

Submission to the CEC – the Commission for Environmental Cooperation

June 2017

On whether the Canadian government is failing to enforce the *Fisheries Act* with leaking tar sands tailings ponds



environmental
defence

The Submitting Organizations and Individual

Environmental Defence Canada

Natural Resources Defense Council

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I. Summary of Submission

This submission asserts that the Government of Canada is failing to effectively enforce subsection 36(3) of the Canadian Fisheries Act with respect to the leaking of deleterious substances from oil sands tailings ponds into surface waters and the groundwater of Northeast Alberta. The Submitters therefore believe that a factual record on the subject is warranted.

Oil sands tailings ponds result from the extraction of bitumen from mined oil sands deposits in Northern Alberta. As of 2013, the tailings ponds had a surface area of 220 square kilometers (85 square miles), with a volume of 975.6 billion litres (244 billion gallons).¹ The volume of tailings now exceeds 1 trillion litres.²

Tailings ponds contain a large variety of substances that are deleterious to fish, including naphthenic acids, ammonia, benzene, cyanide, oil and grease, phenols, toluene, polycyclic aromatic hydrocarbons, arsenic, copper and iron.

Tailings ponds are constructed from the earthen materials that oil sands companies mine from the area. They are not lined and therefore leak contaminated substances into the environment. Companies attempt to recapture the leakage, but do not recapture it all.

There are documented cases of contaminated tailings substances reaching or projected to reach surface waters in Jackpine Creek (from Shell), Beaver Creek (from Syncrude), McLean Creek (from Suncor) and the Athabasca River (from Suncor).

With regards to the groundwater, one study used industry data to estimate that by 2008 the tailings ponds were leaking four billion litres (1 billion gallons) each year, with projections that this figure could reach over 25 billion litres (6.6 billion gallons) within a decade should proposed projects go ahead (see **Appendix III** at p. 2). This contamination can migrate to reach surface waters due to a hydrogeological setting that is punctuated by downcutting glacial and post-glacial meltwater channels and modern stream courses. In fact, a study published in *Environmental Science & Technology* in 2014 suggests that "oil sands process-affected groundwater is reaching the [Athabasca] river system" (see **Appendix XXI** at pp. 1 and 9).

Subsection 36(3) of the Canadian federal Fisheries Act establishes a general prohibition on the deposition of deleterious substances into waters frequented by fish.

The Canadian federal government is on record several years ago with concerns regarding contaminated tailings leakage in the area, and has been present at environmental assessment hearings when companies have projected surface water contamination and water quality degradation.

The Canadian government has neither prosecuted any company for documented surface water contamination, nor has it pursued regulation governing tailings pond leakage. It re-lies on the Government of Alberta to alert it to possible violations of the Fisheries Act, and Alberta in turn relies on industry self-reporting. An industry-funded regional water monitoring body that Canada relies on – the Regional Aquatic Monitoring Program – has been discredited as scientifically inadequate and for failing to identify significant water pollution in the region.

II. Subsection 36(3) of the *Fisheries Act*

A. Subsection 36(3) of the *Fisheries Act*

Subsection 36(3) of the Canadian federal *Fisheries Act* deals with pollution prevention, and establishes a general prohibition on the deposition of “deleterious substances” into waters frequented by fish.

Subsection 36(3) provides that:

Subject to subsection (4), no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water.³

Subsection 36(4) of the *Fisheries Act* provides that a deposit of a deleterious substance is not an offence if permitted by regulation.⁴

Subsections 36(5), (5.1) and (5.2) of the *Fisheries Act* empower the federal government to adopt regulations prescribing when, where, under which circumstances and in which concentrations the deposit of specified deleterious substances, waste or pollutants is authorized.⁵

Subsection 40(5)(a) provides that a deposit occurs whether or not the act or omission resulting in the deposit was intentional.⁶

The Governor in Council has made regulations prescribing the allowable deposits from facilities within specific industry classes such as the pulp and paper industry and the petroleum refining industry.⁷ The Governor in Council has not made any regulations pertaining to oil sands mining, oil sands tailings ponds or any effluent types released by those operations. Therefore, there are no regulatory exemptions from the requirements of subsection 36(3) of the *Fisheries Act* that are relevant to oil sands mining or tailings ponds resulting from oil sands mining.

In addition to prohibiting the direct deposit of deleterious substances into water frequented by fish, the second half of subsection 36(3) clearly prohibits the *indirect* deposition of deleterious substances and has a preventative element of prohibiting deposition “in any place under any conditions where the deleterious substance...may enter any such water” (emphasis added).

B. Subsection 36(3) is an Environmental Law

Subsection 36(3) of the *Fisheries Act* prohibits the release, discharge or emission of pollutants or environmental contaminants for the primary purpose of the protection of the environment or the prevention of danger to animal or human life or health and as such falls within the definition of an environmental law in Article 45(2) of the North American Agreement on Environmental Cooperation.

C. Interpretation of Subsection 36(3)

Canadian case law has clarified that it is not necessary that the receiving water be rendered deleterious to fish. The question is whether or not the substance being deposited is a “deleterious substance.” In *R. v. Kingston (Corporation of the City)*, (2004) 70 O.R. (3d) 577, (2005) D.L.R. (4th) 734 (Ont. C.A.) (“Kingston”), (see **Appendix I**) the Court stated:

[65] The focus of s. 36(3) is on the substance being added to water frequented by fish. It prohibits the deposit of a deleterious substance in such water. It does not prohibit the deposit of a substance that causes the receiving water to become deleterious. It is the substance that is added to water frequented by fish that is defined, not the water after the addition of the substance. A deleterious substance does not have to render the water into which it is introduced poisonous or harmful to fish; it need only be likely to render the water deleterious to fish. The *actus reus* is the deposit of a deleterious substance into water frequented by fish. There is no requirement in s. 36(3) or paragraph (a) of the definition of the term “deleterious substance” in s. 34(1), of proof that the receiving waters are deleterious to fish.

In Canada, jurisdiction over environmental matters is shared between the provincial and federal governments. Therefore, the issue can arise as to whether provincial permitting can serve as a defence to the contravention of a federal law. However, under the doctrine of federal paramountcy, where there is an inconsistency or conflict between a federal law and a provincial law, the federal law prevails.⁸ A provincial approval cannot excuse the proper enforcement of federal law. Furthermore, the existence of a federal-provincial cooperation agreement does not excuse the federal government from the active responsibility to enforce its legislation.

III. Evidence of Tailings Pond Leakage

A. Oil Sands Tailings Ponds Leakage

Canada’s oil sands are a large deposit of thick hydrocarbons trapped in sand and clay in Northern Alberta. The thick hydrocarbons, called “bitumen,” are currently extracted by one of two methods: (1) strip mining or (2) melting it in place (in situ) by injecting steam into the ground and pumping the bitumen out of the ground.

In the strip mining method, hot water is used to help separate the bitumen from the clay, sand, and other materials. This results in a large stream of contaminated liquid waste that is put into holding areas called “tailings ponds,” although they are more like lakes in size. Oil sands tailings ponds currently have a surface area of at least 220 square kilometers (85 square miles), and likely exceed 1 trillion litres in volume.⁹

The containment areas for tailings ponds in the oil sands are built from materials the companies excavate from the surrounding area – earthen materials – and are not lined. In their project proposals (see e.g. **Appendix II**, at pp. 1-2) companies assume that tailings ponds will systematically leak into the surrounding area, and the companies deploy a range of measures to recapture some of the leakage.

These recapture methods, however, are imperfect. As outlined below, there have been documented cases of contaminated tailings materials reaching surface waters, and leakage to deeper aquifers is not recaptured (see **Appendix III**, at p. 11 and **Appendix II** at pp. 1, 3-4, 7-8, 10-12).

In December 2008, Environmental Defence Canada released a report (see **Appendix III**) that for the first time publicly estimated how much contaminated water the tailings ponds leak. The report compiled company data from environmental assessment reports to conservatively estimate that the tailings ponds were leaking at a rate of four billion litres (1 billion gallons) each year, with projections that this figure could reach over 25 billion litres (6.6 billion gallons) within a decade should proposed projects go ahead (see also **Appendix II**).

There are documented cases of contaminated tailings water reaching surface water. In an environmental assessment (see **Appendix IV**, p. 43) Shell Canada Ltd. projected that contaminated tailings from its operations would reach Jackpine Creek. A 2007 academic study from the University of Waterloo (see **Appendix V**) estimates that Suncor Energy's Tar Island pond was then leaking almost 6 million litres a day into the Athabasca River.¹⁰

Another incident is documented in correspondence between the Alberta government and Syncrude, and in an assessment commissioned by Syncrude from Golder Associates (see **Appendix VII** at pp. 24, 31, 37, 45 and **Appendix VI**, respectively). It is clear that contaminated tailings materials leaked into Beaver Creek, a tributary of the Athabasca River, over a number of years.

Another incident of leakage into surface water concerns Suncor's South Tailings Pond leaking into McLean Creek. A study on the issue, in part by a Suncor engineer (see **Appendix VIII** at pp. 7-8: "Seepage Mitigation Design Options" and "Seepage Design Elements") admits that the leakage into the creek would not be stopped, but rather that the company would try to manage the concentrations of deleterious substances in the creek. Again, case law establishes that it is not necessary that the receiving water be rendered deleterious to fish; the question is whether or not the substance being deposited is a "deleterious substance."

With regards to the medium to long term issue of what happens to the leakage to deeper aquifers from tailings ponds, migration of contaminants in tailings leakage from groundwater into surface water over time can be facilitated by the hydrogeological setting of the oil sands. A case study on the oil sands by the Council of Canadian Academies' Expert Panel on Groundwater (see **Appendix IX**, case study 6.4 at p. 144), states:

The land cover in the Athabasca oil-sands area is primarily wetlands and boreal forest. These are underlain by varying thicknesses of overburden, comprising a range of coarse materials in buried valleys or glacial deposits and modern organic deposits sitting atop thick clay tills and sandy tills. The overburden is vertically punctuated by downcutting glacial and post-glacial meltwater channels and modern stream courses.

The issue of more permeable underlying settings for tailings ponds can be seen with the example of Suncor's South Tailings Pond of its Millennium mine. There, the Pleistocene meltwater channel deposits underneath the pond have led to a management strategy of letting contaminated leakage into an adjacent creek, as referenced above (see **Appendix VIII**).

Given that the second half of subsection 36(3) of the Fisheries Act prohibits the indirect deposit of deleterious substances from areas that "may" lead to surface waters frequented by fish, deep leakage into deeper aquifers in an area "punctuated by downcutting glacial and post-glacial meltwater channels" is as much of an issue as leakage into surface water in the oil sands region. A study published in *Environmental Science & Technology* in 2014 suggests that "oil sands process-affected groundwater is reaching the [Athabasca] river system" (see **Appendix XXI** at pp. 1 and 9).

B. Effects of Tailings Ponds Leakage

Tailings ponds contain a large variety of substances that are deleterious to fish. A scientific article (see **Appendix X**) compiles the results of several studies of the inorganic chemistry, organic chemistry and toxicity of oil sands tailings waters and finds the waters exceed the Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines: Surface Water Quality Guidelines for the Protection of Aquatic Life¹¹ for several substances including ammonia, benzene, cyanide, oil and grease, phenols, toluene, polycyclic aromatic hydrocarbons, arsenic, copper and iron. The author concludes that:

Chemicals of environmental concern in oil sands process water include NA's [naphthenic acids], bitumen, ammonia, sulphate, chloride, aromatic hydrocarbons, and trace metals. While NAs are the main

contributors of acute toxicity to aquatic biota, various compounds have exceeded CCME water quality guidelines at some point during oil sands operations and could contribute to chronic toxicity in reclaimed aquatic environments.¹²

Naphthenic acids are of particular concern not just because of their toxicity, but also because of their longevity, taking many decades to break down¹³ (see **Appendix XI**).

Evidence is emerging that the surface waters of the region are being rendered more harmful to fish by oil sands activities. A pair of independent water monitoring studies published in 2009 and 2010 (see **Appendix XII** and **Appendix XIII**) found concentrations of polycyclic aromatic compounds (PACs) at levels several times over the levels considered toxic to fish embryos in areas most heavily impacted by industry, and that Canada or Alberta's guidelines for the protection of aquatic life were exceeded for seven priority pollutants.

IV. Canada's Failure to Enforce Subsection 36(3)

A. Environment Canada's Monitoring and Investigation Failure

In 1994, Canada and Alberta signed the Administrative Agreement for the Control of Deposits of Deleterious Substances under the Fisheries Act ("Agreement") (see **Appendix XIV**). The Agreement was entered into pursuant to section 5 of the federal Department of Fisheries and Oceans Act, section 7 of the federal Department of Environment Act, and section 20 (now section 19) of the Alberta Environmental Protection and Enhancement Act.¹⁴ These provisions permit the federal Minister of Fisheries and Oceans, the federal Minister of the Environment and the Alberta Minister of the Environment to enter into agreements with respect to programs that the federal Ministers are responsible for carrying out, and in the case of the Alberta Minister, for "agreements relating to any matter pertaining to the environment."¹⁵ Therefore, the Agreement is a mechanism for the federal Minister of the Environment to carry out his/her responsibilities and is a subsidiary agreement under an environmental law.

While the Agreement provides for a sharing of responsibility for responding to and investigating releases that may contravene subsection 36(3) of the Fisheries Act, the Agreement designates Alberta Environment as the lead agency in responding to and investigating releases within Alberta. However, Annex 3 of the Agreement confirms that:

2.1 The Parties are responsible for inspections under their respective legislation...

3.1 [Environment Canada and Alberta Environment] will conduct investigations into alleged contraventions of their respective legislation...

3.2.8 The parties recognize that both federal and provincial Attorneys General retain their discretion to prosecute violations of their respective legislation.

The Agreement confirms that the federal government will continue to have the responsibility to conduct inspections, investigations, and prosecutions under the Fisheries Act and that Environment Canada has a positive obligation to investigate alleged contraventions of the Fisheries Act.

In practice, Environment Canada has relied on Alberta Environment to monitor, report and investigate releases from tailings ponds that may contravene subsection 36(3), and Alberta Environment relies on industry self-reporting of tailings leakage (see **Appendix XV**, at p. 7 of 7).

Both the provincial and federal levels of government have delegated regional monitoring of releases to an organization called the Regional Aquatic Monitoring Program (RAMP).¹⁶ RAMP is funded by the oil sands operators, and despite being billed as having a “multistakeholder” governance structure, key First Nation and environmental participants distanced themselves from RAMP in 2008 and 2009.¹⁷

An independent expert review of RAMP in 2004 found “significant concerns” with scientific leadership effective design, and a failure to incorporate a regional approach (see **Appendix XVI**). A 2009 independent monitoring study (see **Appendix XII**, at p. 5) in the oil sands by leading water specialists found high levels of contamination unreported by RAMP and concluded that:

Our study confirms the serious defects of the RAMP. More than 10 years of inconsistent sampling design, inadequate statistical power, and monitoring- insensitive responses have missed major sources of [polycyclic aromatic compounds] to the Athabasca watershed.

Environment Canada’s historical reliance on the discredited RAMP program for monitoring of tailings pond leakage is a further abdication of its responsibility to monitor, investigate and enforce subsection 36(3).

The Canada-Alberta Joint Oil Sands Monitoring (JOSM) program, created in 2012 to replace RAMP, has been assessed as an improvement in terms of scientific integrity and removing conflicts of interest.¹⁸ Nonetheless, problems remain, including insufficient evidence to assess whether current monitoring activities are adequate to assess the full impacts of the oil sands, the lack of a fully documented and uniform approach to quality assurance in the monitoring program, and, most disturbingly, the lack of a planning document that clearly articulates the policy and scientific goals of JOSM.¹⁹

B. Environment Canada’s Failure to Enforce Subsection 36(3)

Despite the failure to directly monitor and investigate subsection 36(3) violations, Environment Canada has known for several years about the problem of contaminated tailings pond leakage. In 2004, the National Energy Board wrote:

the principal environmental threats from tailings ponds are the migration of pollutants through the groundwater system and the risk of leaks to the surrounding soil and surface water...the scale of the problem is daunting...²⁰

Under the previous (prior to 2012) *Canadian Environmental Assessment Act*, each proposal for a new oil sands mine and associated tailings ponds underwent assessment by a Joint Review Panel (in partnership with the Alberta Energy Resources Conservation Board). The proponent provided all relevant federal agencies with information regarding the project.

As outlined below, notable about the environmental assessment process is that the companies themselves predict to relevant agencies tailings leakage into surface waters and water quality impacts, yet Environment Canada does not enforce subsection 36(3) in relation to these deposits; nor does it regulate the releases pursuant to subsection 36(4) of the *Fisheries Act*. For example, the Joint Review Panel in the Shell Jackpine project noted (see **Appendix IV**, at p. 43) that:

Shell stated that it would construct a 6 m deep perimeter ditch to intercept seepage flow from the tailings disposal area, but that some seepage would discharge to the ground surface between the tailings area and Jackpine Creek and that half of this seepage would enter the creek.

In the CNRL Horizon Joint Review Panel report (see **Appendix XVII**, at pp. 14, 30, 46 and 49):

CNRL also stated that there were the following significant cost and environmental benefits associated with the new mine plan that resulted from the new plant site location:

a reduction in the seepage through the Pond 1 tailings dike ...

CNRL expected water to seep from the [external tailings area] into the groundwater system and/or discharge into the mine surface water drainage system. ... ditches would capture some of the seepage flow ... seepage rates would decline over time ...

[Environment Canada] noted that any tailings release or seepage from [End Pit Lakes] into fish-bearing waters might constitute a violation of the Fisheries Act, which would warrant EC taking enforcement action.

The Joint Review Panel also noted the company's admission regarding overall impacts on water quality:

CNRL acknowledged that it predicted some chemical substances would exceed chronic effects levels for fish and other aquatic biota, but it did not believe that there would be any effects on fish health as a result of those exceedances.

The Jackpine and CNRL tailings ponds are currently operating as anticipated in the respective JRP reports.

In a January 2009 Memorandum to Canada's Environment Minister from his Deputy Minister (see **Appendix XVIII**), Environment Canada acknowledges the leakage ("seepage") issue, and the fact that the agency is alerted to it by oil sands companies:

Seepage would not likely be directly into surface waters, but move first into groundwater. It may take decades to reach surface waters. In their environmental assessments, many oil sands companies acknowledge that this may occur.

Two things are notable about this statement. First is the qualification of "not likely" in the first sentence regarding leakage into surface waters, which is an acknowledgement of the prospect of it taking place. Second is an acknowledgement that the leakage may reach surface waters in "decades," well within the life span of naphthenic acids, one of the key pollutants from tailings ponds (see section III. B. "Effects of Tailings Ponds Leakage," above).

The federal government claims that "Alberta has a zero-discharge policy for oil sands tailings ponds" (see **Appendix XVIII**, at p. 1). The Alberta legislation is structured similarly to the *Fisheries Act* in that it states a general prohibition on the release of pollution unless authorized by the regulator.

In March, 2009, Environment Canada communicated with the Canadian Parliament's House of Commons Standing Committee on the Environment and Sustainable Development where the specific question regarding how Environment Canada enforces the *Fisheries Act* with regards to tailings leakage was taken up (see **Appendix XV**, especially at p. 7 of 7). In its communication, Environment Canada indicated that despite the fact that "Alberta Environment inspectors are not designated as Fishery Inspectors under the *Fisheries Act*," it is the practice of Environment Canada (EC) to wait for a referral from Alberta Environment should the latter suspect a *Fisheries Act* violation. And, to date, EC Enforcement has not received a referral from Environment Alberta indicating that they suspect any possible *Fisheries Act* violations.

To repeat, no referrals from Environment Alberta have been forthcoming, and this is despite the documented instances, outlined above, of contaminated tailings pond leakage reaching surface waters.

It is also clear that Environment Canada is fully aware of the general issue of groundwater contamination and migration to surface waters, and in other circumstances is an advocate against the practice. On its webpage on groundwater contamination, Environment Canada states:

It has often been assumed that contaminants left on or under the ground will stay there. This has been shown to be wishful thinking.²¹

Environment Canada is also aware of the issue of migration of groundwater pollution:

Several studies have documented the migration of contaminants from disposal or spill sites to nearby lakes and rivers as this groundwater passes through the hydrologic cycle, but the processes are not as yet well understood. In Canada, pollution of surface water by groundwater is probably at least as serious as the contamination of groundwater supplies. Preventing contamination in the first place is by far the most practical solution to the problem.²²

Environment Canada's failure to enforce the pollution prevention provisions of the *Fisheries Act* has been taken up more than once by Canada's Commissioner of the Environment and Sustainable Development. In a 1999 report, the Commissioner found several shortcomings in the approach of Environment Canada,²³ yet a subsequent 2009 review found that the problems persisted. In 2009 the Commissioner concluded:

Environment Canada does not have a *Fisheries Act* compliance strategy for the industries and activities that must comply with the Act's prohibition requirement against the deposit of harmful substances in water frequented by fish.²⁴

In 2009, the Commissioner also specifically addressed Environment Canada's enforcement with regards to its administrative agreement with Alberta and oil sands tailings pond contamination. Its conclusion in this regard was:

Environment Canada relies on the Agreement and the arrangements with Alberta to meet its *Fisheries Act* responsibilities. However, the Agreement's Management Committee has not provided its oversight role in over two years and Environment Canada has not formally assessed the extent that the arrangements with Alberta fulfill the Department's *Fisheries Act* responsibilities.²⁵

C. Submitters' Past Requests for Enforcement

As outlined above, the Canadian federal government has known about the problem of oil sands tailings leakage for several years, and has also participated in environmental assessment processes where specific instances have been identified.

When Environmental Defence released its December 2008 report on tailings pond leakage and failure to enforce the *Fisheries Act*, there was extensive media coverage across Canada. A national newspaper, *The Globe and Mail*, ran an editorial that concluded that "the federal government has failed to enforce the *Fisheries Act*."²⁶

In January 2009, Environmental Defence Canada (EDC) began direct written correspondence with Environment Canada (EC) to request enforcement of the *Fisheries Act* with regards to tailings pond leakage (see **Appendix XIX**). Here is a summary:

- January 26, 2009: EDC to EC. EDC summarizes findings of its report and requests enforcement.
- April 7, 2009: EC to EDC. EC claims no evidence of particular point of leakage into Athabasca watershed and says will visit oil sands sites to investigate.

- May 8, 2009: EDC to EC. One letter to Deputy Minister regarding the narrow-casting of the leakage issue into specific surface water incidents rather than considering long-term groundwater leakage. Another letter to enforcement division outlining specific instances of surface water leakage and the law. (Supporting document: **Appendix XX**).
- May 29, 2009: EDC to EC. Enclosed copies of Syncrude groundwater monitoring report (see **Appendix XX**) and Expert Panel on Groundwater of the Council of Canadian Academies (see **Appendix IX**) that flags risk to Athabasca River of oil sands operations. Again flags indirect leakage issue.
- July 6, 2009: EC to EDC. Reports that its studies are inconclusive to date, and indicates that “independent monitoring” will be undertaken.
- September 28, 2009: EC to EDC. Sylvie Ladouceur, Executive Assistant to the Deputy Minister declined via email an in-person meeting with EDC.
- January 13, 2010: EDC to EC. Request results of studies and flags new independent monitoring report of Dr. David Schindler finding elevated pollution levels in Athabasca and tributaries near oil sands.
- February 22, 2010. EC to EDC. Indicates that studies are still underway.
- March 25, 2010. EDC to EC. Flags that studies at this point are unlikely to capture information about past surface water incidents. Also flags that EC has known about the leakage problem for several years. Outlines what enforcement of the *Fisheries Act* would look like.
- May 27, 2015. EDC to EC. Despite the CEC Council voting against the preparation of a factual record, contrary to the recommendation of the CEC Secretariat, the matters raised in the 2010 *Alberta Tailings Ponds* submission remain unchanged: there is strong evidence that toxic chemicals continue to leak from tar sands tailings ponds into nearby rivers. Moreover, a study has now been published showing that chemicals found in groundwater and migrating into the Athabasca River have the chemical “fingerprint” of tailings ponds wastewater (See **Appendix XXII**).

Environmental Defence has received no response to its letter of May 27, 2015.

V. Article Requirements

A. This is a Submission the Secretariat May Consider – Article 14.1

This Submission meets the threshold requirements established under Article 14.1 of the NAAEC.

Article 14.1(a). The Submission is presented in English.

Article 14.1(b). Environmental Defence Canada presents the Submission on behalf of itself, the Natural Resources Defence Council, and Daniel T’seleie (the “Submitters”).

Article 14.1(c). This Submission is based on information and documentary evidence contained in environmental assessment submissions, regulatory correspondence, academic papers, and other sources.

Article 14.1(d). The Submitters have a long-standing interest in the health of natural ecosystems, including water pollution issues. The Submitters do not have a financial interest in oil sands operations or their competitors. The Submitters present this Submission with the aim of promoting enforcement.

Article 14.1(e). This matter has been communicated in writing to Environment Canada in a series of correspondence between January 2009 and January 2015 (see **Appendix XIX** and **Appendix XXII**).

Article 14.1(f). The Submitters are not-for-profit organizations and one individual based or residing in the territory of Canada and the United States.

B. The Issues Raised in this Submission Merit a Response from the Government of Canada – Article 14.2

The Submitters respectfully submit that they have met the criteria set out in Article 14.1, and ask that the Secretariat request a response from the Government of Canada.

Article 14.2(a) - Harm to the Submitters

The individual Submitter is a person who has lived, hunted, and fished downriver from the oil sands. The non-governmental Submitters are organizations whose members include over 2.7 million individuals who have a shared interest in protecting the ground and surface waters of Canada and North America, including the reduction and elimination of pollution from industry.

The Submitters and their members make use of these waters and water pollution harms the entire ecosystem, including people, fish and their habitat. The harm that the contaminants found in tailings ponds can do is not in dispute, and as outlined above, contaminants like naphthenic acids are very long-lived, with their toxic legacy extending into many decades. Given the amount of tailings being generated, the scale of the problem is of national and international concern.

Article 14. 2(b) - Advancing the Goals of the NAAEC

This Submission raises matters whose further study in this process would advance the goals of the NAAEC. In particular, the preparation of a factual record would:

- Foster the protection and improvement of the environment for present and future generations (Preamble par.1, Article 1(a));
- Promote sustainable development based on cooperation and mutually supportive environmental and economic policies (Article 1(b));
- Increase cooperation between governments to better conserve, protect, and enhance the environment (Articles 1(c), and 10(2)(i));
- Strengthen cooperation on the development and improvement of environmental laws, regulations, procedures, policies and practices (Article 1(f));
- Enhance compliance with, and enforcement of, environmental laws and regulations (Articles 1(g), and 10(2)(p)); and
- Promote pollution prevention policies, practices, techniques and strategies (Articles 1(j), and 10(2)(b)).

Article 14. 2(c)-Private Remedies

There are no realistic alternative private remedies available. The Submitters either do not have status for civil remedies or they would be impractical to pursue. While Canadian citizens do have the right to commence private prosecutions under the *Fisheries Act* and its regulations where the government refuses to enforce the law, the evidentiary burden is hard to meet for actors without access to significant resources, and such proceedings do not address the systemic problem of persistent non-enforcement by the authorities.

Also, private prosecutions can be stayed by the Crown. Private prosecutions are beyond the financial capacity of most citizens, and are not a viable option for effective enforcement where there are numerous violations of federal law. The Government of Canada has the resources and the obligation to effectively enforce these domestic environmental laws.

Article 14. 2(d)-Mass Media Reports

This Submission is based primarily upon information obtained from governments, industry, and academic research resources, and not simply mass media reports.

Remedy

The Submitters therefore request that the CEC prepare a factual record of the allegation that the Government of Canada is in breach of its commitment under the NAAEC to effectively enforce subsection 36(3) of the *Fisheries Act* against the practice of leaking deleterious substances from oil sands tailings ponds into the surface waters and groundwater of Northeast Alberta.

VI. List of Appendices

Appendix I: R. v. Kingston (Corporation of the City), (2004) 70 O.R. (3d) 577, (2005) D.L.R. (4th) 734 (Ont. C.A.)

Appendix II: Jeremy Moorhouse, “Appendix I — Methodology and Sample Calculations” (Pembina Institute, December 2008)

Appendix III: Matt Price, “1 Million Litres a Day: The Tar Sands’ Leaking Legacy” (Environmental Defence, December 2008)

Appendix IV: Joint Panel Report, EUB Decision 2004-009, Shell Canada Limited, Applications for an Oil Sands Mine, Bitumen Extraction Plant, Cogeneration Plant, and Water Pipeline in the Fort McMurray Area, February 5, 2004, page 43.

Appendix V: Jim Barker et al, “Attenuation of Contaminants in Groundwater Impacted by Surface Mining in Oil Sands, Alberta, Canada” (University of Waterloo) November, 2007

Appendix VI: Golder Associates, “Final Report: Beaver Creek Profiling System” (Golder Associates, February 2009)

Appendix VII: Femi Baiyewun, Syncrude Canada, “2007 Groundwater Monitoring Report, Mildred Lake Site” (March 15, 2008)

Appendix VIII: “Design of Tailings Dams on Large Pleistocene Channel Deposits, A Case Study – Suncor’s South Tailings Pond,” by B. Stephens et al, date unknown.

Appendix IX: “The sustainable management of groundwater in Canada,” Expert Panel on Groundwater, May

2009

Appendix X: Erik W. Allen, “Process water treatment in Canada’s oil sands industry: I. Target pollutants and treatment objectives,” *Journal of Environmental Engineering and Science*, 7:123-138, 2008

Appendix XI: “Naphthenic Acids in Athabasca Oil Sands Tailings Waters Are Less Biodegradable than Commercial Naphthenic Acids,” Angela C. Scott et al, *Environ. Sci Technol.* 2005, 39, 83888-8394.

Appendix XII: E. N. Kelly et al, “Oil sands development contributes polycyclic aromatic compounds to the Athabasca River and its tributaries” (December 2009) *Proceedings of the National Academy of Sciences*

Appendix XIII: Erin Kelly et al., “Oil sands development contributes elements toxic at low concentrations to the Athabasca River and its tributaries” in (September 114, 2010) 107 *Proceedings of the National Academy of Sciences* 37, 16178-16183

Appendix XIV: Canada-Alberta Administrative Agreement for the Control of Deposits of Deleterious Substances under the Fisheries Act

Appendix XV: “Follow-up on Committee Hearings,” (20 March 2009) (responses of Alberta Environment and Environment Canada to questions posed by the Chair of the House of Commons Standing Committee on the Environment and Sustainable Development)

Appendix XVI: Oil Sands Regional Aquatic Monitoring Program (RAMP) Scientific Peer Review of the Five Year Report (1997-2001) (February 13, 2004)

Appendix XVII: Alberta Energy and Utilities Board and Canadian Environmental Assessment Agency, “Report of the Joint Review Panel ... Decision 2004–005: Canadian Natural Resources Limited, Application for an Oil Sands Mine, Bitumen Extraction Plant, and Bitumen Upgrading Plant in the Fort McMurray Area” (EUB/CEAA, 2004)

Appendix XVIII: “Memorandum to the Minister: Oil Sands Tailings Ponds” (Environment Canada, 19 January 2009)

Appendix XIX: Correspondence between the Submitter Environmental Defence and Environment Canada (January 2009 - March 2010)

Appendix XX: Aurora Mine: 2007 Annual Groundwater Monitoring Report, Syncrude Canada Limited (March 2008)

Appendix XXI: Richard Frank et al., “Profiling Oil Sands Mixtures from Industrial Developments and Natural Groundwaters for Source Identification,” in (2014) 48 *Environmental Science and Technology* 5, pp 2660–2670

Appendix XXII: Letter from Environmental Defence to federal Environment Minister (27 May 2015)

Endnotes

¹ Alberta Energy: <http://www.energy.alberta.ca/Oilsands/791.asp>

² McNeill, J. & N. Lothian, “Review of Directive 085 Tailings Management Plans.” Pembina Institute. March 13, 2017: <http://www.pembina.org/reports/tailings-whitepaper-d85.pdf>.

³ *Fisheries Act*, R.S.C. 1985, c. F-14, s. 36(3).

⁴ *Ibid.*, s. 36(4).

⁵ *Ibid.*, ss. 36(5), (5.1) and (5.2).

⁶ *Ibid.*, s. 40(5)(a).

⁷ *Pulp and Paper Effluent Regulations*, S.O.R./92-269; *Petroleum Refinery Liquid Effluent Regulations*, C.R.C. c. 828.

⁸ Peter W. Hogg, *Constitutional Law of Canada*, 2005 Student Ed. (Toronto: Thomson Carswell, 2005) at 16.1.

⁹ Pembina Institute: <http://www.pembina.org/blog/oilsands-tailings-back-spotlight>

¹⁰ “Attenuation of Contaminants in Groundwater Impacted by Surface Mining in Oil Sands, Alberta, Canada,” Jim Barker et al, University of Waterloo, November, 2007 (**Appendix V**) (65 L/s in dyke construction water seepage plus 2 L/s in pond seepage = 67 L/s X 60 [for seepage per minute] X 60 [for seepage per hour] X 24 [for seepage per day] = 5,788,800 L/day).

¹¹ See: <http://ceqg-rcqe.ccme.ca/>

¹² Erik W. Allen, “Process water treatment in Canada’s oil sands industry: I. Target pollutants and treatment objectives,” *Journal of Environmental Engineering and Science*, 7:123-138, 2008, at 135.

¹³ See: “Naphthenic Acids in Athabasca Oil Sands Tailings Waters Are Less Biodegradable than Commercial Naphthenic Acids,” Angela C. Scott et al, *Environ. Sci Technol.* 2005, 39, 8388-8394 (**Appendix XI**); see also: Imperial Oil Resource Ventures Limited: Kearl Oil Sands Project – Mine Development Application and Supplemental Information,” Imperial Oil Ltd., 2005, Volume 6.

¹⁴ *Department of Fisheries and Oceans Act*, R.S.C. 1985, c. F-15, s. 5; *Department of Environment Act*, R.S.C. 1985, c. E-10, s. 7; *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12, s. 19.

¹⁵ *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12, s. 19.

¹⁶ See: <http://www.ramp-alberta.org/RAMP.aspx>

¹⁷ The Athabasca Chipewyan First Nation released a Media Release on May 9, 2008 titled “ACFN Withdraws from R.A.M.P and W.B.E.A.” Personal communication on November 18, 2008 from Shannon Crawley with the Chipewyan Prairie First Nation confirms that Band wrote to RAMP in 2008 to withdraw. Personal communication with Simon Dyer of the Pembina Institute on April 9, 2010 confirmed that Pembina asked RAMP to remove its name from the RAMP website in 2009.

¹⁸ Expert Review Panel assessment of JOSM: <http://aemera.org/wp-content/uploads/2016/02/JOSM-3-Yr-Review-Full-Report-Feb-19-2016.pdf>

¹⁹ *Ibid.*

²⁰ “Canada’s Oil Sands: Opportunities and Challenges to 2015,” National Energy Board, 2004. <<http://tinyurl.com/zforjxw>>.

²¹ See: <http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=6A7FB7B2-1>

²² *Ibid.*

²³ See: 1999 Report of the Commissioner of the Environment and Sustainable Development, Chapter 5—Streamlining Environmental Protection Through Federal-Provincial Agreements: Are They Working?

²⁴ Report of the Commissioner of the Environment and Sustainable Development—Spring 2009 Chapter 1 p. 35.

²⁵ Report of the Commissioner of the Environment and Sustainable Development—Spring 2009 Chapter 1 p. 39.

²⁶ Globe & Mail: “Prevention is best” (12 December 2008) Online:

<http://www.theglobeandmail.com/opinion/prevention-is-best/article1323854/>