Overview of Legal and Regulatory Frameworks for Oil Sands Tailings Management and Mine Reclamation

Review of Gaps, Interjurisdictional Challenges and new proposals that put the OUV of Wood Buffalo National Park at risk

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Overview

The Governments of Alberta and Canada each play a role in the management of oil sands tailings and the risks associated with tailings. To assist the 2022 WHC/IUCN reactive monitoring mission to Wood Buffalo National Park, this report provides an overview of each government's management systems for oil sands tailings and an analysis of the effectiveness of those systems. The report also provides an update regarding relevant developments relating to each government's management system for tailings since the 2016 mission, including an analysis of the proposals to develop OSPW release regulations and the effectiveness of the Oil Sands Monitoring Program.

The report concludes that federal and provincial regimes are replete with flaws and failures and are insufficient for preventing threats to Wood Buffalo National Park's OUV.

Introduction and review of federal and provincial tools for managing tailings

Oil sands mine sites and associated tailings ponds are a broadly recognized threat to the Property and its OUVs. Various expert reports have catalogued the full list of environmental impacts from oil sands operations, including greenhouse gas (GHG) emissions, other air emissions, water use and degradation, tailings and landscape impacts.[1] Most recently, in its 2020 Factual Record for the Alberta Tailings Pond II Submission, the Commission for Environmental Cooperation (CEC) noted that the oil sands processed water (OSPW) found in tailings ponds is an acutely toxic substance containing naphthenic acids and heavy metals, among others, and confirmed the existence of scientifically-valid evidence of tailings ponds leakage into near-field groundwater and the Lower Athabasca River.[2]

Tailings management and mine site reclamation are inescapably interjurisdictional endeavours. As owner of the underlying hydrocarbon resources, as well as the overlaying lands and waters, Alberta has broad regulatory authority over day-to-day oil sands operations.[3] However, federal involvement is triggered by virtue of its authority over fish and fish habitat, interprovincial waterways, migratory birds, and national parks (to name but a few). Binding both levels of government, including in the exercise of their respective regulatory authorities in and around the Property, are legal obligations to Indigenous peoples. Both Canada and Alberta are constitutionally bound to protect Indigenous rights, while Canada is also legislatively bound by virtue of its ratification and implementation of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).[4] Canada holds an additional obligation in its role as state party to the World Heritage Committee.

As further set out below, the fragmented and inadequate management of oil sands' long-term environmental liabilities, which include massive fluid tailings inventories (nearly 1.6 trillion L) and significant outstanding remediation and reclamation obligations, represent a significant threat to Wood Buffalo National Park (WBNP) and its OUV. Estimated by the Alberta Energy Regulator in 2018 to be potentially as high as $130 billion, the province currently only holds less than $1 billion in security against these liabilities in an opaque regime that has been repeatedly criticized by Alberta's Auditor General and other independent analysts and organizations. In plain terms, unless significant reforms are adopted it is presently more likely than not that oil sands operators will fail to remediate and reclaim their mining sites and associated tailings inventories, with all the

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[1] See e.g. Council of Canadian Academies, 2015. Technological Prospects for Reducing the Environmental Footprint of Canadian Oil Sands. The Expert Panel on the Potential for New and Emerging Technologies to Reduce the Environmental Impacts of Oil Sands Development, Council of Canadian Academies. See also accompanying technical reports, esp. Mandy Olsgard, "Tailings Threats to Wood Buffalo National Park: Current and Future Threats" (August 2022).

[2] EC. 2020. Alberta Tailings Ponds II. Factual Record regarding Submission SEM-17-001. Montreal, Canada: Commission for Environmental Cooperation. 204 pp [ATPII].

[3] See Nickie Nikolaou, "Mapping the Legal Framework for Oil Sands Development in Alberta" (2022) Alta. L. Rev (Forthcoming). That article is an update on an earlier paper: Nickie Vlavianos, "The Legislative and Regulatory Framework for Oil Sands Development in Alberta: A Detailed Review and Analysis" CIRL Occasional Paper #21, (Calgary: Canadian Institute of Resources Law, August 2007).

[4] [C-15 (43-2) - LEGISinfo - Parliament of Canada]

attendant risks to the Property and its OUV. Other threats include the state of implementation and governance of the provincial *Tailings Management Framework*, the confirmed seepage of oil sands tailings ponds, the planned release of oil sands processed water (OSPW) pursuant to regulations currently under development through parallel provincial and federal processes, and ongoing delays in reporting monitoring results by the Canada-Alberta Oil Sands Monitoring (OSM) Program. A fundamental theme running throughout this paper is a failure to effectively integrate the various relevant regulatory regimes, both inter- and intra-jurisdictionally, which has led to significant gaps and deficiencies.

A) Provincial Regime

Alberta has broad regulatory authority over oil sands operations, including tailings management and mine closure, remediation, and reclamation. Tailings are primarily regulated through the *Lower Athabasca Region: Tailings Management Framework for the Mineable Athabasca Oil Sands* (*Tailings Management Framework*)[5] and the Alberta Energy Regulator's (AER) *Directive 085*.[6] The *Tailings Management Framework* is one of several environmental management frameworks developed for the Lower Athabasca Regional Plan (LARP) under the authority of the *Alberta Land Stewardship Act*,[7] which sets out the vision and objectives for land-use and resource development in the region for the past decade. *Directive 085* replaced the earlier, more stringent *Directive 074*, which would have required near-term decreases (within 5 years) in fluid tailings volumes but was deemed infeasible by industry and eventually abandoned by the regulator.[8] The *Tailings Management Framework* and *Directive 085* have several components, but their main thrust is to require all legacy fluid tailings to be "ready to reclaim" (RTR) at mine closure and all new fluid tailings (post 2017) to be RTR within ten years of mine closure. "Ready to reclaim" is defined rather nebulously as the "state achieved when fluid tailings have been processed through an accepted technology, have been placed in their final landscape position, and have achieved necessary performance criteria."[9] In practice, interpretation and application of RTR criteria is limited in scope and highly variable across operators.

Mine site remediation and reclamation are regulated through the provincial *Environmental Protection and Enhancement Act* (*EPEA*)[10] and associated regulations, approvals and policies, especially the *Conservation and Reclamation Regulation (CRR)*.[11] Mine operators must prepare and submit mine reclamation and closure plans, the objective of which, per the legislation, is to return the relevant land to "equivalent land capability." This is another nebulous standard that is poorly defined, broadly and variably interpreted, and has been raised by downstream communities as a subject of controversy and dispute.[12]

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[5] [*Tailings Management Framework*], available online at <https://open.alberta.ca/publications/9781460121740>

[6] *Directive 085: Fluid Tailings Management for Oil Sands Mining Projects* (October 12, 2017).

[7] SA 2009, c A-26.8 [ALSA].

[8] For more background on Directive 074 and the events leading to its eventual abandonment, see <https://www.oilsandsmagazine.com/technical/mining/tailings/directive-074>.

[9] *Directive 085*, *supra* note 4.

[10] RSA 2000, c E-12.

[11] Alta Reg 115/1993 [*CRR*].

[12] *CRR*, s 2.

The *CRR* also establishes the Mine Financial Security Program (MFSP), which is Alberta's regime for managing oil sands mines' remediation and reclamation costs, including the permanent disposal of tailings.[13] Rather than requiring hard security in the form of cash or letters of credit, the MFSP allows companies to use their assets (both proven and provable oil reserves) against their estimated environmental liabilities. If a mine's resource assets are worth more than three times their estimated reclamation costs, which costs are based on their own internal calculations that are not publicly disclosed or assessed, only an initial "base deposit" is required; further security is not required until the mine approaches its last fifteen years of operating life.[14]

As of June 30, 2021, total official estimated liabilities were $ CAD 33.19 billion, with $1.52 billion held in security.[15] This total is a marked increase from an estimated $22.6 billion in 2015, yet proportionally the MFSP currently holds less security than it did back then (from barely 6% to just over 4%; see Figure 1 below). Moreover, in 2018 various Canadian media organizations reported on a private presentation given by the then vice-president of closure and liability for the AER, wherein liabilities associated with oil sands mines were estimated to be as high as $130 billion – over four times the official estimate.[16] The AER responded that this presentation provided "a snapshot in time of estimated total liability" and was based on a "worst-case scenario,"[17] but otherwise this figure has never been disputed by the AER or the oil sands industry. Most recently, as part of the AER's and Alberta Environment and Park's (AEP) review of the MFSP regime, the two agencies were again requested to explain the discrepancy between current official MFSP liability estimates and the $130 billion estimate but refused to do so.[18] As further discussed below, some of the problem appears to be rooted in the above-noted ambiguity regarding the *CRR*'s "equivalent land capability" standard, against which remediation and reclamation costs are supposed to be estimated.

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[13] *CRR*, s 16-24.4.

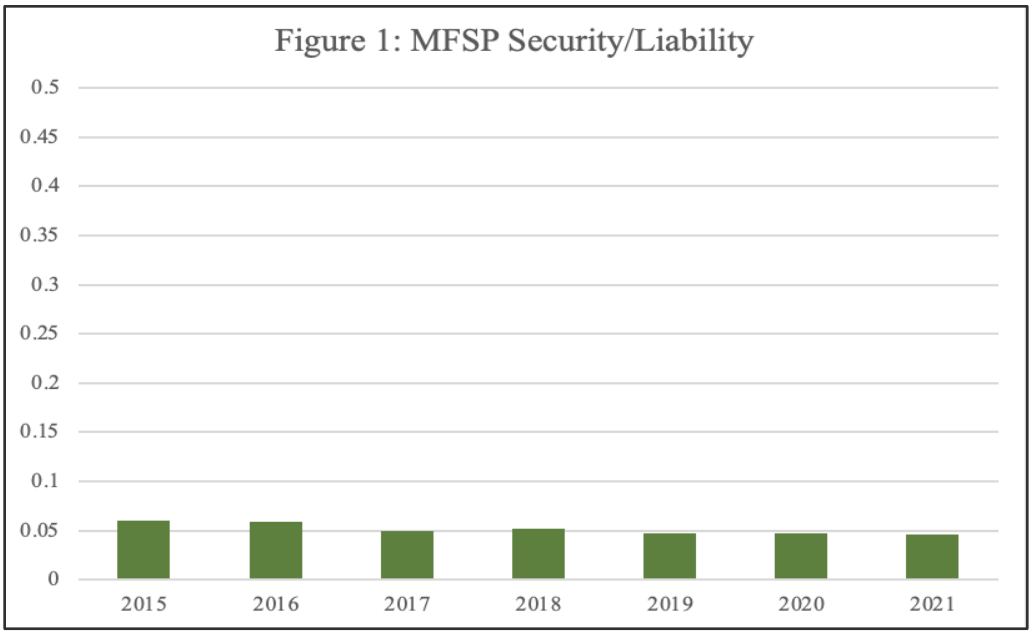
[14] See Drew Yewchuk, "Another Year Gone Under the Mine Financial Security Program" (October 19, 2021), online: ABlawg, <http://ablawg.ca/wp-content/uploads/2021/10/Blog_DY_MFSP_2021.pdf>.

[15] Available at <https://static.aer.ca/prd/documents/liability/MFSP_Liability.pdf>. Roughly $1.5 billion of this security is for coal mines.

[16] See <https://globalnews.ca/news/4617664/cleaning-up-albertas-oilpatch-could-cost-260-billion-regulatory-documents-warn/>.

[17] Ibid.

[18] Martin Olszynski is a current participant in the MFSP Review on behalf of the Athabasca Region First Nations (ARFN). For roughly two months, AER and AEP staff refused to directly answer the question, and then most recently stated that they had no further information regarding the $130 billion estimate.



B) Federal Regime

Federal regulatory authority is triggered by virtue of Parliament's jurisdiction over fish and fish habitat, migratory birds, navigation, and federal lands (*i.e.*, national parks), among others.[19] The most direct and relevant federal regulatory regime is with respect to inland fisheries.[20] All oil sands operators have required *Fisheries Act* section 35 authorizations to cause the "harmful alteration, disruption and destruction of fish habitat,"[21] which for any given oil sands site likely involved the destruction of several hundreds of thousands of square meters (*e.g.* 800 000 m^2 or 80 ha)[22] of fish habitat.

Another relevant *Fisheries Act* provision, administered not by DFO but rather Environment and Climate Change Canada (ECCC),[23] is the subsection 36(3) prohibition against the deposit (*e.g.* release) of any "deleterious substance" (defined in the Act as deleterious to fish) into waters frequented by fish or in any place where such a deposit may enter such waters.[24] Such deposits can only be authorized by regulations under the *Fisheries Act* (e.g. such as exist for metal and diamond mining)[25] or another Act of Parliament. Although currently in development (further

[19] These and other legislative matters have been assigned to the Canadian Parliament pursuant to section 91 of the *Constitution Act, 1867*.
[20] Section 91(12) of the *Constitution Act, 1867* assigns Parliament legislative authority of "seacoast and inland fisheries".
[21] RSC 1985 c. F-14, s 35.
[22] See e.g. Shell Canada Energy, Jackpine Mine Expansion Project, Application to Amend Approval 9756, 2013 ABAER 011/Decision 2013-011 at para 498.
[23] This bifurcation of implementation responsibility first originated in the late 1970s but was only formalized in 2012: see *Order Designating the Minister of the Environment as the Minister Responsible for the Administration and Enforcement of Subsections 36(3) to (6) of the Fisheries Act* (SI/2014-21).
[24] *Fisheries Act* subs 36(3).
[25] *Metal and Diamond Mining Effluent Regulations* SOR/2002-222.

discussed below), no such regulations currently exist for oil sands mines and oil sands processed water (OSPW), which is known to contain various toxic substances harmful to both aquatic and human life. This prohibition is one Canada's strongest tools for safeguarding WBNP because it means that oil sands operators have never been lawfully permitted to release OSPW, or any other substance that is deleterious to fish, into the Lower Athabasca River.

There are several other relevant provisions in the *Fisheries Act*. Although rarely used, section 37 authorizes the Minister for Fisheries and Oceans to require "any documents – plans, specifications, studies, procedures, schedules, analyses, samples, evaluations" related to any "work, undertaking or activity" that is likely to result in impacts to fish, fish habitat, or in the deposit of a deleterious substance, upon receipt of which the Minister may require "modifications or additions to the work, undertaking or activity or any modifications to any plans, specifications, procedures or schedules relating to it that the Minister considers necessary in the circumstances."[26] This authority could plausibly be used to give DFO a greater role in remediation and reclamation planning. Pursuant to section 38, proponents must also notify ECCC of any deposits "out of the normal course of events," which notification requirement has technically been harmonized with the provincial regime.[27] As further discussed below, however, the lack of inter-jurisdictional integration is such that the AER does not share groundwater reports that it receives from operators with ECCC, even those showing near-field groundwater seepage from tailings ponds.

The relatively new (2019) *Impact Assessment Act*[28] regime will be relevant to any new oil sands mine project or expansion that is required to undergo a federal assessment.[29] This scheme is largely the same as the prior *Canadian Environmental Assessment Act, 2012* (*CEAA, 2012*) regime, albeit with a new, consultative "planning phase" that precedes the assessment and decision-making phases, an expanded list of factors to consider in the assessment phase, the legislative codification of some of Canada's constitutional obligations to Indigenous peoples, and heightened scientific rigour.[30] That being said, any improvements to the oil sands' overall environmental performance from these changes would be marginal in light of the industry's existing footprint, which the individual project assessment regime does not affect. More promising may be the new provisions with respect to regional assessments (ss 92 – 94). A regional assessment is defined as an "assessment of the *effects of existing or future physical activities carried out in a region.*" The Impact Assessment Agency of Canada has published preliminary policy guidance on regional assessments.[31] The Agency has recognized that regional assessment "can be used to inform and identify" "[p]otential impacts on rights and interests of Indigenous peoples" and "[g]uidance for land-use planning and other initiatives for managing cumulative effects that may be undertaken by various jurisdictions."[32] A strong case could be made that Canada should undertake a regional assessment of the oil sands region, with a particular focus on threats to the Property and its OUV.

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[26] *Fisheries Act*, s 37.

[27] *Fisheries Act*, s 38 and the *Deposit Out of the Normal Course of Events Notification Regulations* (SOR/2011-91).

[28] S.C. 2019, c. 28, s. 1 [*IAA*].

[29] Currently, Suncor has proposed an expansion to its Base Mine project but has sought a pause at the planning phase of its impact assessment: see <https://iaac-aeic.gc.ca/050/evaluations/proj/80521?culture=en-CA>.

[30] For a review of some of these features, see David V. Wright, "The New Federal Impact Assessment Act: Implications for Canadian Energy Projects" 15 Alta L Rev 1. (2021).

[31] See <https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/regional-strategic-assessments/regional-assessment-impact-assessment-act.html>.

[32] Ibid.

Key Messages Relevant to Protection of Wood Buffalo's OUV

Much has changed since the last Monitoring Mission. On the provincial front, breakdowns in implementation and governance of the *Tailings Management Framework* have significantly increased the risk of ineffective tailings management. On the federal front, changes to the federal *Fisheries Act* and federal environmental assessment regime have restored *some* of the federal environmental protections that were lost in 2012 and that were reported on with concern in 2016.[33] The *Fisheries Act* prohibition against harmful alteration, disruption or destruction of fish habitat has been reinstated and the rigour and scope of federal environmental assessments has been increased. As noted in the preceding section, however, those changes would primarily be relevant to *new projects* and there have been none since 2012, although Suncor's proposed Base Mine expansion has formally entered the planning phase.[34]

The following section identifies and outlines the provincial and federal developments that are most relevant to tailings management and eventual mine remediation and reclamation, all of which are directly relevant to the health of the Property and its OUV.

A) Provincial Developments

a. Tailings Management Framework (TMF) & Governance

There are essentially four pillars to the *Tailings Management Framework* including tailings profile management, reclamation, the MFSP, and water management. AEP sets the policy direction and is responsible for *Tailings Management Framework* governance, while the AER, an ostensibly independent agency, is charged with its implementation. The intra-jurisdictional complexity between AEP and the independent AER affects implementation, increasing the risk that tailings will not be effectively managed and OUV protected.

As one brief example, Indigenous communities review annual tailings management reports as well as amendments to tailings management plans developed by the oil sands industry and have done so since 2016 in many cases. As mentioned above, AER's *Directive 085* is the regulatory mechanism for implementation of one component of the *Tailings Management Framework*; tailings profile management. Directive 085 states:

> This directive, under the *Oil Sands Conservation Act* (OSCA), sets out requirements for managing fluid tailings volumes for oil sands mining projects, including application information requirements, the application review process, fluid tailing management

[33] Mikisew Cree First Nation, *An Urgent Call to Rehabilitate a Global Treasure: Mikisew Cree First Nation's Written Submission to the 2016 Joint World Heritage Centre/IUCN Reactive Monitoring Mission to Wood Buffalo National Park world Heritage Site*, August 2016..

[34] As noted above, Suncor's proposed Base Mine Expansion Project is currently on pause. Tech's Frontier Project completed the assessment process in 2020 under *CEAA, 2012* but Tech withdrew its application before the federal Cabinet made a final project decision.

> reporting, and the performance evaluation and compliance and enforcement processes. The Lower Athabasca Regional Plan required the development of policy direction to manage fluid tailings from oil sands mining projects. The *Tailings Management Framework* (TMF) provides policy direction to the AER to manage fluid tailings volumes during and after mine operation in order to manage and decrease liability and environmental risk resulting from the accumulation of fluid tailings on the landscape. The objective of the TMF is to minimize fluid tailings accumulation by ensuring that fluid tailings are treated and reclaimed progressively during the life of a project and that all fluid tailings associated with a project are ready to reclaim (RTR) ten years after the end of mine life of that project. As this directive is closely aligned and dependent upon the TMF, stakeholders should refer to both documents for a full understanding of the policy direction governing fluid tailings management in Alberta.

The policy direction is relatively clear in its intent; *manage fluid tailings volumes …… in order to manage and decrease liability and environmental risk….*and to ensure *tailings associated with a project are ready to reclaim ten years after the end of mine life.* The interpretation of this direction by industry and the AER has been a point of ongoing concern for communities. Reporting does not demonstrate that tailings storage and deposit areas are on a trajectory that aligns with reclamation and closure plans as per requirements outlined in the Section 6.1 of Directive 085[35] and there is no way to know if tailings management is on a reclamation trajectory towards functional ecosystems.

More specifically, Section 9 of AER's Directive 085 describes *Ready to Reclaim*.

> Tailings are considered RTR when they have been processed with an accepted technology, placed in their final landscape position, and meet performance criteria. RTR is intended to track treated fluid tailings performance during the operational stage of the deposit to ensure that the deposit can be reclaimed as to the targeted outcomes and schedule defined in the life-of-mine closure plan. Treated tailings meeting RTR criteria enables progressive reclamation, which results in reduced liability.

Section 9.2 of AER's Directive 085 describes the objective of RTR

> The concept of RTR tailings supports the objective of reclaiming oil sand mining projects to a self-sustaining boreal forest ecosystem that is (1) integrated with the surrounding area and (2) consistent with the values and objectives identified in local, subregional, and regional plans.

Section 9.3 of AER's Directive 085 describes two sub-objectives

> In order to evaluate whether active treated tailings deposits are on a trajectory to meet the high-level objective, there are two sub objectives that address different aspects of performance:

[35] Directive 085: Section 6.2, p. 21

• Sub-objective 1: the deposit's physical properties are on a trajectory to support future stages of activity.
• Sub-objective 2: to minimize the effect the deposit has on the surrounding environment and ensure that it will not compromise the ability to reclaim to a locally common, diverse, and self-sustaining ecosystem.

Herein lies the problem, by way of one example, that demonstrates the intra-jurisdictional complexity between AEP and the independent AER. Much to the concern of Indigenous communities, groundwater monitoring is the only component reported by industry to the AER to assess if sub-objective 2 of the RTR criteria are being met. In no way is groundwater monitoring alone adequate to address this criterion. Indigenous communities have not been involved in discussions to establish RTR criteria despite requests to industry over multiple years including in 2021 and 2022. This is a clear example of how the intra-jurisdictional complexity in Alberta increases the risk that tailings are not being effectively managed under the *Tailings Management Framework* and Directive 085 contributing to the risk of on-going impacts to OUV's.

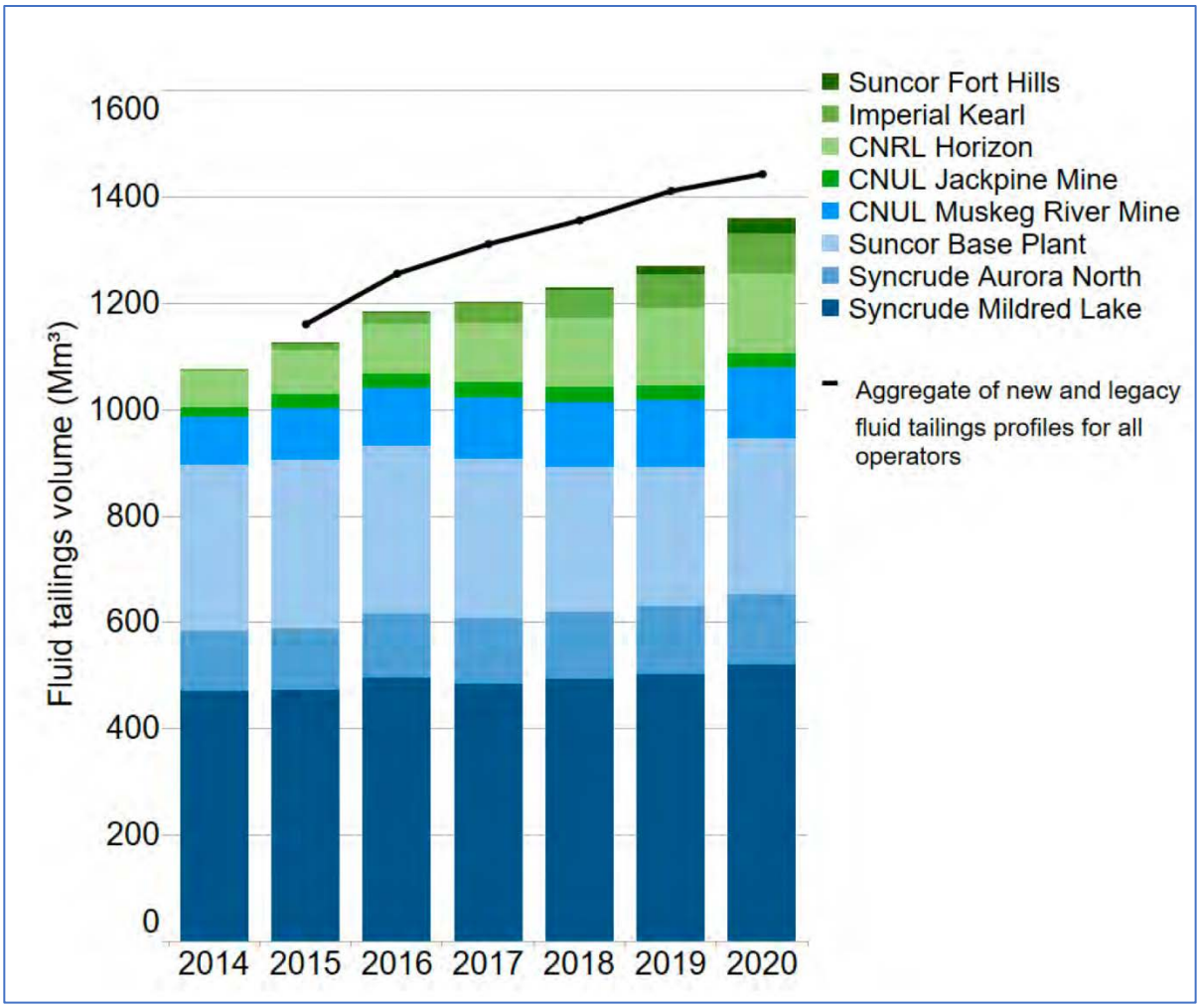
As noted above, the *Tailings Management Framework* was originally intended to address four pillars: water management, tailings management, mine financial security and reclamation. Alberta has established several multi-stakeholder working groups since 2015, some of which have languished (Integrated Water Management Working Group, Stakeholder Interest Group, Oil Sands Process Water Science Team) and some of which have been imposed with restrictive Terms of References that limit Indigenous participation and the scope of discussions to developing effluent release regulations (Oil Sands Mine Water Science Team, Oil Sands Reclamation Interest Group). Indigenous communities have been very active in trying to restore mechanisms for engagement that respect the original intent of the *Tailings Management Framework* and focus on the issues that have led to such extensive waste accumulation; however, Alberta has rebuffed all proposals and continues to focus on effluent release regulations.

b. Continued increases in accumulated tailings

As shown in Figure 2, the constant accumulation of liquid tailings (currently exceeding 1.4 trillion L) has continued in recent years.

Figure 2. Regional Fluid Tailings Volumes (New and Legacy Combined) and Aggregate Tailings Profiles, 2014 To 2020[36]

[36] From Alberta Energy Regulator, "2020 State of Fluid Tailings Management for Mineable Oil Sands report" online: <https://static.aer.ca/prd/documents/reports/2020-State-Fluid-Tailings-Management-Mineable-OilSands.pdf>.



Tailings continue to accumulate and the reporting of how trajectories to mine closure will be achieved (and the assumptions associated with those trajectories) is inadequate (e.g., dependency on technology readiness, treatment and release of OSPW, etc.). In addition, criteria to assess tailings management performance for the protection of downstream communities, the Property and its OUV through the course of time are not yet developed (or are significantly limited to groundwater monitoring for example). Cumulative effects of tailings accumulation for one operator let alone multiple operators in the region are significantly uncertain, and the intra- and inter-jurisdictional complexities are affecting effective tailings management to an extent where the vision of the final landscape is unknown

c. Mine Financial Security Program (MFSP)

The MFSP is the mechanism by which Alberta claims to be ensuring that oil sands operators will remediate and reclaim their sites. However, deficiencies in the MFSP's design, coupled with a culture of regulatory capture, have made it plain that in its current configuration the MFSP is destined to fail and that operators are unlikely to remediate and reclaim their sites, with all the attendant risks to the Property and OUV.

In 2015, Alberta's Auditor General analysed the MFSP and concluded that "for the design and operation of the MFSP to fully reflect the intended objectives of the program, *improvements are needed to both how security is calculated and how security amounts are monitored*."[37] More specifically, the Auditor General found that there is

> *a significant risk that asset values…are overstated* within the MFSP asset calculation, which could result in security amounts inconsistent with the MFSP objectives. The MFSP asset calculations *do not incorporate a discount factor to reflect risk*, *use a forward price factor that underestimates the impact of future price declines*, and *treat proven and probable reserves as equally valuable*.[38]

While fairly technical, the thrust of these criticisms is that the MFSP is designed to inflate assets, thus reducing the likelihood that operators will need to post additional security. Six years later, in 2021, a follow-up audit concluded that "the department *has not made satisfactory progress* in implementing our recommendation."[39] While AEP had completed several analyses in the intervening six years, no changes had been made with respect to the deficiencies identified in 2015.

In addition to Alberta's Auditor General, independent comparative research into provincial mine liability regimes across Canada has also given the MFSP a failing grade, noting that proponent liability estimates do not require supporting documentation and do not take into account the high degree of uncertainty currently associated with proposed reclamation measures (e.g. end-pit lakes).[40] Other scholars and organizations have identified accounting standards regarding asset retirement obligations (AROs), which are incorporated into the MFSP guidance material,[41] as contributing to these deficiencies (*e.g.* ARO calculations are replete with discretionary elements).[42] All of these may explain the ~ $90 billion discrepancy between the current MFSP total liability estimate and the 2018 internal AER estimate referred to above, but the AER refuses to clarify this issue.

The MFSP is also deliberately designed to not account for potential structural changes to oil markets, including as a result of climate policies. This design flaw was first noted by the Auditor General in 2015:

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[37] See Auditor General of Alberta, "Environment and Parks and the Alberta Energy Regulator — Systems to Ensure Sufficient Financial Security for Land Disturbances from Mining" (2015) online: <https://www.oag.ab.ca/wp-content/uploads/2020/05/EP_PA_July2015_AER_Systems_Ensure_Fin_Security_Land_Disturb.pdf>. [emphasis added]

[38] Ibid. [emphasis added]

[39] See Auditor General of Alberta, *Report of the Auditor General (June 2021)* at 29 – 34, online: <https://www.oag.ab.ca/wp-content/uploads/2021/06/oag-june-2021-report.pdf>.

[40] Ecofiscal Commission, "Responsible Risk" (2018): <https://ecofiscal.ca/wp-content/uploads/2018/06/Ecofiscal-Commission-Risk-Pricing-Report-Responsible-Risk-July-11-2018.pdf>.

[41] See <www.aer.ca/documents/liability/MFSP_Guide.pdf> at 16.

[42] Michelle Cooke, "Alberta's Oil Sands: An Unsecured Asset? An Analysis of the Mine Financial Security Program in Relation to Surface Mining of the Alberta Oil Sands," (2018) 56:1 Alta. L. Rev 177 at 193; Institute for Energy Economics & Financial Analysis, "Canada's oil and gas decommissioning liability problem" (2022): https://ieefa.org/resources/canadas-oil-and-gas-decommissioning-liability-problem.

> If an abrupt financial and operational decline were to occur in the oil sands sector it would likely be difficult for an oil sands mine operator to provide this security even if the need for the security was identified through the program. It is important to recognize that the department has accepted the risk of not protecting against a broad based and rapid structural decline in the oil sands sector, having designed the program with the intent of capturing what they believe are a reasonable range of economic conditions.[43]

Setting aside whether such program design decisions may have been defensible in 2015, that is clearly no longer the case in light of the Paris Agreement[44] and the implementation of significant climate policies in Canada and abroad.[45] According to Canadian energy economist Andrew Leach, there is "no question that global action on climate change has and will continue to dramatically affect global oil markets and outlooks."[46]

To put this problem into perspective, Figure 3 (below) shows "official" annual MFSP security and liability estimates from 2015 to 2021 set against the historical and predicted price of oil (both the IEA's estimated 2030 global price pursuant to its net-zero pathway[47] and the U.S. EIA's 2030 Reference case[48]). The question is how this liability funding gap will be closed, bearing in mind that the hard work of remediation and reclamation is not really scheduled to even *begin* until after 2030, when global net zero commitments are broadly expected to start impacting global oil demand and prices. Moreover, the *majority* of reclamation activity is not expected to begin until 2050, the time at which an increasing number of countries have committed to achieving net-zero GHG emissions[49] (see Figure 4).

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[43] Auditor General of Alberta, *supra* note 37.

[44] The Paris Agreement, United Nations Framework Convention on Climate Change, 2016, CN922016TREATIES-XXVII7d.

[45] Domestically, in 2018 Parliament passed the *Greenhouse Gas Pollution Pricing Act*, SC 2018, c 12 (*GGPPA*), which imposes minimum national standards for greenhouse gas (GHG) pricing (currently at $50/tonne), while the federal government has a growing series of regulatory measures in development. The U.S. Senate and Congress recently passed the *Inflation Reduction Act*, which is expected to drive a 40% reduction in that country's GHG emissions by 2030.

[46] Andrew Leach, "Canada's Oil Sands in a Carbon-Constrained World" Canadian Foreign Policy Journal (2022) [*forthcoming*].

[47] International Energy Agency, "Net Zero Emissions by 2050: A Roadmap for the Global Energy Sector" (2021) at p. 51, available online: <https://www.iea.org/reports/net-zero-by-2050>.

[48] See <https://www.eia.gov/todayinenergy/detail.php?id=46656>.

[49] See <https://www.un.org/en/climatechange/net-zero-coalition>.

Figure 3: Annual MFSP Security and Liability (2015 – 2021) and Oil Prices

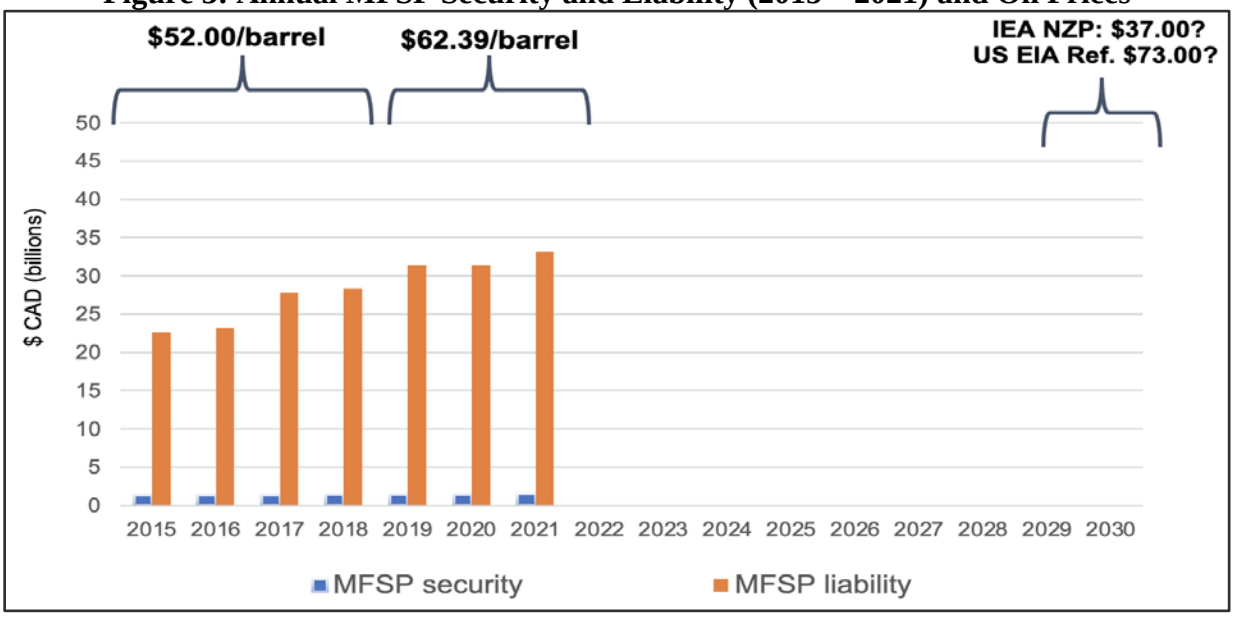
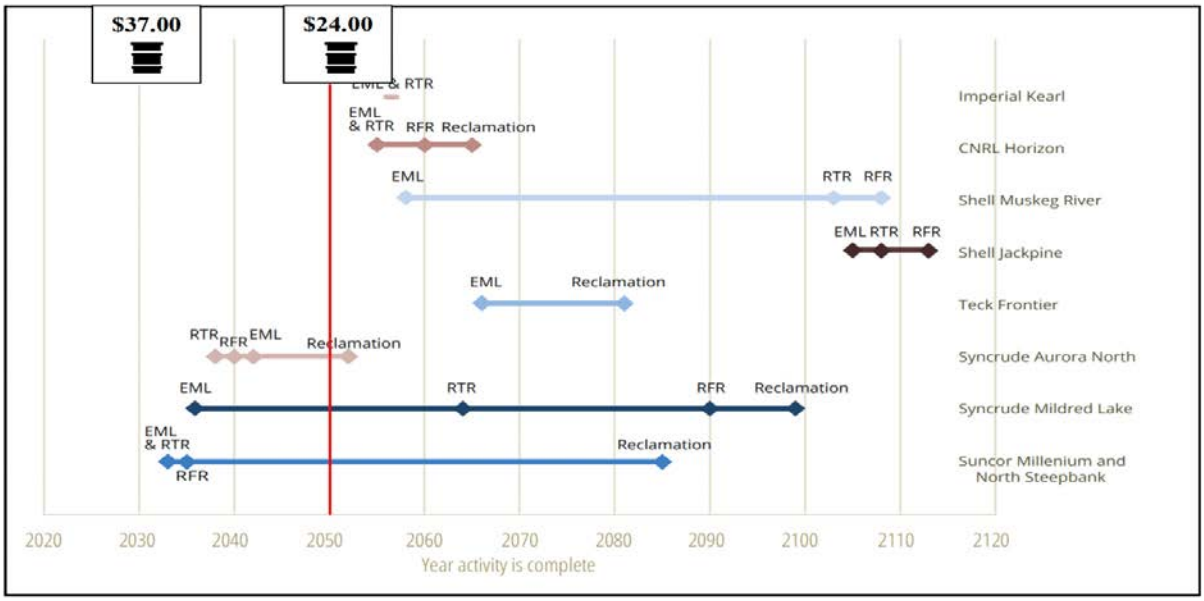


Figure 4: Timelines for Terrestrial Tailings Reclamation & Oil Price (IEA NZP)[50]



Already there are signs of a significant disruption underway. As one example, the number of battery electric vehicles (BEV) sold worldwide is growing exponentially and may have already reached a tipping point.[51] Transportation accounts for roughly 60% of all oil demand.[52] While predicting global oil demand and prices is undoubtedly a difficult and uncertain exercise (see

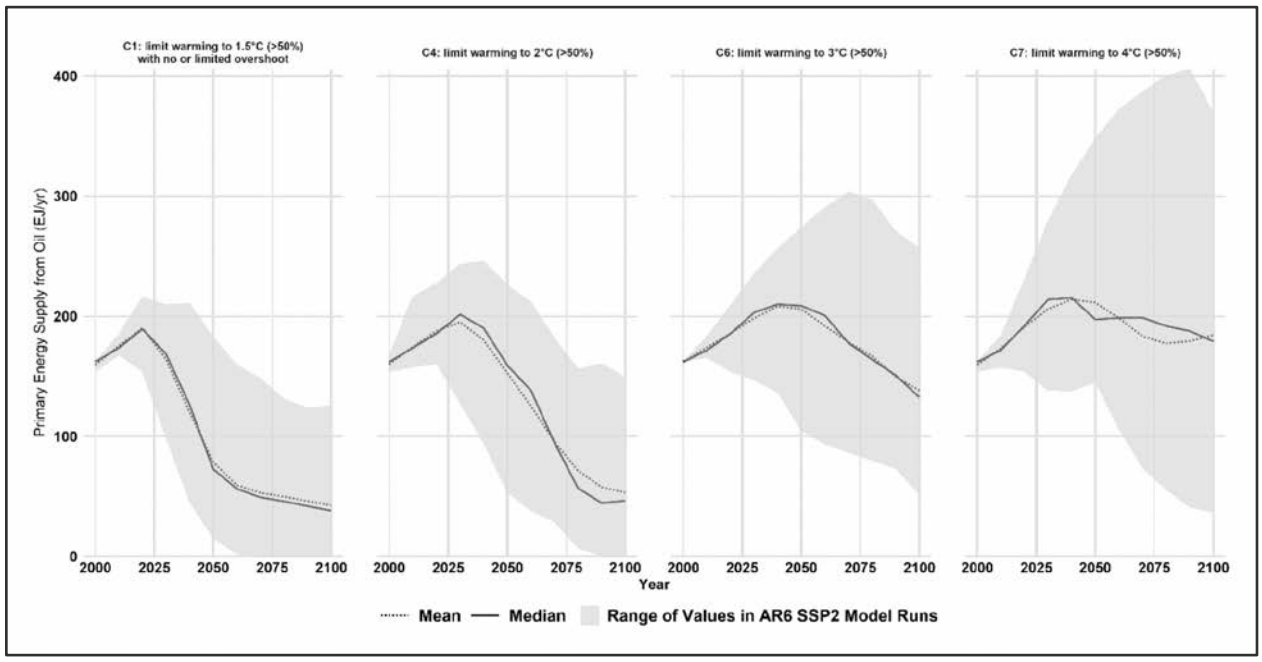
[50] This figure is borrowed from Jodi McNeill and Nina Lothian, "Review of Directive 085 Tailings Management Plans" (2017) Pembina Institute Backgrounder, available online: <https://t.co/B4uqQ5OxDK>.

[51] Ailee Lam, Jean-Francois Mercure, "Evidence for a global electric vehicle tipping point" University of Exeter Global Systems Institute, Working paper series number 2022/01, online: https://t.co/KWC5YWTLu6

[52] See <https://www.iea.org/reports/global-energy-review-2021/oil>.

Figure 5 for a recent range of scenarios), refusing to acknowledge and account for potential structural changes to oil markets in 2022 fatally undermines the MFSP regime.

Figure 5: Mean, median, and range of oil demand in IPCC SSP2 scenarios for C1, C4, C6, and C7 warming scenarios (by A. Leach, data via Byers et al., 2022)[53]



Finally, many of the above-noted deficiencies are also reflective of a culture of regulatory capture, additional evidence of which abounds:

- The Alberta government recently acknowledged[54] what critics have been saying for years, *i.e.* that the liability regime for *conventional* oil and gas wells has been a failure (enabling what two investigative journalists labelled a "hustle" in 2018),[55] but then refused to meaningfully reform it;[56]
- In the wake of the COVID pandemic, when oil prices temporarily reached negative territory, the AER intervened and modified the MFSP liability calculation to *prevent*

[53] Andrew Leach, "Canada's Oil Sands in a Carbon-Constrained World", *supra* note 46.

[54] See <https://financialpost.com/commodities/energy/alberta-to-overhaul-flawed-scheme-that-regulates-old-oil-and-gas-infrastructure>)

[55] Jeff Jones, Jeff Lewis, "Hustle in the Oil Patch" Globe and Mail: https://www.theglobeandmail.com/canada/article-hustle-in-the-oil-patch-inside-a-looming-financial-and-environmental/

[56] See Shaun Fluker & Drew Yewchuk, "The AER is Seeking Public Input on its Proposed Regulatory Solution for the Growing Orphan Well and Other Unfunded Liabilities Problem in Alberta's Oil and Gas Sector" (February 10, 2021), online: ABlawg, http://ablawg.ca/wp-content/uploads/2021/02/Blog_SCF_DY_AER_Directive067.pdf

industry from having to post additional billions in security (otherwise required because their asset to liability ratio fell below 3:1 for a brief period of time);[57]

- In June of this year (2022), the MFSP was further weakened to allow companies to post "surety bonds" rather than cash or cash equivalents when approaching the 15-year end-of-mine-life countdown;[58]

d. Alberta Tailings Ponds II Factual Record

In 2020, the Commission for Environmental Cooperation (CEC) released the Factual Record re: Alberta Tailings Ponds II.[59] In the context of allegations that Canada was not enforcing the *Fisheries Act* subsection 36(3) prohibition against deleterious substances in relation to suspected seepage of oil sands tailings ponds, the CEC Secretariat was instructed to present relevant factual information in relation to:

> (i) Alberta's relationship with Canada with respect to the regulation and enforcement of specified oil sands tailings ponds;
> (ii) the state of the publicly available peer-reviewed science on identifying differences between naturally-occurring bitumen-influenced water and anthropogenic oil sands process-affected water (OSPW); and
> (iii) how the Oil Sands Monitoring Program (OSMP, formerly the Joint Oil Sands Monitoring Program) is carried out and fits into Canada's enforcement of the *Fisheries Act*.

With respect to (i), the Secretariat could not locate any information supporting the existence of any meaningful relationship between Alberta and Canada with respect to releases from tailings ponds.[60] The CEC specifically noted that it did not appear that Alberta even shared groundwater reports from operators that showed tailings ponds seepage with its federal counterparts.[61] While disappointing, this finding is consistent with related observations throughout this paper that effective interjurisdictional water governance does not exist in relation to the Property and the threats to it.

With respect to (ii), the Secretariat's independent expert "concluded that there is scientifically valid evidence of OSPW seepage into near-field groundwater around tailings ponds, especially when compared
with the first peer-reviewed evidence published in 2009."[62] There *was* less publicly available peer-reviewed science that OSPW is reaching natural surface waters, but federal scientists at ECCC have recently reported the development and application of advanced analytical methods for

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[57] Drew Yewchuk, "Responding to Concerns that Alberta Does Not Collect Enough Security for Environmental Remediation the AER Chooses to Collect Less Security" (May 26, 2021), online: ABlawg, http://ablawg.ca/wp-content/uploads/2021/05/Blog_DY_MFSP_Securities.pdf

[58] See <https://edmontonjournal.com/opinion/columnists/opinion-invest-in-oilsands-cleanup-while-energy-is-booming>.

[59] CEC. 2020. Alberta Tailings Ponds II. Factual Record regarding Submission SEM-17-001. Montreal, Canada: Commission for Environmental Cooperation. 204 pp [ATPII].

[60] Ibid at 1.

[61] Ibid at 47.

[62] Ibid at 1.

detecting OSPW seepage and confirmed "earlier findings of OSPW migrations into groundwater *reaching the Athabasca River system* adjacent to the reclaimed pond at Tar Island Dyke."[63]

With respect to (iii), the Secretariat concluded that OSMP "does not have an enforcement mandate but is rather an ambient monitoring program designed to support and inform regulatory and policy decision-making concerning any potential environmental impacts of oil sands operations."[64]

When this Factual Record was first reported on, the then Minister of Environment and Climate Change Canada, Jonathan Wilkinson, stated that the "tailings ponds issue needs to be addressed and that will require more enhanced cooperation and an enhanced level of urgency on the part of both governments."[65] At this time, almost two years later, ECCC has confirmed that tailings pond inspections have resumed (after having been suspended in 2014) and that ECCC has initiated an investigation of one pond.

e. Provincial Regulations for Oil Sands Process Water (OSPW) Release

Integrated water management for oil sands mines is essential for the protection of downstream communities and ecosystems. Integrated water management must consider reduced freshwater import for processing and increased reuse and recycling of mine waters. The potential for water treatment, disposal and potential release was only contemplated in the context of closure releases to facilitate restoration and reclamation.

Treatment and release of mine water during operations was not contemplated and is a very recent development originating from an industry request to the Alberta Energy Regulator to consider a pilot project for treatment and release of process water. The current industry and Alberta government narrative is that water treatment and release is now necessary during operations of oil sands mines to reduce on site inventories of tailings waters stored on site and associated risk. This narrative however is not supported by data or information in the public domain or that has been provided to communities to demonstrate containment constraints, increasing risk due to containment, how reclamation is dependent upon such release, etc.

A Science Team was developed in Alberta to begin the process of assessing technical gaps for development of policy guidance under the TMF for the treatment and release of oil sands process water. The Oils Sands Process Water-Science Team (OSPW-ST) transitioned to the Oil Sands Mine Water-ST (OSMW-ST) and the development of a new Terms of Reference which has resulted in deteriorating relationships with communities. Discussions were closed by Alberta on the Terms of Reference despite community objections. Most communities agreed under protest to proceed under the new Terms of Reference; one community withdrew. Though Alberta continues to characterize the work of the OSMW-ST as inclusive of Indigenous perspectives, participating

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[63] See Hewitt et al (2020), Advances in Distinguishing Groundwater Influenced by Oil Sands Process-Affected Water (OSPW) from Natural Bitumen-Influenced Groundwaters. *Environ. Sci. Technol.* 2020, 54, 1522−1532. Advances in Distinguishing Groundwater Influenced by Oil Sands Process-Affected Water (OSPW) from Natural Bitumen-Influenced Groundwaters (acs.org).

[64] ATPII, *supra* note 54 at 1.

[65] See <https://www.winnipegfreepress.com/arts-and-life/life/sci-tech/2020/09/03/oilsands-tailings-ponds-leaking-federal-enforcement-unclear-report>.

communities have had significant issues providing meaningful input to the technical work being done by the team.

In the fall of 2021, Alberta also proposed a Human and Ecological Health Risk Assessment (HEHRA) related to mine water treatment. Unfortunately, Alberta would not agree to scope and detail of the technical work or basic ethical standards for indigenous knowledge and working with indigenous communities, declined to provide necessary funding for community participation and created insurmountable barriers for community involvement in this project.

B) Federal Developments - Federal Regulations for OSPW Release

The government of Canada through Environment and Climate Change Canada (ECCC) is currently seeking to develop "meaningful solutions to address the accumulation of oil sands mining waters." An Oil Sands Mining Effluent Regulations Crown-Indigenous Working group (CIWG) was developed by ECCC to begin working towards ECCC's goal of establishing a regulatory approach for oil sands mining effluent regulations under the *Fisheries Act* to authorize the deposit of deleterious substances under specified conditions.

The broader context is that the development of oil sands mining effluent regulations needs to be preceded by fulsome consideration of policy and technical options, and broader legislative and policy contexts including Aboriginal and Treaty rights, guaranteed by Section 35 of the *Constitution Act, 1982* (s.35 rights), and commitments made by Canada to the United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP, 2007), the Convention on Biodiversity, Article 8(j) (COB, 1992), the Truth and Reconciliation Commission's (2015) relevant recommendations, and commitments to the World Heritage Committee.

CIWG responsibilities include identifying issues, developing information/analyses/issue papers and conducting/reviewing research to allow for informed dialogue regarding potential regulatory approaches for establishing the proposed regulations and to support bilateral consultation activities with communities. It also includes co-drafting consultation documents and, should ECCC continue to advance its goal of creating regulations, it will be involved in some manner of process for collaboration and sharing of information during regulatory drafting.

CIWG conducts several activities through work planning and includes several technical sub-groups. Significant gaps exist for federal regulatory development including, but not limited to:

1. *No Assessment of Alternatives:* It remains unclear how or if alternatives to water treatment and release will be considered as it is presumed that treatment and release is the most economical.

2. *Lack of Sound Rationale:* No evidence has been provided by industry or government to identify the drivers for development of a regulation for the treatment and release of process water to the Athabasca River by 2025 (2023 timelines for Alberta's process). Tailings reports, tailings management plans, dam safety reports, etc. are reviewed by communities and none of these identify risk of dam breach, containment constraint to current operations

etc. as the basis for driving the need for this regulation by 2025. Some believe the drive for the regulation is to allow industry to grow production although evidence for that has also not been communicated to communities.

3. *Technical Issues:* There are several technical gaps limiting effective regulatory development. For example, industry has not identified which waters (there are many waters produced and stored on site), how much water, or when treatment and release of water is needed for any purpose (water management, tailings management, reclamation, liability, etc.). Hence it is very difficult to understand the scope of the problem or the type of treatment needed. Additional technical issues include:
    a. a lack of understanding of technologies for treatment and release of OSPW to ensure protection of the Property, OUV, and downstream communities.
    b. a lack of available discharge criteria, informed by Indigenous knowledge, for known contaminants in oil sands process waters.
    c. a lack of understanding of the status of the Athabasca River and how this status and that of the Property and OUV would be affected by treatment and release of OSPW exacerbated by the impacts of climate change, water withdrawals, flow regulation, increases to flow regulation (i.e., Site C Dam) and additional cumulative effects in time and space.

While the federal regulatory process is proceeding better than the provincial regulatory process from the perspective of inclusion of Indigenous communities, no community has indicated support for the treatment and release of process water due to the significant gaps and uncertainties associated with risk to the PAD and OUV.

C) Federal/Provincial Developments - Oil Sands Monitoring Program

Environmental monitoring is fundamental to assess the existing state of ecosystems and threats associated with that state. Nowhere is this more clearly demonstrated than for the Property where environmental monitoring continues to show declining trends in environmental indicators due to cumulative effects.

Monitoring in the oil sands region has received significant attention since 2010. The Oil Sands Monitoring Program (OSMP) commenced in 2012 and is a federal (ECCC)-provincial (Alberta Environment and Parks) co-led program funded by industry under provincial regulation (*Oil Sands Environmental Monitoring Program Regulation*). Over $500 MM has been invested to date in environmental monitoring (air, surface and groundwater, terrestrial biodiversity, wildlife, etc) in the oil sands region with the intent to understand environmental impacts associated with oil sands development and activities. The issue is that despite this financial investment, let alone the investment of governments and stakeholders, reporting of results is absent. Certainly many researchers have published their individual contributions in the scientific literature, but integrated and on-going state of the environment reporting from the program itself and the governments accountable for it, does not exist. This has been flagged in numerous scientific reviews, panel reports and reports of the federal and provincial Auditor General offices.

The only attempt at an integrated synthesis of results across environmental media was recently led and published by Dube et al. (2020)[66] as a Special Series entitled, "A Decade of Research and Monitoring in the Oil Sands Region of Alberta, Canada,". Dube was co-lead of the OSM program and published the series after leaving the Government of Alberta. A series of six critical reviews synthesized 10 years of published monitoring results to identify patterns of consistent ecological responses or effects, significant gaps in knowledge, and recommendations for improved monitoring, assessment, and management of the region. The special series considered over 300 peer-reviewed papers and represents the first integrated critical review of the published literature from the region. The authors concluded that while significant progress has been made in areas of governance, expanded geographical scope, and inclusion of Indigenous communities in monitoring in the region, significant issues remain with leadership, governance, a lack of integrated reporting on environmental conditions, public access to data, and continuity of monitoring efforts over time.

The series focused only on published literature in the region; that is, papers published by individual authors on specific programs or hypotheses of interest. Access to OSM data did not, and still does not, exist for analysis and reporting.

After $500 MM and more than 10 years of effort, an absence of reporting from one of the world's largest monitoring programs for an industry of international attention, is a significant issue. Even more concerning is the impact this lack of reporting is having on understanding the state of the Property and how its OUV is being impacted.

[66] See Dube et al. (2020), Special Series: A Decade of Research and Monitoring in the Oil Sands Region of Alberta, Canada. History, overview, and governance of environmental monitoring in the oil sands region of Alberta, Canada. *Integr Environ Assess Manag* 2022;18:319–332. History, overview, and governance of environmental monitoring in the oil sands region of Alberta, Canada - Dubé - 2022 - Integrated Environmental Assessment and Management - Wiley Online Library

Key Messages Relevant to Protection of Wood Buffalo's OUV

At a superficial level, the governments of both Alberta and Canada can claim to have various regimes in place for safeguarding the public interest in the environment generally, and the PAD in particular. Upon closer inspection, however, these regimes are replete with flaws and failures. Provincial and federal agencies barely communicate, let alone coordinate. Within each level of government, bifurcated responsibilities lead to gaps and inconsistencies between agencies and frustration for affected communities. Financial security regimes are tethered to regulations that lack quantifiable objectives and appear designed to favour private interests over the public interest.

In 2015, Natural Resources Canada (NRCan) commissioned the Council of Canadian Academies to report on the technological prospects for reducing the environmental footprint of the oil sands.[67] Its authors made clear that while some progress had been made, a "business as usual" approach would be insufficient to reduce the challenges ahead – that significant investments and collaborations across governments, industry and academia would be required. These calls appear to have been unheeded.

In more concrete terms, unless significant reforms are adopted or the international community fails to meet the challenge of climate change, it is more likely than not that oil sands operators will fail to remediate and reclaim their sites. The funding gap for this reclamation is at least $30 billion and may be as high as $130 billion, while current reclamation planning defers most of this difficult work to the second half of this century, which is to say the net-zero (GHG emissions) era. It is simply untenable to suggest that oil sands operators will close this funding gap in the period that oil demand is expected to decline dramatically. The result will be a permanently scarred landscape with massive tailings inventories and ponds and all the attendant risks to the PAD, some of which have already begun to materialize; tailings ponds have already been confirmed as seeping into near field groundwater, with OSPW-influenced water being detected in tributaries to the Lower Athabasca River.

The CIWG process that is part of Canada's proposal to develop effluent release regulations to allow the deposit of deleterious substances into the Athabasca River, while collaboratively structured and undertaking various work projects, is advancing without sufficient clarity or analysis on key points that should be answered before any federal decision is made to develop the proposed regulations.

The Joint Oil Sands Monitoring Program, while sounding impressive in scope and scale, has been largely ineffective in consideration of OUV and informing any improvements to government management measures relating to tailings.

The complexity of the intra- and inter-jurisdictional issues, regulation and governance is a significant limiting factor when trying to address and mitigate the situation. In our view, the current

[67] Council of Canadian Academies, 2015. Technological Prospects for Reducing the Environmental Footprint of Canadian Oil Sands. The Expert Panel on the Potential for New and Emerging Technologies to Reduce the Environmental Impacts of Oil Sands Development, Council of Canadian Academies.

moment may represent the last best chance to conduct a systematic, interjurisdictional, and transparent risk assessment of the tailings ponds of the Alberta Oil Sands region with a focus on risks to the PAD and their mitigation.