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File No.: 2163

March 11, 2024

Sent via e-mail

The Hon. Steven Guilbeault
Minister of Environment and Climate Change
House of Commons
Ottawa, Ontario K1A 0A6
ministre-minister@ec.gc.ca

Dear Minister Guilbeault:

Re: Request for assessment of naphthenic acids founds in oil-sand processed water (“OSPW NAs”) pursuant to s. 76(1) of the *Canadian Environmental Protection Act, 1999*

We write on behalf of our clients, Athabasca Chipewyan First Nation, Keepers of the Water, and Environmental Defence (the “**Requesters**”) pursuant to s. 76(1) of the *Canadian Environmental Protection Act, 1999* (“**CEPA**”) to request that the Minister of Environment and Climate Change and the Minister of Health (the “**Ministers**”) conduct an assessment of naphthenic acids (“**NAs**”) found in oil-sand processed water (“**OSPW**”) to determine whether they are toxic or capable of becoming toxic within the meaning of s. 64 of CEPA.

The recent assessment of the “commercial naphthenic acids group” excluded OSPW NAs, and therefore excludes the majority of NAs and sources through which they enter the environment. OSPW NAs should be assessed to determine whether they meet the criteria of s. 64 of CEPA. In deciding whether to conduct an assessment of OSPW NAs, and when conducting the assessment itself, the Ministers must, among other things, apply the precautionary principle, protect the right to a healthy environment, uphold principles of environmental justice, protect the health of vulnerable populations, and respect the principles enshrined in the United Nations Declaration on the Rights of Indigenous Peoples (“**UNDRIP**”).

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1. The Requesters

Each of the Requesters has significant, well-founded concerns about the toxicity of OSPW NAs, and tailings ponds more broadly.

The Athabasca Chipewyan First Nation (“ACFN”) is a Denesuliné Nation whose territory centres on the Peace Athabasca Delta, an area that is known as northeastern Alberta. The oil sands are within their traditional territory and their primary community is Fort Chipewyan. They are a signatory to Treaty 8, which recognizes ACFN members’ constitutionally-protected rights to carry out their traditional ways of life.

Keepers of the Water are First Nations, Métis, Inuit, environmental groups, and citizens working together for the protection of water, land, air, and all living things today and tomorrow in the Athabasca River watershed. Guided by both Indigenous Elders’ Traditional Knowledge and Eurocentric science, their mission is to unite the peoples of the Athabasca River Watershed to

secure and protect water and watershed lands for ecological, social, cultural, and community health and wellbeing.

Environmental Defence is a leading Canadian environmental advocacy organization that challenges and inspires change in government, business, and people to ensure a greener, healthier, and prosperous life for all. Environmental Defence has been active on the issue of tailings ponds, including by publishing reports documenting the toxic effects of oil sands tailings ponds,¹ requesting the addition of NAs to the National Pollutant Release Inventory,² and submitting comments concerning proposed regulations under the *Fisheries Act* permitting the release of OSPW into the Athabasca River.³

2. The Ministers' Statutory Obligations

Section 76(1) of CEPA provides that any person may file with the Minister of Environment and Climate Change a request that the Ministers assess a substance to determine whether it is toxic or capable of becoming toxic.⁴ The Minister is required to consider the request and decide whether to add the substance to the Plan of Chemicals Management Priorities developed under section 73 or deny the request (s. 76(2)), and to notify the requesters of the Minister's decision and reasons within 90 days of the filing of the request (s. 76(2.1)).

In administering CEPA and when conducting assessments and deciding whether to conduct an assessment, the Ministers must, among other things:

- exercise their powers in a manner that
 - protects the **environment and human health**, including the health of **vulnerable populations** (s. 2(1)(a)(i)); and
 - applies the **precautionary principle**, which provides that the lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation if there are threats of serious or irreversible damage (s. 2(1)(a)(ii));

¹ See e.g., Environmental Defence, [Fact Sheet: Tar sands tailings “ponds”: five decades of toxic legacy](#) (March 2023); Environmental Defence and Canadian Parks and Wilderness Society Northern Alberta Chapter, Report: “[50 Years of Sprawling Tailings: Mapping decades of destruction by oil sands tailings](#)” (May 2022).

² [Submission from Environmental Defence to the NPRI requesting the addition of naphthenic acids to the NPRI](#) (2016).

³ [Letter from environmental toxicologists, environmental and human health risk assessors and others within the scientific community: Please ensure a transparent, independently reviewed and UNDRIP-compliant consultative process before moving forward with new effluent mine regulations regarding oil sands process water](#) (December 1, 2022).

⁴ In accordance with CEPA, the use of the term “substance” in this submission should be understood to include a class of substances: *Canadian Environmental Protection Act, 1999*, SC 1999, c 33, [ss. 3\(1\) and \(3\)](#) [CEPA]. While s. 76(3) of CEPA provides that the request shall be filed in the form and manner and shall contain the information specified by the Minister, as of the date of this submission the form, manner, and information required have not yet been specified. The requesters hope that this submission provides all the information required by the Ministers, but would be pleased to provide more information if needed.

- protect the **right** of every individual in Canada to a **healthy environment** (s. 2(1)(a.2));
- uphold the principle of **environmental justice**, including the avoidance of adverse effects that disproportionately affect **vulnerable populations** (s. 2(1)(a.3));
- consider available information on any **vulnerable population or environment** in relation to the substance (s. 76.1(2)); and
- consider available information on the **cumulative effects** on human health and the environment that may result from exposure to the substance in combination with exposure to other substances (s. 76.1(2)).

The Preamble to CEPA also affirms that the Government of Canada is committed to implementing UNDRIP, including free, prior and informed consent.

3. Request for Assessment of OSPW NAs

(a) The commercial NAs assessment excludes the majority of NAs and the majority of sources through which NAs enter the environment

The Ministers assessed certain NAs and calcium naphthenates – what they termed the “commercial naphthenic acids group”⁵ – and published a draft assessment of these substances on August 18, 2018.⁶ However, the Ministers excluded from the assessment OSPW NAs, which constitute the vast majority of NAs and the sources through which they are entering or may enter the environment in Canada. The draft assessment offered a brief explanation for the omission of OSPW NAs, stating that “[t]he commercial NAs differ from complex mixtures of naphthenic acids present as a by-product in oil-sand processed water (OSPW) generated from oil sands mining, extraction and processing of bitumen. As OSPW NAs differ in composition, properties and use compared to commercial NAs, they are not considered here”.⁷ Having excluded the major sources of NAs in Canada, the draft assessment proposed to conclude that NAs and calcium naphthenates do not meet any of the criteria set out in s. 64 of CEPA.⁸

In response to the draft assessment, Ecojustice submitted comments on behalf of Keepers of the Water (then Keepers of the Athabasca) and Environmental Defence opposing the failure to consider OSPW NAs and calling on the Ministers to expand the scope of the assessment to include all components and sources of NAs, including those present in OSPW, and consider the cumulative effects of NAs together with the other substances which constitute OSPW.⁹ The Requesters adopt and reiterate the objections noted in the October 17, 2018 submissions, a copy of which is attached to this submission.

⁵ The commercial naphthenic acids group includes CAS Registry Numbers 1338-24-5 (naphthenic acids) and 61789-34-4 (naphthenic acids, calcium salts (calcium naphthenates)).

⁶ [Draft Assessment, Commercial Naphthenic Acids and Group](#), Chemical Abstracts Service Registry Numbers: 1338-24-5 and 61789-36-4 (August 18, 2018).

⁷ Draft Assessment, *ibid* at pp. 2-3.

⁸ Draft Assessment, *ibid* at pp. ii, 12.

⁹ Letter from Fraser Thomson to Julie Thompson, Executive Director, Program Development and Engagement Division, Environment and Climate Change Canada (October 17, 2018).

The final assessment, published January 2024, maintained the exclusion of OSPW NAs from assessment.¹⁰ While the research cited in the final assessment found OSPW NAs to be less hazardous than commercial NAs, that research still found OSPW NAs to be hazardous.¹¹ Marentette’s main conclusion was that commercial NAs are inappropriate surrogates for understanding OSPW NAs, which demonstrates the need for a separate assessment of OSPW NAs.¹²

For the reasons set out below, OSPW NAs must be assessed under CEPA.

(b) OSPW NAs meet the criteria of s. 64 of CEPA

NAs are considered the major toxic component of OSPW¹³ and are among the most persistent compounds in OSPW. NAs exhibit toxic effects through multiple modes of action including narcosis and endocrine disruption.¹⁴ NAs cause serious environmental problems, such as acute and chronic harm to various organisms and local communities, including Indigenous Peoples whose traditional territory and treaty rights are impacted by pollution from oil sands operations.

Section 64 of CEPA provides that a substance is “toxic” if it is “entering or may enter the environment in a quantity or concentration or under conditions that (a) have or may have an immediate or long-term harmful effect on the environment or its biological diversity; (b) constitute or may constitute a danger to the environment on which life depends; or (c) constitute or may constitute a danger in Canada to human life or health.”

There is strong evidence that OSPW NAs meet the criteria of s. 64(a), (b) and (c).

(i) OSPW NAs are entering or may enter the environment in significant quantities

NAs are a byproduct of oil sands extraction and are one of the compounds found in OSPW – also known as oil sands tailings – along with water, sand, fine silts, clay, residual bitumen and lighter hydrocarbons, inorganic salts and water-soluble organic compounds, cyanide, phenols, arsenic, cadmium, chromium, copper, lead and zinc.¹⁵ As of 2020, there were 30 active tailings ponds in

¹⁰ [Assessment, Commercial Naphthenic Acids Group](#) (January 27, 2024).

¹¹ Julie R Marentette et al, “[Toxicity of naphthenic acid fraction components extracted from fresh and aged oil sands process-affected waters, and commercial naphthenic acid mixtures, to fathead minnow \(*Pimephales promelas*\) embryos](#)” (2015) 164 *Aquatic Toxicology* 108; Adrienne J Bartlett et al, “[Toxicity of naphthenic acids to invertebrates: Extracts from oil sands process-affected water versus commercial mixtures](#)” (2017) 227 *Environ Poll* 271.

¹² Marentette, *ibid*.

¹³ See e.g. Rajiv N Tanna et al, “Overview of Existing Science to Inform Oil Sands Process Water Release: A Technical Workshop Summary” (2019) 15:4 *Integrated Environmental Assessment and Management* 519; Hagen MO, Garcia-Garcia E, Oladiran A, Karpman M, Mitchell S, El-Din MG, Martin JW, Belosevic M. The acute and sub-chronic exposures of goldfish to naphthenic acids induce different host defense responses. *Aquat Toxicol.* 2012 Mar;109:143-9. doi: 10.1016/j.aquatox.2011.12.011. Epub 2011 Dec 23. PMID: 22227375.

¹⁴ Chao Li et al, “[The toxicity of oil sands process-affected water \(OSPW\): A critical review](#)” (2017) 601-602 *Science of The Total Environment* 1785-1802.

¹⁵ Commission for Environmental Cooperation, [Alberta Tailings Ponds II: Factual Record regarding Submission SEM-178-001](#) (2020), p 5, para 43 [CEC Factual Record].

Alberta, covering over 300 km² of the boreal forest¹⁶ and containing over 1.4 trillion litres of tailings. As tailings contain estimated concentrations of NAs of 80-110 mg/L according to some studies,¹⁷ this means that there are approximately 6000 to 7500 tonnes of NAs produced in a single year,¹⁸ growing year over year as the tailings accumulate in ponds and are at risk of leaching into the environment through seepage, spills and other incidents.

Tailings ponds are known to leak their contents – including NAs and other toxic chemicals – into the surrounding environment. While seepage collection systems are designed to collect migrating OSPW and return it to tailings ponds, there is consistent evidence that not all OSPW seepage is being recaptured by these systems, and as a result, OSPW is entering the groundwater system and ultimately being transported into surface waters of the Athabasca River and its tributaries. For example, a study measuring NA concentrations at 14 sites in the Athabasca River watershed found elevated concentrations in tributaries adjacent to oil sand mining developments. The study also reported that the NA profiles were more similar to aged OSPW than samples from the Athabasca River, suggesting that the tailings ponds are leaking NAs into the tributaries.¹⁹

In 2018, ECCC confirmed its opinion that NAs “are being released to the Canadian environment” and that “facilities contribute significant releases of the substances”, noting that there have been various incidents involving release of oil sands tailings to surface water, and that “[r]esearch on source identification has demonstrated the possible migration of naphthenic acids from oil sands tailings to groundwater adjacent to those tailings ponds”.²⁰ ECCC referred to the following examples of tailings release compiled by Environmental Defence:

- An environmental assessment of Shell Canada Ltd. projected that contaminated tailings from its operations would reach Jackpine Creek (Alberta Energy Utilities Board, 2004).
- An academic study from the University of Waterloo estimates that Suncor Energy’s Tar Island pond had been leaking almost 6 million litres a day into the Athabasca River (Barker et al, 2007).
- Another incident is documented in correspondence between the Alberta government and Syncrude, and in an assessment commissioned by Syncrude from Golder Associates

¹⁶ Environmental Defence and Canadian Parks and Wilderness Society Northern Alberta Chapter, Report: “[50 Years of Sprawling Tailings: Mapping decades of destruction by oil sands tailings](#)” (May 2022).

¹⁷ Sherwin S Leung et al, “[The ecological effects of naphthenic acids and salts on phytoplankton from the Athabasca oil sands region](#)” (2003) 62(1) Aquatic Toxicology 11-26; Kevin P Timoney, [A Study of Water and Sediment Quality as Related to Public Health Issues, Fort Chipewyan, Alberta](#) (11 November 2007, for the Nunee Health Board Society) at 26 [Timoney 2007].

¹⁸ Based on an oil sands mining production rate of 856,000 barrels of oil per day, resulting in 1.284 million barrels of tailings produced each day as reported in: Grant, J., Dyer, S. and Woynillowicz, D. 2008. Fact or Fiction: Oil Sands Reclamation. The Pembina Institute.

¹⁹ Colin J Arens et al, “[Population impacts in white sucker \(*Catostomus commersonii*\) exposed to oil sands-derived contaminants in the Athabasca River](#)” (2017) 36 Environ Toxicol Chem 2058-2067; see also Richard A Frank et al, “Profiling Oil Sands Mixtures from Industrial Developments and Natural Groundwaters for Source Identification” (January 2014) 48 Environ Science & Tech 2660 at 2668.

²⁰ Environment and Climate Change Canada, “[Addition of Addition of naphthenic acids \(and their salts\) to the National Pollutant Release Inventory, Consultation Document – January 2018](#)” (Appendix 4 of link) at 4 (pdf 87).

(Syncrude Canada, 2007; Golder Associates 2009). 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 (Stephens et al) admits that the leakage into the creek will not be stopped, but rather that the company would try to manage the concentrations of deleterious substances in the creek.²¹

ECCC also confirmed its opinion that “the substance [is] present in the Canadian environment”, stating as follows:

Naphthenic acids may be present in the environment as a result of natural or industrial processes. Naphthenic acids can enter surface water systems through natural mechanisms such as groundwater mixing and erosion of riverbank oil deposits in oil sands areas that are not under development. Naphthenic acids have been detected in various concentrations in tailings, surface water and groundwater in Alberta (Frank et al., 2014; Grewer et al., 2010; Headley et al., 2011; Leung et al., 2003).²²

In 2020, the Commission for Environmental Cooperation (“CEC”) released a report on Alberta’s oilsands tailings ponds that concluded there is “scientifically valid evidence” of OSPW seepage into groundwater around tailings ponds.²³ The report noted that two tributaries of the Athabasca River (Beaver River and McLean Creek) are suspected of receiving OSPW seepage or runoff from nearby tailings ponds, based on analysis showing elevated NA concentrations and similar organic and inorganic chemistry profiles, compared to industry studies of fresh OSPW.²⁴

The Kearl Tailings Pond Leak

Currently, ECCC is investigating a years-long tailings pond leak at Imperial Oil’s Kearl oil sands mine. Imperial reported the leak to the Alberta Energy Regulator (“AER”) in May 2022, though annual groundwater reports filed by Imperial Oil with the AER prior to this date acknowledge that tailings were seeping from the mine in 2020 and 2021.²⁵ However, the leak did not come publicly to light until the AER issued an Environmental Protection Order against Imperial Oil in February 2023 following a separate incident at the mine: an overland release of 5,300 m³ of industrial water from a drainage pond.²⁶ In April 2023, testing detected NAs close to the outlet of the waterbody that connects to a tributary of the Firebag River.²⁷ The concentration of NAs were

²¹ *Ibid* at 4 (pdf 87), citing “[Proposal by Environmental Defence to add naphthenic acids to the NPRI \(November 2010\)](#)” (Appendix 1 of link) at 3-4 (pdf 61-62).

²² *Ibid* at 4 (pdf 87).

²³ CEC Factual Record, *supra* note 15, pp 3-4.

²⁴ CEC Factual Record, *ibid*, p 5.

²⁵ See Bob Weber, “[Imperial and Alberta regulator knew for years about oilsands tailings seepage, documents show](#)”, CBC (October 2, 2023).

²⁶ Alberta Energy Regulator, [Environmental Protection Order against Imperial Oil Resources Limited \(February 6, 2023\)](#).

²⁷ Alberta Energy Regulator, [Statement on Environmental Protection Order for Imperial’s Kearl Oil Sands Project – \(updated April 12, 2023\)](#).

elevated above baseline in a regional offsite monitoring well north of the site according to the Kearl Oil Sand Mine 2020 Groundwater Monitoring Summary.²⁸ The site was not sampled in 2021 due to access issues.²⁹

The Standing Committee on Environment and Sustainable Development (“ENVI”) of the House of Commons studied the Kearl tailings ponds leak.³⁰ A memo regarding an Imperial Oil groundwater report provided to ENVI reported that NAs, along with other harmful contaminants, were found in groundwater wells in the seepage area.³¹ An Imperial Oil memo provided to ENVI on the Kearl leak reported an increase in NAs (compared to historical levels) following the overland release from the drainage pond.³²

Also in 2023, two further incidents happened at settling ponds – 670 m³ of water spilled from a Kearl settling pond into the Muskeg River,³³ while 6,000 m³ of water released from a Suncor Fort Hills settling pond into the Athabasca River.³⁴

Releases documented through the National Pollutant Release Inventory

In 2020, naphthenic acid fraction compounds (and their salts) were added to the list of Part 1A National Pollutant Release Inventory (“NPRI”) substances. Facilities meeting the reporting threshold requirements³⁵ were required to report releases and transfers of NAs beginning in 2020.

Total releases of NAs to water reported were 18.92, 6.97, and 49.30 tonnes in 2020, 2021, and 2022, respectively. Two oil sands operators in Alberta reported releases to water in 2022: Suncor Energy Oil Sands Limited Partnership and Fort Hills Energy L.P. Both facilities reported the primary receiving water body as the Athabasca River.

In addition to releases to water, disposal of 19,109.80, 23,271.45, and 33,611.23 tonnes of NAs to land in the years 2020, 2021, and 2022 were reported to the NPRI, respectively. Ten of the 11 facilities reporting the disposal of NAs to land are oil sands operators in Alberta.

²⁸ 2020 Groundwater Monitoring Summary Report. Kearl Oil Sands Mine. Mikisew Advisian Environmental. (April 9, 2021).

²⁹ 2021 Groundwater Monitoring Summary Report. Kearl Oil Sands Mine. Mikisew Advisian Environmental. (April 13, 2022).

³⁰ House of Commons, [ENVI – Toxic Leak of Tailings Ponds](#).

³¹ [Memo from Imperial Oil Limited to ENVI Re 2023 Groundwater Sampling Results to Date at Kearl \(May 5, 2023\)](#).

³² [Memo from Imperial Oil Resources Limited re Imperial Kearl Oil Sands Mine Seep Investigation \(April 15, 2023\)](#), p. 28.

³³ Emma Graney, [“Another water release incident at Kearl oil sands project follows two earlier this year”](#) *The Globe and Mail* (21 November 2023).

³⁴ Emily Mertz, [“Suncor incident highlights ‘continued failure’ of Alberta regulator: First Nation chief”](#) *Global News* (19 April 2023).

³⁵ Facilities where employees work a total of 20,000 hours or more per year and a total quantity of naphthenic acids of 10 tonnes or more is manufacture, processed (or incidentally manufactured or processed) or contained in tailings or waste rock at 1% or more concentration.

It is important to note that pollutant releases reported to the NPRI are self-reported and NPRI reporting does not capture all types of releases.

(ii) OSPW NAs have an immediate or long-term harmful effect on the environment or its biological diversity, constitute or may constitute a danger to the environment on which life depends, and constitute or may constitute a danger in Canada to human life or health

Impacts on Biodiversity

Fish: OSPW is acutely and chronically toxic to aquatic organisms including fish. NAs are reported to have multiple effects on the endocrine system in a study on zebrafish.³⁶ Multiple studies have found that OSPW NAs are toxic to fathead minnows. Studies found exposure to NAs caused “mortality in fathead minnow embryos and an increase in developmental abnormalities at hatch,”³⁷ impaired reproduction,³⁸ and impacted fathead minnow survival.³⁹ Impacts have also been observed on adult fathead minnows.⁴⁰ Early-life-stage walleye were found to be even more sensitive to NA exposure than fathead minnow.⁴¹ Yellow perch are highly sensitive to NAs, with 100% mortality at a concentration of 6.78 mg/L of NAs extracted from oil sands process-affected water.⁴² Studies found similar toxicity, including genotoxicity impacts, on rainbow trout.⁴³

Amphibians: In a study on Wood Frogs, LC50 values for tadpoles were at concentrations below those found in the OSPW tailing ponds and similar to levels identified in groundwater in the Athabasca Oil Sands region.⁴⁴ Another study of wood frogs found that exposure to NAs during reproduction and offspring development impairs reproductive success through declines in

³⁶ Jie Wang et al, “[Disruption of endocrine function in H295R cell in vitro and in zebrafish in vivo by naphthenic acids](#)” (2015) 299 Journal of Hazardous Materials 1.

³⁷ Marentette, *supra* note 11.

³⁸ Richard J. Kavanagh et al, “[Reproductive and health assessment of fathead minnows \(Pimephales promelas\) inhabiting a pond containing oil sands process-affected water](#)” (2013) 130-131 Aquatic Toxicology 201.

³⁹ Jessie S Reynolds et al, “[Fathead Minnows Exposed to Organic Compounds from Oil Sands Tailings as Embryos Have Reduced Survival, Impaired Development, and Altered Behaviors That Persist into Larval Stages](#)” (2022) 41 Environ Toxicol Chem 1319; Yuhe He et al, “[Toxicity of untreated and ozone-treated oil sands process-affected water \(OSPW\) to early life stages of the fathead minnow \(Pimephales promelas\)](#)” (2012) 46:19 Water Research 6359.

⁴⁰ Richard J. Kavanagh et al, “[Fathead minnow \(Pimephales promelas\) reproduction is impaired when exposed to a naphthenic acid extract](#)” (2012) 116-117 Aquatic Toxicology 34; Richard J. Kavanagh et al, “[Fathead minnow \(Pimephales promelas\) reproduction is impaired in aged oil sands process-affected waters](#)” (2011) 101:1 Aquatic Toxicology 214.

⁴¹ Julie R. Marentette et al, “[Sensitivity of walleye \(Sander vitreus\) and fathead minnow \(Pimephales promelas\) early-life stages to naphthenic acid fraction components extracted from fresh oil sands process-affected waters](#)” (2015) 207 Environmental Pollution 59.

⁴² V. Nero et al, “[The effects of salinity on naphthenic acid toxicity to yellow perch: Gill and liver histopathology](#)” (2006) 65 Ecotoxicology and Environmental Safety 252.

⁴³ E. Lacaze et al, “[Genotoxic potential of several naphthenic acids and a synthetic oil sands process-affected water in rainbow trout \(Oncorhynchus mykiss\)](#)” (2014) 152 Aquatic Toxicology 291.

⁴⁴ Steven D. Melvin & Vance L. Trudeau, “[Toxicity of naphthenic acids to wood frog tadpoles \(Lithobates sylvaticus\)](#)” (2012) 75:3 Journal of Toxicology and Environmental Health 170.

offspring viability.⁴⁵ NAs also disrupt anti-predator⁴⁶ and courtship⁴⁷ behaviours in frogs. A study on the Northern leopard frog and western clawed frog had similar findings.⁴⁸ The authors raise concerns that NAs could cause population level effects in wild amphibians.

Impacts on human health

There are major gaps in the literature on the impacts of exposure to NAs on human health, but even with the limited studies available, NAs have been predicted to have relevant effects on human health, including endocrine disruption.⁴⁹ A study on the adverse effects of NAs on reproductive health concluded that it is “biologically plausible that NA exposure may contribute to placental dysfunction.”⁵⁰

Chemicals released into the environment may partition into different media including air, water, soil, sediment, and animals such as fish. A 2012 study from the University of Alberta found that direct contact activities with surface water that can lead to ingestion and skin contact are the most plausible way that humans may be exposed to NAs from OSPW.⁵¹ In addition, NAs’ resistance to biodegradation indicates they will persist in an aquatic environment.⁵² The 2012 University of Alberta study was unable to draw a conclusion on the subchronic and chronic non-carcinogenic toxicity, development and reproductive toxicity, and genetic toxicity of NAs due to the lack of studies.

(c) The Ministers must consider cumulative effects with other OSPW substances

Subsection 76.1(2) of CEPA requires the Ministers, when conducting and interpreting the results of an assessment, to consider available information on the cumulative effects on human health and the environment that may result from exposure to the substance in combination with exposure to other substances.

Tailings ponds contain a toxic mix of clay, water, acids, metals and bitumen. The University of Alberta study noted that OSPW are complex mixtures of NAs and other organic chemicals that

⁴⁵ C.E. Robinson et al, “[Naphthenic acid fraction compounds reduce the reproductive success of wood frogs \(*Rana sylvatica*\) by affecting offspring viability](#)” (2023) 316:1 Environmental Pollution 120455.

⁴⁶ Chris K. Elvidge et al, “[Chemical communication in wood frog \(*Rana sylvatica*\) tadpoles is influenced by early-life exposure to naphthenic acid fraction compounds](#)” (2023) 257 Aquatic Toxicology 106435.

⁴⁷ Wo Su Zhang et al, “[Petroleum-derived naphthenic acids disrupt hormone-dependent sexual behaviours in male Western clawed frogs](#)” (2022) 10:1 Conservation Physiology coac030.

⁴⁸ Steven D. Melvin & Vance L. Trudeau, “[Growth, development and incidence of deformities in amphibian larvae exposed as embryos to naphthenic acid concentrations detected in the Canadian oil sands region](#)” (2012) 167 Environmental Pollution 178.

⁴⁹ Alan G. Scarlett et al, “[Predicted toxicity of naphthenic acids present in oil sands process-affected waters to a range of environmental and human endpoints](#)” (2012) 425 Science of The Total Environment 119.

⁵⁰ Sergio Ruez-Villanueva et al, “[Adverse effects of naphthenic acids on reproductive health: A focus on placental trophoblast cells](#)” (2019) 90 Reproductive Toxicology 126.

⁵¹ W. Kindzierski et al, “[Review of Health Effects of Naphthenic Acids: Data Gaps and Implications for Understanding Human Health Risk](#)” (2012) Oil Sands Research and Information Network, University of Alberta, School of Energy and the Environment at pp16, 30.

⁵² *Ibid* at p 15.

can also contribute to the overall toxicity,⁵³ underscoring the requirement to consider the cumulative effects of multiple toxic exposures from oil sand pollutants. Another study noted the complexity of OSPW and the need to consider the mixture that includes NAs, polycyclic aromatic hydrocarbons (“**PAHs**”), metals, and ions that may also contribute to the overall toxicity.⁵⁴

While OSPW causes important cumulative effects, these cumulative effects should not be taken as an excuse to refuse an assessment of OSPW NAs specifically. NAs are recognized as the most toxic component of OSPW, and their individual as well as cumulative effects must be assessed.

(d) The Ministers must consider vulnerable populations and environments and environmental justice

Subsection 76.1(2) of CEPA requires the Ministers to “consider available information on any vulnerable population or environment in relation to the substance” when conducting and interpreting the results of an assessment.⁵⁵ CEPA’s Preamble also notes that “the Government of Canada recognizes the importance of considering vulnerable populations in assessing whether substances are toxic or capable of becoming toxic”.

“Vulnerable population” is defined in CEPA as meaning “a group of individuals within the Canadian population who, due to greater susceptibility or greater exposure, may be at an increased risk of experiencing adverse health effects from exposure to substances”.⁵⁶

“Vulnerable environment” is not defined within the Act but, by extension, can be interpreted to mean an environment at increased risk “due to greater susceptibility or exposure” to substances.

The Ministers have a further underlying duty to administer CEPA in a manner that “protects...the health of vulnerable populations” and “uphold[s] principles of environmental justice – including the avoidance of adverse effects that disproportionately affect vulnerable populations”.⁵⁷ As discussed elsewhere in this submission, the Ministers are also required to protect each individual in Canada’s right to a healthy environment, as provided under the Act.⁵⁸

(i) ACFN and other Indigenous Peoples in the Athabasca oil sands region are “vulnerable populations” facing serious environmental injustices

ACFN and other Indigenous Peoples in the Athabasca oil sands region are “vulnerable populations” who, due to greater susceptibility and greater exposure, face “increased risk of experiencing adverse health effects” from OSPW NAs.⁵⁹ Located close to oil sands operations, they face some of the highest degrees of pollution exposure and environmental injustice in

⁵³ *Ibid* at p v.

⁵⁴ Chao Li et al, “[The toxicity of oil sands process-affected water \(OSPW\): A critical review](#)” (2017) 601-602 *Science of The Total Environment* 1785.

⁵⁵ CEPA, s. [76.1\(2\)](#).

⁵⁶ CEPA, s. [3](#).

⁵⁷ CEPA, ss. [2\(1\)\(a\)\(i\)](#), [2\(1\)\(a.3\)](#).

⁵⁸ CEPA, ss. [2\(1\)\(a\)\(i\)](#), [2\(1\)\(a.3\)](#).

⁵⁹ CEPA, s. [3](#) (def’n of “vulnerable population”).

Canada. They also face much greater susceptibility to the impacts of OSPW NAs than non-Indigenous peoples due to their reliance on traditional foods.

During the study of Bill S-5, *An Act to amend the Canadian Environmental Protection Act, 1999*, Minister Guilbeault stated that vulnerable populations may be at increased risk due to a number of factors, “such as health status, socio-economic status, geography and cultural practices.”⁶⁰

In 2018, Health Canada conducted consultations on a definition of “vulnerable populations” substantially identical to the one adopted in Bill S-5. Two examples Health Canada provided of vulnerable populations included “people living near industrial or commercial facilities or any other area with elevated levels of pollutants, including mixtures”, as well as “Indigenous Peoples and communities who may be significantly impacted, due to their close ties to the land and their consumption of country and traditional foods”.⁶¹

These examples are directly relevant to ACFN and other Indigenous Peoples in the oil sands region. As will be demonstrated, ACFN and other Indigenous Peoples in the region experience vulnerability due to: (1) their location in the midst of large-scale industrial developments; (2) their *sui generis* and inherent relationship to their lands, and reliance on foods and medicine therefrom; (3) evidence of existing health concerns in their communities; and (4) the historical and ongoing impacts of colonization and the breach of inherent, treaty, and constitutionally-protected rights.

The Requesters submit that all of these factors must be considered in determining whether to conduct a toxicity assessment of OSPW NAs under CEPA.

ACFN and other Indigenous Peoples in the Athabasca oil sands region are vulnerable due to being located in the midst of large-scale industrial development

ACFN’s reserves are located downstream from the Alberta oil sands, which have been described as “the largest industrial project on the planet”.⁶² Oil sands tailings – the primary toxic component of which is NAs⁶³ – have an enormous impact on Indigenous Peoples in the Lower Athabasca region.

As discussed previously, the total oil sands tailings area was over 300 km² in 2020 – over two and half times the size of the city of Vancouver. Tailings pond fluids alone cover about 120 km² – roughly 240 times the size of West Edmonton Mall, Canada’s largest shopping centre.⁶⁴ In

⁶⁰ House of Commons Standing Committee on Environment and Sustainable Development, [Evidence](#), 44-1, No 41 (2 December, 2022) at [1325](#) (Hon. Steven Guilbeault).

⁶¹ Health Canada, “[Defining vulnerable populations: A first step towards a policy framework on vulnerable populations](#)” (modified January 2019).

⁶² Ingrid RG Waldron, *There’s Something in the Water: Environmental Racism in Indigenous and Black Communities* (Black Point, NS: Fernwood Publishing, 2018) [Waldron] at 81; see also National Geographic, “[This is the world’s most destructive oil operation—and it’s growing](#)” (April 2019).

⁶³ See footnote 13, *supra*.

⁶⁴ *Ibid* at 5.

total, over 1.4 trillion litres of tailings are stored in “ponds” on the shores of the Athabasca River – the equivalent of over 560,000 Olympic-sized swimming pools.⁶⁵

These tailings ponds leak, by design and by accident – in 2008, Environmental Defence calculated that tailings were leaking roughly 11 million litres of fluid per day (4 billion litres per year), and tailings have increased more than 230% in volume since that time.⁶⁶ As a result, Indigenous Peoples face exposure to NAs, as well as other substances such as benzene, lead, mercury, arsenic, nickel, vanadium, chromium, selenium, phthalates and PAHs.⁶⁷

During the hearings held by the House of Commons Standing Committee on Environment and Sustainable Development following tailings leaks at the Imperial Oil Kearl site, ACFN Chief Allan Adam and Mikisew Cree First Nation (“**Mikisew**”) Chief Billy-Joe Tuccaro both described the stress of not being able to confirm that the water their communities used for cooking, showers and children’s swimming lessons was safe.⁶⁸ Both also repeatedly expressed their concerns regarding increased cancer rates in their communities.⁶⁹

Indigenous Peoples in the region also experience poor air quality and pungent, enduring toxic stench, which are associated with increasing asthma and respiratory diseases.⁷⁰ Air quality is a particular concern during the summer, when evaporation during the day followed by cooling at night leaves particles in the air for long periods.⁷¹ Studies have confirmed unacceptable air quality in the oil sands region.⁷² Research has demonstrated that NAs are released into air from oil sands in particulate matter,⁷³ although NAs have not yet been proven as a source of airborne pollution affecting Indigenous Peoples’ health. Research and studies on the impacts of the oil sands on Indigenous Peoples’ health are discussed in subsection (iii) below.

Indigenous Peoples face increased risk of experiencing adverse effects from OSPW NAs not only due to greater exposure to these substances, but also due to greater underlying vulnerability resulting from cumulative exposure to impacts from industrial development.

⁶⁵ *Ibid* at 11.

⁶⁶ *Ibid* at 29.

⁶⁷ *Ibid* at 25.

⁶⁸ House of Commons Standing Committee on Environment and Sustainable Development, *Evidence*, 44-1, No 57 (17 April 2023) [ENVI Hearing (17 April 2023)] at [1155](#) and [1200](#).

⁶⁹ *Ibid* at [1120](#), [1130](#), [1140](#) and [1210](#).

⁷⁰ *Ibid* at 28, 64-65.

⁷¹ *Ibid* at 28.

⁷² Alberta Energy Regulator, News Release, “[New study makes 17 recommendations to address concerns](#)” (21 September 2016); Erin C Horb et al, “[A decadal synthesis of atmospheric emissions, ambient air quality, and deposition in the oil sands region](#)” (2021) 18:2 Integr Environ Assess Manag 333.

⁷³ Mahmoud M Yassine & Ewa Dabek-Zlotorzynska, “[Application of ultrahigh-performance liquid chromatography-quadrupole time-of-flight mass spectrometry for the characterization of organic aerosol: Searching for naphthenic acids](#)” (2017) 1512 Journal of Chromatography A 22; cited in Environment and Climate Change Canada, [Addition of naphthenic acids \(and their salts\) to the National Pollutant Release Inventory – Consultation document](#) (January 2018) at p 4 (PDF p 87).

Indigenous Peoples in the region are “fenced in” and “surrounded” by industry.⁷⁴ In the case of ACFN, the Nation’s traditional lands are covered by bitumen mines and associated plant facilities, in-situ wells, pipelines and facilities, gas wells, seismic lines, oil exploration wells, and related seasonal access and roadways. In addition to the oil sands, conventional oil and gas, forestry, mining and other activities also take up substantial portions of ACFN’s traditional territory.

For example, a further industry of particular concern to ACFN is uranium mining and abandoned uranium mines located on the eastern side of Lake Athabasca. Uranium mines produce radioactive dust, radon gas, water-borne toxins and increased background radiation levels, in addition to impacting ground and surface water quantity and quality, air quality, and biodiversity.⁷⁵

The exposure of ACFN and other Indigenous Peoples to high levels of pollution – including NAs – is far beyond pollution exposure in other parts of Canada and is a grievous example of environmental injustice, which should be addressed in part by the Ministers agreeing to conduct an assessment of OSPW NAs to prevent further risk.⁷⁶

Environmental injustice occurs when “environmental policies, practices, or directives ... disproportionately disadvantage individuals, groups, or communities (intentionally or unintentionally) based on race or colour”.⁷⁷ As found by Baskut Tuncak, the UN Special Rapporteur on hazardous substances and wastes, following a visit to Canada in 2019, the negative health impacts of the oil sands are “disturbing” and are an example of “marginalized groups, indigenous peoples in particular, find[ing] themselves on the wrong side of a toxic divide, subject to conditions that would not be acceptable elsewhere in Canada.”⁷⁸

The environmental pollution experienced by ACFN and other Indigenous Peoples in the Athabasca oil sands region is unacceptable, and a far cry away from pollution levels that are considered acceptable in other parts of Canada.⁷⁹

⁷⁴ Gillian Chow-Fraser & Alienor Rougeot, *50 Years of Sprawling Tailings: Mapping decades of destruction by oil sands tailings* (CPAWS Northern Alberta Chapter and Environmental Defence, 2022) [Chow-Fraser & Rougeot] at 23.

⁷⁵ See ACFN, *ACFN Responses to IAA Guiding Questions for Designation Requests for the Proposed Patterson Lake South Mine Project* (2022) at p. 3.

⁷⁶ CEPA, ss. [2\(1\)\(a.3\)](#).

⁷⁷ Waldron, *supra* note 62 at 12.

⁷⁸ *Visit to Canada: Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes*, 27 November 2020, A/HRC/45/12/Add.1 at 38 and 105.

⁷⁹ As stated by Chief Adams to the Standing Committee on Environment and Sustainable Development hearing on the Imperial Oil Kearl leaks: “If anyone here believes this is safe, I invite you to volunteer your community’s water supply for long-term tailings storage.” See ENVI Hearing (17 April 2023), *supra* note 68 at [1120](#).

ACFN members and other Indigenous Peoples in the Athabasca oil sands region are vulnerable as a result of their relationship to, and reliance upon, the land

ACFN, and many other Indigenous Peoples in the Athabasca oil sands region, have *sui generis* and inherent relationships and rights to their lands, which they rely upon to ensure the health and well-being of their communities.

Traditional foods and medicines continue to form an important part of the diets of ACFN members and other Indigenous Peoples in the region.⁸⁰ Traditional foods are essential to physical, cultural and spiritual health of Indigenous Peoples. For ACFN, the community's identity is integrally related to the land including its animals and vegetation, as is reflected in its Denesuliné name: K'ái Tailé Dené, which means the "people of the land of the willow".

ACFN and many other Indigenous Peoples also have constitutionally protected rights to engage in traditional practices on their territories, including hunting, trapping, fishing, and gathering berries and medicines.⁸¹ ACFN is a signatory to Treaty 8, which protects members' traditional way of life and means of sustaining their livelihood. First Nations signatories to Treaty 8 were told that they "would be as free to hunt and fish after the treaty as they would be if they never entered into it".⁸² Treaty 8 protects not only First Nations' rights to engage in traditional practices including hunting, trapping, fishing and gathering, but also their right to do so in a healthy environment.⁸³

Yet, despite their inherent relationships and rights to their lands, and the promises of Treaty 8, ACFN members and other Indigenous Peoples in the oil sands region have no guarantee that the animals, medicines, and other traditional foods they rely on will continue to be available and will be healthy.

In an ACFN Community Report prepared in 2010, the majority of participants stated that they had witnessed negative changes in the Athabasca River or resources gathered or hunted from its banks over their lifetimes.⁸⁴ Specific concerns related to "change in the taste and smell of Athabasca River water, presence of unusual foams, or films on the water, and the absence or decline of particular species, including insects".⁸⁵ Participants also provided examples where a moose was shot, but the meat was left on the land due to abnormality in the meat, or fish were

⁸⁰ See e.g. Mikisew Cree First Nation, [Written Brief of the Mikisew Cree First Nation to the Standing Committee on Environment and Sustainable Development](#) (15 November 2016) [MCFN 2016] at 1.

⁸¹ See e.g. *Yahey v British Columbia*, [2021 BCSC 1287](#) at paras [214](#) and [1877](#) [*Yahey*] regarding the promises in Treaty 8.

⁸² *R v Badger*, [\[1996\] 1 SCR 771](#) at para [39](#).

⁸³ *Yahey*, *supra* note 81 at paras [272](#), [303](#) and [433](#).

⁸⁴ Craig Candler et al, [As Long As The Rivers Flow: Athabasca River Use, Knowledge and Change](#) (Firelight Group, ACFN, 16 August 2010), online: [iaac-aeic.gc.ca](#) at 19.

⁸⁵ *Ibid* at 20.

caught but not consumed because of perceived quality issues (deformities, loss of colour, excessive slime).⁸⁶ Declining environmental quality was often explicitly linked to the oil sands.⁸⁷

In the same study, 64% of participants stated they were uncomfortable feeding their families fish from the Athabasca River, 14% were uncomfortable feeding their families moose from the surrounding area, 29% were uncomfortable and 43% unsure regarding berries, and all respondents were uncomfortable giving their families Athabasca River water to drink.⁸⁸

In a 2014 study led by Dr. Stéphane McLachlan for ACFN and Mikisew, the large majority of participants (86.5%) agreed that “pollution from the Oil Sands has decreased the quality of traditional foods”. Participants felt that oil sands operations had most harmfully affected the quality of muskrats (83.7%), followed by whitefish (78.5%), some duck species (76.7%), moose (69.52%) and certain medicines (59.8%).⁸⁹

ACFN and Mikisew both have community-based monitoring programs that intake wildlife of concern collected by members. To date, these programs have collected oiled ducks, deformed fish, rabbits with extra genitals, and muskrats, otters, beavers, fox, and mink found dead for no apparent reason. Mikisew’s community monitoring program has also recorded two large fish kills and one large seagull die off involving approximately 125 birds.⁹⁰ Encounters with unhealthy and dead wildlife raise serious concerns regarding the safety of traditional foods.

As discussed above, significant research has linked NAs to health problems in fish and other aquatic species – which are a key traditional food for Indigenous Peoples. This suggests that the supply of fish and other aquatic species that Indigenous Peoples rely on for traditional purposes may be negatively affected by the presence of NAs in the Athabasca oil sands region.

Concerns regarding the effects of NAs on fish and aquatic species are particularly serious in light of other pollutants in the Lower Athabasca region that these species are also exposed to. For example, extremely high mercury levels have been found in fish and aquatic mammals.⁹¹ Mikisew and ECCC have found elevated levels of PAHs in the Athabasca River and Treaty 8 traditional territory, and Mikisew’s community monitoring program has collected fish with liver deformities and skin lesions, which can be linked to elevated PAH concentrations.⁹² Other metals including aluminum, selenium, silver, and vanadium also commonly exceed fish protection

⁸⁶ *Ibid* at 20. First-person stories of impacts of oil sands pollution on traditional foods are abundant. See also Timoney 2007, *supra* note 17 at 46-50; Kevin P Timoney & Peter Lee, “[Does the Alberta Tar Sands Industry Pollute? The Scientific Evidence](#)” (October 2009) 3:1 *Open Cons Bio J* 65 [Timoney & Lee] at 76-77; Chow-Fraser & Rougeot, *supra* note 74 at 63-64. *Joint Review Panel Hearing of Teck Resources Ltd Frontier oil sands mine project (CEAA Ref No 65505)* ([Final Argument of ACFN](#), 5 December 2018) [ACFN 2018] at 28.

⁸⁷ *Ibid* at 19-20.

⁸⁸ *Ibid* at 20.

⁸⁹ Stéphane M McLachlan, [Water is a living thing: Environmental and Human Health Implications of the Athabasca Oil Sands for the Mikisew Cree First Nation and Athabasca Chipewyan First Nation in Northern Alberta, Phase 2 Report](#) (University of Manitoba, 7 July 2014) [McLachlan] at 119 and 128.

⁹⁰ MCFN 2016, *supra* note 80 at 3.

⁹¹ MCFN 2016, *ibid* at 3-4; Timoney 2007, *supra* note 17 at 4.

⁹² MCFN 2016, *ibid* at 5-6.

thresholds.⁹³ The effects of NAs, as well as the cumulative effect of NAs and other substances on the health of fish and aquatic species, should be assessed under CEPA.⁹⁴

Less research has been conducted on the health effects of NAs on other wildlife species. However, studies have confirmed elevated levels of other contaminants in wildlife, including selenium, arsenic, cadmium, mercury, and PAHs.⁹⁵ The 2014 McLachlan study investigated the presence of arsenic, cadmium, mercury, and selenium in different tissues of duck, moose, beaver, and muskrat, and concluded that traces of each of these metals warranted limiting lifetime consumption of different tissues of most of these animals.⁹⁶ The study found that caution should be shown regarding lifetime consumption of all moose and duck tissues due to elevated presence of cadmium, mercury, and selenium.

Together, these studies indicate that Indigenous Peoples in the Athabasca oil sands region are highly vulnerable to experiencing adverse effects from exposure to NAs, due to the effects of NAs on supply of traditional foods and elevated existing levels of contamination of traditional foods. It is also worth noting that the studies referenced above that focus on individual species or individual substances underestimate the level of vulnerability and adverse health consequences ACFN and other Indigenous Peoples face from oil sands pollution, given that they experience this pollution over lifetimes and even generations of living and engaging in traditional practices in the oil sands region.

ACFN members and other Indigenous Peoples in the Athabasca oil sands region are vulnerable as a result of health concerns

There is significant evidence demonstrating that ACFN members and Indigenous Peoples in the lower Athabasca region face significant health risks, due to their proximity to the oil sands and their reliance on traditional foods. ACFN and other First Nations have been requesting a health study on the impacts of the oil sands for more than a decade, which has not been conducted. As such, the precise impacts of oil sands development – including NAs – on Indigenous Peoples and communities remains understudied. Despite this, the research that exists to date and community lived experience both indicate that Indigenous Peoples in the region face significant vulnerability with respect to health status, which weighs in favour of conducting a CEPA assessment of OSPW NAs.

The Alberta Health community profile for Wood Buffalo excluding Fort McMurray published in August 2022 demonstrated that Wood Buffalo has higher Indigenous population (35.9%) compared to Alberta (2.8%) and poorer health outcomes related to chronic diseases, mortality, and mental health disorders, providing evidence that Indigenous Peoples in Wood Buffalo are vulnerable populations.⁹⁷

⁹³ Timoney & Lee, *supra* note 86 at 77.

⁹⁴ CEPA, s. [76.1\(2\)](#).

⁹⁵ MCFN 2016, *supra* note 80 at 3-6; McLachlan, *supra* note 89 at 65-68.

⁹⁶ McLachlan, *ibid* at 65-68.

⁹⁷ Alberta Health Primary Care Network Operations, [Community Profile: Wood Buffalo excluding Fort McMurray \(Health Data and Summary\), 5th Ed](#) (Government of Alberta, August 2022) at iv-vi.

Interview-based studies consistently highlight community members' experiences of high rates of cancers and other diseases, and their concerns about health risks. In the 2014 McLachlan study, the great majority of ACFN and Mikisew respondents (90%+) indicated that they were worried about the current state of health of their community and family.⁹⁸ Most (73.9%) agreed that the health of their community is lower now than it was 50 years ago.⁹⁹ Everyone except for one person agreed that cancer was the illness that had increased the most in prevalence in Fort Chipewyan.¹⁰⁰

An alarming 21% of the 90 participants in this study had personally suffered from cancer,¹⁰¹ and numerous participants spoke of their experiences witnessing increasing rates of cancer in the community.¹⁰² For example:

Oct 17, BR: "I came with, something on my mind that has been bothering me about the health of the community, some things that I have been seeing that I wanted to discuss. Like the rate, increase of cancer. It's getting to younger and younger ages, more and more people. I keep hearing 'oh its hereditary'... So [*sic*] of those hereditary people who have been those for years and years and years and never had cancer in their family until recently. And then boom boom, boom – three, four, five of them. I've got cancers coming out of my ears."

Oct 16, SR: "One way or another we're all touched. It is either a family member or a friend. Like I said, everyone knows everyone in Chip, and we're so close here, and, one family is hurt, we all hurt. One way or the other, it all hurt. So cancer is a big issue here for us. We keep saying it is industry, industry and I know down the road like industry has a big claim, but yet they won't admit to anything. But yet we still live with it. We don't really have a choice because we live downstream... And like it is not only our Elders, it is our youth too."¹⁰³

A study of cancer incidences in Fort Chipewyan between 1995-2006 conducted by the Alberta Cancer Board found 51 documented cancer cases, which was higher than the expected number of 39.¹⁰⁴ Specifically, the Board found higher than expected rates of cancers of the blood and

⁹⁸ McLachlan, *supra* note 89 at 138.

⁹⁹ McLachlan, *ibid* at 138.

¹⁰⁰ McLachlan, *ibid* at 139.

¹⁰¹ McLachlan, *ibid* at 140.

¹⁰² McLachlan, *ibid* at 138-140 and 179. For more interviews with community members documenting their experiences with cancer, see: Timoney 2007, *supra* note 17 at 46-50; Nathalie J Chalifour, "[Bringing Justice to Environmental Assessment: An Examination of Kearl Oil Sands Joint Review Panel and the Health Concerns of the Community of Fort Chipewyan](#)" (2010) 21 JELP 31 at 36-37; Chris E Mbah, [Sacrificial Zone or Living on Borrowed Time: Oil Exploitation in Northern Alberta and its Impact on the Athabasca Chipewyan First Nation Community](#) (Master of Arts Thesis, University of Regina, 2015) [unpublished] at 11 and 66-68; Ian Willms, "[A life — and death — in Fort Chipewyan, downstream from the oilsands](#)", *The Narwhal* (29 October 2022). See also ACFN Chief Adam and Mikisew Chief Tuccaro's recent personal accounts of their experience with cancer in their communities: ENVI Hearing (17 April 2023), *supra* note 68 at [1120](#), [1130](#), [1140](#) and [1210](#).

¹⁰³ McLachlan, *ibid* at 139-140.

¹⁰⁴ Yiqun Chen, [Cancer Incidence in Fort Chipewyan, Alberta 1995-2006](#) (Alberta Cancer Board Division of Population Health and Information Surveillance, February 2009) at 8.

lymphatic system, biliary tract cancers as a group, and soft tissue cancers.¹⁰⁵ Leukemia rates were more than three times higher than expected.¹⁰⁶ A follow up study for the period of 2007-2011 found higher rates of biliary tract cancer than expected (three cases were reported, while none were expected).¹⁰⁷

Other than cancer, participants in the 2014 McLachlan study noted witnessing an increase in a many other diseases including asthma (88.8%), heart disease (85.7%), type 2 diabetes (82%), stress (79.1%), and obesity (73.3%).¹⁰⁸ Increases in type 2 diabetes, obesity, and heart disease are often attributed to changes in diet and lifestyle in Indigenous communities, and have been referred to as an “epidemic in progress” for Indigenous Peoples.¹⁰⁹ ACFN members and other Indigenous Peoples in the region face health risks regardless of their food choices – by relying on traditional foods they face exposure to toxic contaminants, while reliance on store-bought foods has led to increased incidences of issues such as type 2 diabetes, obesity, and heart disease.

Colonialism and the breach of Inherent, Treaty and Constitutional Rights are a key source of vulnerability for ACFN other Indigenous Peoples in the Athabasca oil sands region

It is important to recognize that key underlying causes of vulnerability for ACFN and other Indigenous Peoples in the region are colonialism and the breach of inherent, treaty and constitutional rights. Long histories of social and legal discrimination, residential schools, the taking up and exploitation of Indigenous traditional lands, disregard for Indigenous decision-making authority, interference with traditional social and legal structures, and Crown failure to live up to treaty promises are key reasons for Indigenous Peoples’ current experiences of vulnerability.

The three issues reviewed above that create vulnerabilities for Indigenous Peoples – large-scale industrial development on Indigenous lands, pollution of Indigenous traditional foods and medicines, and health issues facing Indigenous Peoples – are all closely tied to, and arguably caused by, colonialism. At the same time, these issues only capture a portion of the harms and vulnerability that Indigenous Peoples continue to experience as a result of colonization.

As will be discussed more below, it is especially important that the Ministers take action to assess and prevent further harms to Indigenous Peoples, given the Crown’s historic and current responsibility for creating conditions of vulnerability for Indigenous Peoples, as well as the Crown’s responsibility to respect and uphold Indigenous Peoples’ inherent, treaty and constitutionally-protected rights including as reflected in UNDRIP.

(ii) The Athabasca oil sands region is a “vulnerable environment”

The Athabasca oil sands region was explicitly recognized as a vulnerable environment during the debates on Bill S-5. The term “vulnerable environment” was first introduced into Bill S-5 by the

¹⁰⁵ *Ibid* at 8.

¹⁰⁶ *Ibid* at 30.

¹⁰⁷ Alberta Health Services, News Release, “[Cancer incidence in Fort Chipewyan follow-up report](#)” (24 March 2014).

¹⁰⁸ McLachlan, *supra* note 89 at 144-145 and 178.

¹⁰⁹ McLachlan, *ibid* at 144.

Standing Senate Committee on Energy, the Environment and Natural Resources, following a motion by Cree Senator Jane McCallum. Senator McCallum spoke of the importance, from an Indigenous perspective, of considering impacts not only on humans, but also on the broader “land, water, sky – everything”, given that these effects are inseparable and “have an impact on every individual and especially the collective”.¹¹⁰

Senator McCallum’s comments on the need to protect vulnerable environments under CEPA focused on the impacts of resource extraction on the land and on Indigenous Peoples. She noted that both land subject to resource extraction and “land adjacent to it where the toxins can leach to” are vulnerable environments.¹¹¹ Senator McCallum specifically referenced the Athabasca Region as an example of a vulnerable environment:

The example I brought is the tailings ponds and the Athabasca River because the tailings are already leaching into the Athabasca River, which will go into the Mackenzie River and ultimately into the Arctic Ocean.¹¹²

Senator McCallum also noted the importance of interpreting and protecting “vulnerable environments” in the context of colonization and the dispossession of Indigenous lands:

Is there a piece of land that has been treated respectfully by resource extraction? Or have they just left their toxic materials, which makes the land vulnerable? The regulatory gap that exists because of Indigenous lives and lands includes the land. It is these lands and waters that are rich in natural resources and therefore most at risk of exploitation and dispossession. People think the time is over when Europeans came here and people were dispossessed and colonized. It isn’t over. The dispossession continues every single day — every single day in Canada. That’s why we protect more than just the people. We need to protect the land as well.¹¹³

The Athabasca oil sands region was again recognized as a vulnerable environment during debates in the House of Commons Standing Committee on Environment and Sustainable Development regarding whether tailings ponds should be referenced in s. 46(1)(k.3) of CEPA. Although tailings ponds did not need to be mentioned in this provision in order for the Minister’s information-gathering powers to apply, the government finally agreed that they should be included to “underscore the importance of understanding the risks to the environment and human health from tailings ponds” in the context of devastating seepage from the Kearl oil sands facility into the Athabasca River.¹¹⁴

Indeed, it should be absolutely clear that the Lower Athabasca region qualifies as a vulnerable environment. This region is currently at an ecological and cultural tipping point, as industrial disturbance and habitat fragmentation over 50 years has removed key species such as moose and

¹¹⁰ Senate, Standing Committee on Energy, the Environment and Natural Resources, *Evidence*, 44-1 (2 June 2022).

¹¹¹ *Ibid.*

¹¹² *Ibid.*

¹¹³ *Ibid.*

¹¹⁴ House of Commons Standing Committee on Environment and Sustainable Development, *Evidence*, 44-1, No 201 (29 May 2023) at [1200](#) (Terry Duguid, PS to Minister of Environment).

woodland caribou, led to destruction of large and varied habitat areas (e.g. wetlands, forests, peatlands, rivers, and streams), and has caused ecosystems to shift precipitously. Chemical contamination is also at a tipping point, as species relied on for traditional purposes are already dying and experiencing severe health impacts from industrial pollution.

These factors are threatening the ability of ACFN members and other Indigenous Peoples to engage in traditional practices, as is their constitutional and treaty right, and as also forms part of the interconnected interpretation of “environment” put forward by Senator McCallum.¹¹⁵ It is not certain at all, right now, that next generations will be able to engage in traditional practices on their territories as their ancestors did.

With respect to the present Request, the Athabasca oil sands region is a “vulnerable environment” that faces increased risk from exposure to OSPW NAs due to both greater existing exposure and greater susceptibility. Exposure to OSPW NAs in the oil sands region is enormously high given the scale and landscape impact of tailings ponds, as well as leakage into groundwater and surface water. The environment is also highly susceptible to further impacts given the existing, sometimes irreversible, destruction and contamination that has occurred as a result of industrial development.

Specific reasons that the Athabasca oil sands region is a vulnerable environment for the purposes of this Request include:

- **Tailings ponds:** As stated above, tailings ponds cover about 120 km² (considering only the fluids), and contain over 1.4 trillion litres of tailings.¹¹⁶ Oil sands tailings contain many toxic and harmful substances, including OSPW NAs which are substances of particular concern. Tailings leak into the Athabasca River and groundwater, including through massive leakage incidents such as occurred at the Imperial Oil Kearl site between May 2022 and February 2023.
- **Water quality:** Discharge from mining operations, airborne pollution, and seepage from tailings ponds have introduced many heavy metals and toxic chemicals into the Athabasca River and other water bodies, including NAs. As noted above, research has found elevated concentrations of NAs in tributaries adjacent to oil sand mining developments.¹¹⁷ Water sampling within ACFN traditional territory has also found that the heavy metals associated with the oil sands industry frequently exceed Canadian Council of Ministers of the Environment (“CCME”) guidelines: mercury, lead, silver, cadmium, arsenic, selenium, zinc and chromium. Water sampling further shows that

¹¹⁵ As clarified by ECCC ADM John Moffet at the Senate Committee hearing, the term “environment” was chosen to reflect Senator McCallum’s meaning because of its very broad definition under CEPA: “The term “environment” is defined in CEPA already. It encompasses ecosystem — ecosystems, ecosystem and ecosystem functioning. So the way the act is written, the term “environment” would be the broadest possible term that could encompass lands, waters, ecosystem functions, et cetera”: see Senate, Standing Committee on Energy, the Environment and Natural Resources, *Evidence*, 44-1 (2 June 2022). Therefore, the term “environment” should be interpreted to include Indigenous relationships with the land and practices on the land.

¹¹⁶ Chow-Fraser & Rougeot, *supra* note 74 at 10-11.

¹¹⁷ *Supra* note 19.

levels of phosphorus frequently exceed CCME guidelines. Phosphorus is a driver of eutrophication that may be responsible for recent fish kills.

- **Animal health:** Animals no longer come near oil sands sites, which makes hunting almost impossible in the vicinity of industrial activity. Within ACFN traditional territory however, animals have been found to be contaminated with metals such as arsenic, cadmium, mercury, and selenium.¹¹⁸ Eating fish downstream of the oil sands is no longer safe, due to high levels of toxins in their bodies.¹¹⁹ ACFN members and other Indigenous Peoples in the region are very concerned about the impacts of consuming traditional foods on their health and high cancer rates in their communities.¹²⁰
- **Migratory birds:** ACFN members have witnessed changes to migratory birds as a result of the development of the oil sands. Only 30 years ago, thousands and thousands of migratory birds would fly over the region twice a year. Now, many fewer birds fly over the region. The birds that do fly over the region face risks of mistaking enormous tailings ponds – which are larger than water bodies in the area – for rest stops.¹²¹ It is estimated that 200,000 migratory birds may land on tailings ponds annually, and be directly exposed to toxins.¹²² The Oil Sands Bird Contact Monitoring Program reports that year after year, hundreds of birds are oiled and a significant portion die as a result of being oiled.¹²³ Some Indigenous People no longer eat ducks because they are known to land on tailings ponds.¹²⁴
- **Wood Buffalo National Park:** Wood Buffalo National Park is a UNESCO World Heritage site; however, UNESCO has found that this status is at risk due to serious environmental threats from oil sands development.¹²⁵ Wood Buffalo, and particularly the Peace-Athabasca Delta, is highly vulnerable as it receives inputs from both the Peace and Athabasca Rivers. In 2023, UNESCO requested that Canada take new measures to assess and address the impacts of tailings ponds on the Peace-Athabasca Delta and strengthen efforts to transition towards Indigenous co-management of the National Park.¹²⁶

It is also essential to consider Indigenous perspectives in assessing the vulnerability of the Lower Athabasca region. ACFN and other Indigenous Nations and communities have stewarded these lands for thousands of years, and continue to steward the lands through formal management frameworks such as *Nih boghodi*, the stewardship strategy for thunzea, et'then, and dechen

¹¹⁸ McLachlan, *supra* note 89 at 65-68.

¹¹⁹ Timoney & Lee, *supra* note 86 at 77; Timoney 2007, *supra* note 17 at 4; MCFN 2016, *supra* note 80 at 5-6.

¹²⁰ See subsections (ii) and (iii) above in the discussion vulnerable populations.

¹²¹ Chow-Fraser & Rougeot, *supra* note 74 at 32-35; Timoney & Lee, *supra* note 86 at 73.

¹²² Colleen C St. Clair, *Final Report of the Research on Avian Protection Project (2010-2014)* (University of Alberta, RAPP, 30 April 2014) at 55.

¹²³ [Oil Sands Bird Contact Monitoring Program 2021 Annual Report](#) (March 15, 2022); [Oil Sands Bird Contact Monitoring Program 2020 Annual Report](#) (March 15, 2021).

¹²⁴ Chow-Fraser & Rougeot, *supra* note 74 at 32 and 64.

¹²⁵ UNESCO, [Decision 45 COM 7B.22 – Wood Buffalo National Park \(Canada\) \(N 256\)](#) (2023), online: whc.unesco.org.

¹²⁶ *Ibid* at s 8.

yághē ejere (woodland caribou, barren-ground caribou, and wood bison)¹²⁷ as well as through the continued practice of traditional culture and rights.

The following statement by Lisa Tsessaze, ACFN's Director of Dené Lands and Resource Management, at the hearings for the Teck Resources Ltd. Frontier Oil Sands Mine Project, describes the Dené law of relationship with the land. It is particularly clear when the environmental abuses described above are considered in the context of Dené law that the Athabasca oil sands region constitutes a "vulnerable environment":

The Dene law we live by is about love and respect. We respect everyone and everything around us. We watch what we say. Respect for Dene is that law. It's how we live our lives. It's essential to our culture and our spiritual practices.

When I travel over the waters, I feel respect for the water. I make an offering. When we harvest an animal, we want to pick berries or traditional plants, I pay my respect for the land. I make an offering.

This is the way I live my life and the values that I teach my children, and it is the way the Dene people have sustained ourselves for thousands of years.

This law of respect means that Dene people are taught to care for the land. We take only what we need and we use everything that we take. We are responsible for the land. We are responsible for its inhabitants. We are stewards of the birds, the buffalo, the water and the air.

To respect the land we must protect it. We are taught to be respectful of the land and the land will take care of us. The land will provide.¹²⁸

(iii) Available information on vulnerable populations and environments and the principles of environmental justice support the need to assess OSPW NAs under CEPA

In light of the significant vulnerability of the environment and populations in the Athabasca oil sands region, it is essential that Ministers take all possible measures to prevent further environmental and health risks, including by conducting an assessment for OSPW NAs.

In December 2022, 40+ physicians and scientists from fields such as environmental toxicology, ecology, aquatic ecosystems, and conservation biology penned a letter to Environment and Climate Change Minister Guilbeault seeking a guarantee that humans and the environment be subject to "no further exposure" to harmful contaminants from oil sands tailings.¹²⁹ "No further

¹²⁷ ACFN, [Nih boghodi We are the stewards of our land: An ACFN stewardship strategy for thunzea, et'thén and dechen yághē ejere \(woodland caribou, barren-ground caribou and wood bison\)](#) (ACFN with Firelight Group, 26 April 2012), online: iaac-aeic.gc.ca.

¹²⁸ *Joint Review Panel Hearing of Teck Resources Ltd Frontier oil sands mine project (CEAA Ref No 65505)* (Transcript from JRP Public Hearing, 15 October 2018) at 2093-2094.

¹²⁹ [Re: Letter from environmental toxicologists, environmental and human health risk assessors and others within the scientific community: Please ensure a transparent, independently reviewed and UNDRIP-compliant consultative](#)

exposure” was deemed to be the appropriate risk threshold in light of the existing vulnerability of the region. It is essential the Ministers assess the toxicity of OSPW NAs so that their risks can be studied and appropriately managed.

The Ministers are obligated to administer CEPA in a manner that “protects...the health of vulnerable populations” and “uphold[s] principles of environmental justice – including the avoidance of adverse effects that disproportionately affect vulnerable populations”.¹³⁰

During the passage of Bill S-5, Minister Guilbeault described the inclusion of vulnerable populations as “an extremely important improvement to environmental law in Canada.”¹³¹ Parliamentary Secretary Terry DuGuid further explained that consideration of vulnerable populations and vulnerable environments “broadens the scientific basis for risk assessments under CEPA” to help ensure that “real-world exposure scenarios” are addressed.¹³² As noted, the Athabasca oil sands region was specifically mentioned when the term “vulnerable environment” was first added to CEPA, and tailings ponds were explicitly referenced in s. 46(1)(k.3) to “underscore the importance of understanding the risks to the environment and human health from tailings ponds”.¹³³ It is important that the Ministers uphold the legislature’s intent to understand the risks to environment and health from tailings ponds and to protect vulnerable populations and environments in the Athabasca region by accepting this Request.

Environmental justice requires the “fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”¹³⁴ With respect to the impacts of industrial development on nearby communities, Professor Nathalie Chalifour has argued that the precautionary principle and environmental justice require that regulators have evidence demonstrating that industrial projects will not unfairly burden communities before they approve projects.¹³⁵ She notes that the Imperial Oil Kearl project was approved despite insufficient information on the project’s impacts on Indigenous Peoples¹³⁶ – one reason that may have contributed to serious leaks at the Kearl site in 2022-2023. Environmental justice requires the Ministers to make proactive efforts to assess and manage the harms caused by oil sands tailings to Indigenous Peoples and the environment.

Finally, as noted above, it is essential to recognize colonialism and historic as well as more recent Crown conduct in the Athabasca oil sands region as root causes of the vulnerability experienced by Indigenous Peoples and the environment. In light of this, it is particularly

[process before moving forward with new effluent mine regulations regarding oil sands process water](#) (Letter sent to Minister Guilbeault, 1 December 2022), online: environmentaldefence.ca.

¹³⁰ CEPA, ss. [2\(1\)\(a\)\(i\)](#), [2\(1\)\(a.3\)](#).

¹³¹ House of Commons Standing Committee on Environment and Sustainable Development, [Evidence](#), 44-1, No 41 (2 December, 2022) at [1330](#) (Hon. Steven Guilbeault).

¹³² House of Commons, [Debates](#), 44-1, No 190 (3 May 2023) at [1645](#) (Terry Duguid, PS to Minister of Environment and Climate Change).

¹³³ House of Commons Standing Committee on Environment and Sustainable Development, [Evidence](#), 44-1, No 201 (29 May 2023) at [1200](#) (Terry Duguid, PS to Minister of Environment and Climate Change).

¹³⁴ United States Environmental Protection Agency, “[Environmental Justice](#)” (modified 6 September 2023).

¹³⁵ Chalifour, *supra* note 102 at 50 and 57-61.

¹³⁶ Chalifour, *ibid* at 51-56.

important for the federal government to assess and address risks facing Indigenous Peoples, including from OSPW NAs.

(e) The Ministers must apply the precautionary principle

In administering CEPA, the Ministers have an underlying duty to exercise their powers in a manner that “applies the precautionary principle, which provides that the lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation if there are threats of serious or irreversible damage”.¹³⁷ Although NAs are considered the primary source of acute toxicity in OSPW, their real-world impacts are understudied and much still needs to be learned about the effects of OSPW NAs on the environment and human health. The precautionary principle requires this lack of scientific certainty not be used as an excuse for denying the Request.

(f) The Ministers must give effect to the right to a healthy environment

CEPA was amended in 2023 to enshrine the right of every individual in Canada to a healthy environment.¹³⁸ In administering the Act, including when deciding whether to conduct an assessment and in conducting the assessment itself, the Ministers have a duty to protect this right. While the implementation framework setting out how the right to a healthy environment will be considered in the administration of the Act is still being developed, it is important to note that CEPA explicitly identifies assessments as a key area for the protection of the right to a healthy environment, and provides that the implementation framework must set out the process under s. 76.1(1) – which provides for the application of a weight of evidence approach and the precautionary principle when conducting and interpreting the results of assessments – in respect of the protection of the right to a healthy environment.¹³⁹ As a result, the Ministers have a positive duty to implement the right to a healthy environment in assessing this Request, and in conducting an assessment of OSPW NAs.

(g) The Ministers must uphold UNDRIP and advance Reconciliation

The Ministers are required to make decisions consistent with UNDRIP, pursuant to CEPA’s Preamble, and also mandated to advance reconciliation pursuant to s 342.1.

Accepting the present Request is an important step in that direction, given that Indigenous Peoples have been asking for an assessment of NAs for years. In 2016, in a brief to the House of Commons Standing Committee on Environment and Sustainable Development regarding the effectiveness of CEPA, Mikisew recommended that the Ministers “improve assessment approaches under the Act” and be more proactive in evaluating “new and emerging contaminants such as naphthenic acids”.¹⁴⁰ Mikisew noted that CEPA is important for reconciliation in the Athabasca oil sands region, because “measures that recognize the linkages between the protection of the environment and treaty rights can promote reconciliation while approaches to

¹³⁷ CEPA, [s. 2\(1\)\(a\)\(ii\)](#).

¹³⁸ CEPA, [Preamble](#), [ss. 2\(1\)\(a.2\)](#), [5.1](#), [44](#).

¹³⁹ CEPA, [s. 5.1\(1.1\)](#).

¹⁴⁰ MCFN 2016, *supra* note 80 at 11.

environmental protection that ignore the needs of those holding treaty rights can equally undermine reconciliation.”¹⁴¹

The Applicants and Mikisew’s call for the Ministers to assess OSPW NAs under CEPA was also expressed by Liberal members of the House of Commons ENVI Committee in 2010, who wrote in a report to Committee that the exclusion of OSPW NAs from the Chemicals Management Plan (“CMP”) “give[s] rise to the suspicion that the Harper government is surreptitiously protecting the oil sands industry against federal regulation of one of its most harmful pollutants.”¹⁴² The Liberal ENVI members formally recommended that the Government of Canada place NAs on the CMP.¹⁴³

The Requesters ask that the Ministers uphold their commitment to reconciliation and implementing UNDRIP, as required under CEPA, by accepting this Request.

4. Conclusion

Pursuant to s. 76(1) of CEPA, and for the reasons set out above, the Requesters request that the Ministers assess OSPW NAs to determine whether they are toxic or capable of becoming toxic. We would be pleased to discuss this submission or provide any further information that may be useful. We look forward to receiving your decision and reasons pursuant to s. 76(2) and (2.1).

Sincerely,



Bronwyn Roe
Barrister & Solicitor



Anna McIntosh
Barrister & Solicitor



Dr. Elaine MacDonald
Director, Healthy Communities Program

Encl: Letter from Fraser Thomson to Julie Thompson, Executive Director, Program Development and Engagement Division, Environment and Climate Change Canada (October 17, 2018).

cc: Substance Prioritization Assessment and Coordination Division (substances@ec.gc.ca)

¹⁴¹ MCFN 2016, *ibid* at 2.

¹⁴² *The Hidden Dimension: Liberal Report from the Study of the Standing Committee on Environment and Sustainable Development on the Impact of Oil Sands Development on Canada’s Freshwater* (House of Commons, 2010) at 19.

¹⁴³ *Ibid* at 48.