139 (West Vancouver: DFO, 1999) at 24, online: <www.dfo-mpo.gc.ca/Library/240698.pdf> [Seakem].

[16] Seakem, *supra* note 15.

regimes, with the potential for escalating negative effects over multiple generations.[17] Over the past two decades, sockeye salmon numbers on the Fraser River have "declined dramatically, with the sockeye crash of 2009 only eclipsed by 2016, which had the lowest returns ever recorded".[18] The Cohen Commission's response to the 2009 crash highlighted placer mining's "potentially severe impact on sockeye", and identified it as one of the stressors contributing to the uncertain future of Fraser River sockeye.[19] Other salmon and freshwater fish species that spawn in the Fraser watershed are equally threatened by placer mining.[20]

In addition to these negative effects on fish, modern placer mining can also mobilize highly toxic mercury from historic placer mining operations back into streams – where it can enter the aquatic food chain. Gold rush-era placer miners used up to 25lbs of mercury a day to increase gold particle recovery in their sluice boxes, depositing massive amounts of mercury into BC waterways in the process.[21] Approximately 2090kg of mercury "flows out of the Fraser River each year, a portion of which is likely attributable to historic placer mining".[22] When modern placer mining disturbs sediment containing historical mercury deposits, bacteria can convert small particles of elemental mercury into highly toxic 'methylmercury', which is easily ingested by organisms at the bottom of the food chain and causes harm at much lower levels.[23] Once consumed, methylmercury 'biomagnifies' up the food chain, leaving fish species near the top with much higher methylmercury loads than organisms at the bottom.[24]

Although the *Placer Mining Waste Control Regulation* now prohibits mercury use in sluice boxes, the damage has already been done.[25] Modern BC placer miners routinely recover mercury along with gold in some areas.[26] Near the gold rush hub of Barkerville, Jack of Clubs Lake has a long-standing mercury advisory – "WARNING: Lake trout over 45 cm may contain elevated mercury levels. Limit your consumption" – that may be due in part to historic placer mining pollution.[27] The only BC study of mercury levels in a historical placer mining area

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[17] FMC, "New Gold", *supra* note 4 at 9.
[18] FMC, "New Gold", *supra* note 4 at 7.
[19] *Ibid* at 7.
[20] *Ibid* at 9.
[21] FMC, "BC Placer Mining", supra note 2 at 6-7; Marcello M Veiga & J A Meech, "A Brief History of Amalgamation Practices in the Americas" (Paper delivered at the 16th Brazilian Symposium on Ore Processing and Hydrometallurgy, Rio de Janeiro, 17-22 September 1995), vol 1, at 581-594, cited in FMC, "BC Placer Mining", supra note 2 at 7.
[22] FMC, "Stirring Up", supra note 4 at 21; Sophia C Johannessen, Robie W MacDonald & K Magnus Eek, "Historical Trends in Mercury Sedimentation and Mixing in the Strait of Georgia, Canada" (2005) 39:12 Environmental Science & Technology 4361.
[23] "BC Placer Mining", supra note 2 at 6-7; Veiga & Meech, *supra* note 21.
[24] Randy F Baker, Gary Seymour Mann & PJ Allard, "Temporal changes of fish mercury concentrations in mining-affected Pinchi Lake, BC" (2014) British Columbia Mine Reclamation Symposium at 3, online: <https://open.library.ubc.ca/cIRcle/collections/59367/items/1.0042660>.
[25] *Placer Mining Waste Control Regulation*, BC Reg 107/89, ss 3(b)-(c) [*Waste Control Reg*].
[26] FMC, "Stirring Up", supra note 4 at 22; FMC, "BC Placer Mining", supra note 2 at 7.
[27] FMC, "Stirring Up", supra note 4 at 22; Ministry of Forests, Lands and Natural Resource Operations, "2017-2019 Freshwater Fishing Regulations Synopsis - Region 5 – Cariboo" (2017) at 51, online: <www.env.gov.bc.ca/fw/fish/regulations/docs/1719/fishing_synopsis_2017-19_region5.pdf>.

revealed levels up to 200 times higher than expected at some sites on the Lillooet River near Port Douglas.[28] A 2002 guidebook exposed "the likelihood of finding mercury along with gold at Granite Creek, near Princeton" in the Similkameen region.[29] Other gold rush-era mercury "is likely trapped in the sediment" of waterways in the Fraser, Cariboo, and Atlin regions, posing an ongoing risk to fish and fish-consuming species.[30] The risk of modern placer activities mobilizing historic mercury is rising as placer mining activity grows.

Effects on Human Health

Placer mining poses a risk to human health by contaminating fish and seafood that humans consume.[31] The World Health Organization lists mercury as one of the world's ten most harmful chemicals, causing significant fetal harm and serious human health problems, especially in young children.[32] Methylmercury exposure through seafood consumption is particularly dangerous.[33] Unlike Saskatchewan, Ontario, and Québec, which have placed mercury-related fish consumption advisories on hundreds of waterways, BC has not issued a new advisory in over 25 years.[34] As a result, anyone who consumes fish species that live or spawn in placer-mined BC waterways may be at risk of methylmercury exposure without knowing it. Indigenous peoples' reliance on fish for food, social, and ceremonial purposes likely elevates their risk level relative to other BC residents. Placer miners themselves may also be in danger.[35]

Placer mining also poses a risk to drinking water when placer mining-related sediment releases contaminants into waterways. In the Atlin region, "tests downstream of placer mines that discharge directly into streams have found levels of aluminum, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, vanadium, and nickel that exceed drinking water guidelines".[36] Modern placer mining regulations normally require miners to "divert 'process' water into a settling pond and allow the water to seep into the ground, or reuse it, rather than

[28] FMC, "BC Placer Mining", supra note 2 at 7; Veiga & Meech, *supra* note 21.
[29] FMC, "Stirring Up", supra note 4 at 21; Cam Bacon, *Gem Trails of British Columbia* (Surrey, BC: Hancock House, 2002) at 26.
[30] Lamothe-Ammerlaan et al, *supra* note 3 at 7.
[31] See, e.g., ED Bidone et al, "Fish Contamination and Human Exposure to Mercury in the Tapajós River Basin, Pará State, Amazon, Brazil: A Screening Approach" (1997) 59:2 Bull Environmental Contamination & Toxicology 194; ED Bidone et al, "Fish Contamination and Human Exposure to Mercury in Tartarugalzinho River, Amapa State, Northern Amazon, Brazil: A Screening Approach" (1997) 97 Water, Air & Soil Pollution 9; Charles N Alpers et al, "Mercury Contamination from Historical Gold Mining in California: Fact Sheet 2005-3014", US Geological Survey (October 2005), online: <https://pubs.usgs.gov/fs/2005/3014/fs2005_3014_v1.1.pdf>.
[32] World Health Organization, "Mercury and Health" (March 2017), online: <www.who.int/mediacentre/factsheets/fs361/en/>.
[33] *Ibid*.
[34] Azimuth Consulting Group Partnership, "Williston Reservoir Watershed – Fish Mercury Consultation and Next Steps", Fish and Wildlife Compensation Program – Peace (March 2015) at 14, online: <fwcp.ca/app/uploads/2015/12/FWCP-Peace-Willison-Mercury-March-2015-FINAL-with-appendices.pdf>.
[35] FMC, "Stirring Up", supra note 4 at 23.
[36] FMC, "BC Placer Mining", supra note 2 at 5; Smith & Wilford, *supra* note 12 at 58-70.

releasing it directly into the stream", but some BC waterways are exempt.[37] In 1985, Atlin-area placer miners successfully lobbied their MLA to deregulate a number of nearby creeks that had already been damaged by un-reclaimed gold rush placer mining.[38]

As a result, for the past three decades, the *Placer Mining Waste Control Regulation* has allowed placer miners to dump wastewater directly into Birch, Boulder, Ruby, Otter, Wright, Quartz, Spruce, Pine, McKee, Snowy, and Dease Creeks, compounding gold rush-era problems.[39] A 2013 Ministry of Environment study found that aluminum levels on lower Otter Creek exceeded drinking water guidelines by a factor of 624, while samples taken farther away revealed aluminum levels seven times the recommended maximum.[40] Many of these creeks feed into Atlin Lake, jeopardizing the health of Taku River Tlingit First Nation members and other Atlin residents who use it as a drinking water source.[41]

Effects on Indigenous Rights

Placer mining has disproportionately affected Indigenous peoples since the gold rush era. It "played a pivotal role in the colonization of British Columbia", sparked a smallpox epidemic that killed at least half the Indigenous population of BC, and led to significant Indigenous-settler clashes in the Chilcotin and Fraser Canyon Wars.[42] Nineteenth-century placer mining laws and regulations were crafted without regard for Indigenous livelihoods that relied on traditional uses of fish, wildlife, and plants.[43] This "set the stage for modern day land use laws, which hold mining as the highest and best use of land, pushing aside Indigenous peoples and creating wide-spread environmental and cultural impacts".[44]

Placer mining continues to reduce Indigenous access to traditional territories and resources, jeopardizing the meaningful exercise of constitutionally-protected Aboriginal rights. In some parts of the province, streams can host hundreds of active mine sites, each of which is required by law to control public access.[45] This blocked access interferes with Indigenous fishing, hunting, and gathering activities.[46] Placer miners' removal of riparian vegetation also reduces local biodiversity, and forces Indigenous harvesters to travel much farther to access traditional

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[37] FMC, "BC Placer Mining", supra note 2 at 4-5; *Waste Control Reg, supra* note 25 at ss 2-3.
[38] FMC, "Lost Creeks", *supra* note 4 at 5.
[39] *Waste Control Reg, supra* note 25 at s 3(c)(i).
[40] FMC, "Lost Creeks", *supra* note 4 at 6; Smith & Wilford, *supra* note 12 at 14, 58-72.
[41] *Ibid*; *Ibid*.
[42] FMC, "New Gold", *supra* note 4 at 3. On the devastating impact of the 1862 smallpox epidemic, see Joshua Ostroff, "How a smallpox epidemic forged modern British Columbia" *Macleans* (1 August 2017), online: <www.macleans.ca/news/canada/how-a-smallpox-epidemic-forged-modern-british-columbia/>; Dene Moore, "BC First Nations mark small pox anniversary" Vancouver Metro (6 August 2012), online: <www.metronews.ca/news/canada/2012/08/06/b-c-first-nations-mark-small-pox-anniversary.html>.
[43] *Ibid*.
[44] *Ibid*.
[45] For example, 1400 placer mine sites have been established in the Fraser Watershed since 1980, and over 4000 Notice of Work permits have been issued. See Lamothe-Ammerlaan et al, *supra* note 3 at 126.
[46] FMC, "New Gold", *supra* note 4 at 7.

foods and medicines.[47] When Indigenous peoples do secure access to fish, wildlife, and plants for traditional use, placer mining-related contamination may lead to negative health effects.

2. The Negligible Economic Benefits of Placer Mining

An important public interest issue arises – are the negative effects of placer mining worth it to British Columbians? Fair Mining Collaborative argues that the placer mining industry "offers little in economic return to offset the environmental damage" it causes to natural public assets.[48] Placer gold mine operators pay only 0.5% in mineral tax on their mineral sales, and individual operators who produce less than $50,000 (fair market value) of gold a year per mine are exempt from filing mineral tax returns unless the commissioner of mineral tax issues a demand for a return.[49] And since operators are taxed per mine, individual operators may pay no tax even if they are producing more than $50,000 of gold a year across multiple mines.[50]

Under the current *Mineral Tax Act* regime, the BC government collected less than $65,000 in royalties on nearly $13 million in reported 2015 placer mining gold sales.[51] Over the eight year period from 2008 to 2015, it collected only $253,248 on more than $50 million in reported sales.[52] BC's "perpetually low royalty returns" from placer mining are not commensurate with the public costs of regulating the industry and the "inordinate amount of environmental damage" done to BC's natural assets.[53] This state of affairs also leaves no funds available for revenue-sharing with affected First Nations.

Additionally, the tax return exemption for individual placer miners who mine or sell up to $49,999.99 of gold per mine per year means BC lacks a complete record of placer mining production or profits. If more data were available on the smaller industry players, those data might reveal much higher total industry-wide profits than the reported figures suggest.[54] If that were the case, the financial compensation the province receives would appear even less commensurate to the private value placer miners generate at public expense.

In any case, the Auditor General needs to determine what revenue and other benefits the placer mining industry provides to the Province – and whether those benefits are sufficient to justify the substantial risk created to Crown assets such as clean water, healthy fish and wildlife, and human health.

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[47] FMC, "Lost Creeks", *supra* note 4 at 4.
[48] FMC, "BC Placer Mining", supra note 2 at 1.
[49] *Ibid* at 3; *Mineral Tax Act,* RSBC 1996, c 291, ss 1.1, 2.2, 12(2.1).
[50] *Mineral Tax Act, supra* note 49, ss 12(2.1).
[51] FMC, "BC Placer Mining", supra note 2 at 3.
[52] Calculated from figures in *Ibid* at 3, Table 1.
[53] FMC, "Stirring Up", supra note 4 at 32. A 2003 BC Mining Task Force report noted the imbalance between the low royalty returns and high regulatory costs of placer mining, but reached the environmentally unconscionable conclusion that the industry should be deregulated as a result. See British Columbia Government Caucus Mining Task Force, *Restoring the British Columbia Mining Industry* (Victoria: BC Mining Task Force, 2003) at 46, online: <ralphsultanmla.ca/wp-content/uploads/sites/60/2014/07/MTF9dec03.pdf>.
[54] FMC, "BC Placer Mining", supra note 2 at 4.

3. The Under-Regulation of Placer Mining

At each stage of the placer mining process, BC's current regulatory framework fails to prevent or adequately mitigate the harms detailed above. Insufficient and poorly-enforced laws and regulations jeopardize British Columbia's natural assets and the health of British Columbians.

Regulatory Shortcomings at the Pre-Mining Stage

The BC government places very few restrictions on those who wish to initiate placer mining activity. Placer miners are allowed to begin excavating streams and riparian areas without environmental assessment or Indigenous consultation, and without any of the constraints those processes might place on their activities. Some forms of placer mining do not even require a claim, permit, or water authorization.

- *Minimal Preconditions for Placer Mining*

Placer mining activity can take the form of:

- 'hand panning' with a shovel and hand-held pan;
- 'placer hand mining' with hand tools and a sluice or shaker box; or
- 'placer mines' that use excavation machinery.

BC classifies hand panning as a recreational activity and has made it almost completely exempt from regulatory oversight, so long as it does not take place on heritage or conservation lands or without permission from private landowners or mineral title holders.[55] Hand panning placer miners do not need to stake a claim, apply for a permit, or obtain a *Water Sustainability Act* authorization,[56] and the province does not appear to track their activities.

Placer hand mining requires prospective miners to stake a claim online, and maintain it by performing work each year or by paying an annual fee per hectare.[57] Claims must be converted to a lease if the miner intends to process more than 20,000 m^3 of pay-dirt a year.[58] Provincial data and communications with provincial officials suggest that while placer hand mining activity has more than doubled since 2005, it has attracted little government oversight and been

[55] British Columbia, Mineral Titles Branch, "Information Update No 2 - Recreational Hand Panning for Placer Minerals" (rev 2 May 2016), online: <www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/mineral-titles/notices-mineral-placer-titles/information-updates/infoupdate2.pdf>.
[56] *Ibid*; *Water Sustainability Act*, SBC 2014, c 15, s 6(3).
[57] FMC, "Stirring Up", supra note 4 at 6; *Mineral Tenure Act,* RSBC 1996, c 292, s 29.
[58] FMC, "Stirring Up", supra note 4 at 6-7; *Mineral Tenure Act*, *supra* note 57 at s 45; *Mineral Tenure Act Regulation,* BC Reg 529/2004, s 17.2. While the conversion process allows the chief gold conditioner to attach conditions to the lease, they have no discretion to reject a properly completed lease application. See also British Columbia, Mineral Titles Branch, "Information Update No 6 – Applying for a Placer Lease" (rev 4 Nov 2015), online: <www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/mineral-titles/notices-mineral-placer-titles/information-updates/infoupdate6.pdf>.

imprecisely tracked.[59] Like hand panners, placer hand miners do not need to obtain a *Water Sustainability Act* authorization to excavate BC streams.[60] Placer hand miners have not typically needed a permit either.[61] Ministry of Energy, Mines & Petroleum Resources personnel claim that, since November 2017, they have directed prospective placer hand miners to submit an online Notice of Work application for review by the Regional Inspector of Mines, to determine whether a permit is required in the circumstances.[62] However, the legal or policy basis for this supposed change remains unclear.[63]

Placer mines that use machinery for riparian excavation are subject to the same claim and lease requirements as placer hand mines. They also require a Notice of Work permit to operate, which can be obtained via an online application and is valid for up to 5 years.[64] Since 2015, placer mines that will be moving more than 60,000 tonnes or 30,000 m^3 of pay-dirt per year with machinery must pay a $4000 permit fee, but 90% of placer mines that require a permit likely fall below this threshold and receive them for free.[65] Placer mines that use machinery are theoretically subject to *Water Sustainability Act* requirements, but those processing less than 2000 m^3 of pay-dirt per year are not currently required to obtain water authorizations.[66] BC does not appear to collect or publish statistics on the number of placer mines operating under permits, but Fair Mining Collaborative estimates suggest numbers are on the rise, "with 542 sites holding an active Notice of Work permit in 2016, up from a low of 187 in 2005".[67]
In order to effectively protect the public interest, measures such as a moratorium on placer claim staking and Notice of Work permit issuance may be necessary until comprehensive regulatory reform is achieved.[68]

[59] FMC, "Stirring Up", supra note 4 at 1, 6, 29.
[60] *Water Sustainability Act*, *supra* note 56 at s 6(3).
[61] FMC, "BC Placer Mining", supra note 2 at 8.
[62] Personal communication (phone call) with Tracy Martin, Mineral Lands Administrator, Ministry of Energy, Mines and Petroleum Resources (1 February 2018).
[63] The Ministry is developing a new policy guidance document that will clarify this issue, and they "hope to publish the document publicly" sometime in spring 2018. Email from James Prsala, British Columbia Ministry of Energy, Mines and Petroleum Resources to Environmental Law Centre (28 February 2018).
[64] FMC, "BC Placer Mining", supra note 2 at 7; FMC, "Stirring Up", supra note 4 at 6-7; Ministry of Energy and Mines, *Health, Safety and Reclamation Code for Mines in British Columbia* (Victoria: Ministry of Energy & Mines, rev June 2017), s 10.1.1 [*HSR Code for Mines*]; *Mines Act*, RSBC 1996, c 293, s 10.
[65] The fee increases if a placer mine moves more than 62,500 m^3 of pay-dirt per year. See *Mines Fee Regulation,* BC Reg 54/2015, s 4; British Columbia, Ministry of Energy & Mines, "Guide to Mines Fee Regulation: Placer Mines: (rev 30 March 2015), online: <www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/permitting/guide_to_mines_fee_regulation-placer_mar_30.pdf>.
[66] This exemption is found in a supposedly transitional provision of the *Water Sustainability Act Regulation* that has been renewed twice so far. See *Water Sustainability Regulation*, BC Reg 36/2016, s 56, as amended by BC Reg 238/2017, Schedule A.
[67] These estimates are based on a combination of government reports and communications and FOI requests. See FMC, "BC Placer Mining", supra note 2 at 2, 9; FMC, "Stirring Up", supra note 4 at 27-28.
[68] FMC, "BC Placer Mining", supra note 2 at 2.

- *Lack of Environmental Assessment*

All forms of placer mining are essentially exempt from environmental assessment in BC. Under the *Reviewable Projects Regulation*, new placer mines only trigger an assessment if they will have a production capacity of at least 500,000 tonnes of pay-dirt a year. [69] By comparison, BC requires hard rock mineral mines to undergo environmental assessment if they produce more than 75,000 tonnes of ore a year. As a result, "placer mines in B.C. can process six times the amount of material as a mineral mine" without triggering an environmental assessment, and the placer threshold is "so high that it has excluded every single placer mine" in the province.[70] Despite extensive research, the Fair Mining Collaborative has been "unable to find a single record of a [BC] placer mine undergoing a federal or provincial Environmental Assessment".[71]

BC's failure to assess the environmental effects of placer mining contrasts sharply with Yukon's comparatively robust environmental assessment regime. The Yukon Environmental and Socio-Economic Assessment Board "conducts more environmental assessments on placer mines than on any other kind of development", and it assessed 572 placer projects between 2008 and 2017.[72] Its Designated Offices must notify affected First Nations and the public of upcoming assessments, and must "give equal consideration to scientific and traditional Indigenous knowledge" it receives.[73] Yukon decision-makers are also required to consider "adverse cumulative environmental and socio-economic effects that have occurred or might occur in connection with the project… in combination with the effects of other projects".[74] Although BC's current environmental assessment process does not mandatorily require cumulative effects assessment, the placer mining industry is a prime candidate for cumulative effects assessment.[75] High numbers of small mines scattered across historically-mined watersheds may make cumulative assessment the most efficient, cost-effective way to measure and control the industry's ongoing environmental effects.[76] If British Columbia wants to protect its natural

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[69] FMC, "New Gold", *supra* note 4 at 10; *Reviewable Projects Regulation*, BC Reg 370/2002, s 8(2) & Table 6, s 4(1). Existing placer mines that wish to expand only require an environmental assessment if the expansion will put them over the 500,000 tonne threshold *and* disturb at least 35% more land than was previously permitted.

[70] FMC, "New Gold", *supra* note 4 at 10.

[71] *Ibid*. Section 43 of the *Mineral Tenure Act* required any placer miner wishing to convert a claim into a lease to obtain an environmental assessment certificate, but this provision was repealed in 2003. *Mineral Tenure Act, supra* note 57 at s 43, as repealed by *Energy and Mines Statute Amendment* Act, SBC 2003, c 1, s 5.
See FMC, "Stirring Up", supra note 4 at 15.

[72] FMC, "New Gold", *supra* note 4 at 10; Yukon Environmental and Socio-economic Assessment Board, "Project Statistics" (1 August 2014), online: <www.yesab.ca/about-yesab/assessment-statistics/>.

[73] Yukon Environmental and Socio-economic Assessment Board, "Rules for Evaluations Conducted by Designated Offices" (1 June 2010), ss 25 & 55, online: <www.yesab.ca/wp/wp-content/uploads/2013/04/DO-Rules-English-as-approved-June-1-10.pdf>.

[74] *Yukon Environmental and Socio-economic Assessment Act,* SC 2003, c 7, s 42(1)(d).

[75] FMC, "New Gold", *supra* note 4 at 10. BC Environmental Assessment Office policy only requires cumulative effects assessment at the project level if the proposed project is "likely" to have effects on a 'valued component' of the environment despite proposed mitigation measures. See Environmental Assessment Office, "Cumulative Effects and BC Environmental Assessment" at 1, online: <www.eao.gov.bc.ca/files/EAO-Cumulative-Effects-and-BC-Environmental-Assessments.pdf>.

[76] *Ibid*; FMC, "Stirring Up", supra note 4 at 23-24.

resources, it must begin to conduct environmental assessments of placer mining operations – and include cumulative assessment of impacts.

- *Indigenous Consultation, Accommodation, and Consent*

As previously noted, placer mining has the potential to jeopardize Indigenous peoples' rights in a number of ways. Consequently, any placer mining activity allowed by the BC government may trigger its constitutional duty to consult and accommodate Indigenous peoples, which arises whenever the Crown contemplates conduct that might adversely affect an asserted or established Aboriginal right.[77]

However, the entire BC mining framework has almost no built-in mechanism for consultation with First Nations. From the top down, BC designates entire sections of the province as "placer mining zones"[78] and allows proposed placer mines to go ahead with only the Notice of Work application as the sole "de facto" instrument of consultation for the whole process.[79] Absent an environmental assessment or other "statutorily-mandated consultation" process, reliance on the single Notice of Work permit application fails to recognize the full legal gravity and substance behind the duty to consult; and it fails First Nations".[80]

The BC government claims to fulfil its duty to consult by giving First Nations thirty days to respond to Notice of Work applications. However, this consultation period is unreasonably short, particularly "in light of the administrative capacity of many First Nations" that are already overburdened with consultation referrals from other resource sectors.[81] As a result, First Nations are denied a meaningful opportunity to request or receive accommodations that could mitigate placer mining's impact on their access to traditional sites and the health of the waterways, fish, plants, and animals that sustain them.

BC's current approach to placer mining consultation appears inconsistent with the provincial Crown's constitutional duty to consult and accommodate Indigenous rights-holders. It also clearly falls short of the 'free, prior, and informed consent' requirements set out in the *United Nations Declaration on the Rights of Indigenous Peoples*, which Premier Horgan has recently committed to "embrace and implement… in partnership with Indigenous peoples".[82]

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[77] *Haida Nation v British Columbia (Minister of Forests)*, 2004 SCC 73, [2004] 3 SCR 511.
[78] British Columbia, Ministry of Energy and Mines, "Placer Designations" (3 January 2014), online: <www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/mineral-titles/mineral-placer-titles-getting-started/forms-maps-publications/maps/placer_designated_areas.pdf>.
[79] FMC, "Stirring Up", supra note 4 at 7, 10; FMC, "New Gold", *supra* note 4 at 7.
[80] FMC, "New Gold", *supra* note 4 at 7.
[81] *Ibid*; Fair Mining Collaborative, "The Path to Zero Failures: Health, Safety and Reclamation Code Review" (2015) at 36, online: <www.fairmining.ca/wp-content/uploads/2016/01/The_Path_To_Zero_Failures.pdf> [FMC, "Zero Failures"]. The Fair Mining Collaborative has recommended Notice of Work consultation periods be extended to 90-120 days.
[82] Office of the Premier, News Release, "Statement from Premier John Horgan on the 10th anniversary of the UN Declaration on the Rights of Indigenous Peoples" (13 September 2017), online:

Serious Regulatory Shortcomings at the Mining Stage

BC's approach to active placer mining is riddled with regulatory gaps. BC does not regularly inspect placer mines or placer hand mining sites, and typical penalties for environmental violations are too low to effectively incentivize compliance.[83] In some cases, the province's limited restrictions on particularly damaging practices lack clarity or are waived entirely.

- *Low Inspection Rates*

Many BC placer mining sites are rarely, if ever, inspected. On average over the past decade, the number of annual inspections was equal to only 26% of number of placer mines with active Notice of Work permits.[84] Actual annual inspection rates are likely lower than 1 in 4, because inspectors inspect 'problem' mines several times a year, 'inspect' some mine sites twice in a single day, and include inspections of abandoned and non-operational placer mines in their figures.[85] In 2015 and 2016, 58% of inspections took place at only 17% of permitted placer mines, and 6% of mines received 3 or more inspections, making up 34% of all inspections.[86]

Directing so much attention at particular mines means non-compliance at other placer mines may go unnoticed. Annual inspections of all permitted placer mines would go a long way to rectifying this lack of oversight.[87] Placer hand mining activity is also overdue for improved oversight: only two inspectors are tasked with inspecting thousands of active sites, and the 2016 inspection rate was approximately one in twenty.[88]

- *High Non-Compliance Rates*

Your 2016 finding of "limited compliance and enforcement" across the mining sector appears to be particularly applicable in the placer mining context.[89] For example, a 2010 Ministry audit of twenty-three active placer mines in the Cariboo area found that 74% were not in compliance

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<https://news.gov.bc.ca/releases/2017PREM0083-001562>; *United Nations Declaration on the Rights of Indigenous Peoples,* GA Res 61/295, Sess 61, Plen 107 (13 September 2017), online: <www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf>.

[83] FMC, "BC Placer Mining", supra note 2 at 7; FMC, "Stirring Up", supra note 4 at 30.

[84] FMC, "BC Placer Mining", supra note 2 at 7-9.

[85] Data from FOI Request - EGM-2017-70745, online: <www2.gov.bc.ca/enSearch/detail?id=7AFDBC16F15F42E289E9F7DDB0F80C40&recorduid=EGM-2017-70745&keyword=EGM-2017-70745>; Fair Mining Collaborative, "Additional comments on distribution and frequency of placer mine inspections" (2017) [unpublished draft report, on file with the University of Victoria Environmental Law Centre] [FMC, "Additional comments"].

[86] FMC, "Additional comments", *supra* note 84.

[87] FMC, "Stirring Up", supra note 4 at 1, 4.

[88] FMC, "BC Placer Mining", supra note 2 at 7-8; Email from M Messmer, Chief Gold Commissioner, Mineral Titles Branch, British Columbia Ministry of Energy and Mines to Fair Mining Collaborative (7 April 2017).

[89] British Columbia, Office of the Auditor General, *An Audit of Compliance and Enforcement of the Mining Sector* (Victoria: Queen's Printer, May 2016) at 6; online: <www.bcauditor.com/pubs/2016/audit-compliance-and-enforcement-mining-sector> [Auditor General].

with their Notice of Work permit requirements.[90] More than half of the audited placer mines were operating too close to the stream bank, and 26% were doing so in areas identified as critical fish habitat.[91] Forty-three percent of mines audited had unauthorized in-stream works, and 35% were illegally discharging wastewater into bodies of water.[92]

Placer hand mining sites were not included in the audit.[93] In the absence of comprehensive inspection, compliance rates in the Cariboo and other placer mining regions likely continue to be low.

- *Lack of Clarity around Riparian Setbacks*

Riparian setbacks, which require potentially damaging activities to take place a specified minimum distance from the high-water mark, can reduce damage to streams and riparian habitat. However, BC lacks a "clear legislative standard regarding riparian setbacks" for placer mining.[94] The 2010 Ministry audit referenced a 10m riparian setback requirement – supposedly "the standard reserve zone" set out in placer mine Notice of Work permits and a 1997 interdepartmental Memorandum of Understanding – and found it was widely ignored, with less than half of placer mines actually respecting it.[95] The legal status of this minimal supposed requirement remains unclear. The 2014 *Atlin Placer Mining Best Management Practices Guidebook* identified it as a mere policy requirement, and a 2015 Fair Mining Collaborative report characterized it as "something more akin to a word of mouth practice among placer miners," with "low adherence".[96]

In April 2016, the Mineral Titles Branch issued an Information Update on "Acceptable Practices for Placer Hand Mining in British Columbia," which indicated that activity could only take place "10 horizontal metres out from the high water mark of any watercourse, wetland or waterbody" or "on a gravel bar within a watercourse… 3 metres from the edge of the water".[97]

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[90] British Columbia, Ministry of Forests, Lands and Natural Resource Operations, "Cariboo Region Placer Mine Inspection Report" by Michelle Arcand & Joanne McLeod (December 2011) at 1, in FOI Request – FNR-2012-00238, Response Package at 161, online: <docs.openinfo.gov.bc.ca/D10015613A_Response_Package_FNR-2012-00238.PDF> [Arcand & McLeod].

[91] *Ibid* at 11.

[92] *Ibid* at 10-11.

[93] FMC, "Stirring Up", supra note 4 at 18.

[94] FMC, "Zero Failures", *supra* note 80 at 9.

[95] Arcand & McLeod, *supra* note 90 at 1, 4, 6.

[96] Taku River Tlingit First Nation et al, *Atlin Placer Mining Best Management Practices Guidebook* (June 2014) at 25, online: <www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/standards-guidelines/best-management-practices/atlin_placer_mining_bmp_guidebook_final_june_30_2014.pdf> [*Best Management Practices Guidebook*]; FMC, "Zero Failures", *supra* note 80 at 9.

[97] British Columbia, Mineral Titles Branch, "Information Update No 38 – Acceptable Practices for Placer Hand Mining in British Columbia" (12 April 2016), revised 29 March 2017, removed fall 2017, archived online: <https://web.archive.org/web/20170707004040/http://www2.gov.bc.ca:80/gov/content/industry/mineral-exploration-mining/mineral-titles/news-notices-announcements/information-updates> at 1-2. The update set out slightly different requirements for the Fraser River.

However, this document was removed from the Mineral Titles Branch website in fall 2017.[98] If the setback requirement is still government policy, it remains unclear which forms of placer mining are supposed to comply with it, if or how prospective placer miners are being notified, and whether it is being enforced.[99]

Even if a 10m setback requirement still exists for some types of placer mining activity, this distance is inadequate compared to BC setbacks for other industrial activities. Hard-rock mineral exploration can only take place 10-70m from the water, and many municipalities require a 30m setback for development activities.[100] Indeed, scientific studies support a setback of at least 30m to protect streams and riparian habitat.[101] A 10m setback allows placer mining activity to take place in vitally important fish and wildlife areas that are off-limits to other industries".[102] To make matters worse, the 2010 Ministry audit's findings suggest a majority of operators may be violating even these minimal standards.

- *Legally Permissible Environmental Destruction – Suspending Pollution Rules in Atlin*

As noted above, BC placer miners are normally required to "divert 'process' water into a settling pond and allow the water to seep into the ground, or reuse it, rather than releasing it directly" into a waterway.[103] Proper use of settling ponds "lowers the risk of mercury from historic placer mines re-entering the ecosystem".[104] However, BC inexplicably suspended normal environmental rules for placer mining operations in the Atlin region in 1988. Placer miners operating on the eleven 'deregulated' creeks near Atlin do not have to use settling ponds (as long as they do not use mercury or chemicals for placer mineral recovery).[105] This requirement does little to stop the reintroduction of dormant, historical placer mining contaminants, or protect the life-sustaining riparian environments and drinking water sources in the Atlin region.[106] This anachronistic regulatory exemption affects most streams within

[98] Personal communication (phone call) with Tracy Martin, Mineral Lands Administrator, Ministry of Energy, Mines & Petroleum Resources (1 February 2018). Martin claims the update was removed in November because the Mineral Titles Branch was directed not to give advice on *Mines Act* permitting and that the 10m setback is still government policy. However, she could not provide any evidence of internal communications to this effect, or identify any current means of notifying placer miners at large about the setback. Internet archives suggest the document was removed between 7 July 2017 and 31 October 2017.

[99] The Ministry is developing a new policy guidance document that will clarify this issue, and they "hope to publish the document publicly" sometime in spring 2018. Email from James Prsala, British Columbia Ministry of Energy, Mines and Petroleum Resources to Environmental Law Centre (28 February 2018).

[100] FMC, "BC Placer Mining", supra note 2 at 5-6; *HSR Code for Mines*, *supra* note 64 at Table 9.1 & s 9.5.1; *Riparian Areas Regulation*, BC Reg 376/2004, s 1(1).

[101] FMC, "BC Placer Mining", supra note 2 at 6; Seth Wenger, "A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation" (Athens: University of Georgia Institute of Ecology, March, 1999) at 3, online: <www.memphremagog.org/FCKeditor/ckfinder/userfiles/files/Centre_de_documents/EN/Review-scientific-literature.pdf>.

[102] FMC, "BC Placer Mining", supra note 2 at 6.

[103] *Ibid* at 4-5; *Waste Control Reg*, *supra* note 25 at ss 2-3.

[104] FMC, "BC Placer Mining", supra note 2 at 6.

[105] *Waste Control Reg*, *supra* note 25 at s 3(c)(i).

[106] FMC, "Lost Creeks", *supra* note 4 at 6; Smith & Wilford, *supra* note 12 at 14, 58-72.

20km of Atlin -- and has essentially authorized the destruction of provincial environmental assets in the region for the past three decades.[107]

Although this type of pollution remains illegal in most parts of BC, the 35% non-compliance rate noted in the 2010 Ministry audit suggests a significant proportion of placer mines across the province may be flouting the law and causing similar devastation by discharging their placer tailings directly into other waterways.[108]

Widespread Failure to Reclaim Mining Sites

- *Low Reclamation Rates*

Proper reclamation of placer mining sites is critical to ensure that exposed areas are not endlessly eroded, and to re-establish critical riparian vegetation and stable banks.[109] However, few BC placer mines are adequately reclaimed, leaving areas subject to ongoing erosion, sedimentation and loss of critical riparian habitat.[110]

Placer miners with Notice of Work permits are generally required to carry out reclamation activities in accordance with the standards set out *Health, Safety and Reclamation Code for Mines in British Columbia*, and must submit a reclamation plan as part of their Notice of Work application.[111]

However, reclamation standards are insufficiently precise to ensure compliance with global best practices, and the 2010 Ministry audit identified only one mine that was actually performing the reclamation work required by its permit.[112] Moreover, data from the past decade suggest that 21% of 'closed' placer mines in the Atlin region and 14% of 'closed' placer mines across the province lack a clear record of reclamation.[113] The provincial government and BC taxpayers may ultimately bear either the financial burden of reclaiming such sites, or the cumulative environmental cost of leaving them un-reclaimed.

Reclamation standards consistent with global best practices need to be implemented, along with bonding requirements that ensure reclamation actually takes place.[114]

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[107] *Ibid*.
[108] Arcand & McLeod, *supra* note 90 at 11.
[109] FMC, "Stirring Up", supra note 4 at 19.
[110] *Ibid* at 3, 19.
[111] *HSR Code for Mines, supra* note 64 at s 10.7; FMC, "Stirring Up", supra note 4 at 20.
[112] FMC, "Stirring Up", supra note 4 at 20; FMC, "BC Placer Mining", supra note 2 at 5; Arcand & McLeod, *supra* note 90 at 13.
[113] FMC, "Lost Creeks", *supra* note 4 at 1-2, 14.
[114] The Fair Mining Collaborative has found that the BC government's reclamation requirements fall short of global best practices: FMC, "Stirring Up", supra note 4 at 4, 20. For an overview of possible best practices, see *Best Practices Management Guidebook*, *supra* note 96.

- *BC's Inadequate Reclamation Bond Regime*

Fair Mining Collaborative research suggests that BC's inadequate reclamation bond regime is one reason for the province's low placer mine reclamation rates.[115] Reclamation bonds are a primary means of ensuring mine cleanup: security deposits commensurate with the scale of potential damage incentivize miners to reclaim their sites properly, rather than letting this burden fall on government and the public.[116] However, if reclamation bonds are set too low, improperly enforced, or not posted in the first place, it may be cheaper for the miner to abandon the mine than perform the required reclamation work.[117]

Under the *Mines Act*, the Chief Inspector of Mines and inspector-delegates can choose whether to make a Notice of Work permit conditional upon provision of a reclamation bond, and the "amount and form" of any such security is also at their discretion.[118] Prior to 2004, many placer mines were not required to post security, and since 2004, at least 36 have been allowed to operate without a reclamation bond.[119] Additionally, 12% of placer mines operating in BC over the past decade have received new Notice of Work permits extending their existing operations into the future without topping up their bonds to cover increased site activity or inflation.[120] In at least eighteen cases, two or more mines have been allowed to operate concurrently under a single bond that likely falls short of the total reclamation costs for all the sites it secures.[121] Overall, 15% of BC placer mines with permits to operate in the last decade have had inadequate security.[122]

Just as the Office of the Auditor General's 2016 audit concluded regarding major mines, the province is clearly "not holding an adequate amount of security to cover the estimated environmental liabilities" of placer mining activity.[123] BC's reclamation bond regime is overdue for reform -- to ensure that all placer mines post and maintain adequate security to effectively incentivize reclamation.[124]

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[115] FMC, "BC Placer Mining", supra note 2 at 5.
[116] FMC, "Lost Creeks", *supra* note 4 at 1, 13.
[117] FMC, "BC Placer Mining", supra note 2 at 5.
[118] *Mines Act*, *supra* note 64 at s 10(4); FMC, "Lost Creeks", *supra* note 4 at 8; D Howe, T Demchuk & A Rollo, "BC Mines Act Permitting: Update on Government Structure, Roles, Responsibilities and Requirements" (2012) British Columbia Mine Reclamation Symposium at 3, online: <https://open.library.ubc.ca/cIRcle/collections/59367/items/1.0042628>.
[119] FMC, "Lost Creeks", *supra* note 4 at 13.
[120] The Chief Inspector has the authority to require an additional bond amount annually, but does not appear to use it consistently. *Mines Act*, *supra* note 64 at s 10(5); *Ibid* at 14.
[121] FMC, "Lost Creeks", *supra* note 4 at 13.
[122] *Ibid* at 2.
[123] Auditor General, *supra* note 89 at 6.
[124] FMC, "Stirring Up", supra note 4 at 4.

Emerging Concerns

BC's growing placer jade mining industry raises additional issues.[125] Operating in the Cassiar and Tournigan River regions of northern BC, placer jade miners are extracting boulders "weighing as much as 20-30 tons" with heavy machinery.[126] The scale of placer jade extraction and potential consequent environmental disruption raises unique concerns. Any investigation of BC's regulatory approach to placer mining should include some consideration of the emerging placer jade mining industry.

4. The Auditor General's Legal Authority to Investigate

Based on the work of Fair Mining Collaborative, we have outlined how placer mining activity has jeopardized vast areas of natural, cultural, and economic resources, vital to the health of all British Columbians, while consistently generating no worthwhile tax revenue, under the advantages of a broken mining law regime. The provincial government has a duty to sustainably manage and steward natural resources in the public interest. A failure to implement and enforce effective regulatory measures to prevent and mitigate placer-related environmental and human health risks is a failure to act "economically, efficiently and effectively" as per s 11(8)(b) of the *Auditor General Act*.[127] You have the mandate, pursuant to section 13 of the *Act*, to act in the public interest and examine whether placer mining's effects on waterways, riparian areas, fish, drinking water, and Indigenous rights are being adequately managed. Section 12 of the *Act* empowers you to make any report that should, in your opinion, be made, at any time.

Precedent for such a report is found in previous Office of the Auditor General audits of the province's management of public resources such as grizzly bears, groundwater, drinking water, wild salmon, and forest resources.[128] You and your predecessors have previously recognized the economic and other values associated with public resources, and the critical importance in ensuring their proper management by Government.

5. Conclusion

The BC placer mining industry has far-reaching negative effects on riparian areas and streams, fish, human health, and Indigenous rights – but appears to provide little economic benefit to compensate the provincial government and British Columbians for the risks it creates and the

[125] The growing popularity of placer jade mining in BC is likely due in part to rising jade prices, but may also be influenced by Discovery Channel Canada's popular reality TV show, *Jade Fever*, which covers placer and hard rock jade mining operations in northern BC, and is now in its fourth season. See Jeff Desjardins, "The Rush For Jade in British Columbia" *Visual Capitalist* (23 September 2015), online: <www.visualcapitalist.com/the-rush-for-jade-in-british-columbia/>; Discovery, "Jade Fever" (2018), online: <www.discovery.ca/Shows/Jade-Fever>.
[126] Pacific Bay Minerals, "BC Jade", online: <www.pacificbayminerals.com/properties/bc-jade/>.
[127] *Supra* note 1.
[128] British Columbia, Office of the Auditor General, "Publications – Subject: Environment & Natural Resources", online: <www.bcauditor.com/pubs>.

damage it causes. The province's current regulatory approach to placer mining is unequal to the task of preventing or mitigating these harms.

As a result, we urge you to undertake an investigation into the BC government's apparent failure to adequately regulate placer mining in the public interest. We ask that you undertake this investigation pursuant to sections 11, 12, and 13 of the *Auditor General Act.*

We would be pleased to discuss this important matter at any time.

Yours sincerely,

Erin Linklater, Law Student

Renata Colwell, Articled Student

Calvin Sandborn Q.C., Legal Director